Priority Climate Action Plan (PCAP) of the Omaha-Council Bluffs Metropolitan Statistical Area Climate Pollution Reduction Grant (CPRG) Program

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University of Nebraska Medical Center (UNMC)
Douglas County Geographic Information Systems (DoGIS)
Omaha By Design

Definitions and Acronyms

CCAP: Comprehensive Climate Action Plan, a narrative report that provides an overview of the grantees' significant GHG sources/sinks and sectors, establishes near-term and long-term GHG emission reduction goals, and provides strategies and identifies measures that address the highest priority sectors to help the grantees meet those goals.

CPRG: Climate Pollution Reduction Grant.

EPA: Environmental Protection Agency.

GHGI: Greenhouse Gas Inventory, a list of emission sources and sinks and the associated emissions quantified using standard methods.

LIDAC: Low Income and Disadvantaged Communities, communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens.

MAPA: Omaha-Council Bluffs Metropolitan Area Planning Agency

MSA: Metropolitan statistical area as defined by the U.S. Census 2020 MSA population. In particular, the Omaha-Council Bluffs Metropolitan Statistical Area, comprising eight county regions and the municipalities within Washington, Douglas, Sarpy, Cass, Saunders Counties in Nebraska and Harrison, Pottawattamie, and Mills Counties in Iowa.

MUD: Metropolitan Utilities District.

OPPD: Omaha Public Power District.

PCAP: Priority Climate Action Plan, a narrative report that includes a focused list of near-term, high-priority, and implementation-ready measures to reduce GHG pollution and an analysis of GHG emissions reductions.

UNMC: University of Nebraska Medical Center

UNO: University of Nebraska, Omaha

Table of Contents

Acknowledgements 2
Definitions and Acronyms 3
Executive Summary 6
1.0 Introduction 7
1.1 Climate Pollution Reduction Grant (CPRG) Overview 7
1.2 Priority Climate Action Plan (PCAP) Overview 8
1.3 Scope of the PCAP 8
State/MSA Context 10
1.4 PCAP Development Approach 11
Previous Climate Action Efforts 11
Equity in Climate Action 12
2.0 Public Engagement 13
Contributing Organizations and Stakeholder Identification 21
3.0 PCAP Elements 23
3.1 Greenhouse Gas Inventory Methods Data Sources 23
3.2 Regional Greenhouse Gas Inventory 24
Emissions Calculations 26
Stationary Combustion 26
Mobile Combustion 27
Employee Commute 28
Electricity Consumption 28
Solid Waste 28
Wastewater Treatment 29
Water 29
Agriculture and Land Management 29
Urban Forestry 30
3.3 Greenhouse Gas Reduction Measures 31
3.3.1 Stationary Combustion of Fossil Fuels 31
3.3.2 Mobile Combustion of Fossil Fuels: 34
3.3.3 Solid Waste Management 36
3.3.4 Agriculture and Land Management 38
Appendix: Climate Action Measures Overview 40

List of Figures

Figure 1: Omaha-Council Bluffs Metropolitan Statistical Area 10
Figure 2: Total emissions in MT CO_2e per county in the MSA 26

List of Tables

Table 1: Omaha-Council Bluffs Metropolitan Statistical Area Population Estimates 9
Table 2: Public Outreach Activities, Descriptions, and Potential 15
Table 3: Stakeholder Tiers and Work Plan Details 22
Table 4: Data Sources and Data Gaps by Emissions Source Category 24
Table 5: Total metric tons of carbon dioxide equivalent (MT CO_2e) for the Omaha Council-Bluffs Metropolitan Statistical Area 25
Table 6: Conversion factors for units received to mcf (thousand cubic feet) of CO_2 emissions 28

Executive Summary

The City of Omaha in coordination with the Omaha-Council Bluffs Metropolitan Area Planning Agency received a planning grant from the Climate Pollution Reduction Grants (CPRG) program, which was appropriated by the Inflation Reduction Act (IRA) to the U.S. Environmental Protection Agency (EPA). The Priority Climate Action Plan (PCAP) is the first component of the Regional Climate Action Plan that the MSA has developed for the CPRG program. The PCAP includes a regional greenhouse gas (GHG) inventory, a public outreach process, identification of priority GHG emissions reduction measures, a benefits analysis for low-income and disadvantaged communities, and identification of implementation authorities.

The public engagement process leverages the interest of the localized community through the City of Omaha engagement plan and coordination with MAPA at the broader regional level. Early engagement opportunities relied on virtual and multimedia platforms to allow the most access of materials to stakeholders, the general public, and especially the low-income and disadvantaged communities identified during the process. MAPA and the City of Omaha used existing opportunities to enhance and expand engagement efforts at the region level. The Regional Planning Advisory Committee (RPAC), which provides a forum to coordinate future planning and growth in the Greater Omaha-Council Bluffs region, is composed of representatives from across the region including municipalities, non-profits, energy representatives, education, health, and economic development from both Nebraska and Iowa.

The greenhouse gas inventory in the PCAP follows and uses tools and data developed by the U.S. EPA. The data was consolidated at the county level using emissions records from numerous sources including the EPA Greenhouse Gas Reporting Program (GHGRP), local utilities, Nebraska and Iowa Departments of Transportation, Nebraska Department of Environment and Energy, and Nebraska and Iowa Departments of Agriculture. The data was input into the EPA Local Greenhouse Gas Inventory Tool.

The PCAP was the first region-wide climate action planning effort in the Omaha-Council Bluffs MSA. It provided a valuable educational experience to the communities in the region as well as to the municipality staff on climate action planning. However, due to the constrained timeline for the PCAP development, the process for many components of the PCAP was shortened or simplified.

The next step in the planning process will be the preparation of a Comprehensive Climate Action Plan (CCAP) that will build on the PCAP, address the additional requirements for the CCAP, and expand/enhance the PCAP components in the CCAP

1.0 Introduction

The City of Omaha, in partnership with the Metropolitan Area Planning Agency (MAPA), along with many other prominent and critical institutions across the region recognize that action is necessary to address and prepare for the inevitable impacts of climate change. It is critical that we act collaboratively to address the potential impacts and issues that we face. As a community, we must mitigate, adapt, and respond to climate impacts in a way that prioritizes the needs of residents, institutions, the private sector, non-profits, and local service providers. We must acknowledge the work in climate action that has occurred in the past, but more importantly we must demonstrate commitment, tangible action, and inclusivity in the face of this challenge.

In the City of Omaha, this commitment manifested in the form of the Climate Action and Resiliency Plan (CARP), proposed by the Mayor of Omaha in 2021. A Request for Proposals was released to the public on October 12, 2022 and Metro Smart Cities, a collaboration of area governments, utilities, educational institutions, and regional nonprofits, began their search for a qualified consultant to develop the City of Omaha's CARP. After a rigorous selection process, Minneapolis firm paleBLUEdot, in collaboration with local engineering firm HDR, was selected and in March of 2023, the Omaha City Council awarded the contract. Work on the development of the CARP continues today, with completion expected in the summer of 2024.

As a part of this process, the City engaged MAPA, the local regional planning authority, with the intent of collaboration on development of a broader plan, intended to serve as a source of ideas and action for communities across the region.

1.1 Climate Pollution Reduction Grant (CPRG) Overview

Separately from the CARP, the Environmental Protection Agency (EPA) was authorized under Section 60114 of the Inflation Reduction Act to announce the Climate Pollution Reduction Grant (CPRG) program. The program provided a total of $5 billion to states, local governments, tribes, and territories to "develop and implement ambitious plans for reducing greenhouse gas emissions and other harmful air pollution" (EPA website, 2023). The Environmental Protection Agency (EPA) awarded the City of Omaha a $1 million grant to develop a climate action plan on August 14, 2023. The intent of the CPRG grant funding is to help in the development of a regional plan, rather than the City-specific plan initially approved by City Council for development. The City of Omaha sub-awarded a portion of the EPA grant funding to MAPA with the intent to develop a regional plan for the Metropolitan Statistical area. Additionally, the State of Nebraska was also awarded a CPRG grant to develop a Statewide Climate Action Plan.

It is with this understanding and background that we present the Omaha-Council Bluffs Metropolitan Area's Priority Climate Action Plan. The Priority Climate Action Plan (PCAP) is the first deliverable requirement for the Omaha-Council Bluffs Metropolitan Statistical Area's

participation in the Climate Pollution Reduction Grant (CPRG) program. The PCAP will be followed by a Comprehensive Climate Action Plan (CCAP) in August of 2025, with a status report due at the end of the grant period in 2027.

The PCAP is intended to identify the nature and extent of greenhouse gas emissions within our community, along with priority actions that can immediately help to address greenhouse gas emissions. The Plan also defines the region's path forward, toward net zero emissions and a strong position of adaptability and resilience in the face of an uncertain climate future. Elements of this PCAP have been derived or identified as a part of the work to develop the ongoing City of Omaha CARP, but the data and information provided here is a reflection of regional planning efforts.

