Chicago Metropolitan Agency for Planning

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MEMORANDUM

To: CMAP Climate Committee

From: CAP Project Team

Date: July 11, 2025

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

Action Requested: Discussion

The project team will update the Climate Committee on the development of the Comprehensive Climate Action Plan (CAP) for the Greater Chicago area, funded by the U.S. Environmental Protection Agency's Climate Pollution Reduction Grant. Since the last Climate committee meeting in May, the team has reviewed initial modeling results across all sectors and engaged the buildings, industry, and transportation working groups for feedback and implementation input. At the July meeting, the team will share progress to date and present initial results—economy-wide GHG and air quality modeling, along with sector results for agriculture, water and wastewater, waste, and carbon sequestration—for discussion.

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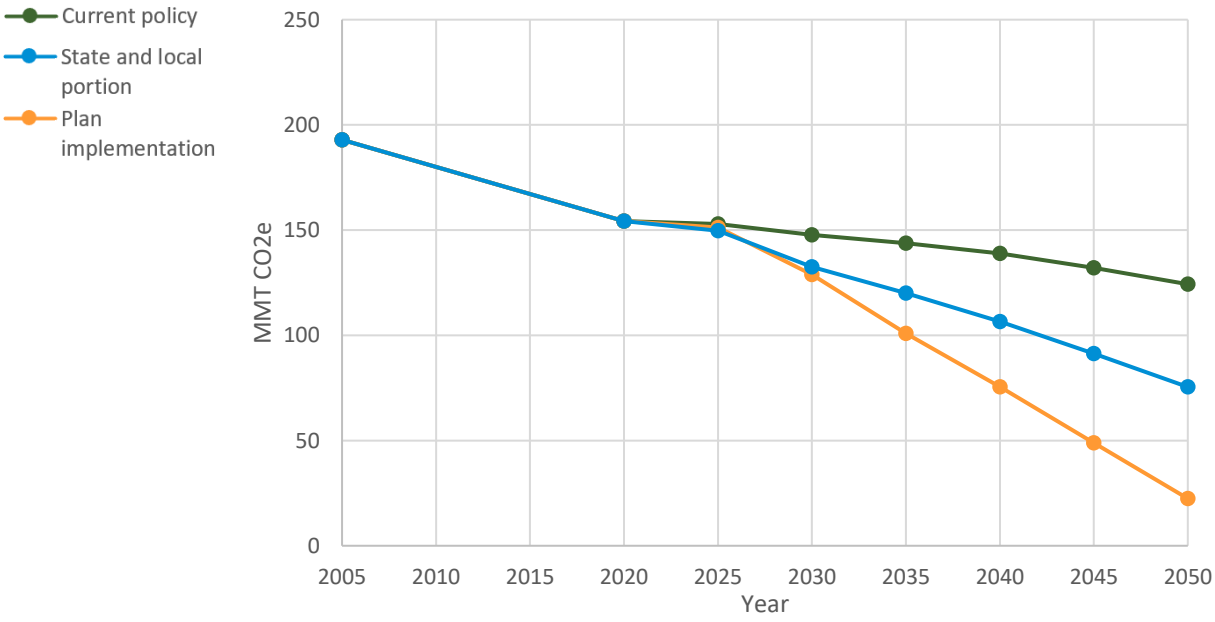
1. Quantifying emissions reductions

At the July meeting, the project team will share emissions reduction modeling results for agriculture, water and wastewater, waste, and natural carbon sequestration. The goal of the meeting is to vet these initial results with the Climate Committee and discuss ways to both overcome barriers and advance implementation. For context and discussion purposes, information about the modeling tool, economy-wide modeling results, sector-specific assumptions used to inform the model, as well as sector-specific results for these sectors, is provided below. For information about the modeling tool, see the May 2025 meeting memo.[1]

1.1. Economy-wide: initial modeling results for the full plan implementation scenario

At the May meeting, the project team presented the initial economy-wide modeling results for two scenarios: the current policy and the state and local portion of the plan implementation scenario. Since then, the team has produced results for the full plan implementation scenario, which demonstrates how new or expanded actions can achieve the plan's 80-85 percent emissions reduction target by 2050 as well as the air quality impacts of those actions. Figure 4 illustrates the economy-wide GHG emissions reductions for the full plan implementation scenario, including the state and local portion of the scenario, as well as the current policy scenario.

Figure 4. Economy-wide GHG emissions by scenario in MMT CO2e (2005-2050)



Source: CMAP and E3, 2025.

