



NDOT Carbon Reduction Strategy

November 2023

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Acknowledgements

The Nebraska Department of Transportation (NDOT) wishes to acknowledge and express thanks for the wide array of input received from stakeholders through interviews, survey responses, meeting participation, sharing of related plans, and draft document review that were critical to the development of this Carbon Reduction Strategy (CRS).

Stakeholders included Metropolitan Planning Organizations (MPOs), local governments, sister state agencies, academic institutions, advocacy organizations, the private sector, tribal governments, and the general public.

Nebraska’s four MPOs, in particular, were critical partners in the development of the CRS: the Metropolitan Area Planning Agency (MAPA) in the Omaha-Council Bluffs region; the Lincoln Metropolitan Planning Organization (Lincoln MPO); the Grand Island Area Metropolitan Planning Organization (GIAMPO); and the Siouxland Interstate Metropolitan Planning Council (SIMPCO).

In addition, NDOT is indebted to DOT staff from other states who shared information about their carbon reduction efforts and development of their CRSs: Iowa, Kansas, Minnesota, New Mexico, Oregon, and Vermont.

Finally, NDOT would like to thank the contractor for the CRS development effort, High Street Consulting Group, for their diligent and thorough work supporting NDOT in this endeavor.

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NEBRASKA

Good Life. Great Journey.

DEPARTMENT OF TRANSPORTATION



Jim Pillen, Governor

November 13, 2023

Secretary of Transportation Pete Buttigieg
U.S. DEPARTMENT OF TRANSPORTATION
1200 New Jersey Avenue, SE
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Nebraska DOT Director's Message: Carbon Reduction Program

The Carbon Reduction Program was created by the 2021 Infrastructure Investment and Jobs Act (IIJA) to provide resources for states to reduce transportation emissions. NDOT's Carbon Reduction Strategy highlights how the Department will work with our partners as well as identify projects and strategies that reduce transportation carbon emissions in Nebraska, essentially leading to an increase in value to the public.

NDOT's Long Range Transportation Plan as well as input from Nebraska's metropolitan planning organizations (MPOs) identified two major focuses of the Carbon Reduction Strategy: mobility and accessibility. Both are essential for connecting Nebraska's communities while simultaneously reducing CO2 emissions from on-road traffic.

NDOT seeks to provide a safe, reliable and resilient transportation system to support the movement of people and goods, while also continuing to develop sustainable and environmentally friendly strategies. Our Carbon Reduction Strategy includes tactics that reduce traffic congestion, facilitate other modes of travel and plan for a more accessible system.

The Carbon Reduction program will support NDOT's goals of increasing transportation safety, upholding fiscal responsibility, advancing environmental stewardship, and maintaining and enhancing transportation assets.

NDOT is dedicated to working with Nebraska's MPOs and other partners to invest these funds in a way that has broad and diverse benefits for Nebraskans across the state as well as for future generations.

A stylized black ink signature of Vicki Kramer.

Vicki Kramer, NDOT Director

Vicki Kramer, Director

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Executive Summary

Introduction to the Carbon Reduction Program

Carbon Reduction Program Background

Carbon dioxide is the principal greenhouse gas (GHG) emitted through human activity, the largest portion of which results from burning fossil fuels. Increasing concentrations of GHGs may result in changes in precipitation patterns, storm severity, and sea level. These climate changes impact transportation systems through infrastructure stress, network disruption, and safety risks.

The federal Infrastructure Investment and Jobs Act (IIJA) created the Carbon Reduction Program (CRP)¹ to fund state and local activities that reduce carbon emissions from on-road highway sources. The CRP requires each state Department of Transportation (DOT) to develop a Carbon Reduction Strategy (CRS) that describes carbon reduction efforts in the transportation sector and identifies projects and strategies to reduce emissions and promote safe, reliable, and cost-effective transportation options.

Because disadvantaged populations can be most burdened by the impacts of climate change, the federal Justice40 Initiative aims to accrue 40 percent of benefits from CRP funding and certain other federal programs to transportation disadvantaged communities that are marginalized, underserved, and overburdened by pollution.

Eligible Projects

CRP funded projects must reduce transportation emissions and promote safe, reliable, and cost-effective transportation options. FHWA's CRP guidance states that project types may include:

- Reducing traffic congestion by facilitating the use of alternatives to single-occupant vehicle trips including public transportation facilities, pedestrian facilities, bicycle facilities, and shared or pooled vehicles.
- Facilitating the use of vehicles or modes of travel that results in lower transportation emissions per person-mile travelled as compared to existing vehicles and modes.
- Facilitating approaches to the construction or installation of transportation assets that result in lower transportation emissions as compared to existing approaches.

Nebraska's CRP Funding Allocation

Nebraska will receive over \$9.2 million annually over five years from the CRP program. 35 percent of CRP funds may be used in any area of the state. The other 65 percent of CRP funds must be used in specific population areas in proportion to the state population share.

Key considerations in the use of CRP funds include maximizing the benefits of the funding across NDOT's strategic goals, ensuring no lapse in funding, and guaranteeing the funding will be used for immediately deliverable projects. Regional characteristics and designations are important considerations with respect to NDOT's tailored approach to CRP coordination.

¹ https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm

Nebraska is home to four Metropolitan Planning Organizations (MPOs). The Metropolitan Area Planning Agency (MAPA) in the Omaha-Council Bluffs region and the Lincoln MPO are designated as Transportation Management Areas (TMAs). The Grand Island Area Metropolitan Planning Organization (GIAMPO) and the Siouxland Interstate Metropolitan Planning Council (SIMPCO) are designated as non-TMA MPOs. TMA MPOs, which encompass urbanized areas with populations of at least 200,000, have authority to spend their allocated funds anywhere in the MPO boundary, whereas non-TMA MPOs must spend their allocated funds within the urbanized area boundary.

In the early years of the CRP, NDOT plans to transfer the majority of the 35 percent of CRP funding that may be obligated in any area of the state to other eligible programs when CRP eligible projects are not available for investment.

NDOT will leverage the Federal Funds Purchase Program (FFPP) to purchase GIAMPO and SIMPCO's CRP funding at a discounted rate with state cash and apply the funds to state projects within those regions. The FFPP was enacted in Nebraska in 2011 through Legislative Bill 98. This legislation granted NDOT the authority to purchase federal aid transportation funds allocated to Local Public Agencies (LPAs). This exchange eliminates federal requirements of the LPAs thereby granting flexibility to meet specific needs and relieving them from the responsibility of programming federal funds.

The challenges disadvantaged communities face in accessing essential services, job opportunities, and recreational activities informed the types of strategies that NDOT and MPOs are prioritizing for the use of CRP funds.

Related Statutory Drivers and Funding Programs

The CRS includes a summary of the following statutory drivers and initiatives that are related to carbon reduction:

- Every Day Counts-7: Integrating GHG Assessment and Reduction Targets in Transportation Planning
- National Performance Management Measure to Set Targets and Reduce GHG Emissions from Transportation
- The Council on Environmental Quality Interim Guidance on Consideration of GHGs and Climate Change Under the National Environmental Policy Act
- Nebraska's Climate Action Plan

The CRS also highlights other funding programs beyond the CRP that can be used to fund strategies and projects that reduce carbon emissions. These include:

- Congestion Mitigation and Air Quality Improvement Program
- Transportation Alternatives Program
- National Electric Vehicle Infrastructure Program
- Charging and Fueling Infrastructure Program
- Low or No Emission Vehicle Program
- Federal discretionary grant programs

Beyond these related programs, other programs may fund projects that reduce carbon emissions, such as the Surface Transportation Program and the Highway Safety Improvement Program (HSIP).

Nebraska's Carbon Reduction Goals and Strategies

CRS Goals

The following CRS goals were selected to guide the development of the CRS, the use of CRP funds, and CRS implementation activities:



Maximize Benefits



Promote Equity



Reduce Carbon Emissions



Use Established Methods and Practices



Invest 100% of Funds



Engage Stakeholders

These goals support NDOT's overall mission and align with NDOT's strategic goals.

CRS Strategies

The following CRS strategies were generated to meet these goals:

- **Internal Strategies**
 - Continue to implement sustainable construction materials and methods for highway construction
 - Leverage cost-saving technology to reduce energy used by:
 - Streetlights and traffic control devices
 - Facilities and buildings
 - Transition NDOT fleet and support public partners as they transition transit vehicles and municipal fleets to alternative fuels that emit less carbon emissions compared to gasoline or diesel-powered vehicles
- **Transportation System Strategies**
 - Leverage technology and partnerships to reduce carbon emissions associated with roadway congestion
 - Promote mode shift to less carbon intensive travel options by enhancing multimodal transportation services, partnerships, and infrastructure
 - Work with public and private partners to deploy EV charging infrastructure

Approach to Developing the CRS and Identifying Strategies

Foundational Research

NDOT's CRS was informed by the (1) examination of relevant state, local, and regional government plans in Nebraska, and (2) evaluation of carbon reduction practices in peer states.

Review of Related Plans and Studies

The review of the following related plans and studies provided a comprehensive understanding of statewide and regional transportation infrastructure, development plans, and opportunities to reduce carbon emissions:

- **Statewide:** 2040 Long Range Transportation Plan (LRTP), Strategic Highway Safety Plan (2022), Transportation Systems Management and Operations Strategic Plan (2021), Transportation Asset Management Plan (2022), Freight Plan, Statewide Transportation Improvement Program
- **Regional:** MAPA 2050 LRTP, Lincoln MPO 2050 LRTP, GIAMPO 2045 LRTP, SIMPCO 2045 LRTP, Heartland 2050 Vision, Metro Area Travel Improvement Study

Interviews with Other States

In order to determine possible approaches for reducing carbon emissions, research on and interviews with peer state DOT staff were conducted. Iowa, Kansas, and New Mexico were selected as comparable states based on their similar transportation systems and geographic contexts. Oregon, Minnesota, and Vermont were selected as exhaustive-practice states based on their existing carbon reduction goals and climate action plans.

Internal Engagement

The core CRS development team and five NDOT divisions met during CRS development to identify priorities, opportunities, and challenges. The divisions were: Program Management, Project Development, Operations, Roadway Design, and Local Assistance Divisions.

External Engagement

From the outset, NDOT envisioned the development of a comprehensive CRS that would effectively showcase the diverse range of carbon reduction initiatives and efforts throughout the state's transportation system. External stakeholder engagement was conducted to ensure alignment between CRS strategies and existing stakeholder priorities and initiatives. External stakeholders include MPOs, local governments, sister state agencies, academic institutions, advocacy organizations, the private sector, tribal governments, and the general public.

MPO Consultation

While MPO consultation is a mandatory CRS requirement, NDOT saw it as an opportunity to collaborate, exchange ideas, and identify supportive initiatives. NDOT held three rounds of MPO consultations: a kickoff meeting, one-on-one interviews with each MPO, and a summary meeting. The priorities identified by MPOs fell under the following themes and supportive sub-themes:

- **Travel efficiency, options, and choice:** Efficient and effective transportation system, multimodal transportation (including transit), connectivity and accessibility.
- **Quality of life and livelihood:** Environmental sustainability, livability, safety, economic development.

Public Engagement and Stakeholder Consultation

Public and stakeholder input informed the development of Nebraska's CRS and helped NDOT and its MPO partners prioritize strategies for the use of CRP funds. A survey was distributed to

external stakeholders and advertised to the general public. NDOT also held a public meeting to introduce the CRP and gather input on the development of the CRS. Interviews were conducted with five key external stakeholders to ensure the CRS is both comprehensive and rooted in real-world applications. These stakeholders were: Nebraska Department of Environment and Energy, Nebraska Department of Economic Development, Bike Walk Nebraska, City of Lincoln, and the University of Nebraska-Lincoln. These public involvement and stakeholder engagement activities collected information related to preferred mode use and rationale, organizational carbon reduction initiatives, metrics for emission tracking, criteria for using CRP funds, and opportunities for collaboration.

Implementation, Coordination, Evaluation, and Future Updates

The CRS will be implemented through the delivery of strategies and projects around the state that reduce carbon, utilizing CRP funds and funds from related programs. In planning and delivering carbon reduction projects, NDOT will employ its typical public involvement processes, engaging with and considering the needs of traditionally underserved communities.

NDOT will assess its use of CRP funds to learn from the initial rollout of the program, ensure effective project delivery, and inform future efforts. NDOT will evaluate program progress against the CRS goals using a combination of informal and formal evaluation efforts and a mix of qualitative and quantitative performance measures.

NDOT will continue to consult and coordinate with other key agencies and stakeholders in implementing the CRS, using CRP funds, and advancing carbon reduction initiatives in the state. NDOT plans to update this CRS in consultation with its MPO partners and other stakeholders at least once every four years. Updates will be undertaken as part of the typical transportation planning processes in the state and aligned with NDOT's LRTP and the MPOs' RTPs.

I. Introduction

Transportation and Carbon Emissions in Nebraska

Carbon dioxide (also known as CO₂) is the predominant greenhouse gas (GHG) emitted through human activity, and the largest portion of those carbon emissions result from the burning of fossil fuels. The transportation sector generates the largest share of carbon emissions in the United States², having overtaken the power sector in the last decade.

In Nebraska, transportation is the second largest source of carbon dioxide after the electrical power generation sector³. Carbon emissions from the transportation sector were on an upward trend in Nebraska prior to the pandemic, as shown in Figure 1.

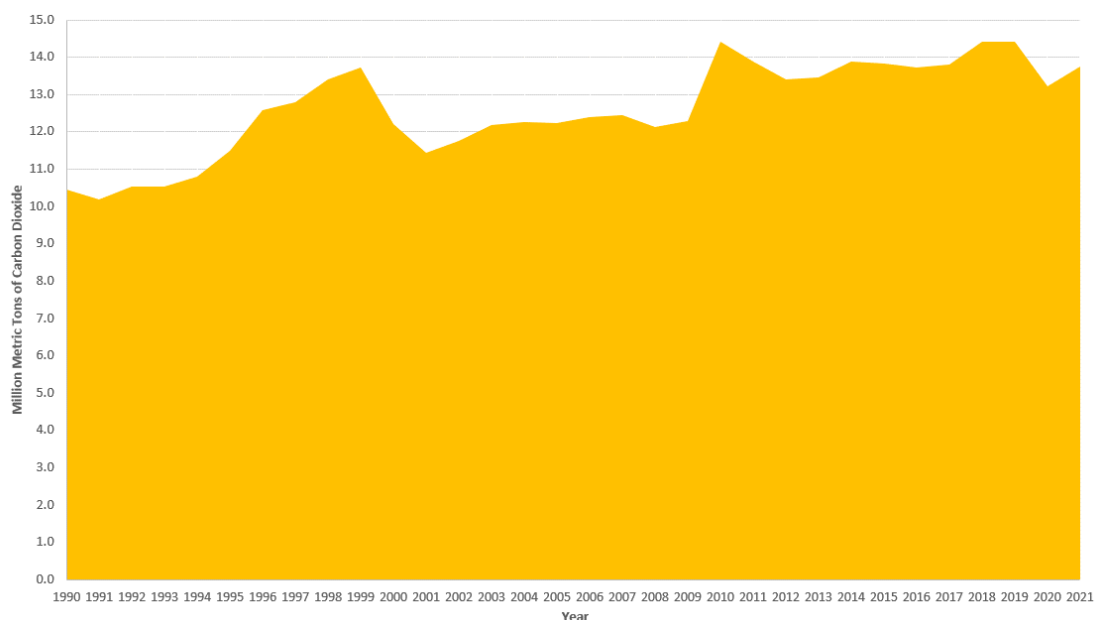


Figure 1. Carbon Dioxide Emissions from the Transportation Sector in Nebraska (1990-2021)⁴

There is a global scientific consensus that increasing concentrations of carbon dioxide and other GHGs are warming the planet, and this warming may cause changes in precipitation patterns, storm severity, and sea level⁵. These changes – collectively referred to as climate change – have significant impacts on transportation systems, including network disruption, stress on infrastructure, and safety risks to people. Disadvantaged and vulnerable populations can be most burdened by these impacts.