1.2 Priority Climate Action Plan (PCAP) Overview

Based on the requirements of the CPRG program and the unique requirements of the Omaha-Council Bluffs Metropolitan Area, this PCAP includes the following:

- An overview of public engagement
- Greenhouse Gas (GHG) Inventory
- GHG Reduction Measures (identified as "priority measures")
- A preliminary analysis for each identified measure, to include:
    - Benefits Analysis, including a specific analysis of benefits in Low Income/Disadvantaged Communities (LIDAC)
    - A review of Authority to Implement

1.3 Scope of the PCAP

Based on the regional intent of this plan, data collection, evaluation, and recommendations are provided at the Omaha-Council Bluffs Metropolitan Statistical Area (MSA) level. The MSA covers roughly 4,407 square miles in eight counties (five in Nebraska, three in Iowa) with an estimated total population of 976,671 people *(see Table 1)*. Primarily, the Omaha-Council Bluffs MSA is an urbanized region consisting of three major cities: Omaha, Nebraska; Bellevue, Nebraska; and Council Bluffs, Iowa. A number of smaller communities combine with Omaha, Bellevue, and Council Bluffs to comprise the overall "Metro" area.

Table 1: Omaha-Council Bluffs Metropolitan Statistical Area Population Estimates

County (State)	2022 Population (est.)
Douglas (NE)	586,327
Sarpy (NE)	196,553
Pottawattamie (IA)	93,173
Cass (NE)	27,122
Saunders (NE)	23,118
Washington (NE)	21,167
Harrison (IA)	14,658
Mills (IA)	14,553
Total	976,671

U.S. Census Bureau Quickfacts, 2023

With such a diverse number of communities, populations, densities, and land uses, it is difficult to identify specific sectors or emission sources that can be tackled in a singular, wide-scale effort. Similar to State efforts in the development of a State Climate Action Plan, smaller, agriculture-focused communities and larger, urbanized population centers require different evaluation and recommendations. The intent of the targets and recommendations identified here are to provide the greatest amount of GHG emission reductions and/or impact the largest number of people. However, it is vital to note that additional recommendations and efforts identified in the pending CCAP are intended to broaden the reach of the overall Action Plan to focus on additional emissions sectors, develop policies to address additional impacts of climate change, and develop strategies for resilience and adaptation moving forward.

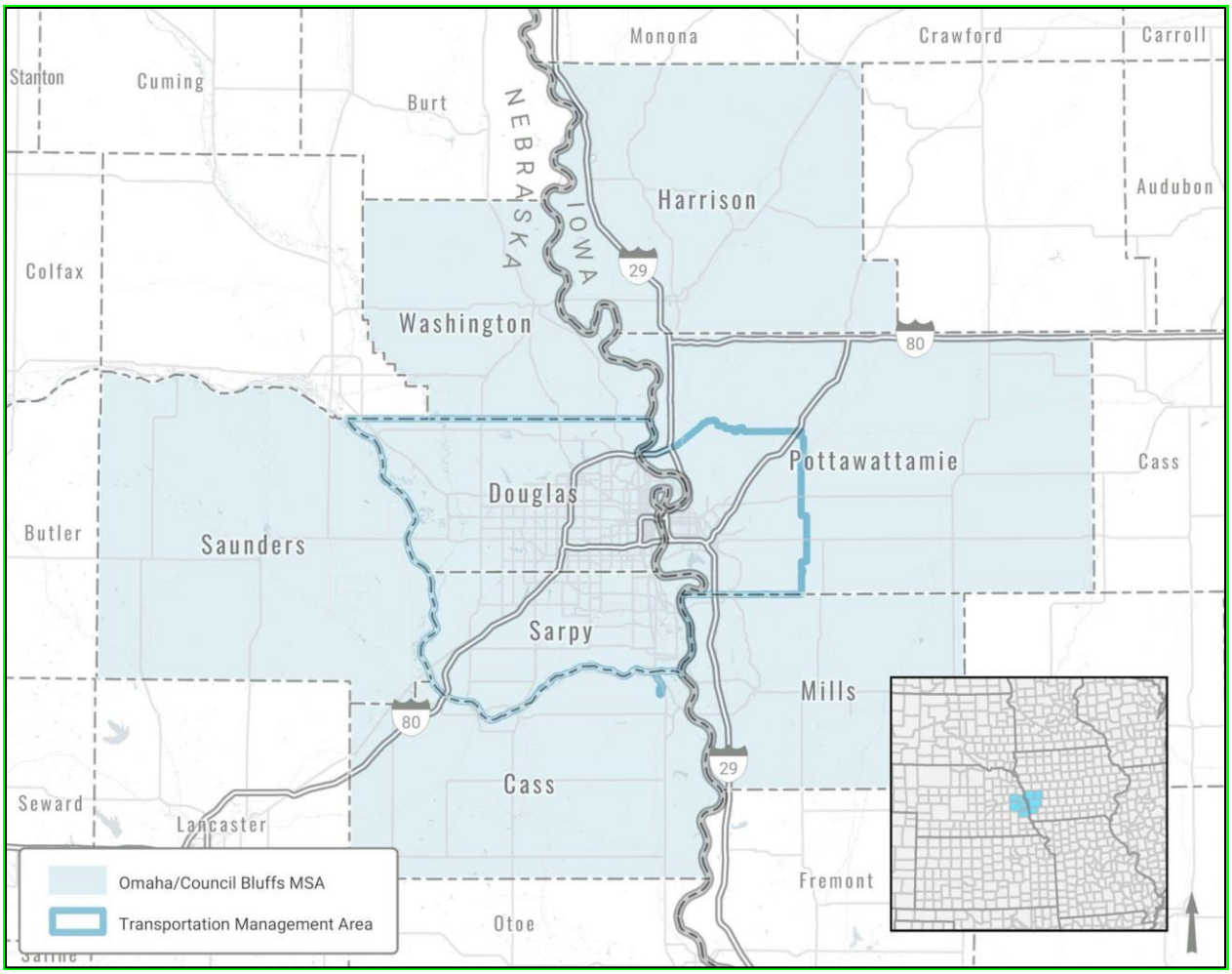


Figure 1: Omaha-Council Bluffs Metropolitan Statistical Area

State/MSA Context

The State of Nebraska is also a CPRG funding recipient and is currently developing a state-wide climate action plan. While collaboration between the City of Omaha and the regional MSA is being established and developed through this PCAP, additional collaboration between the MSA and state is expected. It is important to note that the dynamic between the eight-county MSA and the balance of Nebraska is widely variable. The rural, agricultural character of the vast majority of the state provides a different community profile and set of challenges to that of the greater Omaha metro area. The CCAP is the appropriate process through which additional collaboration will be explored in greater detail. Additionally, the State of Iowa did not opt in to the CPRG program. However, the Iowa Department of Natural Resources has developed a greenhouse gas inventory for the State and is consulted as part of the PCAP and CCAP efforts moving forward.

1.4 PCAP Development Approach

During development of the initial work plan for the CPRG, the City determined that a collaborative process with MAPA would provide the most effective approach. While the CARP under development provides a comprehensive GHG inventory for the City of Omaha, the data and analysis is limited to the city limits only, and does not provide a regional assessment of GHG emissions as identified in the CPRG work plan. To address this, the PCAP consists of two elements: First, the inventory and evaluation covers the entire MSA; and second, the results of the regional inventory and evaluation will provide validation of the existing GHG Inventory and targets already completed.

Robert Laroco in the City of Omaha Planning Department is designated as project manager for the overall CARP as well as management of the CPRG grant, including the development and submission of the PCAP, CCAP, and status update. Carlos Morales at MAPA is acting in a "task leader" capacity for development of the regional GHG inventory as well as the development and implementation of additional targets and recommendations derived from their regional perspective.

Previous Climate Action Efforts

Throughout the MSA several relational studies are already underway and the PCAP represents a further refinement of the following efforts:

- Environmental Element of the City of Omaha Master Plan (2007)
- Municipal Operations Greenhouse Gas Inventory (2011)
- Papio-Missouri River Natural Resource District Hazard Mitigation Plan (2021)
- City of Omaha GHG Inventory (In progress)
- Nebraska Department of Environmental Quality Title 129 - Nebraska Air Quality Regulations (2016)[1]
- Omaha Air Quality Regulations (OAQR) Emissions Inventories (annual)[2]
- City of Council Bluffs Sol-Smart Designation and commitment to create a 10-year sustainability master plan (2020-ongoing)[3]

These efforts represent an on-going commitment within the region to tackle the various climate actions that will help inform the PCAP and further refine efforts within the regional comprehensive climate action plan.

[1] https://publicworks.cityofomaha.org/images/air_quality/TITLE129_7.20.2016.pdf
[2] https://publicworks.cityofomaha.org/air-quality-control/permitting-programs/emissions-inventories
[3] https://www.councilbluffs-ia.gov/documentcenter/view/7966

Equity in Climate Action

Climate equity is the goal of recognizing and addressing the unequal burdens made worse by climate change, while ensuring that all people share the benefits of climate protection efforts. Achieving equity means that all people—regardless of their race, color, gender, age, sexuality, national origin, ability, or income—live in safe, healthy, fair communities.