Current policy scenario. The current policy scenario projects a 36 percent reduction in GHG emissions from 2005 levels by the year 2050. From 2020, this would produce an average annual reduction of 1.04 MMT CO2e between 2020 and 2050—partially contributing to the 4.18 MMT CO2e per year needed to meet the plan's reduction goal (Figure 4). These reductions primarily stem from cleaner electricity in Illinois, largely driven by the Climate and Equitable Jobs Act, as well as fuel economy standards, incentives included in the Inflation Reduction Act, and others.

Plan implementation scenario. The plan implementation scenario builds on the current policy scenario to show how the planning area can reach an 80-85 percent reduction in GHG emissions by 2050 (Figure 4). It includes more than 20 reduction measures across seven emission sectors.[2]

This scenario also distinguishes what is achievable through state and local actions versus what requires federal action, larger economic changes, and technological advancements. By demonstrating the potential of local and state action, this scenario highlights a path for what regional and state implementers could achieve. The state and local portion of this scenario is based on existing policies and programs adopted within the region or in other U.S. jurisdictions, whereas the full plan implementation scenario includes additional reductions informed by national or state-scale modeling and benchmarks needed to close the remaining emissions gap.

As modeled, the state and local portion of the plan implementation scenario achieves a 61 percent reduction in economy-wide GHG emissions by 2050 compared to 2005 levels (Figure 4). This would result in an average annual reduction rate of 2.63 MMT CO2e between 2020 and 2050—partially contributing to the 4.18 MMT CO2e per year needed. Specific modeling results for the small emissions sectors (agriculture, waste, water/wastewater) and carbon sequestration within the state and local portion of the plan implementation scenario are included in section 03.

Air quality impacts

The project team conducted an air quality and health impact analysis by linking fuel combustion in the modeled scenarios to changes in ambient concentrations of fine particulate matter (PM2.5), nitrogen oxides (NOx), sulfur dioxide (SO_2), and volatile organic compounds (VOCs), all of which contribute significantly to premature mortality and other health issues in the planning area and U.S.

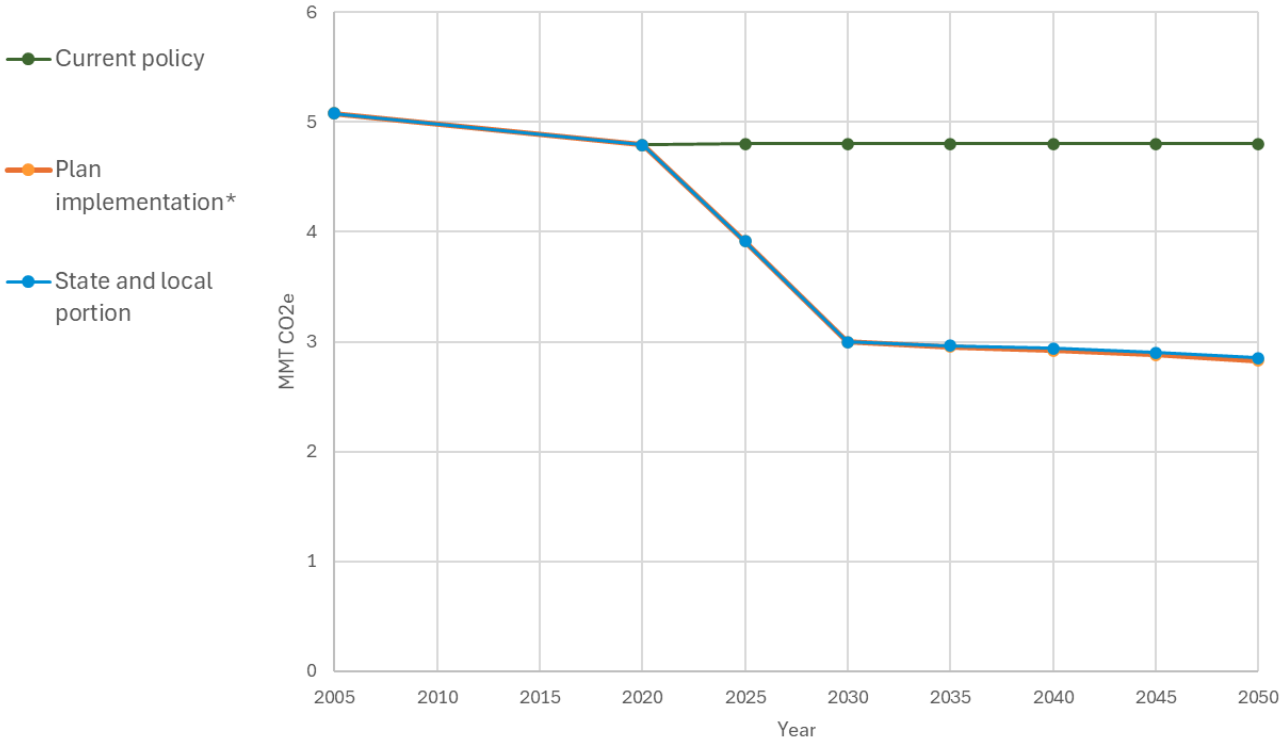
Using the USEPA's Co-Benefits Risk Assessment (COBRA) screening model,[3] the analysis estimates air quality improvements based on sector-specific changes in technology and fuel use, such as shifts in vehicle types and vehicle miles traveled. At the July meeting, the project team will present initial results from this analysis, highlighting expected reductions in NOx, SO2, PM2.5, and VOCs, as well as the associated public health benefits of the plan implementation scenario when compared to the current policy scenario.