² <https://www.transportation.gov/priorities/climate-and-sustainability/climate-action>

³ <https://www.eia.gov/environment/emissions/state/> (Table 3: State energy-related carbon dioxide emissions by sector)

⁴ <https://www.eia.gov/environment/emissions/state/> (table of transportation emissions by state)

⁵ https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

Statutory Drivers and Related Efforts

Carbon Reduction Program Created by the Federal Infrastructure Investment and Jobs Act

The federal Infrastructure Investment and Jobs Act (IIJA) (also known as the Bipartisan Infrastructure Law, or BIL) created the Carbon Reduction Program (CRP), which provides \$6.4 billion in formula funding over five years to states and localities for use on a wide range of eligible activities⁶. The purpose of the CRP is to reduce carbon emissions from on-road highway sources. Important considerations and related priorities listed in the IIJA/BIL include safety, complete streets, equity, climate change, job creation, and program evaluation.

The CRP requires each state Department of Transportation (DOT) to develop a Carbon Reduction Strategy (CRS) – this document – that describes carbon reduction efforts in the transportation sector and describes the types of strategies and projects the agency is pursuing to reduce emissions and promote safe, reliable, and cost-effective transportation options. Strategies and projects expressly must be appropriate to the population density and context of the state. The CRS should focus not only on CRP funded strategies and projects but should articulate how the state is reducing emissions more broadly, including through other program funds. The CRS does not have to chronicle all uses of the CRP funds and must comply with federal Justice40 Initiative requirements to confront and address decades of underinvestment in disadvantaged communities⁷. The CRS must be aligned with existing transportation planning processes and must be developed in consultation with Metropolitan Planning Organizations (MPOs) in the state. CRSs are due to the federal government by November 15, 2023, and must be updated every four years.

EDC-7: Integrating GHG Assessment and Reduction Targets in Transportation Planning

Developed by FHWA, Every Day Counts (EDC) is a “state-based model that identifies and deploys proven, yet underutilized innovations – saving time, money, and resources that can be used to deliver more projects.” EDC-7⁸ outlines approaches (e.g., specific analytic tools, methods, and frameworks) to support state DOTs and MPOs with GHG target setting, measurement, and reduction. These tools and practices can be integrated with existing planning products, including statewide and metropolitan transportation plans and transportation improvement programs, and new planning programs (e.g., National Electric Vehicle Infrastructure (NEVI) and CRP).

In April 2023, NDOT responded to FHWA’s invitation for technical assistance to help advance the state of the practice in GHG target setting, measurement, and reduction. NDOT expressed interest in receiving training, technical support, and guidance to support:

- Exploration of common methods for describing GHG emission performance and the associated data needed to calculate the performance.

⁶ https://www.fhwa.dot.gov/bipartisan-infrastructure-law/crp_fact_sheet.cfm

⁷ <https://www.transportation.gov/equity-Justice40>

⁸ https://www.fhwa.dot.gov/innovation/everydaycounts/edc_7/integrating_ghg.cfm

- Assessment of the relative value to NDOT's stakeholders and customers versus the cost to capture and report.
- Determination of whether NDOT prefers reporting at a program level or at the project level.
- Coordination with NDOT stakeholders, including those who participated in the development of the CRS.
- Exploration of resources needed to capture, report, and integrate into decision making processes.

National Performance Management Measure to Set Targets and Reduce GHG Emissions from Transportation

Under the Highways title of the United States Code, the Federal Highway Administration (FHWA) proposes to amend its regulations governing national performance management measures to require state DOTs and MPOs to establish declining carbon dioxide emissions targets⁹. The proposed rule requires only that the targets reduce emissions over time, granting agencies flexibility to set targets that are context-specific for their communities, work for their respective climate change, and consider other policy priorities. The proposed rule also requires that state DOTs and MPOs determine a method for measuring and reporting GHG emissions. Progress reports must be submitted biennially to FHWA, which will then assess significant progress toward achieving the targets.

The Council on Environmental Quality Interim Guidance on Consideration of GHGs and Climate Change Under the National Environmental Policy Act

The Council on Environmental Quality (CEQ) Guidance on Consideration of GHG Emissions and Climate Change under the National Environmental Policy Act (NEPA)¹⁰ explains how agencies should apply NEPA principles and existing best practices to climate change analyses. This interim guidance updates the CEQs 2016 guidance and discusses methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions. It also outlines unique considerations for agencies analyzing biogenic carbon dioxide sources and carbon stocks associated with land and resource management actions under NEPA.

Nebraska's Climate Action Plan

Nebraska does not currently have a statewide Climate Action Plan (CAP); however, strides have been made at the municipal level with the City of Lincoln adopting its CAP in 2021 and the City of Omaha initiating plan development. These city-based plans primarily focus on larger urban centers, incorporating both adaptation strategies and GHG reduction measures. Nebraska's forthcoming Priority Climate Action Plan (PCAP) and Comprehensive Climate Action Plan (CCAP), led by the Nebraska Department of Environment and Energy (NDEE), will expand this focus. Set to include both urban and rural areas, these plans aim to address pollution reduction across the state's diverse geographies.

⁹ <https://www.transportation.gov/bipartisan-infrastructure-law/regulations/2022-14679>

¹⁰ <https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate>

NDEE is actively working on the PCAP, which is due by March 1, 2024, and will subsequently release the CCAP in late summer of 2025. The PCAP aims to spotlight high-priority actions that can be readily implemented to lower GHG emissions, concentrating on voluntary initiatives and financial inducements. The CCAP is slated to delve into both short-term and long-term GHG emission curtailment measures across various economic sectors. These state plans will be inclusive, inviting participation from low-income and marginalized communities and assessing the benefits that accrue to these demographics. Following the submission of the PCAP, both state and local governing bodies in Nebraska will become eligible for competitive grants to enact actions consistent with the state's climate strategies.

To fund these initiatives, NDEE has secured a \$3 million planning grant from the U.S. Environmental Protection Agency's Climate Pollution Reduction Grants (CPRG) Program, under the aegis of the Inflation Reduction Act. NDOT has a designated role as a stakeholder in this endeavor and will be part of one or more sector-specific workgroups. These workgroups aim to propose and discuss potential GHG reduction strategies, particularly in transportation, aligning them with related plans and initiative such as NDOT's CRS.

At this stage, NDEE has laid out a comprehensive work plan¹¹ that encapsulates objectives, deliverables, processes, and budgets, as well as stakeholder engagement. This work plan is designed to further the overarching goal of GHG reduction while delivering environmental, health, and economic advantages for the state of Nebraska.

Transportation Disadvantaged Populations in Nebraska

NDOT carefully considered equity implications in the development of this CRS. Awareness about the location of disadvantaged communities in Nebraska and the challenges they face informed the types of strategies that NDOT and MPOs are prioritizing for the use of CRP funds now and into the future, with the intent of meeting the federal Justice40 Initiative goal of 40% of benefits accruing to disadvantaged communities. NDOT and its MPO partners will continue to evaluate and implement federal requirements related to Justice40 as guidance becomes available.

Transportation disadvantaged communities are those that are marginalized, underserved, and overburdened by pollution. These communities may comprise communities of color, low-income households, and the mobility impaired. Members of these communities face barriers in accessing essential services, job opportunities, and recreational activities.

According to the United States Department of Transportation's (USDOT's) Equitable Transportation Community (ETC) tool¹², there are 84 disadvantaged census tracts in Nebraska, of which 64 are located within MPO boundaries and 20 are located outside of MPO boundaries. In Nebraska, 18% of census tracts are disadvantaged, and 15% of Nebraskans live in disadvantaged census tracts. A summary output from the ETC tool is shown in Figure 2.

¹¹http://dee.ne.gov/ndeqprog.nsf/xsp/.ibmmodres/domino/OpenAttachment/ndeqprog.nsf/42611C8E19F26F58862589C90070404D/Attachment2/NDEE_CPRG_Workplan_Complete.pdf

¹²<https://experience.arcgis.com/experience/0920984aa80a4362b8778d779b090723/page/ETC-Explorer--National-Results/>

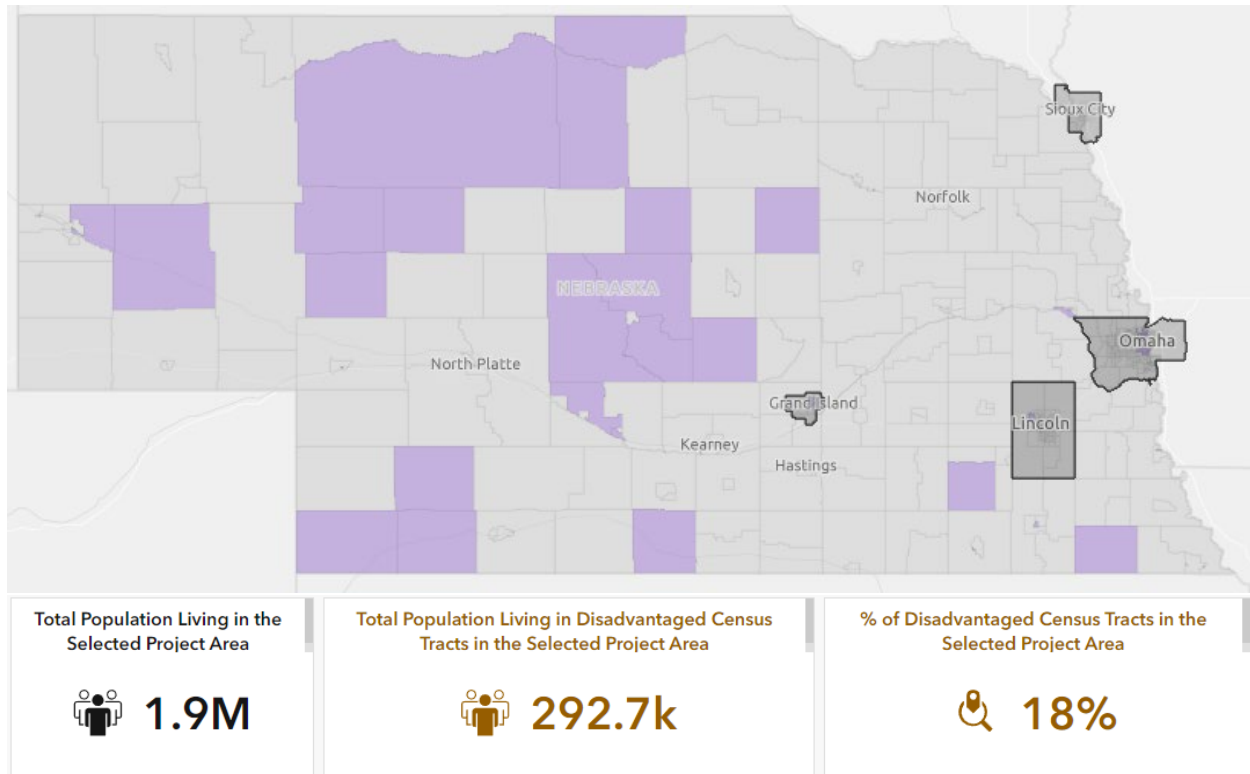


Figure 2. Nebraska Disadvantaged Census Tracts in Purple and MPO Boundaries in Black (“Selected Project Area” is the State of Nebraska)

The disadvantaged census tracts **outside of MPOs** in Nebraska tend to have high scores for two of the five components of disadvantage as compared to other census tracts around the United States: **Health Vulnerability** and **Transportation Insecurity**. The *Health Vulnerability* category assesses the increased frequency of health conditions that may result from exposure to air, noise, and water pollution, as well as lifestyle factors such as poor walkability, car dependency, and long commute times. *Transportation Insecurity* occurs when people are unable to get to where they need to go to meet the needs of their daily life regularly, reliably, and safely.

Disadvantaged census tracts **within MPO boundaries** also tend to score highly for the *Health Vulnerability* and *Transportation Insecurity* components, but also have high scores for **Environmental Burden**, and, to a lesser degree, **Climate and Disaster Risk Burden**. The *Environmental Burden* component of the index includes variables measuring factors such as pollution, hazardous facility exposure, water pollution and the built environment. *Climate and Disaster Risk Burden* reflects changes in precipitation, extreme weather, heat, and (for coastal communities) sea level rise, which pose risks to the transportation system. Results for the fifth component of disadvantage, *Social Vulnerability*, are more mixed, both for tracts outside and within MPO boundaries.

These results show that by focusing on key challenges in Nebraska’s context – such as health-related vulnerabilities and transportation insecurity – and by considering the geographical contexts of disadvantaged communities when making project selection decisions, NDOT will

enhance the quality of life for the most marginalized, underserved, and overburdened Nebraskans while also ensuring compliance with federal requirements.

CRS Goals

Alignment with NDOT’s Mission and Strategic Agency Goals

As demonstrated by the CRS goals below and the strategies presented later in the document, the CRS supports NDOT’s mission of providing the best possible statewide transportation system for the movement of people and goods. Additionally, the CRS aligns with NDOT’s strategic goals of Safety; Fiscal Responsibility; Environmental Stewardship; Project Delivery; Asset Management; Mobility; Communication, Coordination, Collaboration, and Cooperation; and Workforce Development.

Carbon Reduction Strategy Goals

NDOT’s CRS goals are outlined below. These goals guided the development of the CRS, the use of CRP funds, and CRS implementation activities. They were developed during a facilitated meeting of key NDOT staff on June 15th, 2023 (Figure 3).



Figure 3. Key NDOT Staff Developed Tailored Goals for NDOT’s CRS



Maximize Benefits

- Prioritize projects with multiple co-benefits across NDOT’s strategic goals to improve overall transportation system performance.



Reduce Carbon Emissions

- Show progress in carbon reduction at both the transportation system level and within the agency.
- Reduce transportation’s contribution to carbon emissions through system strategies such as:
 - Advanced traffic management, congestion management, and intelligent transportation systems (ITS)
 - Multimodal transportation
 - Support for electric vehicles (EVs) and other low carbon fuels through charging station deployments and facilitating access to alternative fuels

- Reduce NDOT’s contribution to carbon emissions through agency strategies such as:
 - Use of sustainable construction materials and methods
 - Energy efficient streetlights and traffic controls
 - Energy efficient agency buildings and indoor lighting
 - Use of alternative fuel vehicles in the agency fleet



Invest 100% of Funds

- In the short term, focus on immediately deliverable projects to ensure beneficial use of federal funds and prevent lapses.
- In the long term, work collaboratively and proactively to program CRP funds for beneficial use.



Promote Equity

- Ensure benefits from federal investments accrue to disadvantaged areas and meet federal requirements.



Use Established Methods and Practices

- Adopt strategies that are practical, readily implemented, and have previously proven successful.
- Prioritize the use of pre-approved methods or data to demonstrate carbon reduction.



Engage Stakeholders

- Engage and educate stakeholders and the general public through a variety of mechanisms including regular updates, annual reporting, and in person engagement.