Climate equity can be woven into the broader efforts to address the socioeconomic, sociocultural, and physical impacts of climate change. It is a public health issue in every respect. The following principles were considered in the development of the PCAP:

- **Engage**. Include people with diverse backgrounds and experiences in community efforts to address climate change. Foster honest conversation, meet people where they are already active (such as in schools and community centers), and involve those leaders who are respected by the community. Indigenous and local knowledge can advance understanding of climate change effects and solutions. When possible, amplify the voices of those who are most vulnerable, underserved, or overburdened.
- **Share**. Connect communities with the information and data that can help them prepare for and adapt to climate impacts. Helping communities access relevant resources enables them to refine their climate resiliency efforts and empowers them to develop targeted, grassroots solutions.
- **Build**. Climate-resilient solutions based on equity and inclusivity reduce vulnerability for everyone. Consider solutions that boost resilience while improving livelihoods, accessibility, and social and economic well-being. Solutions could include improving the efficiency of buildings, investing in low-carbon transportation networks, and adding green spaces in urban areas. Such solutions can also promote other local benefits by mitigating the effects of urban heat islands, reducing air pollution, and strengthening community interaction.
- **Prepare**. Climate equity includes the ways communities prepare for and respond to extreme events. Consider how overburdened and underserved groups have different needs during an emergency. Being ready to address those specific needs is a part of effective disaster response and overall good governance. Solutions could include providing language or accessibility services.

This report acknowledges specifically that the benefits and burdens caused by past actions, inactions, and attitudes specific to climate disproportionately impact the most marginalized and most vulnerable people of our community. Therefore, a commitment to an equitable, just, and inclusive approach to climate action is fundamental to the development and implementation of this Plan. The challenges presented by at-risk communities are unique and dire. The proposals in this document include a specific consideration of the implications for low income and disadvantaged communities. Data collection and analysis includes a specific analysis of Low Median Income (LMI) populations, and the Public Engagement Plan includes the identification of and outreach to representatives of under-represented communities in an effort to ensure their voices are heard.

2.0 Public Engagement

As part of the public engagement efforts, a shared goal of MAPA and the City of Omaha is to make equity a central component in the engagement process. As such the public engagement efforts are intended to leverage local community interests through the City of Omaha's engagement along with coordination with MAPA at the broader regional level. Initial efforts concentrated on online engagement through a series of online questionnaires to gauge the interest, understanding, and awareness of climate action. The City of Omaha released an initial survey that MAPA continued to enhance through social media channels, newsletters and public websites. To date, the survey has garnered over 2,300 responses, including 20 percent located within the MSA and outside the City of Omaha. Additionally, MAPA and the City have developed a program website to help elevate and educate people regarding the different concurrent planning efforts.

MAPA worked with the Regional Planning Advisory Committee (RPAC), which provides a forum to coordinate future planning and growth in the Greater Omaha-Council Bluffs region and is composed of representatives throughout the region. Members include municipal officials, non-profits, energy representatives, education, health, and economic development from both Nebraska and Iowa. Through the RPAC, MAPA presented updates and information on the PCAP, including several in-person and hybrid meetings to discuss the inventory and the potential strategies for the regional plan. Additionally, MAPA worked with the RPAC natural resource sub-committee to discuss the plan and obtain input for strategies and implementation. A number of webinars have been hosted in order to engage a wider audience. Concurrently, the City of Omaha continued engagement efforts, including several virtual and in-person open houses, attendance at a local "Seed Swap", listening sessions with under-represented communities (the Urban Indian Health Coalition, the Fabric Lab, Girls, Inc., and others) and the first of a series of focus group workshops. As the development of the City's plan continues, additional efforts to engage the public are being scheduled through the spring and summer of 2024. The results of public engagement efforts will be incorporated into future climate change efforts, including the Comprehensive Climate Action Plan (CCAP).

Table 2, shown below, includes a description of the outreach methods utilized to date, along with potential for additional engagement through the development of the Comprehensive Climate Action Plan (CCAP).

Table 2: Public Outreach Activities, Descriptions, and Potential

Activity	Description and Intent	Potential
Website(s)	For both the regional planning effort: https://mapacog.org/projects/cprg/ and City of Omaha plan: www.omacap.org the respective websites serve as the information hub for communications and resources and are available 24/7. Content includes a plan overview and background, schedule, information on opportunities for public input, frequently asked questions, and a comment form. All content and graphics are ADA compliant. The webpage will be updated surrounding key project milestones.	MAPA's and the City's webpages will host the final Plans and be a resource for progress towards goals and objectives.
Social Media	MAPA and the City of Omaha's social media outlets have been utilized to promote the survey, and will continue to be utilized for future input opportunities.	Social media will continue to be used for input opportunities and to promote key milestones and achievements towards the regional goals.
Press Release	Press releases were used to promote the CARP to Omaha area news media outlets to broaden the CARP's audience. A press release was launched October 18, 2023 to promote the survey. Press releases will also be developed to promote round one and round two public open houses.	The City will continue to use press releases to promote the draft and final actions and promote key milestones and achievements.
Project Flyer	Project flyers were used at community gathering spaces across Omaha and particularly in Justice 40 communities to promote input opportunities such as surveys and public meetings.	Flyers will be distributed ahead of round one and round two public meetings.

Email Notifications	Emails were sent by MAPA staff to inform various committees, groups and identified stakeholders about the project as well as opportunities to share input.	Email will continue to be used throughout the project.
Online Survey	MAPA has used several online surveys to gather public and stakeholder feedback for the project. **Public Survey:** MAPA replicated the City of Omaha CARP survey and distributed it to contacts throughout the eight-county Omaha-Council Bluffs Metropolitan Statistical Area (MSA). This survey was intended to gauge public opinion on the impacts of climate change as well as to prioritize potential pollution reduction strategies. Results will be shared and compiled with City of Omaha responses as appropriate. A Spanish version of this survey was also made available. The survey was open from December 2023 to February 2024. Combined the survey obtained over 2,268 responses with approximately twenty percent of respondents living outside the City of Omaha zip codes. **Stakeholder Survey:** This survey was intended for city and county staff and elected officials from throughout the MSA, as well as members of several MAPA committees. This survey was designed to assist in the development of the Preliminary Climate Action Plan (PCAP) for the MSA by gathering potential	Surveys are accessible 24/7, and serve to capture feedback from those who are not able or willing to attend in-person project meetings or events.

	pollution reduction strategies and stakeholder priorities. **PCAP Projects and Strategies Survey:** This survey was intended to capture details on potential and planned projects throughout the MSA for inclusion in the PCAP. The survey introduces the community to a number of climate and resiliency ideas and allows users to consider the impacts of these ideas within the community, both today and in the future. The initial survey was open from October 2023 to February 2024. The survey was also replicated and distributed to the entirety of the MSA to solicit public input from residents outside of the City of Omaha.	
Executive Committee	The City is working with an executive committee to guide the process of developing the Omaha Climate Action and Resilience Plan. This group is responsible for identifying issues and providing community, infrastructure and economic insights to the Planning Team to develop a Climate Action and Resilience Plan for Omaha. The executive committee is comprised of the following organizations: ● City of Omaha ● Metropolitan Area Planning Agency (MAPA) ● Metropolitan Utilities District (MUD) ● Omaha Public Power District (OPPD) ● University of Nebraska Medical Center (UNMC)	Continued quarterly meetings throughout the plan development process. Most entities involved in the executive committee have identified similar net-zero goals. This committee will also be used to convene and enhance the regional efforts.

	• Douglas County • Omaha by Design	
Planning Team	The Planning Team is a group of identified stakeholders that serve as a collaborative group with the project team on goals, strategy and action development. • Introductory meeting (November 2023) • Goal setting (December 2023) • Workshop sector actions (January 2024) • Workshop action ideas (February 2024) • Review action ideas (March 2024) • Identify primary and supporting parties for each action (April 2024) • Review Draft CARP (June 2024) Participants: 90	This group will continue to be active and engaged with, or potentially even lead, some actions ultimately identified in the Omaha CARP.
Community Stakeholder Focus Groups	The Community Stakeholder Focus Group is a group of identified stakeholders that serve as the voice of the community and work in collaboration with the Planning Team. They will provide input and feedback on the plan development, but at a higher-level than the Planning Team which is a working group. The first meeting occurred on January 18, 2024 and was an introductory meeting for the CARP, with opportunities for input on potential draft actions. Invitees: 266	This group will be empowered to lead some actions in their homes or workplace.

Regional Planning Advisory Committee	The Regional Planning Advisory Committee (RPAC) provides a forum to coordinate future planning and growth in the Greater Omaha-Council Bluffs region. The Committee provides direction for the regional vision (Heartland 2050) through oversight of the Implementation Committees work and strategic decision making. RPAC is composed of members from the Council of Governments including Cass, Douglas, Sarpy and Washington Counties in Nebraska, and Mills and Pottawattamie Counties in Iowa. The committee meets bimonthly and convened on December 2023 and February 2024.	These standing regional committees can continue to serve as opportunities for sharing project information as well as gathering feedback from a wide variety of stakeholders and interested parties. Additionally, members of these groups can share information with their networks. These meetings are open to the public and have options to join either in-person or virtually. Meetings of the Heartland 2050 Regional Planning Advisory Committee (RPAC) and Regional Planning Affiliation 18 (RPA-18) are live streamed and available for viewing on the MAPA YouTube channel.
Natural Resources Implementation Sub-Committee of the Regional Planning Advisory Committee	Natural Resources Implementation Sub-Committee is composed of members from the Regional Planning Advisory Committee and includes subject matter experts that are concentrating on the topics of solid waste and developing a community forest plan. The subcommittee meets quarterly. The group discussed the CARP and the PCAP in January 2024.	The Natural Resources Implementation Sub-Committee will continue to be involved with the progress of the regional plan and the City of Omaha CARP.
Infrastructure Implementation Sub-Committee of the Regional Planning Advisory Committee	The Infrastructure Implementation Sub-Committee is composed of members from the Regional Planning Advisory Committee and includes subject matter experts that are concentrating on the topics of transportation and land use. The sub-committee meets bi-monthly and last met February 2024 to discuss the PCAP initial strategies.	The Infrastructure Implementation Sub-Committee will continue to be involved with the progress of the regional plan and the City of Omaha CARP

Listening Sessions	Group listening sessions and one-on-one interviews with priority community liaisons will be held to build relationships, deepen understanding of needs, and identify best ways to partner to broaden engagement within their community. The goal of this engagement is to identify and activate key community partners and establish Climate Engagement Champions capable of supporting deep, authentic communication within target communities within the City and support robust input on solution ideas and the impacts experienced by different communities and groups within the city. Targeted organizations: ● Spark ● Fabric Lab ● Simple Foundation ● Restoring Dignity ● Refugee Empowerment Center ● Latino Center of the Midlands ● Intercultural Senior Center ● Disability Advisory Commission through the Omaha Mayor's office ● Urban Indian Health Coalition	Listening sessions occur for Round 1 engagement and Round 2 engagement. Justice 40 communities in Omaha have been and are anticipated to be disproportionately impacted by climate change. The plan team will continue to focus on engaging targeted organizations and expand for regional organizations going forward for the CCAP.