1.2. Initial modeling results for agriculture, water and wastewater, and waste sectors and natural carbon sequestration

The project team is seeking feedback on four areas included in the analysis: the agriculture, water and wastewater, and waste emission sectors, as well as natural carbon sequestration potential. When agriculture, water and wastewater, and waste are considered together, the current policy scenario results in a 5 percent reduction (0.28 MMT CO2e) in GHG emissions from 2005 levels, while the plan implementation scenario provides a 44 percent reduction (2.25 MMT CO2e) (Figure 5). More than 98 percent of these emissions reductions under the plan implementation scenario are driven by the state and local actions, underscoring the essential role of local and state-level leadership in decarbonizing these relatively small but important sectors. In addition, natural carbon sequestration removes an estimated 6.00 MMT CO2e annually in 2050 under the plan implementation scenario.

A detailed breakdown of the sector emissions and carbon sequestration estimates are provided below. Additional details on the policies and programs used to model reduction measures are included in the appendix. Details on the full slate of reduction measures will be made available on the Comprehensive Climate Action Plan engagement website in the coming weeks.

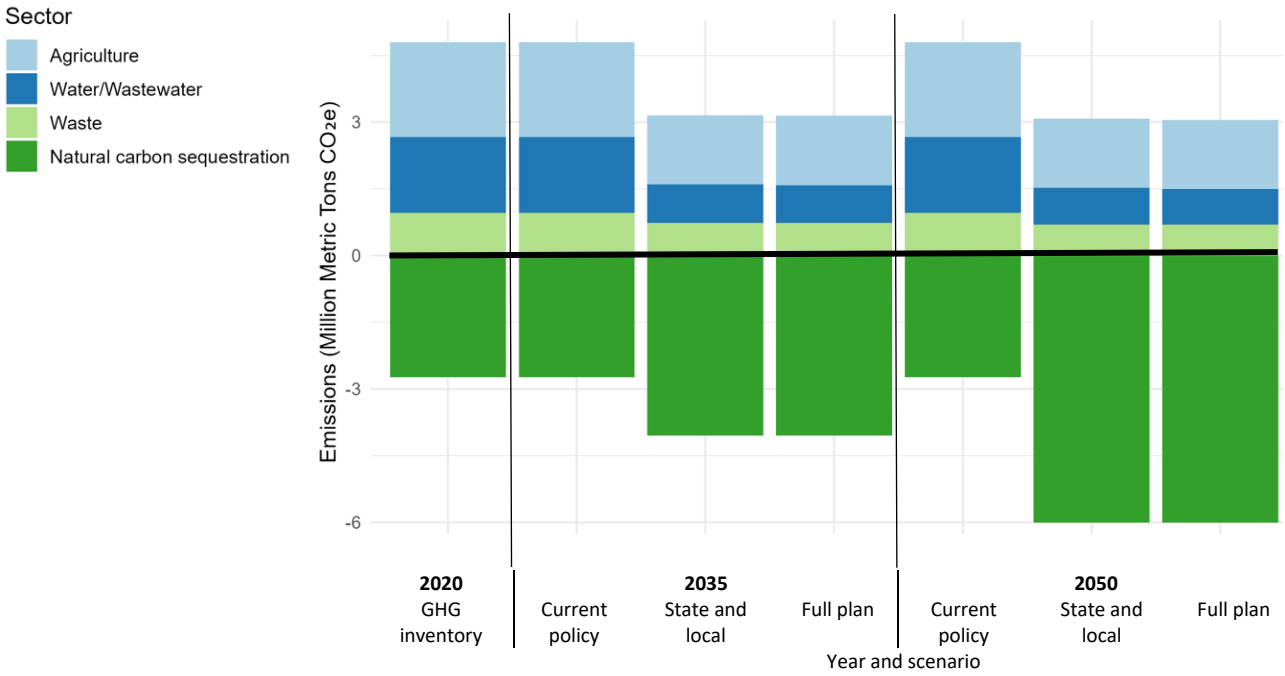
Figure 5. Agriculture, water and wastewater, and waste emissions by scenario, MMT CO2e (2005-2050)



*The plan implementation scenario largely reflects state and local actions, resulting in nearly identical trend lines. Natural carbon sequestration estimates are not included in this chart.