NDOT's Recycled Paving Materials

NDOT has followed the industry standard in utilizing sustainable materials for highway construction, aligning perfectly with the department's carbon reduction goals. NDOT's commitment to minimizing the carbon footprint of its construction program has been evident through its long-term use of Supplementary Cementitious Materials (SCMs) like Fly Ash, slag, and calcinated clay in Portland Cement Concrete since the early 2000's. These SCMs not only make concrete more durable but also substantially reduce the carbon emissions associated with cement production.

Further displaying NDOT's commitment is the department's strategic use of Recycled Asphalt Pavement (RAP). Since 2006, NDOT has implemented high RAP mixes, thus lessening the demand for new asphalt binder and aggregate—minimizing both costs and environmental impact. Another laudable practice is the mandated use of 100% Warm Mix Asphalt (WMA) additives, which significantly reduce the energy needed for asphalt production and compaction. The national average for raw material post-consumer recycled content is 22%, and NDOT is committed to meet this trend and exceed it where appropriate. These practices position NDOT as a sustainable highway constructor and provide a foundation for continued reduction of carbon use in the state.

II. Approach to Developing the CRS and Identifying Strategies

Foundational Research

The development of NDOT's CRS was informed by comprehensive foundational research that included (1) examination of relevant state, local, and regional government plans in Nebraska, and (2) evaluation of carbon reduction practices in, and interviews with, comparable and exhaustive-practice states.

Review of Related Plans and Studies

The review of related state plans and studies provided a comprehensive understanding of the state's transportation infrastructure, plans for its development, and opportunities to reduce carbon emissions in the transportation sector. Similarly, the review of local and regional plans provided a regional perspective on transportation planning, related initiatives, and opportunities.

Details on each of the reviewed plans and their relevance to carbon reduction are presented on the pages that follow. Many of the reviewed plans informed or were informed by other plans (Figure 4):

- The Long-Range Transportation Plan (LRTP) and Regional Transportation Plans (RTPs) centralize planning efforts to present a comprehensive look at the transportation system at the state or regional level, respectively. The RTPs are developed by the four MPOs in the state: the Metropolitan Area Planning Agency (MAPA) in the Omaha-Council Bluffs region; the Lincoln Metropolitan Planning Organization (Lincoln MPO); the Grand Island Area Metropolitan Planning Organization (GIAMPO); and the Siouxland Interstate Metropolitan Planning Council (SIMPCO). The RTPs are typically informed by statewide plans, including the LRTP, Strategic Highway Safety Plan (SHSP), and Freight Plan. Specific studies such as the Metro Area Travel Improvement Study (MTIS) were conducted for regionally local multi-modal planning.
- The Program Area plans (SHSP, Transportation Systems Management and Operations (TSMO), Transportation Asset Management Plan (TAMP), and Freight Plan) identify needs, set performance measures, and enumerate priorities. The Program Area plans are then used to develop Program and Service Delivery Plans (such as the Highway Safety Improvement Plan (HSIP)), which outline design and delivery products and processes.
- The Statewide Transportation Improvement Program (STIP) and the Regional Transportation Improvement Programs (TIPs) identify projects by type and include associated financial information. The projects identified in the STIP and TIPs are linked to the LRTP and RTPs through performance-based resource allocation.
- Other related plans in the MAPA Heartland 2050 Vision, the Metro Area Travel Improvement Study (MTIS), and the Federal Funds Purchase Program (FFPP).

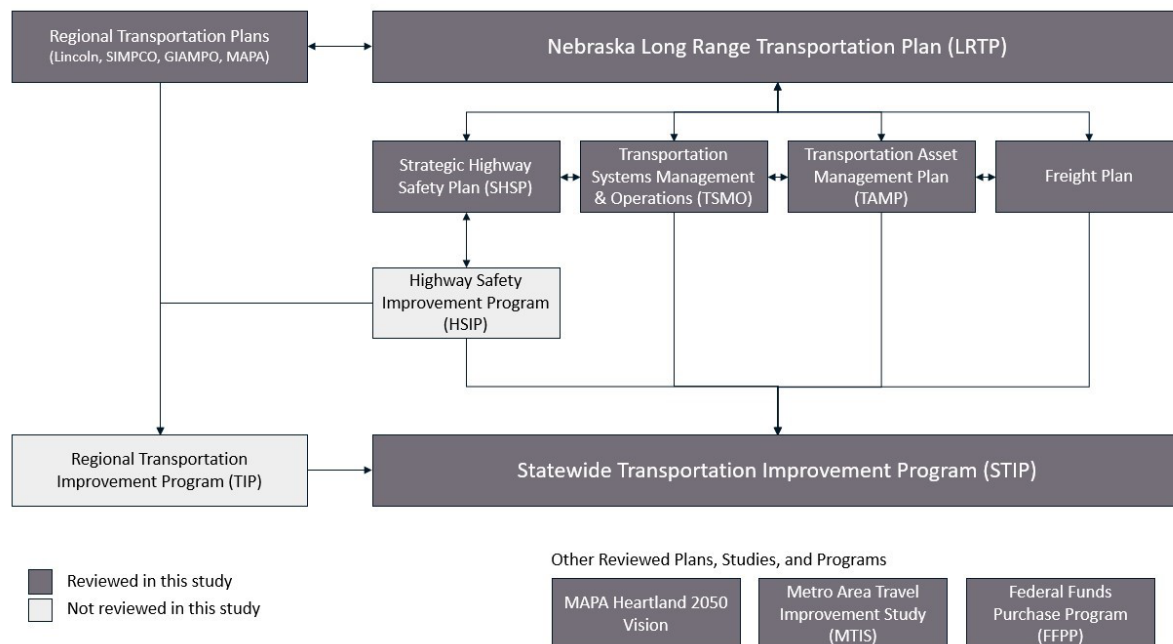


Figure 4. Connections Between Relevant Plans and Studies

The reviewed plans incorporated carbon reduction in trends analyses, project descriptions, and strategic direction. Micromobility expansion, EV adoption, and active transportation use are identified as trends that have led to a reduction in carbon emissions. Shared-use fleets of bikes and scooters have become a popular form of micromobility, particularly in urban areas. EVs also present an opportunity to reduce emissions from personal vehicles. Private-public partnerships can be instrumental in developing the supporting charging infrastructure that is critical to successful EV adoption. Similarly, partnerships with health departments, schools, and nonprofit organizations have proved successful for programs that encourage active transportation and promote pedestrian and cyclist safety. The reviewed plans identified other projects that have the potential to reduce carbon emissions including alternative fuel corridors, alternative fuel vehicles, sustainable construction materials, projects that enhance multimodal connectivity, intermodal facilities, and complete street programs. Many plans incorporated carbon reduction into the strategic direction. An inventory of carbon-reduction-related goals, objectives, strategies, performance measures, and project scoring criteria from the reviewed plans can be found in Appendix B.

Statewide Plans and Studies

Nebraska Long Range Transportation Plan

Nebraska’s 2040 Statewide Transportation Plan (STP)¹³ was developed in 2020 through a collaborative process. The 2040 STP is a statewide transportation planning document that defines methods for measuring and monitoring progress toward plan goals and objectives. The 2040 STP identifies Nebraska’s transportation priorities, strengths, and challenges; outlines goals,

¹³ <https://dot.nebraska.gov/2040-ndot/>

objectives, and strategies that address Nebraska’s transportation priorities and challenges; and provides direction for Nebraska’s transportation policies for the next 20 years.

Carbon emission reduction opportunities and initiatives include the following:

- **Population Growth:** Urban and rural population growth will have an impact on emissions and increase the need for multimodal transportation options. The aging population growth will also increase the need for non-highway transportation options.
- **Micromobility Growth:** Shared-use fleets of bikes and e-scooters are becoming increasingly popular, although they currently only represent a small portion of trips.

Strategic Highway Safety Plan

NDOT’s most recent SHSP¹⁴, released in 2022, provides guidance for the 2022-2026 planning period. The SHSP continues NDOT’s decade-long mission to reach zero fatalities on Nebraska roads. The plan includes safety-focused goals, strategies, and critical emphasis areas, all of which are informed by data analysis. The critical emphasis areas identify opportunities for both individuals and agencies to take actions that will help reduce roadway fatalities.

Encouraging the use of alternative modes of transportation such as walking, biking, and public transportation is important in carbon reduction strategies. In particular, this could be incentivized through vulnerable road users’ safety improvement programs. The 2022 plan specifically identifies reducing non-motorist pedestrian and bicycle crashes as a critical emphasis area.

Several local agencies were awarded 2022 Safe Streets for All (SS4A) funding such as MAPA, City of Madison, City of North Platte, City of Lincoln, City of Beatrice, and the City of Sidney.

Transportation Systems Management and Operations Strategic Plan

The 2021 TSMO Strategic Plan guides NDOT’s TSMO Program from 2021 to 2030. The TSMO Strategic Plan sets a vision, provides a framework to guide planning, identifies issues to consider, and recommends investments for implementation.

In regard to carbon reduction, the TSMO highlights the need to maintain awareness on emerging opportunities such as EV regulation and shared-use mobility services and using this awareness to inform decisions on investment priorities and potential technology pilot projects. The plan also identifies the need to prepare for EVs and provide charging station information by coordinating with public and private partners.

Transportation Asset Management Plan

The 2022 NDOT TAMP describes current asset management practices and processes that support and guide decisions for project development and delivery. Section 7.10 “Sustainability at the NDOT” specifically outlines how NDOT has reduced the use of materials with a high carbon footprint in favor of more sustainable construction materials.

Carbon emission reduction opportunities and initiatives include the following:

- **Portland Cement Concrete and Supplementary Cementitious Materials (SCMs):** NDOT has required the use of SCMs for Portland Cement Concrete pavement and structures since

¹⁴ <https://dot.nebraska.gov/media/ozwcsbj3/2022-2026-nebraska-shsp.pdf>

the early 2000's. SCMs include Fly Ash (a by-product of coal combustion), slag (a by-product of steel manufacturing), and calcined clay. SCMs reduce the amount of cement required to produce concrete, resulting in a lower carbon footprint as well as a more durable and long-lasting concrete.

- **Recycled Asphalt Pavement (RAP):** NDOT began widespread use of high RAP mixes in 2006. Using RAP reduces the needed amount of asphalt binder (derived from fossil fuels) as well as new aggregate (and its requisite mining, processing, and trucking).
- **Warm Mix Asphalt:** NDOT encourages the use of Warm Mix Asphalt additives which reduce the energy needed to produce asphalt and compact it.

Freight Plan

The Freight Plan examines Nebraska's industry drivers of goods movement, the impact of supply chains on transportation system condition and performance, and the link between land use, infrastructure, economic development, and workforce needs. In addition to technical analysis, the plan was developed through extensive engagement with the public and stakeholders. The plan is a resource for NDOT and its partners to develop policies, programs, and projects that can reduce costs and help attract and retain its critical industries.

The Freight Plan acknowledges the MAP-21 freight goal of "Reduce the environmental impacts of freight movement on the national freight network." It also acknowledges the effects of freight transportation on GHG emissions and air quality, and considers those impacts in project evaluation and planning. The plan identifies the following opportunities that have an impact on carbon reduction:

- The National Electric Vehicle Program (NEVI) will be used to acquire, install, and maintain EV infrastructure.
- Charging and Refueling Infrastructure Grants would support the build-out of the identified Alternative Fuel Corridors in the state.
- The Surface Transportation Block Grant now includes vehicle charging infrastructure.
- The Congestion Mitigation and Air Quality Improvement Program (CMAQ) now allows for funds to be used for micromobility and purchase of medium- or heavy-duty zero emission vehicles and charging equipment.
- The Reducing Truck Emissions at Ports Program funds electrification and emerging technology efforts at ports to reduce emissions from idling trucks.

Statewide Transportation Improvement Program

NDOT's Statewide Transportation Improvement Plan (STIP)¹⁵ includes financial information, project listings, and project types. Performance management has been a focus for NDOT since the passage of federal transportation legislation in 2015 and 2021, which emphasized a performance-based approach for transportation planning and increased investments for new infrastructure. The STIP reduces carbon emissions by funding projects that support advanced traffic management, congestion management, and intelligent transportation systems (ITS);

¹⁵ <https://dot.nebraska.gov/projects/publications/stip/>

promote the use of multimodal transportation including public transit, bicycling, and walking; and advance other low-carbon transportation options such as EVs.

The STIP references air quality measures established in the Transportation Performance Management program for CMAQ, but Nebraska does not calculate or report on this measure since it has no non-attainment issues. Performance measurements of Infrastructure Condition (Performance Measure #2) and System Reliability and Freight Movement (Performance Measure #3) support the national goals set by the federal aid highway program. More specifically for the CRS, these performance measures support the “Environmental Sustainability” goal to “enhance the performance of the transportation system while protecting and enhancing the natural environment.”

Regional Transportation Plans

MAPA 2050 Long Range Transportation Plan

MAPA 2050 LRTP¹⁶ is a 30-year vision for the future of transportation in the Omaha-Council Bluffs region. It was developed in harmony with Heartland 2050, ConnectGO, and the other planning initiatives undertaken in the region in recent years and much of the analysis included in the plan was done through the Metropolitan Travel Improvement Study (MTIS). The four goals guiding the LRTP are as follows:

- (1) Access to Opportunity
- (2) Talent Attraction and Retention
- (3) Economic Growth Throughout the Region
- (4) Stewardship of the Transportation System

One important strategy MAPA investigated for reducing harmful emissions from the transportation sector is the electrification of vehicles. During the last five years MAPA has taken part in several successful efforts to expand the number of EV charging stations around the region. Many of these efforts have focused on cooperative purchases of EV charging infrastructure. The effort supports the Nebraska Clean Energy Alliance's efforts to build a network of charging stations.

Additionally, MAPA was successful in securing the designation of US-6 from Council Bluffs to Gretna as an Alternative Fuel Corridor through FHWA. These corridors are part of the national network of charging infrastructure along the NHS and provide more attention to the importance of alternative fuels to the transportation system.

MAPA has a Transportation Incident Management Plan¹⁷ to address incidents that lead to congestion and increased GHG emissions. The goal is to improve traffic flow and reliability. The LRTP shows MAPA is eager to work with other major employers to reduce demand for single occupancy vehicles, to “close the gap” illustrated in Figure 5, based on a survey of 7,000 area employees. Two activities supporting mode shift to lower carbon options are:

¹⁶ <https://mapacog.org/reports/lrtp-2050/>

¹⁷ <https://mapacog.org/projects/tim/>

- Address traffic congestion and reduce single-occupancy vehicle usage by partnering with private sector organizations like Omaha Metro Transit and bikeshare programs. Statewide programs like vanpooling and carpooling are also being promoted.
- Invest in active mobility plans, including biking, walking, and trail expansion, to make transportation more people-centered and reduce reliance on cars.