Youth Engagement	Youth participation in plan development is critical, because Omaha's youth will ultimately be the community who reach the CARP's net zero goal. To gain critical input from youth, the plan team has already engaged youths of middle through University aged youth such as: • Girls Inc, • University of Nebraska Sustainability Summit, • University of Northern Illinois Communications Small Group (in partnership with HDR) • UNMC College of Public Health • UNL College of Architecture The plan webpage also includes resources for youth, parents and teachers for education on climate change and climate action.	Youth engagement for the CARP will continue to be a focus for the planning team. Kiewit Luminarium, Henry Doorly Zoo, Lauritzen Gardens, and Omaha Public Schools have all been engaged for future involvement opportunities for the Omaha CARP. Beyond the CARP, the above organizations will continue to be engaged for future planning efforts and implementation.

Contributing Organizations and Stakeholder Identification

Contributing organizations and stakeholders can generally be categorized into three groups with differing levels of interaction: The Executive Team, the Planning Team, and Stakeholder Focus Groups.

A stakeholder list was developed to guide engagement with a diverse group of stakeholders. The project team will utilize stakeholders to broaden distribution of key messages and opportunities for feedback. A definition of the roles of each stakeholder group are included below in Table 3:

Table 3: Stakeholder Tiers and Work Plan Details

Stakeholder Group	Intent and Work Plan Details
Executive Committee	Comprised of the following organizations: ● City of Omaha ● Metropolitan Area Planning Agency (MAPA) ● Metropolitan Utilities District (MUD) ● Omaha Public Power District (OPPD) ● University of Nebraska Medical Center (UNMC) ● Douglas County ● Omaha by Design This group meets quarterly and is the steering mechanism responsible for guidance of the planning process through development, and for identifying issues, providing community, infrastructure, and providing economic insights to the Planning Team.
Planning Team	The Planning Team is a group of identified stakeholders that are collaborating with the project team to establish goals, strategies and actions of the plan. Priority actions discussed later in this report are the direct result of Planning Team efforts. The Public Engagement Work Plan proposes a total of seven meetings for the Planning team. Meetings 1, 2, and 3 have occurred and included an introduction of members to the project; a discussion of goals, concerns, and vision for the Plan; a review of baseline documents and the existing GHG inventory for the City of Omaha; and establishment of preliminary goals and recommendations. The actions identified in this report have been established based on these preliminary goals and recommendations. Future meetings will establish screening criteria and standard operating procedures that can be included in CCAP recommendations; discuss collaborative opportunities for implementation of strategies; review drafts of the City of Omaha CARP; review authority to implement, and begin a discussion of next steps in Plan implementation.

Community Stakeholder Focus Groups	The Community Stakeholder Focus Group is a group of identified stakeholders that serve as the voice of the community and work in collaboration with the Planning Team. They will provide input and feedback on the plan development. The initial invitation for participation in this group was sent to a number of agencies and groups, along with individuals who applied to be members of the Focus Groups on the website and/or survey. The first meeting occurred on January 18, 2024, and the second meeting will occur in July or August 2024. Outreach to the Community Stakeholder Focus Group is being conducted through email, calendar invitations to meetings, and letters in the mail.

3.0 PCAP Elements

3.1 Greenhouse Gas Inventory Methods Data Sources

The data was consolidated at the county level using emissions records from numerous sources including the EPA Greenhouse Gas Reporting Program (GHGRP), local utilities, Nebraska and Iowa Departments of Transportation, Nebraska Department of Environment and Energy, and Nebraska and Iowa Departments of Agriculture. The data was input into the EPA Local Greenhouse Gas Inventory Tool. Data source and manipulation details can be found further in this section. Separated by emissions source category. A brief summary of data sources and data gaps by emission source category can be found in Table 4.

Table 4: Data Sources and Data Gaps by Emissions Source Category

Emissions Source Category (Base Year)	Data Sources	Data Gaps
Stationary Combustion (2022)	Metropolitan Utilities District Omaha Public Power District Black Hills Energy MidAmerican Energy GHGRP	Potentially smaller providers on the Iowa side, although none were turned up in the GHGRP.
Mobile Combustion (2020)	EPA National Emissions Inventory (NEI)[4] NDOT IDOT	Aircrafts Trains Data is not current. Expecting 2023 data release sometime in 2024.
Electricity Consumption (2022)	Omaha Public Power District MidAmerican Energy Nebraska Public Power District Burt Public Power District City of Neola	Providers to contact again: Butler PPD, Nishnabotna Valley REC, Harrison County REC, Southwest Iowa REC, Western Iowa Power Coop., and some smaller municipal providers.
Solid Waste (2022)	Nebraska Department of Environment and Energy Iowa Department of Natural Resources Douglas County Landfill GHGRP	Landfills need to be contacted individually, or tonnage reports will need to be obtained through a formal data request to NDEE. There are likely additional landfills that are not accounted for in this inventory. Further investigation is needed.

[4]https://awsedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,currsel

Wastewater Treatment	Not included in the PCAP	No data for lists of facilities on either the IA or NE sides other than their locations and contact information.
Agriculture & Land Management (2021)	Nebraska Department of Agriculture Iowa Department of Agriculture United States Department of Agriculture - Natural Resources Conservation Service	This data only included fertilizer values. Additional investigation is warranted towards obtaining livestock and manure emissions. NDA data can be updated with more recent data published in the 2022 report, which was released during GHG inventory development.
Urban Forestry	Not included in the PCAP	Moving forward, this data could be sourced from USDA Cropland Data layer (CroplandCROS)[5] or new Google Environmental Insights Tool tree canopy coverage layer[6]
Water Use (2022)	MUD Not included in the PCAP	Further investigation is needed to determine what proportion of MSA water is local vs. imported before this data can be utilized to calculate emissions.

3.2 Regional Greenhouse Gas Inventory

The top three emissions sources for the MSA are as follows;

1. Electricity Consumption (35.6%),
2. Mobile Combustion (27.5%), and
3. Stationary Combustion (21.7%).

A detailed breakdown of all included categories can be found in Table 5 below. Wastewater treatment, urban forestry, waste generation, and water use were not included in this iteration of the inventory. These classifications will be examined further as a part of the CCAP. Agriculture and Land Management currently only includes emissions from fertilizer consumption and is likely underrepresented. Base year ranged from 2020-2022, as base year varied for each emission source category and was dependent on the available data.

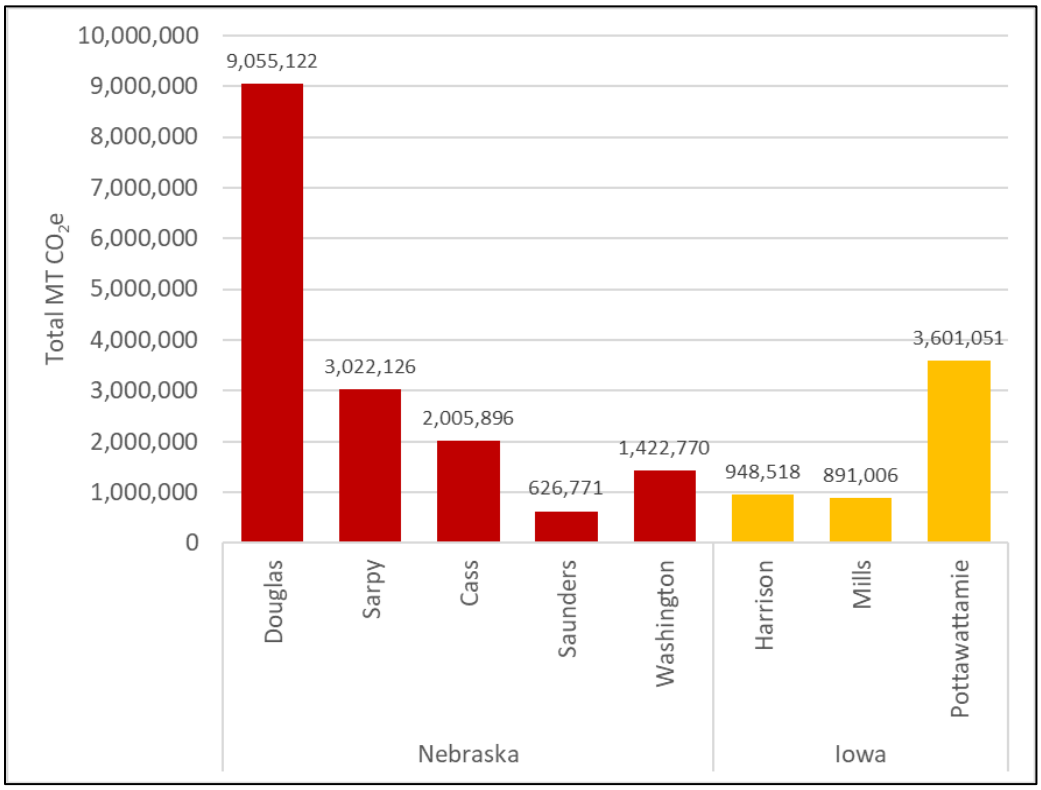
[5] https://croplandcros.scinet.usda.gov/
[6] https://partnerdash.google.com/apps/environmental-insights/

Table 5: Total metric tons of carbon dioxide equivalent (MT CO_2e) for the Omaha Council-Bluffs Metropolitan Statistical Area.