Source: CMAP and E3, 2025.

Figure 6. Agriculture, water and wastewater, and waste emissions and natural carbon sequestration by scenario, MMT CO2e (2020-2050)



Source: CMAP and E3, 2025.

Table 2. Percent change in agriculture, water and wastewater, and waste emissions and natural carbon sequestration by scenario, 2020 to 2050

Sector	2020 emissions, MMT CO2e	Percent change in emissions from 2020 to 2050		
		Current policy scenario	State and local portion	Plan implementation scenario
Agriculture	2.14	0%	-27%	-27%
Water and wastewater	1.78	0%	-53%	-53%
Waste	0.96	0%	-50%	-50%
Natural carbon sequestration	-2.74*	0%	-119%	-119%

* Natural carbon sequestration emissions are based on emissions or reductions associated with activities such as afforestation, deforestation, and land management practices. See the October 2024 Climate Committee memo for more details.[4]

Source: CMAP and E3, 2025.

Agriculture

The project team has identified the four decarbonization objectives for the agriculture sector:

1. Improve nutrient management and soil health
2. Improve manure and feed management
3. Increase the carbon storage potential of agricultural lands
4. Improve the energy efficiency of agriculture and livestock operations

While these objectives guide the overall strategy, not all can be quantified in this planning effort. The analysis focuses on two key reduction measures that align with objectives 1 and 2:

- Reducing nitrous oxide emissions from soil management
- Reducing methane emissions from manure management

Objective 3 is addressed further below in the context of natural carbon sequestration.

In 2020, agricultural emissions were estimated to be 2.14 MMT CO2e. Under the current policy scenario, no significant change in emissions is projected (Table 3). In contrast, the plan implementation scenario emphasizes state financial incentives to support improved nutrient and manure management practices.

These targeted actions, addressing non-CO2 gases, such as nitrous oxide and methane from soils and manure, are estimated to reduce agricultural emissions by 27 percent from 2020 levels, with most reductions occurring by 2035 (Figure 6). See the appendix for more details on the assumptions used to estimate these reductions.

Table 3. Percent change in agriculture emissions by subsector, 2020 to 2050

Agriculture emissions subsectors	2020 GHG emissions, MMT CO2e regional	Percent change in emissions from 2020 to 2050		
		Current policy scenario	State and local portion	Plan implementation scenario
Enteric fermentation	0.18	0%	-40%	-40%
Liming	0.14	0%	-0%	-0%
Manure management (N_2O)	<.01	0%	-40%	-40%
Organic N_2O	<.01	0%	-0%	-0%
Residue burning	<.01	0%	-0%	-0%
Soil management	1.27	0%	-40%	-40%
Synthetic N_2O	0.55	0%	-0%	-0%

Note: Organic N_2O refers to natural N_2O emitted through biological and microbial processes within environments, such as wetlands, or from over-fertilized agricultural fields. Synthetic N_2O refers to the N_2O that is a byproduct of the chemical reactions associated with the use of nitrogen fertilizers.

Source: CMAP and E3, 2025.

Water and wastewater

The project team has identified four decarbonization objectives for the water and wastewater sector:

1. Increase energy efficiency in water and wastewater operations
2. Shift water and wastewater systems to clean energy
3. Lower domestic water consumption
4. Reduce the need for energy-intensive water treatment

While these objectives guide the overall strategy, not all can be quantified in this planning effort. The analysis focuses on two reduction measures that align with objectives 1, 2, and 4:

- Electrifying water and wastewater operations.
- Reducing methane and nitrous oxide emissions through upgraded wastewater treatment processes.