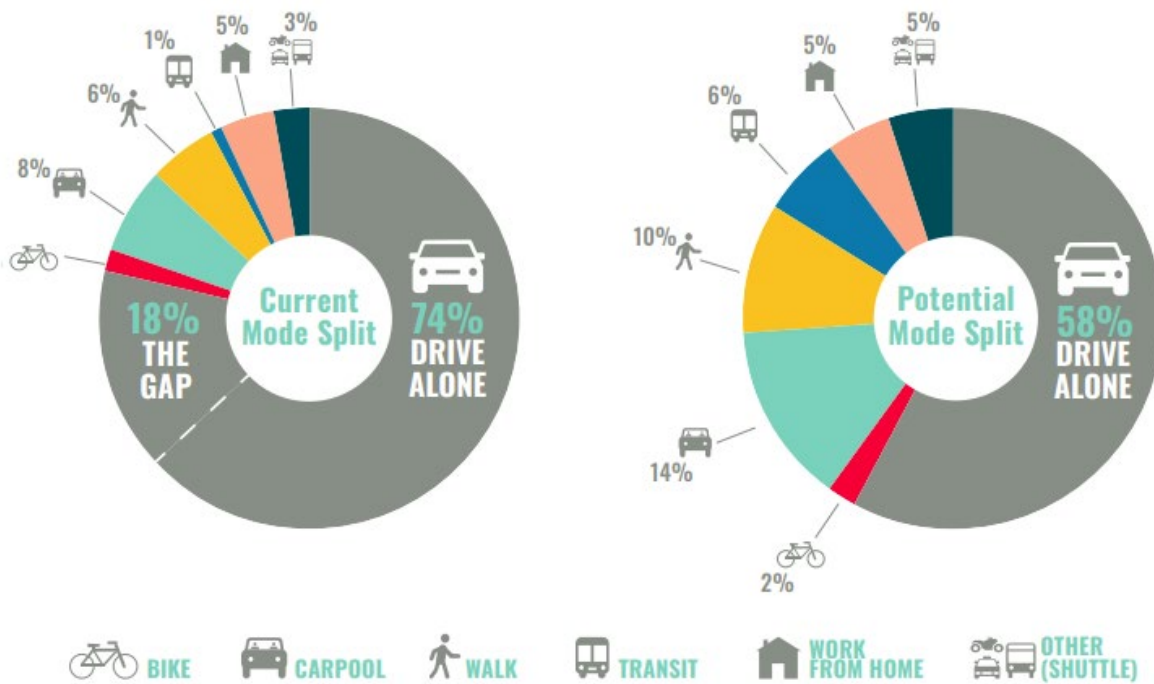


Figure 5. Current and Potential Mode Split (MAPA LRTP)

Lincoln MPO 2050 Long Range Transportation Plan

The Lincoln MPO's 2050 LRTP¹⁸ provides a foundation for transportation planning between 2021 and 2050. It lays out goals, objectives, and strategies to meet the community's vision for the future. The recommendations identified in the 2050 LRTP were developed based on an evaluation of the multimodal transportation system and public input. The transportation planning process is a collaborative effort between the City of Lincoln, Lancaster County, NDOT, StarTran transit and other agencies. The 2050 LRTP was developed in coordination with PlanForward, the Lincoln-Lancaster 2050 Comprehensive Plan.

One focus area of the 2050 LRTP is Transportation and the Environment. Lincoln MPO notes that it will incorporate environmental stewardship, sustainability, and resiliency into transportation decisions and investments.

Carbon emission reduction opportunities and initiatives include the following:

¹⁸ <https://www.lincoln.ne.gov/City/Departments/Planning-Department/MPO/LRTP>

- ***EV Adoption.*** Seventeen public electric charging stations are available in Lincoln. StarTran added six new electric buses to its fleet and a new charging station was added. StarTran now has 10 electric buses, representing about 10% of the fleet.
- ***Transit and Active Transportation Initiatives:***
 - ***Complete Streets:*** The City of Lincoln adopted a Complete Streets Policy through an Executive Order/Administrative Regulation in 2013. As part of this effort, streets are identified as best candidates for improvements that accommodate multiple travel mode choices to develop a network of complete streets for the community.
 - ***Micromobility:*** Lincoln has two shared micromobility programs that provide low-cost transportation alternatives compared to personal vehicle ownership and use: BikeLNK and ScooterLNK. BikeLNK, Lincoln’s bikeshare program has 21 docking stations that support 105 traditional bikes and 26 electric bikes (e-bikes).
 - ***Multimodal Transportation Center:*** The MMTC would function as a bus transfer center, StarTran administrative office, and a mobility hub. It would provide a high level amenity for StarTran bus riders, bicyclists who desire to use transit when they travel, pedestrians as an information center and travel hub, and other transportation providers.
 - ***Bus Rapid Transit (BRT):*** Study the opportunity for BRT in high use corridors such as O Street and 27th Street.
 - ***Alternative Fuel Types:*** Consideration of different fuel types and propulsion systems such as electric buses as a means of reducing GHG emissions and lowering fuel costs.
 - ***Light Rail:*** Study of the potential for using existing rail corridors (i.e., Highway 2 and Cornhusker Highway) for light rail.
- ***Green Light Lincoln Program.*** Upgrades and replacement of existing traffic signal system and equipment (i.e., new signal system management system hardware/software, new intersection detection systems, new signal displays, new signal phasing alternatives, ITS deployment, corridor signal optimization program, traffic monitoring, incident management improvement). This program has saved 1.2 million gallons of fuel and 111,000 kilograms of emissions.

GIAMPO 2045 Long Range Transportation Plan

GIAMPO’s 2045 LRTP¹⁹ is a 25-year plan that guides transportation system decision-making and provides a list of transportation projects that meet future transportation needs. The Plan was developed from a combination of a current transportation system operations technical analysis, a forecast of future conditions, and public input. The 2045 LRTP includes strategies for achieving regional goals, a prioritized list of projects based on anticipated funding, results of technical analyses, and community preferences.

Carbon emission reduction opportunities and initiatives include the following:

- ***Central Nebraska Transload (CNT) Intermodal Freight Facility Expansion:*** CNT provides truck-to-rail and rail-to-truck transloading services, which bolster regional supply chains through increased efficiency owing to freight consolidation. Freight consolidation also

¹⁹ <https://www.qi2045.mplshdrshared.com/>

reduces long-haul trips, resulting in less wear on highway pavement, lower freight truck emissions, and improved safety on the region's roadways.

- **Transit Development Plan:** CRANE Public Transit completed this transit study for the Grand Island area in February 2023, which recommends the potential implementation of enhanced service options – extended hours, expanded service days, and same day service. These potential enhancements to the current transit service would occur in a phased approach based on triggers such as partnerships with employment/education facilities and funding opportunities.
- **Fiscally Constrained Bicycle and Pedestrian Projects:** The following projects identify opportunities for potential projects that could be incorporated into the CRP.
 - Capital Ave Trail to Eagle Scout Park Connection
 - Trail between Cedar Hills Park and the new medical center, and Stuhr Trail / Riverway Trail
 - Connection between Shoemaker Trail and Cedar Hills Park
 - State Fair Boulevard / Bellwood Drive Trails
 - Oak Street Bike Boulevard
 - NW High School to State Street Trail Connection
 - Stolley Park to LE Ray Park Trail
 - South Locust Street Trails
 - Claude Avenue Trail from Faidley Ave to Capital Street
 - Grade separation and pedestrian improvements at Broadwell Ave / UP railroad

SIMPCO 2045 Long Range Transportation Plan

The 2045 SIMPCO LRTP²⁰ is a resource for planning safe and efficient multimodal transportation improvements. This plan addresses existing transportation system deficiencies, projects future system demand, and identifies projects and policies that can preserve and enhance mobility.

Carbon emission reduction opportunities and initiatives include the following:

- **Fleet Transition.** The Sioux City Transit System (SCTS) is applying for a grant for a new hybrid electric bus and aims to replace all diesel buses with electric buses by 2045. The City is actively seeking funding to build a new Transit Maintenance and Storage Facility, which would include provisions for electric buses, on Hawkeye Drive within the next five years. Transit is working with FTA Region VII staff to implement the project.
- **EVs.** The city of South Sioux City has begun utilizing EVs for staff cars. There are currently four electric fueling stations in South Sioux City and two in central Sioux City. In addition to reducing emissions, they hope that this initiative will encourage other residents to consider EVs. MidAmerican Energy Company has initiated an EV Charging Network Program to incentivize businesses and nonresidential community partners to serve as host sites for EV fast-charging stations.
- **Active Transportation Initiatives:**
 - SIMPCO Siouxland District Health Department (SDHD) Partnership: SIMPCO works with SDHD on mutual goals related to walking, bicycling, and creating healthy and safe environments. SIMPCO and SDHD work on a variety of committees together

²⁰ <https://simpc.org/divisions/transportation-planning/long-range-transportation-plans-lrtp/>

(i.e., Healthy Partners, Bicycle and Pedestrian Roundtable, the Sioux City Active Transportation Committee, Safe Routes to School Committee, and the All Abilities Health and Wellness Collation).

- *Bicycle Lanes*: There is one existing bike lane, three proposed bike lanes, and about six miles of proposed shared roadway. In 2020, the Sioux City metro designated its first official bicycle lane on Leech Ave. One bicycle lane was added as part of the corridor reconstruction project and offers a designated bicycle path on the roadway; additional bike lanes will be added.
- *Bike and Pedestrian Roundtable (BPR)*: The BRP hopes to obtain bicycle friendly community status for jurisdictions within the SIMPCO MPO, work with local stakeholders to improve bicycle and pedestrian facilities, guide a Metropolitan Active Transportation Study, promote the use and expansion of the MPO area bicycle and pedestrian facilities, set up trail counters and provide data, create an accessible multi-purpose trail system in residential areas, and work with Sioux City Active Transportation Committee to install bike lanes throughout the metro area.
- *Sioux City Active Transportation Advisory Committee (ATAC)*: In 2019 the City of Sioux City created the ATAC based on a recommendation from a 2015 project with the University of Iowa. The Sioux City Active Transportation Plan was designed to reduce and overcome barriers to walking and bicycling, providing safe and accessible connections for pedestrians and bicyclists, and encourage community participation in active transportation.
- *Complete Streets*: Complete streets policies have been adopted by South Sioux City, Sioux City, Sergeant Bluff, and the Iowa DOT. Related projects include a trail-width sidewalks within a commercial development along Floyd Boulevard in Sioux City.

Other Plans and Studies

Heartland 2050 Vision

Heartland 2050²¹ is a community vibrancy vision and plan for the Omaha-Council Bluffs metro region. Carbon emission reduction opportunities and initiatives include the expansion of Heartland B-Cycle, which introduced five bike sharing stations in Council Bluffs and added 14 bike sharing stations to the existing Omaha network (31 stations in total).

Metro Area Travel Improvement Study

The Metro Area Travel Improvement Study (MTIS)²² is a collaborative effort between NDOT and MAPA conducted between 2015 and 2019 in coordination with other regional planning studies and projects. The study recognizes future interstate and freeway system needs are intrinsically linked with arterial, local roads, and transit system needs and investment decisions. This approach helped identify how the transportation network could best meet the long-term needs of the community and take advantage of innovative strategies to guide funding decisions. MTIS achieves the following:

1. Creates a comprehensive, multi-modal plan for the interstate and major roadways in the region.

²¹ <https://heartland2050.org/>

²² <https://mapacog.org/projects/metropolitan-travel-improvement-study-mtis/>

2. Prioritizes projects for short-term, mid-term, and long-term.
3. Considers shortfalls in existing sources of local, state, and federal funding.

Federal Funds Purchase Program

The Federal Funds Purchase Program (FFPP)²³ allows NDOT to purchase federal funds from Local Public Agencies (LPAs) in exchange for state cash, which allows LPAs to tailor projects to better meet their needs. This program is used extensively by NDOT by exchanging these federal funds with state funds, which is much easier for local agencies to use on local projects. Eligible activities include:

- **Road Projects:** construction, reconstruction, maintenance, or repair of public highways, streets, roads or bridges and facilities, appurtenances, and roadway structures.
- **Bridge Projects:** construction, reconstruction, improvements, repair, or maintenance (projects that preserve, restore, or correct major roadway or bridge condition) of LPA public road bridges.
- **Other Projects:** erosion protection, sidewalk, ADA ramps, curb repair, gutter repair, and storm sewer repair.

Interviews with Other States

In order to determine the best approaches for reducing carbon emissions in Nebraska's transportation sector, carbon reduction practices were researched in both comparable and exhaustive-practice states. Following evaluation of this research, interviews were conducted with DOT staff working on carbon reduction. Through these interviews, relationships with key contacts were developed, lessons learned, and best practices compiled, implementation challenges identified, and performance evaluation approaches shared.

Peer states were identified that have similar transportation systems, urban/rural contexts, and geographies as demonstrated by the following performance measures:

- Population
- Percent Urban Lane Miles
- Public Road Length Miles
- Vehicle Miles Traveled
- Interstate Travel Time Reliability
- Non-Interstate Travel Time Reliability
- Truck Travel Time Reliability

The following peer states were identified, researched, and interviewed (Figure 6):

- Iowa
- Kansas
- New Mexico

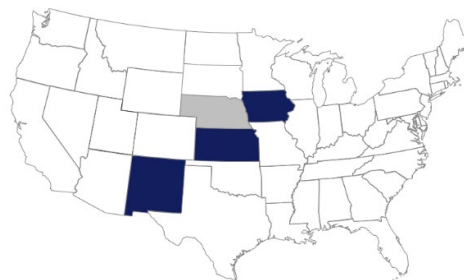


Figure 6. Three Peer States

²³ <https://dot.nebraska.gov/business-center/lpa/projects/programs/ffpp>

Exhaustive-practice states were identified based on their existing carbon reduction goals and climate action plans, recognizing that identifying "best practice" is difficult because different states may have different strengths, contexts, and challenges. The following exhaustive-practice states were identified, researched, and interviewed (Figure 7):

- Oregon
- Minnesota
- Vermont



Figure 7. Three Exhaustive-Practice States

Peer States

Iowa Department of Transportation

There is no department-level carbon reduction strategy at IDOT, but at the state level there are plans developed by other state agencies such as a climate change plan from 2008, an annual GHG inventory, and the governor's carbon sequestration task force. Iowa DOT is taking a streamlined approach to the CRS at first, trying to avoid the CRS becoming a programming document that needs to be updated. They do not plan to do any carbon reduction calculation for CRP funded projects and expect CRP funds to be mostly used on transit and bike/ped projects. The state DOT and MPOs have many existing plans and they are trying to synthesize the strategies from those plans into the CRS. Iowa DOT is giving the smaller MPOs that don't act as Transportation Management Areas (i.e., the "non-TMA MPOs") the authority to select projects and is not currently planning to conduct a call for projects in future years.

Kansas Department of Transportation

Kansas DOT has transferred approximately 50% of its fiscal year 2022 CRP funding but does not plan to transfer any funding for 2023. As Kansas DOT is in the early stages of developing carbon reduction strategies, they have recently engaged a consultant to assist in this process. External engagement will involve environmental groups as well as MPOs, and Kansas DOT recommends early engagement with MPOs to ensure their understanding of the program. Kansas DOT's focus areas include small projects in small communities, medium-sized projects, NEVI charging stations and community charging initiatives, and short line rail projects. To facilitate project selection, Kansas DOT will issue a call for projects for non-TMA MPOs, rather than having them program the funds. The CRP program is not part of Kansas DOT's local buy-back program.

New Mexico Department of Transportation

New Mexico DOT has developed an extensive 2024-2026 CRP "call for projects" process with accompanying program guide. The CRS will capture current initiatives and put all information in one place. It will act as New Mexico DOT's Climate Action Plan. It will cover three things:

- (1) Identification of immediate CRP projects
- (2) Carbon reduction efforts occurring in the state more broadly
- (3) How the program is set up to do future calls for projects

New Mexico DOT believes quantifying emissions reduction will be challenging. Local funding allocations based on population will be difficult for areas with minimal funds that are not enough

for a full project. Engagement efforts will focus on internal staff and a few key stakeholders. Very little public involvement is anticipated. The two TMA MPOs will be getting funding directly and have programming authority. For the three smaller MPOs, New Mexico DOT's interpretation is that New Mexico DOT can obligate those funds within the urban area. Their interpretation is that the standard TIP amendment process covers the required coordination. For other smaller urban areas, New Mexico DOT is programming the funding in the STIP which they believe counts as the required consultation.