Emission Source Category	MT CO_2e	Proportion
Electricity Consumption	7,679,825.66	35.60%
Mobile Combustion	5,927,331.82	27.48%
Stationary Combustion	4,678,328.52	21.69%
Agriculture and Land Management*	2,022,252.19	9.37%
Employee Commute	989,642.54	4.59%
Solid Waste Management	275,879.00	1.28%
Total	**21,573,259.73**	

The MSA GHG Inventory was calculated using emissions data for each county in the MSA, and then summed across the region to present total emissions by category in MT CO_2e. Douglas County makes up 42 percent of the total GHG emissions for the region (Figure 2). The City of Omaha comprises the majority of Douglas County, and is home to 60 percent of the total population of the MSA. As such, many GHG reduction measures included in the PCAP focus on the City of Omaha, however, many of these strategies could also be implemented at a larger regional level.

Figure 2: Total emissions in MT CO_2e per County in the MSA.



Emissions Calculations

Emissions for each county were calculated independently using the EPA Local Greenhouse Gas Inventory Tool (LGGIT)[7]. LGGIT output totals were then summed across Counties for each emissions source category to provide a single value for each emissions source for the entirety of the MSA. For this report, total emissions are presented in metric tons of carbon dioxide equivalent (MT CO_2e).

The following describes in detail each emission source explored within the Omaha-Council Bluffs MSA. The descriptions will detail how each emission sector used the LGGIT tool, a detailed documentation of data sources inventoried, any data manipulation used to facilitate entry into the LGGIT tool, and identification of data gaps that should be addressed in the CCAP.

Due to availability and completeness of the data, the MSA PCAP focuses primarily on Stationary Combustion, Mobile Combustion, and Electricity Consumption as its priority areas for actionable strategies.

Stationary Combustion

Data received from the Metropolitan Utilities District (MUD) was organized by zip code. Zip codes were sorted by county, and entered into the appropriate county LGGIT tool. Stationary combustion was then summed across all Counties to produce a single value for the MSA. Base year for this data was 2022.

Both Greenhouse Gas Reporting Program (GHGRP) and Facility Level Greenhouse Tool (FLIGHT) provide Stationary Combustion emission data for smaller facilities throughout the MSA that were not already covered by either MUD or MidAmerican Energy. Ultimately GHGRP was selected as the primary data source, with FLIGHT used as a validation tool, as GHGRP was more comprehensive and detailed, and included separate fields for different emission facility types, allowing for separation of stationary combustion from sanitation (waste management) facilities.

The LGGIT tool requires stationary fuel consumption data to be entered in thousands of cubic feet (mcf). Where appropriate, data was converted from the units in which it was received into mcf to facilitate entry into the LGGIT tool. Conversions were conducted using the formulas outlined in Table 6 below. In instances where data was provided in MT CO_2e, emissions were back calculated to mcf using the proportion of each gas found within MT CO_2e, each respective gas' Global Warming Factor (GWP), a conversion from metric tons to kilograms, and finally to thousands of cubic feet using the Stationary Combustion Natural Gas EPA factors.

[7] https://www.epa.gov/statelocalenergy/local-greenhouse-gas-inventory-tool

For example, mcf CO_2 is back calculated from MT CO_2e using the following formula;

CO_2 =((0.9970205 * X)/1)/.001/54.86261322

Where;

.9970205	= the proportion of MT CO_2e that is comprised of CO_2
X	= MT CO_2e
1	= the GWP of CO_2
0.001	= conversion from tons to kg
54.86261322	= Stationary Combustion Natural Gas factor

Calculated mcf values were cross referenced with the total emissions per the EPA Facility level greenhouse gasses tool (FLIGHT) to ensure accuracy.

Table 6: Conversion factors for units received to mcf (thousand cubic feet) of CO_2 emissions

Units received (X)	Conversion factor
CCF	X*0.1
SCF	X*0.001
therms	X*.0973
MT CO_2e	CO_2 = ((0.9970205 * X)/1)/.001/54.86261322 CH_4 = ((0.0024801 * X)/28)/.001/0.0048739 N_2O = ((0.0004994 * X)/265)/.001/0.0001037

Mobile Combustion

Requests for mobile combustion data were sent to both the Nebraska and Iowa Departments of Transportation. Data was received from both DOTs and included total vehicle miles traveled (VMT) by county. However, this data did not include the types of vehicles, amount of fuel consumed, or other identifying information required for entry into the LGGIT tool. As such, the LGGIT tool was not used to calculate emissions from mobile combustion sources.

The EPA National Emissions Inventory (NEI)[8] was used to obtain county level data on the types of pollutant / gas emitted, the total emissions in tons, and Emission Inventory System (EIS) sector (vehicle type) along with more information about vehicle type. Data was filtered to the relevant counties and pollutants of interest (CO_2, CH_4, and N_2O) to provide the total emissions in tons.

[8]https://awsedap.epa.gov/public/single/?appid=20230c40-026d-494e-903f-3f112761a208&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,currsel

These were then converted to MT CO_2 emitted by all vehicles by county for inclusion in the MSA GHG inventory.

It is worth noting that NEI data is not current, as it is compiled on three-year cycles, with 2020 being the most recent release. We expect a 2023 data release in 2024, at which time, this data should be updated in the MSA GHG Inventory to more recent values.

Employee Commute

Employee commute data was generated for each county using the U.S. Census Bureau's American Community Survey (ACS) five-year data estimates table S0801 "Commuting Characteristics by Sex"[9]. This table includes the total number of employees in a given county and the mode of transportation / percent of employees that use that mode of transportation for base year 2022. The LGGIT tool provides national average values for requested inputs of the average one-way commute length, and the number of workdays per year.

It is unclear if this emissions data is overlapping or duplicative of the emissions calculated under mobile combustion. Further investigation is needed.

Electricity Consumption

Electricity consumption data was obtained for Commercial, Residential, and Industrial use classes from the Omaha Public Power District (OPPD) and MidAmerican Energy; the two largest energy producers in the MSA. Base year is 2022.

OPPD data included emissions over the last seven years separated by both county and type (commercial, residential, and industrial) in kWh.

Data from MidAmerican Energy was provided as an aggregate across Harrison, Mills, and Pottawattamie counties in Iowa. As the MSA GHG inventory is calculated separately for each county, data was disaggregated to the county level using the proportional population.

Data was also obtained from the Nebraska Public Power District (NPPD) for Cass County, the Burt Public Power District for Washington County, and the City of Neola in Pottawattamie County. These emissions data were also provided in kWh, and did not require manipulation for entry to the LGGIT tool.

Solid Waste

Data requests were sent to the Nebraska Department of Environment and Energy (NDEE), and the Iowa Department of Natural Resources (DNR). At time of publication, only data from the Iowa DNR was received. This included 2022 annual tonnage for Harrison County Landfill and Loess Hills Regional Landfill.

Harrison County Landfill provides landfills services for Harrison County as well as the city of Neola in Pottawattamie County. Tonnage was disaggregated to the county level using the populations of Harrison County, and the City of Neola, prior to entry into each county's LGGIT tools.

[9] https://data.census.gov/table/ACSST5Y2022.S0801?q=S0801

The Loess Hills Regional Landfill serves a large area across Iowa, Missouri, Nebraska, and Kansas. Data provided was a combined total tonnage for Pottawattamie and Mills Counties.

In lieu of NDEE data, county level landfill emissions data was taken from GHGRP.

NDEE did provide a contact list for landfill facilities throughout the MSA. To obtain emissions data, Landfills will need to be contacted individually, or tonnage reports will need to be obtained from NDEE. A request was sent to NDEE for this data, but given the workload required by NDEE and the time to publication, we were unable to obtain this information. Moving forward, a formal data request may need to be considered, along with budgeting for the associated NDEE data fee, in order to acquire this data and produce a more comprehensive GHG inventory.

There are also likely additional landfills in the MSA that are not accounted for in this inventory. Further investigation is needed.

Wastewater Treatment

A data request was made to NDEE for wastewater treatment emissions. We received a list of facility names, but in order for NDEE to provide facility-specific emissions data a formal request must be made and budgeting for their fee will be necessary. Follow up will be made during CCAP development to ensure this emissions type's inclusion in the baseline GHG inventory.