In 2020, emissions were estimated to be 1.78 MMT CO2e. Under the current policy scenario, emissions are projected to stay flat through 2050 (Table 4). The plan implementation scenario assumes widespread state and local action to modernize and electrify water and wastewater operations. Drawing from recommendations in the Metropolitan Water Reclamation District's Climate Action Plan, these efforts—particularly replacing outdated water treatment tanks with advanced technologies—are projected to achieve a 52 percent reduction in emissions from 2020 levels by 2035, with reductions sustained through 2050. Additional strategies to retrofit building operations and clean the electricity grid, which would reduce water conveyance-related emissions, are included in the appendix.

Table 4. Percent change in water and wastewater emissions by subsector, 2020 to 2050

Subsectors	2020 GHG emissions, MMT CO2e	Percent change in emissions from 2020 to 2050		
		Current policy scenario	State and local portion	Plan implementation scenario
Water conveyance	0.12	0%	-72%	-72%
Commercial wastewater	0.72	0%	-55%	-55%
Wastewater treatment CH4	0.86	0%	-52%	-52%
Wastewater treatment N2O	0.08	0%	-52%	-52%

Note: Water conveyance emissions from Illinois and Wisconsin counties are based on the methodology used in CMAP's 2019 regional GHG emissions inventory, which calculated emissions based on electricity usage. Water conveyance emissions from Indiana counties are based on the methodology used in NIRPC's 2017 GHG emissions inventory, which calculated emissions based on natural gas usage. There may be additional emissions from water conveyance that are not represented in the inventory.

Source: CMAP and E3, 2025.

Waste

The project team has identified three decarbonization objectives for the waste sector:

1. Reduce and divert organic waste from the waste stream
2. Expand and improve biogas collection from landfills
3. Reduce inorganic landfill waste and improve overall waste management practices

While these objectives guide the overall strategy, not all can be quantified in this planning effort. The analysis focuses on one key reduction measure – reducing methane emissions from landfills – which aligns with objectives 1 and 2.

In 2020, waste-related emissions were estimated at 0.96 MMT CO2e. However, this figure only accounts for emissions from waste management facilities located in the planning area and does not fully reflect emissions associated with waste generated in the region but managed elsewhere. Under the current policy scenario, no significant change in emissions is projected.

In contrast, the plan implementation scenario emphasizes expanded state and local action to cut landfill methane emissions. Key strategies include:

- Organic waste diversion programs, modeled after Washington's Use Food Well Washington Plan and House Bill 2301, which supports waste prevention, rescue, and recovery programs.
- Expanded landfill gas capture requirements, modeled after California's Global Warming Solutions Act and Code Regulation 95464, which mandates that more landfills install gas collection systems.

Waste combustion emissions remain unaddressed but represent a small share of the sector's total emissions. Together, these strategies are estimated to reduce waste sector emissions by 43 percent by 2035 and 50 percent by 2050, compared to 2020 levels (Table 2).

Table 5. Percent change in waste emissions by subsector, 2020 to 2050

Subsectors	2020 GHG emissions, MMT CO2e	Percent change in emissions from 2020 to 2050		
		Current policy scenario	State and local portion	Plan implementation scenario
Landfills	0.94	0%	-28%	-28%
Waste combustion CO2	0.02	0%	-0%	-0%

Note: Waste combustion CO_2 emissions reported by the USEPA only account for the non-biogenic fraction of waste that is burned at landfill recovery facilities. Since the landfill gas collection measure in the waste sector measures the collection of methane produced by the breakdown of organic waste, the methane is treated as biogenic CO2, and the combustion emissions are treated like other biofuels in that their emissions are not counted against net totals.

Source: CMAP and E3, 2025.

Natural carbon sequestration

The project team has identified three strategic objectives to enhance carbon sequestration:

1. Maintain and expand natural lands
2. Advance development practices that protect natural resources
3. Increase the carbon storage potential of agricultural lands

While these objectives guide the overall strategy, not all can be quantified in this planning effort. The analysis focuses on two key reduction measures that align with objectives 1 and 3:

- Increase CO2 sequestration in forest carbon
- Increase CO2 sequestration in agricultural soils

In 2020, the greater Chicago region sequestered 2.74 MMT CO2e through afforestation, deforestation, and land management practices. While land protection, restoration, and other improvements are anticipated to continue, they are not captured in the current policy scenario. The plan implementation scenario, however, incorporates state and local financial incentives to expand and protect natural carbon sinks—particularly through restoration of degraded lands and preservation of existing carbon-rich landscapes. Assuming a $200 per ton CO2 cost of sequestration, these efforts are projected to increase carbon sequestration by 48 percent by 2035 and 119 percent by 2050.