Exhaustive-Practice States

Oregon Department of Transportation

Oregon DOT is looking to conduct a call for CRP projects for areas with a population less than 200,000. They are looking to do innovative projects but are challenged by lack of FHWA clarity on project eligibilities. Oregon DOT will evaluate projects based on criteria developed in consultation with MPOs. The criteria include climate benefits, local support, equity, innovation, and project readiness. Oregon DOT is concerned about project delivery but wants to take advantage of the opportunity to innovate. Oregon DOT will incorporate past planning efforts to develop the CRS, with the intention of developing a more strategic CRS for the four-year update. Like Nebraska DOT, Oregon DOT also hears rural interest for EV charging installations.

Minnesota Department of Transportation

In the initial years, Minnesota DOT's approach is to fund projects that have already been programmed and are expected to have a carbon reduction impact. Subsequently, the primary goal will shift towards maximizing carbon reduction. Minnesota DOT's CRS will adopt a comprehensive perspective on carbon reduction in Minnesota's transportation sector. While it may not identify specific projects, it will outline the types of projects that Minnesota DOT intends to explore. The document will describe the connections between various programs, initiatives, and documents related to climate reduction within the state of Minnesota, while also identifying any existing gaps. Minnesota DOT envisions the CRS as a living document that will be regularly updated to reflect ongoing efforts and developments.

Minnesota DOT is particularly interested in funding various project types, including transit, EV leasing, EV charging infrastructure, LED lighting, Transportation Alternatives projects to fill gaps, and snow fencing. To confirm eligible project types, Minnesota DOT has closely collaborated with the FHWA Division office. If the Division office is uncertain, the matter is escalated to FHWA headquarters, and they typically receive responses within a month. Minnesota DOT has interpreted the guidance from the FHWA to mean that smaller non-TMA MPOs should have authority in selecting projects.

For emissions reduction calculations, Minnesota DOT's CRS consultant will develop a simple toolkit to calculate the emissions reductions for different project types. Minnesota DOT is committed to conducting a robust stakeholder and public engagement process for the development of the CRS, involving transit agencies, MPOs, and rural transportation partners.

Vermont Agency of Transportation

Vermont Agency of Transportation (VTTrans) sees the CRS as a document that will inform broader approaches to meet legally binding statewide legislative requirements. Such approaches include

Vermont's climate action plan, which has specific reduction targets to be achieved by 2025, 2030, and 2050. Recognizing equity as a significant focus of the agency as a whole, VTrans is developing a comprehensive equity framework. This framework will ensure that equity considerations are integrated into the CRS and other transportation initiatives.

VTrans's priority for spending CRP funds is to maximize carbon reduction. Because of this, VTrans initial focus will be on electrification, particularly public charging stations and electrification of agency fleets, with additional strategies incorporated in future years. However, until the CRS is submitted, VTrans has decided not to allocate any CRP funds. Regarding the utilization of CRP funds, VTrans considers roundabouts as eligible project types.

Internal Engagement

Ongoing engagement was conducted between the core CRS development team and key NDOT divisions during CRS development. Part of this engagement included interviews with five divisions in March 2023. Fifteen staff members from the Program Management, Project Development, Operations, Roadway Design, and Local Assistance Divisions identified priorities, opportunities, and challenges to be considered in the CRS development process. A summary of the input collected at the time of the interviews is presented below.

Program Management

The Program Management Division leads programming of agency funds, development of the STIP, civil rights, and project scheduling.

- **Lapsing of funds:** CRP funding lapses as a group rather than by population-based allocation. NDOT is committed to the prevention of CRP funding lapse and to providing benefits to Justice40 disadvantaged communities. Therefore, NDOT wishes to maximize flexibility for itself and the MPOs. To avoid funding lapses, NDOT will maximize CRP funding transfers to other programs. NDOT plans to transfer the majority of the 35 percent of CRP funding that may be obligated in any area of the state to other eligible programs when CRP eligible projects are not available for investment.
- **Transfers:** MPOs are apportioned a relatively small amount of CRP funding and are in the process of identifying CRP projects that can be readily delivered and meeting Justice40 requirements.
- **Justice40:** As directed by Executive Order 14008 (Tackling the Climate Crisis at Home and Abroad), 40 percent of project benefits must accrue to historically disadvantaged areas. NDOT has begun to identify possible CRP projects and cross-referenced them with designated disadvantaged census tracts.
- **MPO considerations:** MPO consultation is required for the CRS. NDOT will continue to coordinate with MPOs and include their perspective in programming considerations.
- **Project Prioritization:** NDOT's initial strategy for CRP investments include: (1) sustainable construction materials; (2) energy efficient street lighting and traffic control devices; (3) advanced transportation management, congestion management, and ITS; and (4) traffic monitoring, management, and control facility or programs.

Project Development

The Project Development Division leads project permitting, environmental services, air and noise studies, project scoping, location studies, and consulting agreements.

- **Emissions analysis:** NDOT is rarely required to complete air quality analyses. In lieu of project-level GHG emissions estimates, NDOT may prefer to include a pro-forma mention of carbon reduction estimates (e.g., “Typical carbon reduction from this project type is X amount.”)
- **Right of way requirements:** The CRS may present an opportunity to consider alternate types of roadside vegetation for carbon sequestration, but alternative uses of the ROW may have statutory restrictions in Nebraska.
- **Climate action plan:** Opportunities may exist to coordinate with NDEE on the new Climate Action Plan effort.

Operations

The Operations Division leads efforts related to NDOT fleet, facilities, ITS/Transportation Systems Management and Operations (TSMO).

- **Fleet:** Operations is researching hydrogen and EV for potential equipment purchases, but they have not yet developed a plan for purchase. NDOT has an existing practice of using biodiesel and occasionally ethanol.
- **Facilities:** Lots of existing efforts exist in NDOT facilities that lead to carbon reduction such as energy efficiency upgrades, but these efforts likely aren’t eligible for CRP funds.
- **ITS:** There are many ITS projects that will likely be eligible for funding. Spending funds can be challenging in ITS projects because systems engineering has to be completed first.

Roadway Design

The Roadway Design Division oversees all roadway design efforts for the agency.

- **Safety improvements:** NDOT calculates “unit costs” of safety improvements (e.g., rumble strips) as part of larger projects. NDOT is a leader in its use of roundabouts as a safety countermeasure. Roundabouts also have emissions benefits and are eligible for CRP funds.
- **Complete streets:** NDOT is currently involved in designing its Complete Streets strategy and is working with stakeholders from across the state.
- **Sustainable materials:** NDOT’s leading use of sustainable concrete and asphalt should be highlighted in the CRS.
- **Recycle badge:** NDOT has published a recycle badge on its title sheet for more than five years, so there is good documentation of those practices.

Local Assistance

The Local Assistance Division helps Nebraska’s Local Public Agencies build and maintain transportation assets by overseeing federal and state funds on behalf of those agencies.

- **MPO challenges:** MPOs may have difficulty finding projects that match the smaller funding amounts, spending funds only in the states from which they have been allocated and identifying existing projects already using federal funds to avoid having to rework

projects. NDOT may need to offer guidance for MPOs, especially Grand Island and Sioux City.

- **ITS projects:** MAPA should consider its large signal system upgrade project as a potential use for its CRP funds.
- **Other:** Local agencies typically use NDOT's standard specs for paving materials.

MPO Consultation

Introduction to Nebraska's MPOs and NDOT's Approach to Consultation

While MPO consultation is a mandatory CRS requirement (23 U.S.C. 175(d)(1)), NDOT viewed it as an opportunity to actively engage with Nebraska's MPOs in a collaborative exchange of ideas and information. From the outset, NDOT envisioned the development of a comprehensive CRS that would effectively showcase the diverse range of carbon reduction initiatives and efforts throughout the state's transportation system. The MPO consultation process conducted by NDOT played an important role in uncovering and highlighting supportive initiatives taking place within Nebraska's larger population centers. This section describes NDOT's MPO consultation process and highlights integral outcomes. Further details of MPO Consultation meetings are documented in Appendix C.

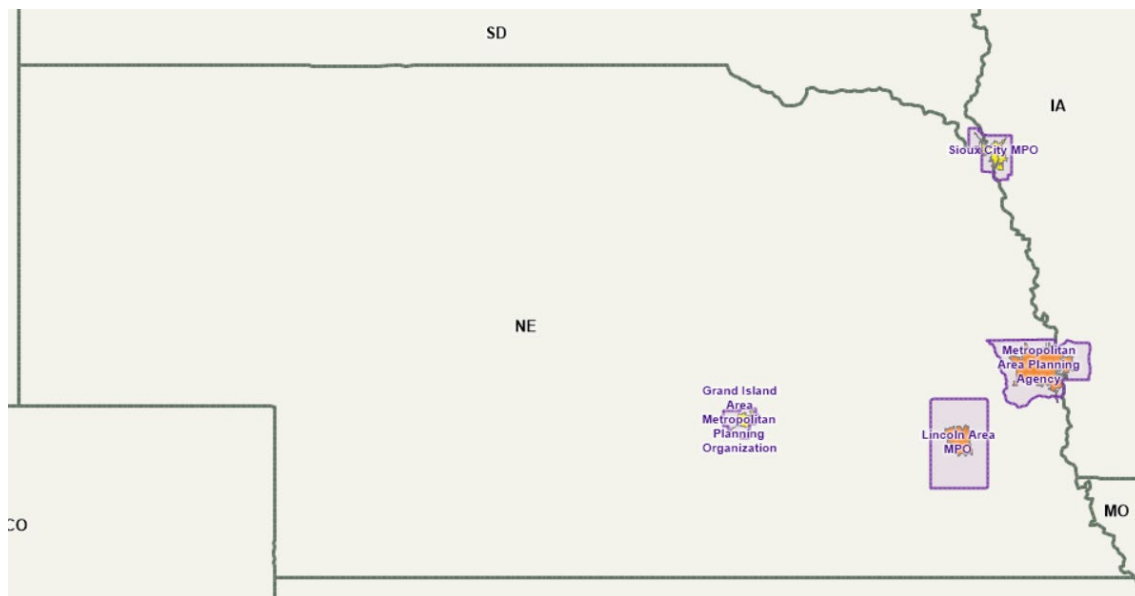


Figure 8. Map of Nebraska's Four MPOs²⁴

²⁴ <https://hepgis.fhwa.dot.gov/fhwagis/>

Nebraska has four metropolitan planning organizations MPOs (Figure 8). The **Metropolitan Area Planning Agency (MAPA)** which serves the Omaha-Council Bluffs Region (Figure 9) and the **Lincoln MPO** serving the Lincoln Capital Region (Figure 10) are both designated as Transportation Management Areas (TMAs) which grant these MPOs additional oversight responsibilities. This includes autonomy over their use of CRP funds.

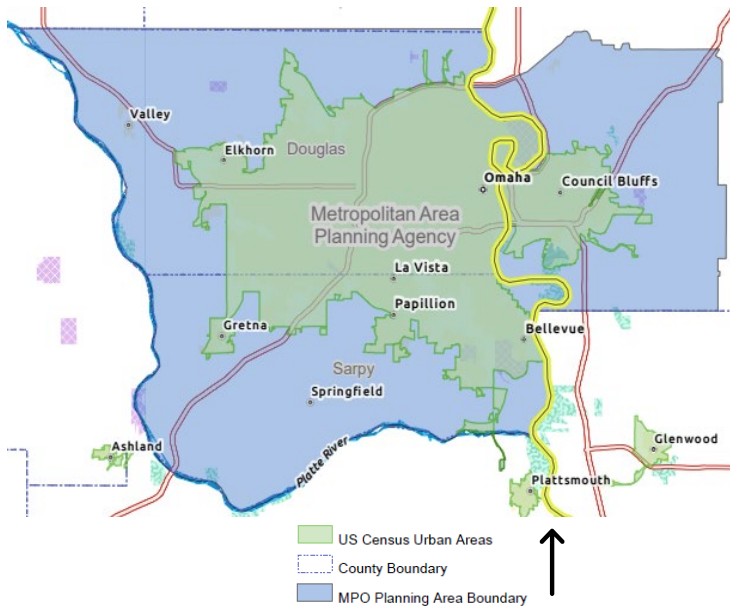


Figure 9. MAPA MPO Planning Area Boundary and Urbanized Area

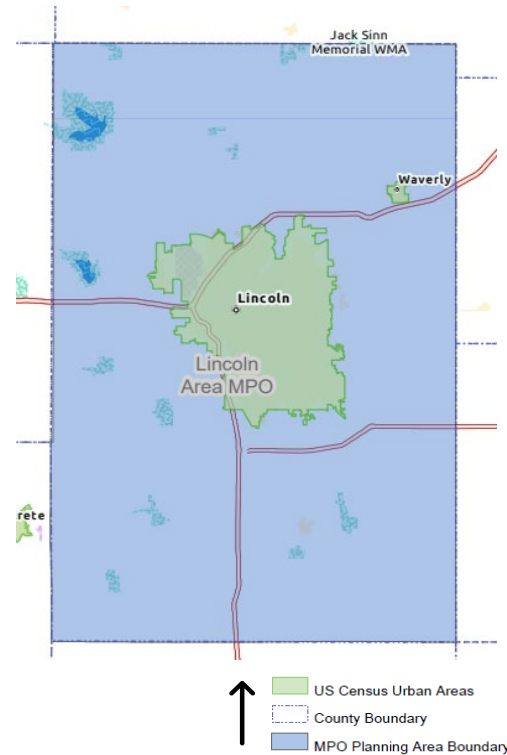


Figure 10. Lincoln MPO Planning Area Boundary and Urbanized Area

The two other MPOs – the **Grand Island area Metropolitan Planning Organization (GIAMPO)** (Figure 11) and the **Siouxland Interstate Metropolitan Planning Council (SIMPCO)** (Figure 12) – are designated as non-TMAs and therefore have less autonomy over suballocated CRP apportionments.