Water

Emissions data requests were made to MUD, NDEE, and several municipal providers. MUD provided the total water consumed by zip code for the MSA, however, it is unclear what percentage of water usage in the MSA is imported. Further investigation is needed before this data can be utilized by the LGGIT tool and added to the GHG inventory.

Agriculture and Land Management

Fertilizer consumption data was obtained from the Nebraska Department of Agriculture, and the Iowa Department of Agriculture for Nebraska and Iowa Counties respectively. Data was provided at the county level in short tons N and did not require any additional manipulation to facilitate entry to the LGGIT tool. Base year utilized for the GHG inventory was 2020, however, 2022 data was published after completion of the inventory.

Although fertilizer consumption was the only metric requested by the LGGIT tool, this does not provide a complete picture of agricultural emissions in the MSA. Both Nebraska and Iowa are largely agricultural states, and previous GHG emissions works show agricultural emissions as the largest emissions source for both Nebraska[10] and Iowa[11]. Agricultural emissions include a combination of fertilizer consumption (soil management), as well as livestock enteric fermentation, and manure management. For Nebraska, livestock has been shown to be responsible for up to 55% of the State's agriculture emissions[7]. As such, the agriculture emissions presented in this PCAP are likely an underrepresentation of total agricultural emissions. Moving forward, these

[10] Holley, Eric R. & Liska, Adam. "A Greenhouse Gas Emissions Inventory for Nebraska: Livestock and Coal Loom Large". Published as Chapter 3 in Chittaranjan Ray, Sekhar Muddu, & Sudhirendar Sharma, editors, Food, Energy, and Water Nexus: A Consideration for the 21st Century. Springer, 2022, pp. 33-66. doi:10.1007/978-3-030-85728-8_3

[11] https://www.iowadnr.gov/environmental-protection/air-quality/greenhouse-gas-emissions

additional sources of agricultural emissions will need to be explored to enhance our baseline emissions data.

Urban Forestry

Urban Forestry was not included in the initial GHG inventory provided in this PCAP. Moving forward, this data could be sourced from USDA Cropland Data layer (CroplandCROS)[12] or new Google Environmental Insights Tool tree canopy coverage layer[13].

[12] https://croplandcros.scinet.usda.gov/
[13] https://partnerdash.google.com/apps/environmental-insights/

3.3 Greenhouse Gas Reduction Measures

A Measures Overview (see Appendix) has been included and prioritizes the major sources of greenhouse gas emissions ("Mobile Combustion", "Stationary Combustion", and "Waste Management"), along with specific categories of "Local Foods and Agriculture", "Ecology and Greenspaces", "Water, Wastewater, and Flooding", "Health and Welfare", and "Economic Development" that are not generally reflected in the LGGIT response reporting. The Overview provides an example of City of Omaha-specific strategies that reflect the outcomes of the Omaha GHG Inventory, in combination with public engagement and CARP Planning Team working sessions. These actions serve as a baseline for the development and implementation of broader regional measures. In addition, potential actions for each measure are identified, but it should be noted that these actions are not exhaustive, final, or prescriptive. These inputs only serve as examples of the types of actions that have been proposed, discussed, or noted in public engagement. These are the basis for ideas that any one community within the MSA may develop in pursuit of identified priority Measures.

3.3.1 Stationary Combustion of Fossil Fuels

Stationary combustion represents 35 percent of total GHG emissions in the region and is the largest source of GHG emissions across the MSA. Stationary combustion is broadly split into two categories: Combustion associated with construction and combustion associated with existing buildings. However, across all sectors and in all municipalities, enhancements to building codes and local incentive programs must focus on high efficiency, whole-building systems that reduce or lower energy consumption (and thereby, emissions) associated with ubiquitous machinery and systems like appliances and heating/venting/air-conditioning (HVAC) systems.

Priority Actions: **Improve building energy efficiency across all sectors** and **Develop alternative and renewable energy options across all sectors**.

In particular, energy efficiency can be improved immediately with the following:

- Increase energy conservation efforts with initial investments concentrated in LIDAC neighborhoods
- Expand/institute rebate programs for purchase of high-efficiency appliances and home systems.
- Increase training availability and opportunities in renewable energy systems, building weatherization retrofitting, and high-efficiency systems installation and maintenance

Basic energy conservation methods like switching to LED lights are driven in part by the industry and availability of viable technologies. Newer appliances that are EnergyStar rated and are more efficient appliances and represent a significant cost burden on new and existing households. Existing incentive programs within the region focus on minor energy repairs focused on minor weatherization projects and minor exterior enhancements. This program could potentially be expanded to include windows, insulation, and expand to include appliance and residential solar

rebates. For example, working with local electric providers to enhance weatherization programs to include a rebate program to replace inefficient appliances for more efficient appliances such as washers and dryers, water heaters, HVAC systems, and installation of solar systems can reduce the energy consumption within buildings. These incentive and rebate programs could be tiered to serve specific geographic and income thresholds and then be further expanded throughout the region.

LIDAC Benefits: Initial investments to enhance and increase weatherization and appliance rebate programs within LIDAC communities will reduce energy consumption and serve as the first step toward the development of whole-home systems that that can be adopted across the MSA. Rebate programs for energy-efficient appliances reduce the cost burden of retrofitting older homes and promote the health benefits of appliances that emit less. The rebate program will also provide additional long-term economic benefits through reduced operating costs. While all residents across the MSA could benefit from this program, vulnerable populations who typically reside in existing, older housing stock and who have fewer resources for home improvements will benefit from an expanded/improved rebate program for energy efficient appliances and from an expanded weatherization program.

Implementation Area: All areas covered in the MSA with a special focus of expanding efforts in vulnerable communities.

Implementation Authority: Local, County, and State Governments, Electric providers, public, private, and non-profit housing organizations, education institutions.

Access to alternative/renewable energy options could be improved immediately through the following:

- Adopt regulations permitting personal alternative energy generation in all sectors.
- Ensure that the latest International Energy Conservation Code (IECC) is adopted and maintained.
- Expand/institute alternative energy adoption rebate programs.
- Develop standards for green building policies in existing/retrofitted residential, commercial, industrial, and institutional uses.

Such an effort must include the development of a coalition of local municipalities, private and non-profit builders, and utility providers and must include a strong component of engagement and education on the social, environmental, and economic benefits of renewable energy.

LIDAC Benefits: Diversification of the area's sources of energy have universal benefits. However, expansion/institution of alternative energy rebate programs will help to bridge the gap between the costs of current systems and resources currently available for many residents vulnerable to the impacts of heating and cooling costs.

Implementation Area: All areas covered in the MSA.

Implementation Authority: Local, County, State Government agencies, private and nonprofit builders, utility providers.

3.3.2 Mobile Combustion of Fossil Fuels:

The mobile combustion sector, which represents one of the top three emission sources within the region, was identified as a priority for the region. For the MSA Mobile combustion represents 27 percent of all GHG emissions which is similar to national inventories. Transportation plays a central role in the region because the way we move impacts the land use decisions we implement. Transportation, specifically mobility access, is an area where several comprehensive and long-range transportation plans have focused on developing equitable access to transportation options that serve and benefit everyone in order to increase environmental, social, and economic benefits.

Priority Action: **Reduce Vehicle Miles of Travel** through:

- Increase bicycle, pedestrian, and transit access
- Develop a regional transportation demand management program
- Increase adoption of electrification of mobility options

Increasing infrastructure that supports biking, walking, and transit can have one the greatest benefits to the reduction of Vehicle Miles of Travel. Increasing the network of on-street and off-street bicycle facilities, reducing the gaps of missing sidewalks that lead to transit stops, increasing the availability of transit options like expansion of the bus rapid transit in the region. Deploying more accessible options within the metro will lead to better co-benefits including health, greater access to employment and education opportunities, and enhance safety outcomes. As land use is intricately linked to transportation, developing higher density nodes will help enhance the viability of transit within the region. Single family suburban development diminishes the viability to provide transit and can oftentimes make transit and other services more difficult to serve.

LIDAC Benefits: Initial investments to better connect infrastructure within LIDAC communities can enhance and further the equity goals of this plan. For example, the City of Omaha recently adopted a Vision Zero plan which identified the majority of fatal and severe crashes are concentrated within LIDAC communities. Expanding the network of transit supportive infrastructure can help bolster and enhance not only the reduction of VMT but also lead to better localized outcomes in the form of reduction of fatal and severe crashes, increased opportunity to economic and education access, and more locally reduce the cost burdens of vehicle ownership.

Implementation Area: All areas covered in the MSA with a special focus of enhancing the areas that are LIDAC communities.

Implementation Authority: Local governments and County Governments, Papio-Missouri River Natural Resource District, Transit Agencies within the MSA.

The primary focus of Transit Demand Management (TDM) programs will focus on increasing the number of people that are able to switch from single occupancy vehicular trips to multi-modal options. These incentives can take the form of increasing and improving transit supportive infrastructure such as bus shelters and park-and-ride lots. But can also be expanded for cities, developers, employers, and education institutions to develop a transit subsidy or reduced cost of transit passes through an employer benefit or in the case of education institutions as a form of universal transit pass. This will have the benefit of reducing the number of single occupancy drivers.