Table 6. Sequestered carbon[5] by subsector, 2020 to 2050

Subsectors	2020 GHG emissions, MMT CO2e	Emissions sequestration from 2020 to 2050		
		Current policy scenario	State and local portion	Plan implementation scenario
Trees and wetlands sequestration	-2.51	-2.51	-3.38	-3.38
Cropland conservation and conversion sequestration	-0.23	-0.23	-2.63	-2.63

Source: CMAP and E3, 2025.

2. Project updates

2.1. Climate questionnaire

As part of the planning process, the project team has released a community questionnaire to help ensure the plan reflects local priorities and burdens. The questionnaire is available in English and Spanish, will remain open through July 29, 2025, and respondents will be entered to win a $20 gift card.

Please consider sharing the questionnaire with your networks to boost participation. To make it easy, the project team has created a promotional toolkit, which contains flyers, social media graphics, and sample text to use in newsletters and posts.

2.2. Feedback on initial modeling results for building, industry, and transportation

In June and July, the project team workshopped initial modeling results with the building, industry, and transportation working groups. Each meeting included project updates, initial economy-wide modeling results, and sector-specific modeling assumptions and results. Following the presentations, working group members provided feedback and discussed critical implementation steps, known barriers, and key actors. Below is a summary of insights from each meeting.

Buildings working group

- Stakeholders were surprised by the significant role that state and local governments can play in advancing building decarbonization, even without federal support—though federal investment remains essential for achieving emissions reduction goals.
- Strategies prioritized for discussion included Building Performance Standards (BPS), all-new electric construction requirements, land use strategies, and heat pump incentives.
- Stakeholders emphasized the need for collaboration and streamlined decision-making. Suggestions included convening regional interest groups of building owners to co-develop ambitious but feasible building performance standards, publishing case studies and policy templates from successful local initiatives, creating regionally-funded programs to avoid competition and inefficiencies between jurisdictions, and advocating for clear state-level policies that support utility decarbonization investments.
- Labor and political resistance to state-level electrification policies remain a key barrier, driven by concerns over gas-related jobs and consumer freedom. Members recommended targeted education and reframing electrification as a workforce transition opportunity.

Industry working group

- Stakeholders were surprised by the relatively limited impact state and local measures could have on industrial decarbonization by 2050.
- Despite previously raised concerns, participants appreciated the modeling of carbon capture and storage as an optional strategy to achieve further reductions.
- Strategies of greatest interest included facility emissions limits, equipment emissions standards, and state-level buy clean programs.
- While large emissions reductions will depend on federal action in a few dominant subsectors, stakeholders also expressed interest in supporting small and mid-sized manufacturers and leveraging new and existing local programs.

Transportation working group

- **Passenger electric vehicles (EVs):** Participants emphasized that the stock turnover and emissions reductions achieved through EV sales mandates will require complementary strategies, including investments in charging infrastructure and reducing reliance on single-occupancy vehicles. Some felt the plan implementation scenario relies too heavily

on ambitious electrification goals, given regulatory uncertainty, and emphasized focusing on strategies within state and local control.

- **Medium and heavy-duty EVs:** Participants were encouraged by potential emissions reductions from MDHVs, but noted several barriers to achieving those reductions, including long fleet turnover timelines and high associated costs, changing regulations and economic uncertainty, needed consensus around technological advancements, and lacking grid capacity. Participants noted that setting ambitious goals for this subsector would send important signals to the market, and that interim strategies like low-carbon fuels could be helpful.
- **Reducing vehicle miles traveled (VMT):** A lack of sustainable funding for regional transit operations was seen as a major barrier. Participants highlighted the complementary roles of transit, active transportation, land use planning, and demand management, and encouraged the plan to feature these strategies more prominently due to their public health and mobility co-benefits.

2.3. Next steps

Final modeling results will be presented to the CAP steering committee in late summer 2025, followed by a presentation of the draft plan to the same committee in early fall. Climate committee members will be invited to attend the two remaining steering committee meetings virtually. Additionally, members may be asked to review portions of the draft plan related to implementation authority, among other areas as appropriate.

Appendix

To estimate emissions reductions and sequestration from agriculture, water and wastewater, waste, and carbon sequestration, the project team developed implementation rates based on existing state and local policies —both within the region and from other states—as well as additional analysis to align with the plan's 80-85 percent reduction target.

Tables A.1-A.4 summarize the source material and explain how each policy or program has been adapted to the greater Chicago area. Unless otherwise noted, programs are assumed to begin implementation in 2026. While each reference policy serves as an important tool for reducing emissions, quantifying their individual impacts is challenging due to overlap with other measures. Notes in the table indicate where such overlaps occur.

Table A.1. Agriculture reference policies, programs, and other analyses used to inform scenarios.