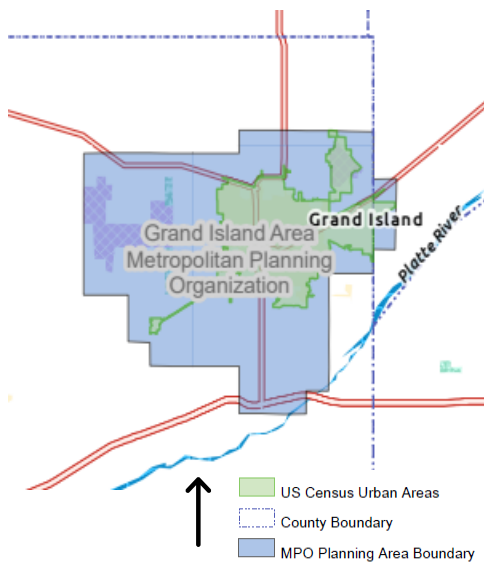


Figure 11. GIAMPO MPO Planning Area Boundary and Urbanized Area

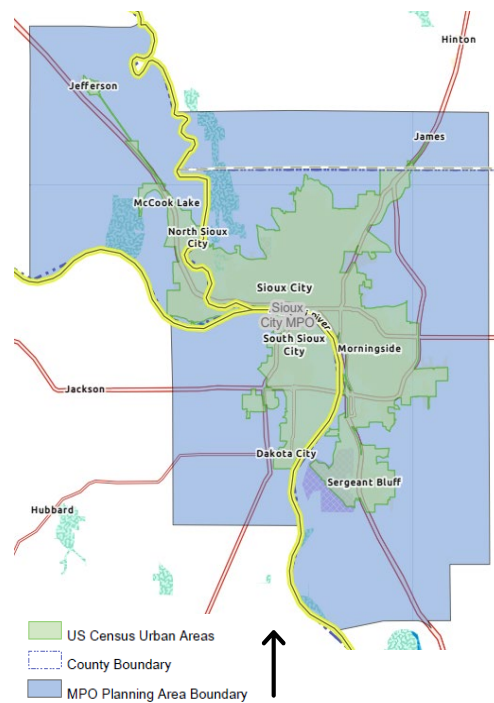


Figure 12. SIMPCO MPO Planning Area Boundary and Urbanized Area

These regional characteristics and designations are important considerations with respect to NDOT's tailored approach to CRP coordination, which is further discussed in subsequent sections. Despite these differences, NDOT uniformly consulted all MPOs throughout the CRS development process. This approach ensured that each MPO, regardless of size or geographic make-up, had equal opportunities to provide meaningful input.

CRS Kick-Off Meeting

The first meeting with representatives from the four MPOs was virtual and held on March 27, 2023. The purpose of this meeting was to orientate MPO representatives by providing them an overview of the following topics:

- NDOT's CRS project components include foundational research into related plans and studies, internal NDOT coordination, statewide stakeholder engagement, development of the CRS, and submitting the CRS to FHWA by November 15, 2023.
- CRP and CRS objectives and considerations such as the formula funding level over the next five years, breakdown of funding apportionments based on population areas, relationship to other federal priorities, and basic program requirements.
- The status of Nebraska's carbon emissions which have been rising over the past 30 years, with transportation second only to power generation.
- Opportunities to reduce carbon emissions which fall into two categories: (1) transportation system strategies that cover fuel economy, switching fuels, reducing vehicle miles traveled (VMT), and congestion management through operations and technology; and (2) agency activities including converting fleet vehicles, use of

recycled/sustainable construction materials, implementing energy efficient streetlights and traffic control devices, and energy efficient facilities improvements.

- The range of CRP project eligibilities and remaining uncertainties being coordinated with FHWA.
- NDOT's approach to CRP funding, which places a priority on reducing the risk of funds lapsing by targeting existing eligible projects already programmed in the STIP. NDOT also identified four eligible project types to be considered as the department's initial focus for use of CRP funds: (1) sustainable construction materials; (2) energy efficient street lighting and traffic control devices; (3) advanced transportation management, congestion management, and ITS; and (4) traffic monitoring, management, and control facility or programs.

Questionnaire

Following the kick-off meeting, MPO representatives were asked to respond to a questionnaire. Responses from the question supported NDOT's preparation for more in-depth discussions. The following questions were included in the questionnaire:

CRP Project Identification

- Can you identify eligible CRP projects in your TIP? Or are you having difficulty?
- Are there CRP eligible components of larger projects?
- Which projects might be easiest to deliver and before CRP funds lapse?
- Are there any projects that could benefit by supplementing with CRP funding?

CRS Strategy Development

- Which of your carbon reduction activities should NDOT highlight in the CRS?
- Are you hearing interest from your local partners?
- Do you have other ideas to apply CRP funding while meeting critical project delivery needs to avoid lapsing funds?
- What other questions do you have?

MPO Responses

Responses from this questionnaire helped NDOT focus on the unique challenges, opportunities, ideas, and questions expressed by each MPO. Responses are summarized below:

Challenges

- GIAMPO and SIMPCO expressed difficulty identifying CRP eligible projects especially given the small amount of annually apportioned CRP funding that they receive and the limited number of "federalized" projects.

Opportunities

- MAPA stated that their eligible needs far exceed funding opportunities including their apportioned CRP funds. These include existing Transportation Alternatives Program (TAP) projects, components of larger projects (e.g., bicycle/pedestrian infrastructure), easily deliverable projects (e.g., signal system upgrades), and projects to supplement with CRP funding.

- Lincoln MPO identified several trail and on-street bike projects and noted a range of supportive pedestrian and bicycle improvements around the proposed location of the StarTran Multimodal Transportation Center project.
- GIAMPO noted that the City of Grand Island submitted a project application for TAP funding but that this project could also be funded using CRP funds. They also identified CRP eligible components of the Broadwell Avenue Viaduct project including sidewalks and the possibility of energy efficient lighting.

Ideas

- To leverage Omaha's expanding bicycle network and address the City's hilly terrain, MAPA noted interest in an e-bike rebate program as a potential use for CRP funds. MAPA also outlined a range of carbon reduction activities, including transit improvements, trail enhancements, active mobility planning, travel demand management, and offsetting carbon through tree planting.
- Lincoln MPO provided many examples of how their efforts can help define carbon reduction strategies including alternative-fueled vehicles, traffic improvements, bike and scooter share programs, trail expansion, and EV charging infrastructure development.
- SIMPCO highlighted their efforts to support trail network development, bicycle, and pedestrian improvements, and expand transit services as ways they are reducing transportation carbon emissions.

Questions

- MAPA asked about NDOT's method to pursue energy efficient traffic signals such as adopting LEDs as a standard. MAPA was also curious about NDOT's CRP project selection process and if they came across other MPO CRP project selection examples.
- Lincoln MPO expressed concern over whether certain bicycle and pedestrian improvements would qualify for CRP funding such as a bicycle repair station and shower facilities for bicycle commuters.
- GIAMPO asked how the new Justice40 requirements would impact the use of CRP funds. They also asked about the eligibility of roundabouts, whether they could consolidate multiple years of CRP funding to put towards a single project, and if CRP funding was eligible through NDOT's Federal Funds Purchase Program (FFPP).
- SIMCPO inquired whether CRP funding could be used to support transit operations.

In-Depth Meetings

One-on-one consultation meetings were held between NDOT and each MPO on May 15th and 16th, 2023. The meetings with GIAMPO, Lincoln MPO, and MAPA were hosted by NDOT in-person, and the meeting with SIMPCO was virtual. The purpose of the meetings was to address the questions raised through the MPO questionnaire, collect additional questions that could be forwarded to FHWA, and to develop a deeper understanding of the driving forces behind the MPO's current carbon reduction activities.

A key development following the kickoff meeting was NDOT's decision to include the CRP funding apportionments for the GIAMPO and SIMPCO regions in the FFPP. While this relieved GIAMPO

and SIMPCO from the responsibility of programming CRP funding, NDOT would continue to apply CRP funding on state projects within those regions.

The meetings resulted in wide-ranging discussions covering many regional aspirations pursued by Nebraska’s MPOs. These discussions, highlighting key supportive carbon reducing initiatives and priorities, are summarized below.

GIAMPO May 15, 2023

Multimodal connectivity and accessibility hold significant importance in the GIAMPO region, prominently featured in GIAMPO’s 2045 LRTP. Trail projects like the JBS USA extension²⁵ are expanding the existing network, contributing to improved connectivity. GIAMPO’s Bike/Ped Master Plan identifies the community's strong desire to enhance walkability and bike-ability. During the planning process, the public expressed a keen interest in walking to destinations such as schools and public facilities, including the library.

GIAMPO's proposed pedestrian trail network (Figure 13) is strategically designed to serve key destinations, address gaps, minimize conflicts, and provide a safe separation from motor vehicle traffic. This emphasis not only ensures safer routes for students to travel independently between school and home but also encourages a shift away from motorized transportation, thereby reducing emissions.

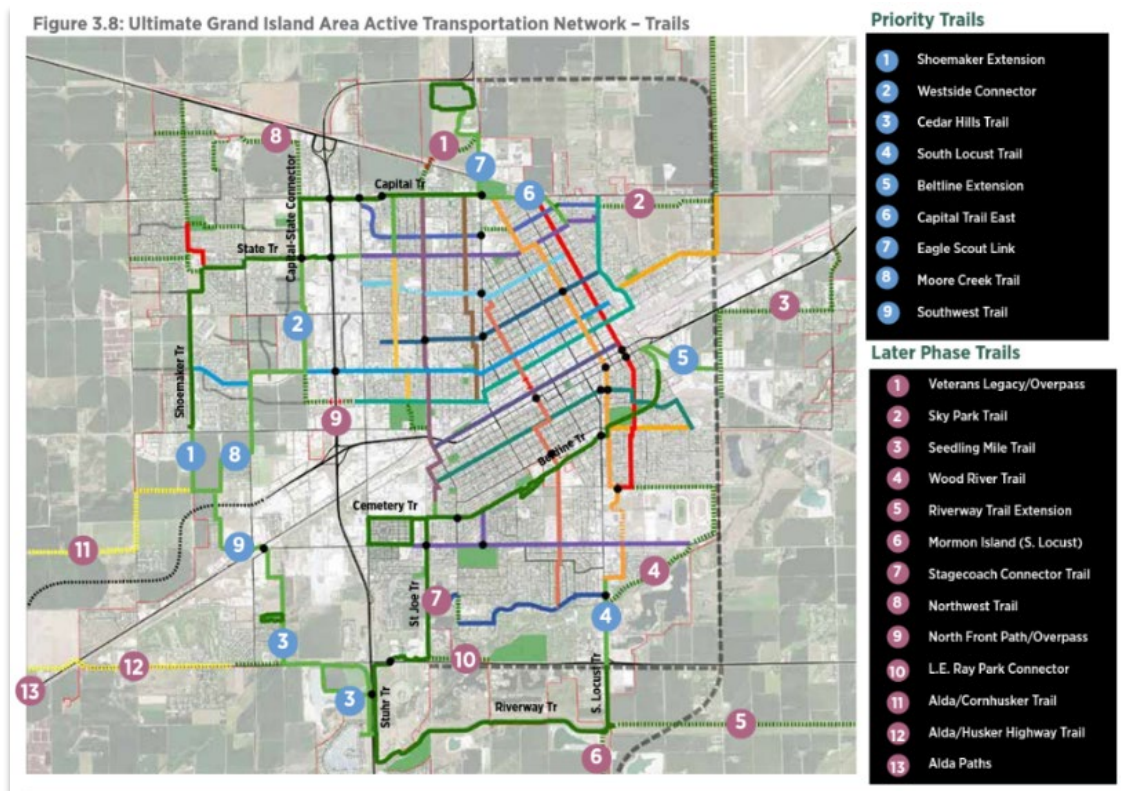


Figure 13. GIAMPO Bicycle and Pedestrian Master Plan - Trails Network Map

²⁵ <https://jbsfoodsgroup.com/articles/jbs-grand-island-breaks-ground-on-hike-and-bike-trail>

The Bike/Ped Master Plan also advocates for the construction of bike boulevards and bikeways that offer high-quality facilities to attract more people to choose cycling as their mode of transportation. The bicycle and pedestrian advisory committee that supported development of the Master Plan has been recently re-established as GIAMPO's non-motorized committee. This committee will advise GIAMPO on the prioritization of future projects and initiatives.

GIAMPO actively promotes the use of energy efficient lighting and traffic control devices in its projects. This initiative aligns with their 2045 LRTP environment and system resilience goals and objectives. Furthermore, GIAMPO strongly endorses the implementation of roundabouts through their Alternative Roadway Strategies, as outlined in their 2045 LRTP. Roundabouts serve multiple purposes such as enhancing safety, alleviating congestion, and reducing emissions.

MAPA May 15, 2023

Transportation demand management stands out as a priority for MAPA. They are actively exploring the commuting habits of the region's residents. Collaborations with private sector partners, and public agencies such as Omaha Metro Transit and bikeshare programs, are underway to broaden transportation choices. Notably, they have organized commuter challenges to engage the community in these efforts. Furthermore, MAPA is lending support to statewide programs, including NDOT's vanpool program and Iowa DOT's MetroRideshare carpooling platform.

MAPA is also embracing alternative fuels, particularly EVs. They are an active member of the Nebraska Clean Energy Alliance, a group focused on promoting EV adoption statewide. Collaborations with local power districts, Omaha Public Power District (OPPD) and Nebraska Public Power District (NPPD), have led to plans for an extensive network of EV charging stations. Ensuring the affordability and sustainability of these stations is a key consideration.

Traffic incident management is another critical area of focus for MAPA. Drawing inspiration from Iowa DOT's successful performance-based approach, they aim to replicate a similar model on the Nebraska side of the region. The rationale behind this effort is clear – incidents and construction activities contribute significantly to congestion and, subsequently, to increased carbon emissions.

The pursuit of mode shift is also evident in MAPA's plans. They are actively promoting biking, walking, and expanding the region's trail network. They encourage municipalities to seek funding opportunities through the TAP program to support active mobility initiatives. MAPA has real-time data sources like trail counters and Strava to measure progress in encouraging these sustainable modes of transportation.

MAPA recognizes the importance of closing gaps in the bicycle network (Figure 14) and enhancing the comfort of cyclists. Their collaboration with Park Omaha to manage the Heartland Bike Share system is a testament to this commitment. Through this partnership, they gain insights into real-time bikeshare and scooter usage, which informs their strategies.

Transit is an area where MAPA is making considered investments. Their future vision involves investing in additional Bus Rapid Transit (BRT) corridors to encourage the use of non-auto modes of transportation. Monitoring ridership data plays a crucial role in shaping these strategies.