TDM measures can also include bicycle supportive facilities like expanding bicycle parking and enhancing the bicycle parking for residential and commercial developments throughout the region. Additionally, other incentives for electric bikes and multi-modal transportation voucher programs would lower the cost of personal eclectic bikes and or reduced membership to the local bike share company ROAM. A regional incentive has the potential to help increase the adoption of electric bicycles within the region which have the potential to reduce short single occupancy vehicle trips especially when the majority of all trips are under five miles in length. Other supportive programs like walking and bicycle safety education and programming will help develop greater adoption. MAPA's Little Steps to Cleaner air can be further enhanced to partner with more local communities to help develop TDM measures including incentives, education, and programing to help increase adoption.

LIDAC Benefits: Initial investments would be set to benefit underserved and vulnerable communities and help reduce the overall cost burdens of vehicle ownership. For example, a region-wide program could be structured with coordination and cooperation between local communities and electric providers to issue mail-in rebates for personal e-bikes. Electric providers already implement rebates within the region and can be developed as a tiered rebate system based on geography and income thresholds.

Implementation Area: All areas covered in the MSA with a special focus of enhancing the areas of vulnerable communities. Incentives for ROAM would be restricted to areas that are currently served by ROAM bike share.

Implementation Authority: Local governments and County Governments, Chamber of Commerce, MAPA, Papio-Missouri River Natural Resource District, Transit Agencies, Electric providers.

Increased adoption of electrification of mobility options focuses on shifting combustion engine vehicles to electric through public and municipal fleet vehicles. This involves developing supportive facilities to ensure that EV charging facilities are readily available. This priority will focus on developing EV action plans to ensure that municipalities are ready for both the public and private sector to ensure that zoning ordinances are providing the necessary infrastructure for new developments. Additionally, working with power providers to increase available incentives throughout the region can focus on retrofitting existing facilities to incorporate EV infrastructure.

Municipal agencies and bedrock institutions throughout the community have an opportunity to lead in the transition of vehicular fleets to EV. In particular, the Omaha Public School System and Henry Doorly Zoo have expressed interest in fleet electrification of light-duty and non-essential vehicles. As a part of any fleet electrification strategy, several prerequisites aimed at charging capacity and infrastructure at a broader level must be developed. However, a long-term objective of transitioning public transit fleets and larger vehicles to EV or low emission vehicles will further enhance the greenhouse gas reductions for the region. Development of an EV Infrastructure and Fleet Electrification Plan is critical. Local agencies will need to work with electric providers to further enhance the GHG reductions by implementing renewable energy sources where possible.

Focusing incentive options for charging infrastructure within LIDAC communities will further reduce the costs and burdens within these communities and allow greater adoption within the community.

LIDAC Benefits: The initial investments in municipal and transit fleet conversion will provide localized co-benefits of reduction in noise, exhaust, and overall emissions. Developing a regional incentive for charging infrastructure will help reduce the cost burdens and lead to more significant market penetration. Similar to a regional e-bike rebate, a similar regional program could be structured with coordination and cooperation between local communities and electric providers to issue mail-in rebates for EV charger infrastructure retrofits for multi-family residential buildings. Electric providers already implement rebates within the region and can be developed as a tiered rebate system based on geography and income thresholds.

Implementation Area: All areas covered in the MSA with a special focus of enhancing the areas that are LIDAC communities.

Implementation Authority: Local municipalities, Counties, and public agencies such as school districts, utility providers, resource agencies, Airports, Transit Agencies, Electric providers, private EV charger companies.

3.3.3 Solid Waste Management

Waste management is a critical aspect of environmental stewardship, public health, and sustainable development. Understanding the intricacies of waste generation, disposal, and the role of landfills is paramount in ensuring a cleaner, healthier future for the region. Waste comes in various forms, including municipal solid waste (MSW), industrial waste, construction and demolition debris, and hazardous materials. The management of these diverse waste streams poses unique challenges, requiring tailored solutions to minimize environmental impact and promote resource conservation.

Central to the region's waste management infrastructure are landfills. These engineered facilities serve as repositories for non-recyclable and non-compostable waste. Landfills are carefully designed and operated to contain and mitigate potential environmental hazards, such as groundwater contamination and air pollution. Despite advancements in recycling and waste

reduction efforts, landfills remain a crucial component of the waste management landscape. Properly managed landfills provide a necessary service by safely disposing of waste that cannot be recycled or reused. Additionally, modern landfills often incorporate technologies to capture and utilize methane gas, a byproduct of decomposing organic matter, as a renewable energy source. Despite solid waste representing a small percentage of the total GHG inventory for the region, it is an area identified for potential coordination between State and local agencies.

The priority action for the region will focus to **Reduce Total Waste across the MSA** through:

- Improve waste diversion programs and waste diversion infrastructure
- Decrease organic waste

Increasing the regional capacity to divert recyclables from entering the landfill requires investment in expanding and improving recycling infrastructure such as curbside recycling programs, recycling drop-off centers, and recycling facilities. For example, within the City of Omaha there are multi-family residential areas that contract waste disposal that do not provide recycling service. These measures provide additional ways to encourage businesses and residential complexes to implement recycling programs by providing incentives and support.

In 2009, the State of Nebraska developed a Waste Characterization Study to help identify the type and tonnage of materials ending in landfills. An update of this study will provide a clarification and direction on the nature of area waste streams.

LIDAC Benefits: Access to recycling services and resources can promote social equity by ensuring that all communities, including LIDAC communities, have equal opportunities to participate in sustainable waste management practices. By addressing disparities in waste management infrastructure and services, recycling initiatives can contribute to greater social inclusion and cohesion within LIDAC communities.

Implementation Area: All areas covered in the MSA.

Implementation Authority: Local municipalities, Counties, State resource agencies, public agencies such as school districts, resource agencies.

Organic waste in the waste stream represents a great opportunity to increase the regional capacity to divert organic waste from entering the landfill. Investing in expansion and improvement of infrastructure, education, and development of a multi-prong approach of neighborhood/non-profit/private collaboration can help achieve this measure. One way to reduce the amount of waste is to not have waste in the first place. Examples of a collaborative approach to waste elimination include development of food donation programs, proper inventory management, and consumer education on food storage and expiration dates. At a more localized level, municipalities can introduce community composting programs to divert organic waste from landfills and provide resources and education on home composting for residents.

LIDAC Benefits: Access to food diversion services and resources can promote social equity by ensuring that all communities, including LIDAC communities, have equal opportunities to participate in sustainable waste management practices. By addressing disparities in waste management infrastructure and services, food recovery and composting initiatives can contribute to greater social inclusion and cohesion within LIDAC communities.

Implementation Area: All areas covered in the MSA.

Implementation Authority: Local municipalities, Counties, State resource agencies, non-profit and private agencies.

3.3.4 Agriculture and Land Management

The greater MSA region contains the largest urbanized area for the State of Nebraska but also includes counties that are more rural and rely on agricultural production. Although, within the region agriculture represents about 10% of the GHG emissions, but represents a third of all emissions for the State of Nebraska and Iowa. Agriculture and land management plays an important role for the local economy and is an area that requires additional attention.

The priority action for the region will focus on **Preservation of Land in the MSA** through:

- Enhance climate-smart agriculture practices
- Expand urban greening projects, including tree canopy, urban agriculture, and native species initiatives

Enhancing climate-smart agricultural practices involves adopting techniques and technologies that improve resilience to climate change, reduce greenhouse gas emissions, and promote sustainable land management. This includes diversification of crops and livestock, soil health, crop rotation, no-till, soil carbon amendment (biochar). By integrating climate-smart agricultural practices into farming systems, local communities can enhance food security, protect natural resources, and contribute to climate change mitigation and adaptation efforts. Collaboration among farmers, researchers, policymakers, and development organizations is essential to promote the widespread adoption of these practices and build resilient agricultural systems for the future. Some of the statewide priorities include incentives for farmers for crops, livestock, water management, and soil health improvements.

LIDAC Benefits: Development of climate-smart agriculture standards and practices in urban agriculture will improve food security, health and welfare, and provide economic benefits.

Implementation Area: MSA-wide, with particular emphasis on LIDAC areas

Implementation Authority: Local municipalities, Counties, State resource agencies.

Expanding urban greening can improve environmental quality, and create more resilient and livable communities for residents now and in the future. This is an area where a focus on the urban areas can have a wide range of benefits. The Natural Resource subcommittee of RPAC is currently investigating the development of a comprehensive community forest plan for the region. For urbanized areas there is a potential to use public right-of-way including streets, parks, and public spaces for tree planting programs. With recent floods and disease impacting existing tree canopy there is a strong desire and need to work to replace and enhance the public landscape. Prioritization of tree plantings in areas with limited canopy cover and in areas identified as heat islands (i.e., underserved neighborhoods and historically industrial development) can develop tremendous benefits for the region.

Additionally, enhancing sustainable, native landscaping programs and practices to strengthen flood resistance and increase native wildlife and pollinator habitat will help with stormwater run-off and the energy needed to pump and treat stormwater in the region. This will require additional investments to integrate trees and native landscaping infrastructure into urban planning and development projects. Implement green roof and bio-swale projects, tree-lined streets, and permeable pavement designs to enhance urban resilience and ecosystem services by engaging residents, schools, and community groups in tree planting and stewardship activities, through educational workshops, volunteer events, and tree adoption and sustainable landscaping programs. Raising awareness and potentially providing incentives about the benefits of urban trees and sustainable landscaping for air quality, public health, property values, and quality of life.