Policy or program	Description	How policies informed modeling
Plan implementation scenario - *State and local strategies only*		
Soil nutrient management – US EPA State-level Non-C02 GHG Mitigation Report[6]	Creates financial incentives to adopt soil fertilizer application practices that reduce nitrous oxide emissions. Practices include reducing fertilizer application and using nitrification inhibitors with fertilizer application.	Reductions are achieved through shifts in non-CO2 emissions from agricultural soils below the current policy scenario. - Assumes increased adoption of practices that reduce nitrous oxide emissions from soils. - Because there are no examples of direct regulation to require agricultural nitrous oxide emissions reductions, it is assumed that financial incentives are used to change farming practices.
Livestock methane management – US EPA State-level Non-C02 GHG Mitigation Report[7]	Provides financial incentives to adopt animal feeding and manure management practices that reduce methane emissions and increase the productivity of livestock. Animal feeding and productivity practices include intensive grazing and the use of antimethanogen vaccines. Manure management practices include anaerobic digestion of manure through covered lagoons, complete-mix, and plug-flow digesters.	Reductions are achieved through shifts in non-CO2 emissions from agricultural soils below BAU. - Assumes increased livestock productivity, which means fewer animals are required to produce dairy and meat, and fewer manure management practices are needed to mitigate methane production. - Because there are no examples of direct regulation requiring agricultural methane reductions, it is assumed that financial incentives are used to change farming practices.

Table A.2. Waste reference policies, programs, and other analyses used to inform scenarios.

Policy or program	Description	How policies informed modeling
Current policy scenario		
Illinois Climate and Equitable Jobs Act (CEJA) Electricity Generation Emissions Rules	State of Illinois requires a reduction of all CO2e and co-pollutant emissions from electricity generation units by 2045.	Influences the adoption rate of renewable electricity generation for Illinois counties. - Assumes 100 percent of renewable electricity generation by 2045. - Note: The adoption rate of renewables is influenced by policies included in other emissions sectors.
Plan implementation scenario - *State and local strategies only*		
Divert organic waste – Use Food Well Washington Plan[8] and Washington House Bill 2301[9]	Sets a state-level target for a 50 percent reduction in food waste by 2030. Together, the Plan and bill create organic waste prevention, rescue, and recovery programs, including residential and commercial compost collection services, as well as degradability labeling requirements.	Reductions are achieved through shifts in annual methane (CH4) emissions, resulting from smaller volumes of organic materials being sent to landfills to decompose. - Shifts in CH4 emissions start in 2027; by 2030, non-CO2 emissions are reduced by 29 percent. - The share of landfill emissions from food waste is derived from a national EPA report on landfill methane, which is equivalent to 58 percent.[10] - The US EPA State Inventory and Projection Tool was used to generate a state-level forecast of landfill methane emissions for Illinois, Indiana, and Wisconsin.
Expand landfill gas capture systems – California Global Warming Solutions Act (AB32)[11] and Code Regulation 95464[12]	Expands the number of landfills previously required to install gas capture systems under Obama-era methane regulations by lowering size and emissions thresholds. Prohibits the use of open flares to burn off captured gas, encouraging the collection of gas for energy use and the production of renewable natural gas.	Reductions are achieved through shifts in non-CO2 emissions, resulting from improved waste management activities. - Uses USEPA state-level estimates for landfill gas mitigation rates. Note: No reductions are projected in the initial modeling results; however, the project team is considering refinements to improve the model.

Table A.3. Water and wastewater reference policies, programs, and other analyses used to inform scenarios.

Policy or program	Description	How policies informed modeling
Current policy scenario		
Illinois Climate and Equitable Jobs Act (CEJA) Electricity Generation Emissions Rules	State of Illinois requires a reduction of all CO2e and co-pollutant emissions from electricity generation units by 2045.	Influences the adoption rate of renewable electricity generation for Illinois counties, and therefore, the electricity used by water and wastewater facilities. - Assumes 100 percent of renewable electricity generation by 2045. - Note: The adoption rate of renewables is influenced by policies included in other emissions sectors.
Plan implementation scenario		
National Renewable Energy Lab (NREL) Standard Scenarios	Explores potential scenarios impacting electric sector decarbonization.	Influences the adoption rate of renewable electricity generation for non-Illinois counties. Applies NREL's 95 Percent Decarbonization by 2050 standard scenario, which extends renewable energy generation requirements to Wisconsin and Indiana.