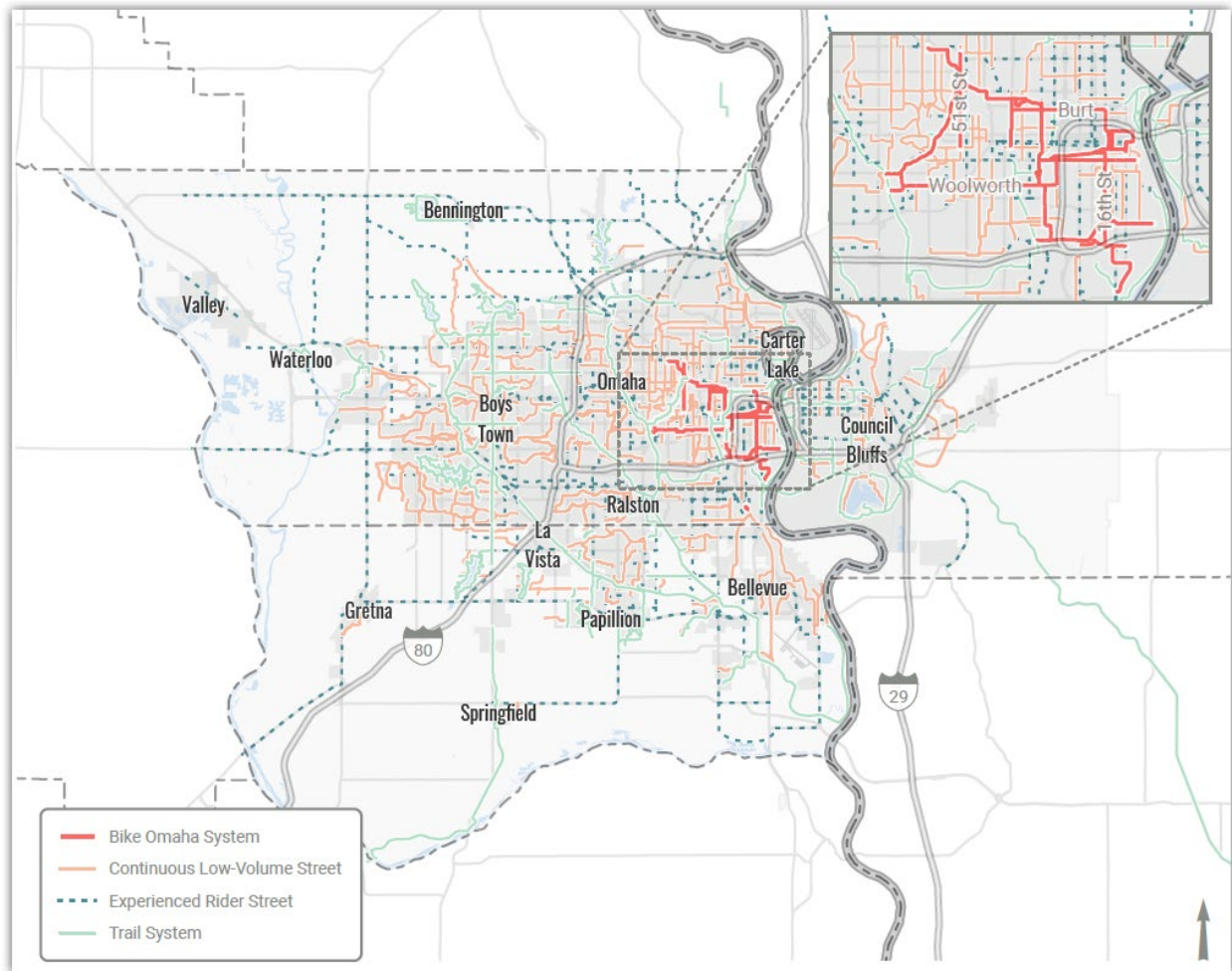


Figure 14. Metropolitan Area Bike Map (MAPA LRTP)

Lincoln MPO May 16, 2023

Lincoln MPO highlighted the transition of both the City of Lincoln’s municipal fleet and StarTran’s transit vehicles to the use of compressed natural gas (CNG), biodiesel, ethanol, and electricity. Notably, a new CNG refueling station is being developed and the city has been exploring the potential of renewable natural gas (RNG) derived from organic solids. These efforts have been impactful, with a significant portion of the StarTran fleet now running on renewable energy sources contributing to reduced emissions and a cleaner urban environment.

The "Green Light Lincoln" initiative has improved traffic systems with a focus on reducing congestion and enhancing air quality (Figure 15). A before and after analysis of this initiative has quantified a cost-benefit ratio of 17:1, underlining its effectiveness. The initiative includes reducing the frequency and severity of accidents, minimizing travel times, decreasing vehicle emissions and pollutants, reducing fuel consumption, improving traffic flow, and postponing the necessity for extensive street expansion projects which can lead to more carbon emissions.

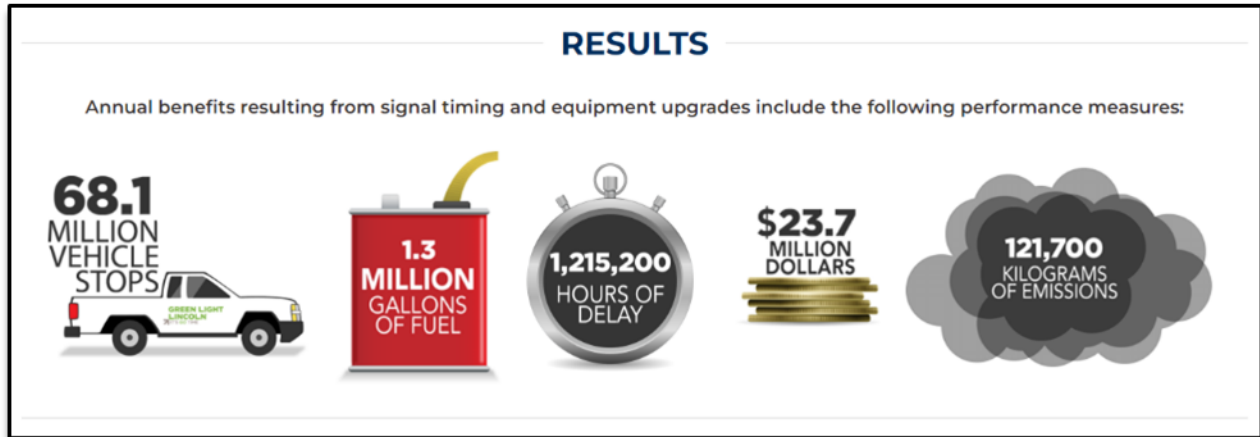


Figure 15. Green Light Lincoln Results

Lincoln has also invested in encouraging sustainable and active modes of transportation. The city introduced the BikeLNK bikeshare program in 2018, comprising 21 bikeshare stations covering Downtown and East Campus. The result has been over 121,000 trips recorded since its inception, offering residents a convenient alternative transportation option.

Furthermore, Lincoln introduced electric scooters through a pilot program that began in 2022. The program exceeded expectations, with over 91,400 trips and 25,000 unique riders during the pilot phase. Due to its success, the program became permanent in March 2022. This transition included a larger service area and extended operating hours.

For residents seeking outdoor activities and alternative transportation options, Lincoln offers an extensive network of trails managed by the Lincoln Parks and Recreation Department. With 252 miles of trails and 132 pedestrian crossings, residents have opportunities to enjoy nature and utilize sustainable transportation alternatives.

Lincoln's commitment to creating safe and accessible streets is illustrated by its Complete Streets policy, which has been in place since 2013. This policy promotes the implementation and coordination of projects across city departments, with dedicated committees overseeing policy and funding tasks. The result is streets that are safer and more accessible for all users.

The Lincoln MPO is actively implementing the Lincoln Bike Plan of 2019, focusing on on-street bike projects as funding becomes available. Among the notable projects is the F Street Bicycle Boulevard, one of the first undertakings realized as part of the plan.

EV charging infrastructure is also a priority for Lincoln. The city has created an EV Readiness Plan in collaboration with various stakeholders, including the University of Nebraska-Lincoln, Lincoln Electric System (LES), and Lincoln Public Schools (LPS). This plan aims to identify new EV initiatives and local funding opportunities. The Urban Development Department operates several charging stations in public garages, in cooperation with LES, further facilitating the adoption of EVs.

Lincoln's comprehensive Climate Action Plan encompasses various sections, with transportation being a key focus area. The plan outlines strategies for reducing emissions within the city's

control. These strategies include transitioning the city's fleet to renewable energy sources and implementing bike and pedestrian improvements. This comprehensive approach aligns with the city's long-term objectives to significantly reduce GHG emissions, with a target of an 80% reduction by 2050.

SIMPCO May 16, 2023

SIMPCO is actively improving its bike and pedestrian infrastructure and trail networks. This aligns with their LRTP, focusing on mobility, accessibility, connectivity, and livability goals. The community strongly supports connecting schools to the trail system, campgrounds, riverfront trails, the Ponca trail system, and commercial areas. They also aim to link downtown with other neighborhoods and commercial centers. Future trail connections are planned from G St. to 25th St. and Veterans Dr., and from Siouxland Freedom Park to E. 39th St. and C St. SIMPCO uses trail counters for measurement.

SIMPCO is also advocating for enhanced transit services in South Sioux City, particularly extending transit south of I-129 to serve the industrial corridor, which employs over 6,000 people. A recent Transit Mobility Study identified vanpooling as a flexible alternative to fixed routes, better matching varying shift times. Nebraska offers a state-subsidized vanpool program called "Go 'NE'Where Vanpools" through Enterprise's "Commute with Enterprise" service, with affordable options for employees, particularly at Tyson Foods.

South Sioux City has been on the forefront in the state of Nebraska on transitioning its municipal fleet to EVs. This includes the procurement of an EV motorcycle for use by the Police Department, believed to be the first in the State for this use (Figure 16).



Figure 16. South Sioux City Police Department Recently Purchased an Electric Motorcycle (Source: KSCJ)

CRS Approach Validation Meeting

NDOT's third round of MPO consultation meetings was held virtually on August 9th, 2023. The purpose of this meeting was to provide a project status update, focusing on NDOT's vision and goals for the CRS, outreach efforts, and to discuss FHWA's responses to previously collected questions from the MPOs. NDOT also aimed to confirm the information that was gathered during the previous in-depth meetings and establish a framework to incorporate this information within the CRS.

Additional Stakeholder Engagement and Public Involvement

Additional stakeholder engagement and public involvement activities included an online survey, a virtual public meeting, and interviews with key external stakeholders. These activities informed the development of Nebraska's CRS and helped NDOT and its MPO partners prioritize strategies for the use of CRP funds. For example, information was collected related to preferred mode use

and rationale, organizational carbon reduction initiatives, metrics for emission tracking, criteria for using CRP funds, and opportunities for collaboration.

Survey

A survey was distributed to external stakeholders and advertised on the NDOT website between July 8th and August 29th. Of the 255 responses that were received, 225 were from individual members of the public and 30 were from representatives of organizations.

General Public Responses

Participant Demographics

More than half of participants were between the ages of 35 and 64. About a quarter of participants were younger than 34, and about a quarter of participants were older than 65. A little over half of participants identified as male (54%), and about a third of participants identified as female (37%). Four participants identified as nonbinary or third gender, and 16 participants preferred not to say their gender or noted that their gender wasn't listed.

More than three quarters of participants identified as white (81%). The remaining participants identified as Black or African American (5%), American Indian or Alaskan Native (1%), Asian (1%), or a race that was not listed on the survey options (4%). Thirty participants chose not to identify their race. One participant identified as being of Hispanic, Latino, or Spanish origin and 192 respondents did not identify as being of Hispanic, Latino, or Spanish origin. Thirty-two participants did not identify their ethnicity.

Demographic responses are shown in Figure 17 and Figure 18.

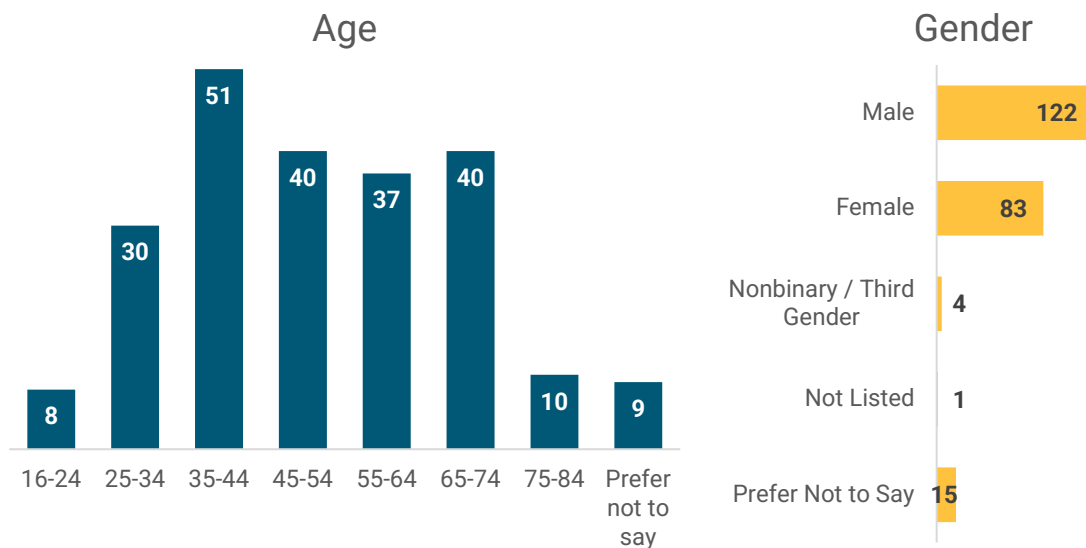


Figure 17. Survey Participant Demographics – Age and Gender

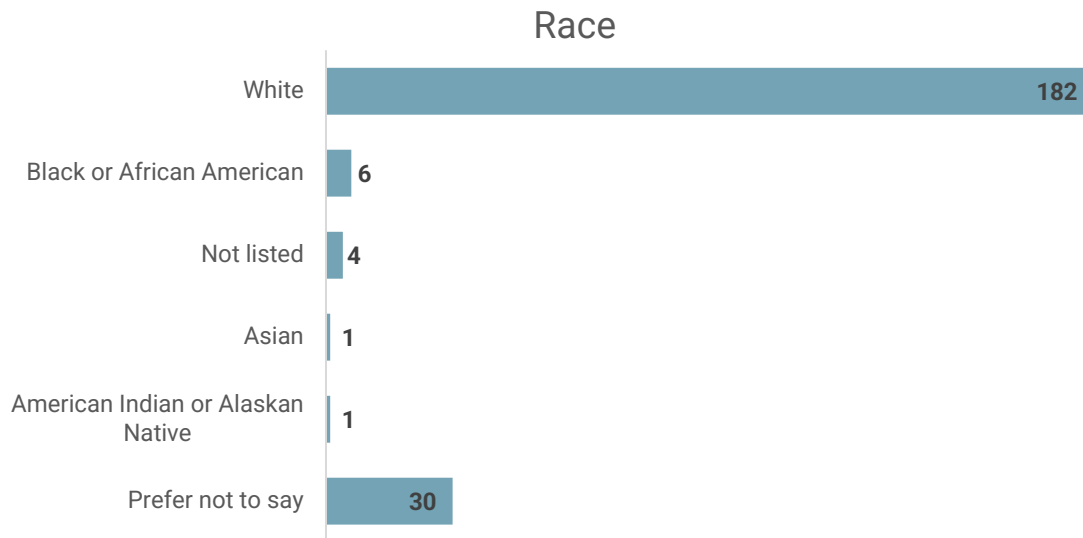


Figure 18. Participant Demographics – Race

Public Opinion and Behavior

Over 70 percent of respondents reported that they are somewhat or very concerned about climate change (Figure 19).

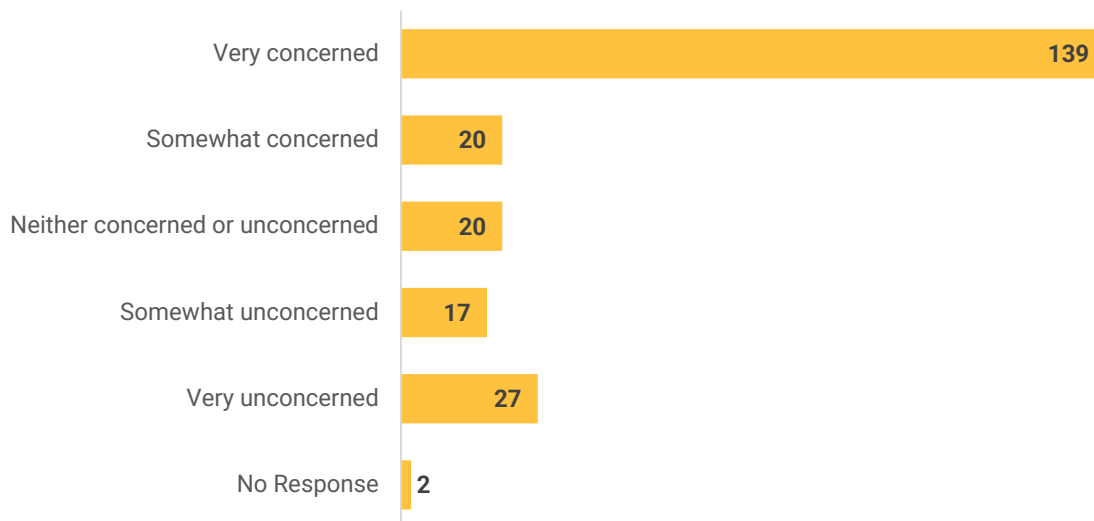


Figure 19. Level of Public Concern about Climate Change

The survey included several questions about mode use, reasons for using that mode, and desire to participate in that mode. People had different reasons for using each mode. Over 60 percent of respondents indicated that they walked or biked for transportation or worked from home. Health was the most frequently reported reason for walking and biking, whereas convenience was the most frequently reported reason for working from home. Between 20 and 30 percent of respondents indicated that they drive an EV, carpool, or used public transportation. Interestingly, protecting the environment was the top reason for driving an EV or using public

transportation. Carpooling had a fairly even split between money savings, protecting the environment, and convenience. Mode use and reason responses are shown in Figure 20.