LIDAC Benefits: Restoration of tree canopy and access to green spaces will benefit areas vulnerable to heat island impacts, poor air quality, poor water quality, and flood-prone areas. Many of these areas are also identified centers for low-income and disadvantaged populations. While the benefits of green spaces and tree canopy are universal, high-risk populations can benefit the most from these improvements.

Implementation Area: Urban areas within the MSA.

Implementation Authority: Local municipalities, Counties, State resource agencies, non-profit and private entities, developers.

Appendix: Climate Action Measures Overview

(Priority Actions are identified in **bold text**)			
Sector	**City of Omaha Strategies**	**Regional Implementation Measures**	**Identified Programs and/or Action Items**
Mobile Combustion	Decrease community wide Vehicle Miles Traveled (VMT) by 2.5 percent by 2030 while increasing public transit ridership from 1.3 percent to 5 percent by 2030	**Improve choice, availability, service, and amenities of metro-area transit**	24th St and 72nd St ORBT
			Metro Transit Days/Hours Analysis
			Metro Bus Shelters Analysis
			Microtransit Potentials Study
		Improve multi-modal transportation options	Regional Trails Master Plan Update
			ROAM; Regional Bikeshare Program Expansion
			E-Bike Rebate Program
		Increase average population density region-wide	Ordinance Amendment: Density, Use Types
			Comprehensive Plan Update
			Financial Incentives Program Development
	Increase battery electric vehicle use to 10 percent of vehicles on the road	**Facilitate installation of electric vehicle charging infrastructure**	City of Omaha EV Infrastructure Development Plan
			Residential EV Charging standards
			Ordinance Amendment: Non-SFR uses have EV Parking Minimums
		Incentivize fleet electrification	Henry Doorly Zoo Fleet Electrification Pilot Program
			Omaha Public Schools Fleet Electrification Pilot Program
			City of Omaha Municipal Operations Fleet Electrification Pilot Program

Stationary Combustion	Increase access to building energy alternatives and increase the share of the electric utility portfolio serving the community from 35 percent to 50 percent by 2030	**Encourage development of alternative and renewable energy options across all sectors**	OPPD: Hosting Capacity Analysis
			OPPD: Value of Solar Funding Analysis
			Ordinance Amendment: Energy Systems
			Solar installation rebate program
			Solar Arrays in Parking Lots Program Development (Henry Doorly Zoo, OPS)
		Encourage conversion from on-site fossil fuel combustion to electrification or renewable fuels across all sectors	IECC Building Code Adoption (unamended) and Maintenance
			OPPD Energy Efficiency Tax Credit and Rebate Program Expansion
			HERS Program Review and Expansion
	Improve total Citywide building energy efficiency in all sectors by 5 percent for electricity and natural gas by 2030	**Improve building energy efficiency across all sectors**	Net Zero standards for new construction
			OPPD Energy Star Rebate Program expansion
			LED Conversion Program
			HE appliances, renewables, and weatherization training for the trades
	Reduce the share of the population living in energy poverty.	Improve access to weatherization, high-efficiency appliances, and whole-home energy solutions	Weatherization Assistance Program expansion
Waste Management	Reduce the amount of municipal solid waste generated per household by five percent by 2030.	**Reduce the amount of municipal solid waste generated across all sectors**	Regional Waste Characterization Study
			Community Composting Program Development
			Single Use Plastics Pilot Program Development
	Increase recycling diversion from 25 percent to 50 percent of Municipal Solid Waste by 2030.	Expand education opportunities, access and scale of recycling programs across all sectors	Pay as You Throw for non-diverted solid waste
			Residential Recycling Program Expansion
			Multifamily Residential Recycling Program
			Recycling Drop Off Location Evaluation
			Office, Commercial, and Industrial Recycling Program Development
			Spoke and Hub Waste Economy Model Development (First Star Recycling)

	Increase the capture and use of solid waste energy potential to account for 100 percent of on-site energy needs	Explore the potential of energy capture in regional waste streams	Pheasant Point Energy Capture Program Expansion
Local Foods and Agriculture	Increase production of and access to local food, particularly serving low income and food insecure individuals	Encourage local food production	OPS Community Gardens Program Development
			Develop a public-facing dashboard and educational platform for local food systems
	Reduce food waste and achieve a 50 percent reduction in food security by 2030	Reduce food waste and food insecurity	Regional Waste Characterization Study
			Municipal Food Waste Diversion Program
	Increase adoption of carbon positive soil, crop, fertilizing, irrigation, and drainage management practices	Encourage the use of regenerative agricultural practices across the region	Soil Health Education and Incentive Program Expansion
	Protect and preserve agricultural land while increasing its resilience to climate shocks	Encourage and protect regional agricultural uses and the importance of agricultural uses in the urban environment	Alternative Energy Systems and Agriculture Co-location Standards
			Urban Agriculture Education Program Development
			Urban Agriculture Registry Incentives Program Development
Water and Wastewater	Reduce water consumption and wastewater generation by 5 percent by 2030	Encourage water conservation and wastewater reductions across all sectors	Rain Barrel Program Development
			Establish Water Use Restriction Guidelines for municipal operations
			Smart Irrigation Systems Rebate or Incentives Program Development
			Low Flow/Efficient Fixture Incentives Program
			Drought-Tolerant Landscaping Guidelines

	Increase the capture and use of wastewater energy potential to account for 100 percent of on-site energy needs	Explore the potential of energy capture in regional wastewater treatment	City of Omaha Water Resource Recovery Facilities Energy Capture Program Expansion
			Greywater Recycling/Reuse Program
	Update design standards for stormwater management and flood mitigation requirements	**Preserve and protect regional drainage and waterways**	Development of a regional stormwater utility
			Stormwater Manual Update
			Community Rating System (CRS) Development and Implementation
			Papio Creek watershed Floodplain Mitigation and Channel Improvements (BRIC, USACE Sec 206, etc.)
			Develop a public-facing floodplain management dashboard and education platform
			Ordinance Amendment: Floodplains, floodplain development standards, waterway restrictions
Greenspace and Ecology	Increase tree cover city-wide (and in particular in identified target neighborhoods) from 24.9 percent to 27.9 percent by 2040	**Increase established tree canopy on non-agricultural land across all sectors**	Establish City of Omaha native tree species nursery
			Comprehensive Plan Amendment: Ecology, Tree Canopy, Infill and Redevelopment Guidelines
			Ordinance Amendment: Tree canopy, landscaping, streetscape improvements
			Native Omaha Ecosystems dashboard and public education platform
	Increase pollinator supportiveness and achieve a 10% turf replacement with native grasses and wildflowers citywide by 2040 (approximately 210 acres annually)	**Enhance sustainable, native landscaping programs, habitats, and practices**	Ordinance Amendment: Native species landscaping, green roofs, impervious surfaces, natural topography, weeds and litter modifications
			OPS: Native Prairie Conversion Program Development
			Pollinator Habitat Certification Program
			Native Omaha Ecosystems dashboard and public education platform.

			Native Prairies and Floodplains Colocation Program.
			Dark Skies Program Development
	Reduce heat island effect through citywide “dark” impervious surface coverage reduction of 10% by 2040, particularly in neighborhoods identified with higher heat island impacts (approximately 100 acres annually)	Encourage reductions in the impact of heat islands throughout the region, and particularly in target neighborhoods	Heat Island Mitigation Plan Development
			Tree Canopy Improvements Plan Development
			Ordinance Amendment: Reduce required parking and evaluate Parking Maximums
			Solar Arrays in Parking Lots Pilot Program
			Green Roofs Design Criteria Development
	Reduce invasive species and increase climate resilience and biodiversity of City’s tree canopy, parks and greenspaces	Encourage review and comprehension of the long-term impacts of development across all sectors	Require Environmental Impact Assessments for all new development
	Increase connectivity, accessibility, and equity of City parks and greenspaces	Promote a robust, well-connected regional trails system	Omaha Parks and Trails Master Plan Update
Health and Safety	Assist the City’s climate vulnerable populations in preparing for and mitigating climate change impacts	Prepare adaptation and resiliency strategies to maintain safe, healthy communities in the face of climate impacts	Prepare for future climate migration and refugees
			Identify and designate neighborhood warming and cooling centers that can be accessed during extreme temperature events
	Ensure municipal operations and adequate emergency, health and	Increase resilience of municipal buildings and infrastructure to potential impacts of climate change	Municipal Solar Pilot Program

	transportation services can be maintained in a climate emergency		Emergency Housing Plan Development
		Ensure critical emergency services and health care facilities are prepared for the impacts of climate change	Collaborate with area services/hospitals to develop response-driven climate event plans
		Strengthen community response capacity and social support networks	Community Resilience Hubs Development Program
Economic Development	Develop equitable workforce and entrepreneur opportunities of Climate Action in the economy	Enable the development of innovative business practices to enact climate solutions, particularly in low income and disadvantaged communities	Establish and implement workforce training for renewable energy systems, HVAC installation and maintenance, and construction practices in collaboration with area trade unions
	Support local business operations in building marketplace climate resistance	Help local and small businesses be climate-impact ready	Support efforts of local and small businesses to develop business continuity plans during climate events
	Establish sustainable financing for the City's climate action implementation	**Ensure the long-term success and commitment to enacting climate action across all sectors, and adapt to changing conditions**	Establish a central Climate Action office to facilitate coordination, implementation, monitoring, and funding of all proposed and future climate planning actions
			Establish a public-facing Sustainability Hub, with dashboards and educational platforms on Climate Action