Table A.3. continued

Policy or program	Description	How policies informed modeling
State and local strategies within the plan implementation scenario		
Colorado's Building Performance program	Establishes benchmarking requirements and building performance standards (BPS) for reducing GHG emissions by 7 percent by 2026 and 20 percent by 2030 relative to 2021 emissions levels. The program applies to large commercial, multi-family, and public buildings (equal to or greater than 50,000 square feet) and expands to smaller buildings over time.	Reductions result from reduced natural gas demand from commercial and public buildings as they comply with BPS standards. Assumes public water and wastewater facilities meet the commercial and public buildings threshold of 50,000 square feet or larger.
Decommissioning of outdated wastewater treatment tanks – MWRD Climate Action Plan[13]	Sets the goal of decommissioning the Stickney Water Reclamation Plant's Imhoff tanks and updating them with newer technology by 2025.	Reductions are achieved through shifts in non-CO2 emissions (methane) from wastewater treatment. - Reductions are based on MWRD's abatement estimates from decommissioning the Imhoff tanks and are scaled proportionally relative to each of the county's total wastewater-related methane emissions.

Table A.4. Carbon sequestration reference policies, programs, and other analyses used to inform scenarios.

Policy or program	Description	How policies informed modeling
Plan implementation scenario - *State and local strategies only*		
Natural carbon sequestration – Naturebase Tool[14]	Estimates impacts from financial incentives for land management practices that preserve existing sinks and increase sinks on degraded lands.	Reductions are achieved by increasing the carbon sequestered through forest and wetland protection, restoration, and management activities, as well as cropland conservation and conversion. - Assumes payment of $200/tCO2 sequestered/reduced to incentivize adoption of land management practices. - Note: Additional research is being conducted to provide more information on the incentives and sequestration activities.

Endnotes

[1] CMAP, "Update on the Comprehensive Climate Action Plan for the Greater Chicago area," Memo to the Climate Committee, May 15, 2025, https://cmap.legistar.com/gateway.aspx?M=F&ID=c5668ca7-4a5e-4231-8817-cbd696d7c0ed.docx

[2] While natural carbon sequestration strategies will be modeled, emissions reductions from carbon sinks do not count toward the 85 percent target.

[3] USEPA, "Co-benefits risk assessment health impacts screening and mapping tool (COBRA)", June 2025, https://www.epa.gov/cobra

[4] CMAP, "Update on the Comprehensive Climate Action Plan for the Greater Chicago area," Memo to the Climate Committee, October 17, 2024, https://cmap.legistar.com/gateway.aspx?M=F&ID=250e2b6c-4e7f-4782-9a79-deb6f24e9fbc.pdf

[5] Pathways models carbon sequestration under a land use, land-use change and forestry (LULUCF) sector, which includes the accounting of emissions related to how land is used (including forests, wetlands, and agricultural/croplands), changes in land uses (deforestation and afforestation) and management of those land uses (e.g., regenerative agricultural practices).

[6] USEPA, "U.S. State-level Non-CO2 Greenhouse Gas Mitigation Potential: 2025-2050", 2019, https://cfpub.epa.gov/ghgdata/nonco2/usreports/.

[7] USEPA, "U.S. State-level Non-CO2 Greenhouse Gas Mitigation Potential: 2025-2050", 2019, https://cfpub.epa.gov/ghgdata/nonco2/usreports/.

[8] Washington Department of Ecology, "Use Food Well Washington Plan," 2021,

[9] Washington State Legislature, HB 2301, https://app.leg.wa.gov/billsummary?BillNumber=2301&Year=2023&Initiative=false.

[10] USEPA, "Food Waste Management: Quantifying Methane Emissions from Landfilled Food Waste," Office of Research and Development, October 2023, https://www.epa.gov/system/files/documents/2023-10/food-waste-landfill-methane-10-8-23-final_508-compliant.pdf.

[11] California Air Resources Board, "Landfill Methane Regulation: Summary of provisions in California's Global Warming Solutions Act, Assembly Bill (AB) 32," https://ww2.arb.ca.gov/our-work/programs/landfill-methane-regulation/about.

[12] California Code of Regulations, Title 17, Section 95463-95464, https://ww2.arb.ca.gov/resources/documents/landfill-methane-regulation.

[13] Metropolitan Water Reclamation District of Greater Chicago, "Climate Action Plan," 2023, https://mwrd.org/sites/default/files/documents/MWRD_Climate_Action_Plan_230720.pdf.

[14] Naturebase, "Naturebase: A Global Map for Nature-Based Solutions," The Nature Conservancy, 2024, https://app.naturebase.org/map/adm1/66186276B11383391196245.