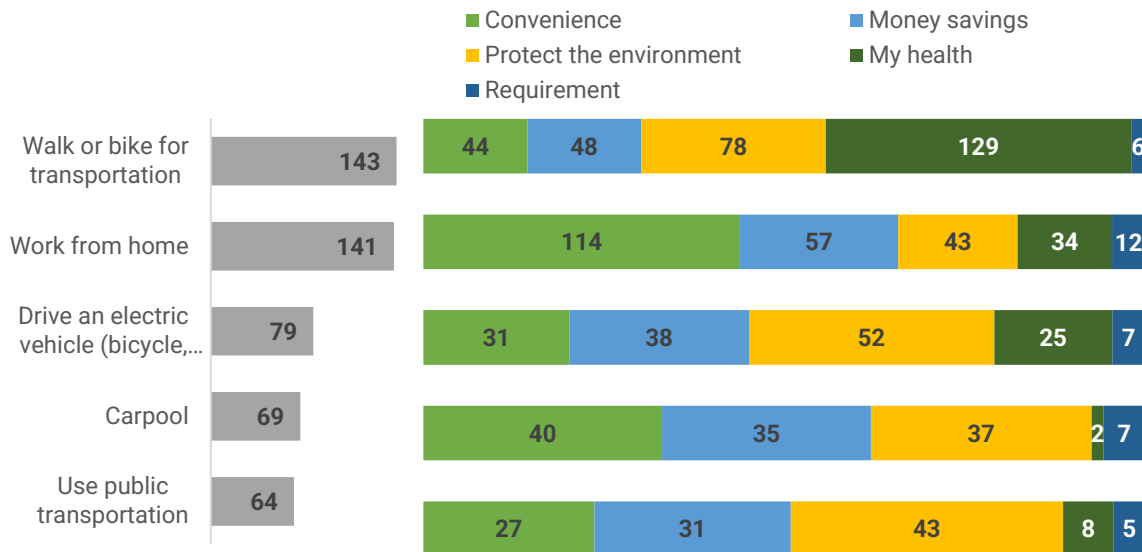


Figure 20. Mode Use and Reasons for Mode Use

The survey also asked whether people want to change their modal activity. Most people wanted to increase their use of walking, biking, public transportation, and driving an EV. However, there is also a sizable number of people who wanted to decrease their use of public transportation, driving an EV, or carpooling (Figure 21).

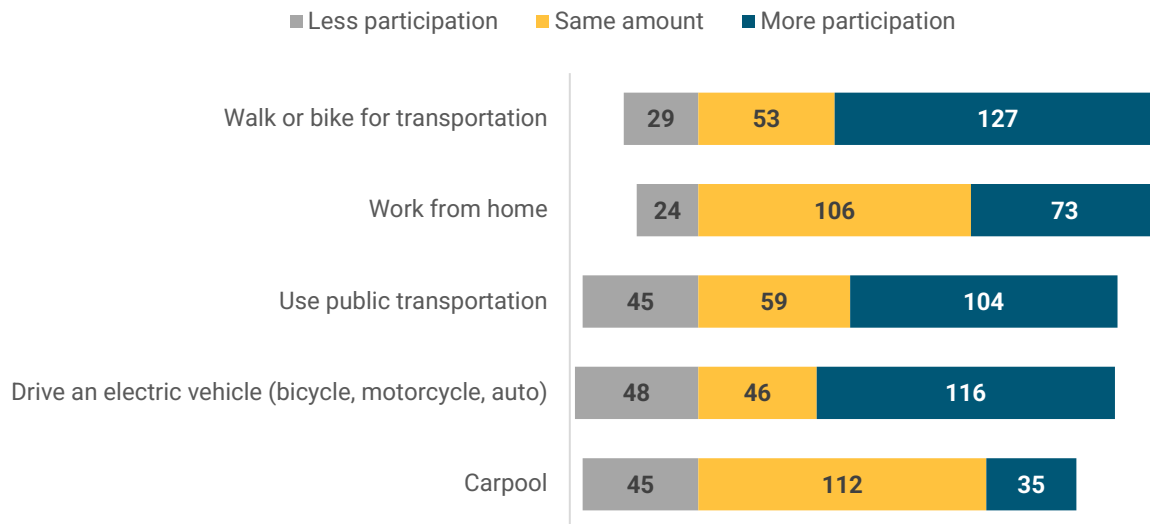


Figure 21. Desired Level of Mode Use

Organizational Responses

Organizational Representation

Of the 30 organizational representatives that completed the survey, almost half came from local, regional, or state government agencies. A quarter of organizational representatives worked at private sector companies. Two respondents work in academia, and one represents a tribe. Organizational representation results are shown in Figure 22.

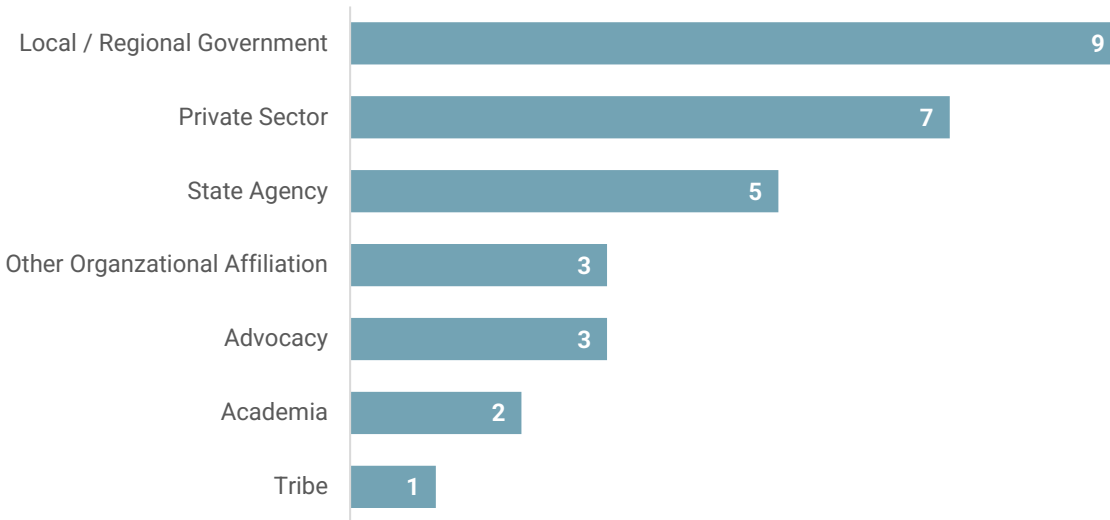


Figure 22. Organizational Representation

Forty-three percent of organizations are in a transportation disadvantaged community, and 33 percent of organizations primarily serve customers who are members of the disability community, racial or ethnic minorities, tribal community members, or low-income people.

Transportation-related Carbon Reduction Initiatives

Over three quarters of organizations reported advocating for carbon reduction initiatives in the transportation sector, and about 60% implemented such strategies. The most popular initiatives that were advocated and implemented include (1) bicycle, pedestrian and transit facilities, (2) smart growth principles and efficient land use, (3) public education, and (4) low emissions vehicle programs. Results are shown in Figure 23, and examples of specific initiatives that were identified by stakeholders are outlined in Table 1.

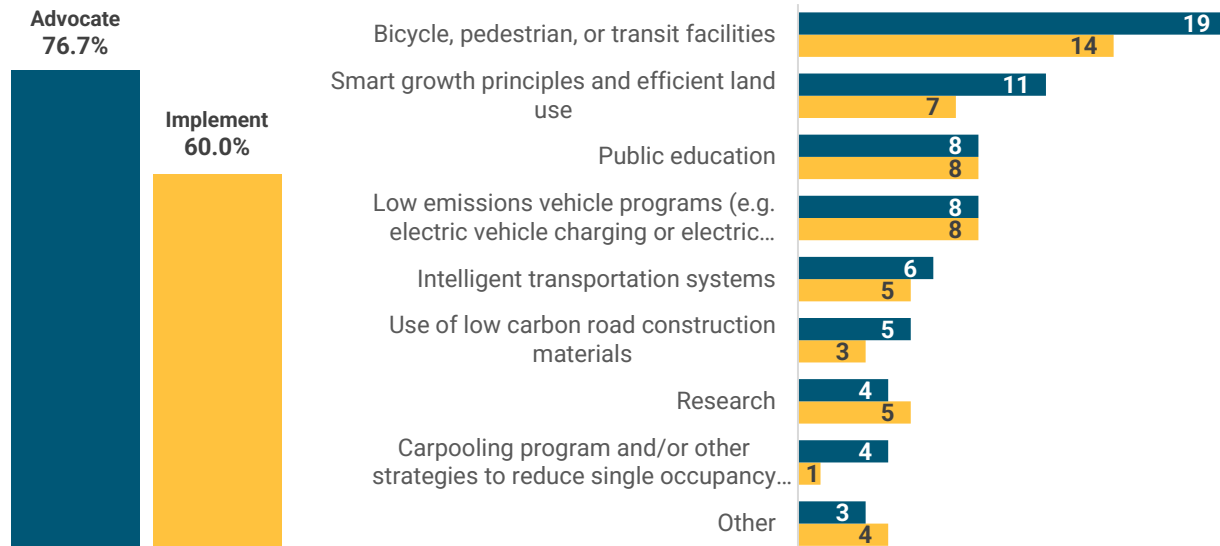


Figure 23. Advocacy and Implementation of Transportation-related Carbon Reduction Initiatives

Table 1. Examples of Stakeholders' Carbon Reduction Initiatives

| Initiative Type | Initiative | Stakeholder Organization |
|------------------------|---|---|
| Planning | Lincoln Bike Plan | <ul style="list-style-type: none"> City of Lincoln Parks and Recreation |
| | Resilient Lincoln (Climate Action Plan) | <ul style="list-style-type: none"> City of Lincoln |
| | Traffic Signal Master Plan | <ul style="list-style-type: none"> City of Omaha |
| | Greater Omaha's Urban Core Strategic Plan, an urban core Initiative that seeks to create a live-work-play space | <ul style="list-style-type: none"> Greater Omaha Chamber |
| | Environmental Sustainability Action Plan | <ul style="list-style-type: none"> Central Community College |
| Project Implementation | Green Light Lincoln | <ul style="list-style-type: none"> City of Lincoln Parks and Recreation |
| | Complete Streets (e.g., building bike trails, sidewalks, side paths) | <ul style="list-style-type: none"> City of Lincoln City of Lincoln Parks and Recreation |
| | Intersection improvements (e.g., roundabouts, lighting LED in the construction of intersections, traffic signal timing) | <ul style="list-style-type: none"> City of Omaha GIAMPO City of Lincoln Parks and Recreation |
| | City of Omaha | <ul style="list-style-type: none"> Using IL cement |
| | Reducing facility emissions | <ul style="list-style-type: none"> University of Nebraska - Lincoln |
| Alternative Fuels | Transitioning the agency fleet to alternatively powered vehicles | <ul style="list-style-type: none"> Sioux City Transit Lincoln Lancaster County Health Department City of Lincoln |
| | Installing EV charging stations | <ul style="list-style-type: none"> Central Community College City of Omaha |
| | Using E30 in non-flex fuel vehicles | <ul style="list-style-type: none"> Nebraska Corn Board |
| | Expanding ethanol infrastructure | <ul style="list-style-type: none"> Nebraska Corn Board |
| | Renewable Energy Projects | <ul style="list-style-type: none"> Central Community College |
| Advocacy and Lobbying | Advocating for higher blends of ethanol | <ul style="list-style-type: none"> Nebraska Farmers Union |
| | Lobbying for carbon-reduction legislation | <ul style="list-style-type: none"> Nebraska Sierra Club |

Internal Organizational Initiatives

50 percent of organizations noted that they also implement internal initiatives that reduce carbon pollution. Programs that encourage staff to use active transportation or public transportation were the most popular organizational efforts, followed by programs to reduce emissions from organization fleets. Several organizations also implemented carpooling programs or programs to reduce single occupancy vehicle miles traveled. Other initiatives included renewable energy projects, implementing hybrid work schedules and environments, and offering on-site lunch meetings. Results are presented in Figure 24.

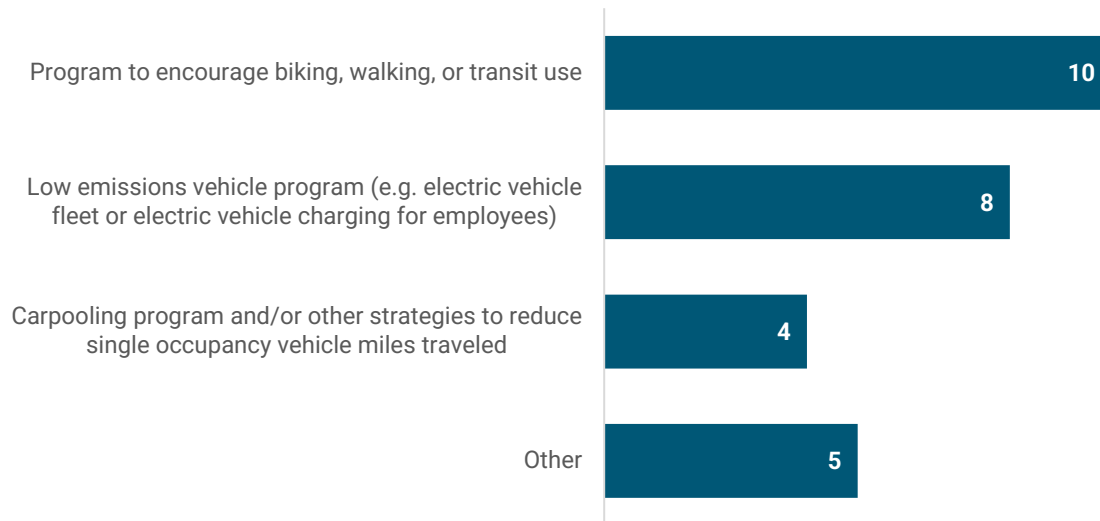


Figure 24. Internal Carbon Reduction Initiatives

Emission Tracking

Only seven organizations determine baseline emissions for their carbon reduction initiatives. They use a mix of federal, state, and internal data sources to track metrics like vehicle miles traveled, fuel purchases, single occupancy vehicle commutes, EV ownership, emissions, and air quality.

Input on Criteria for Use of CRP Funds and Co-Benefits

Both the general public and representatives from organizations were asked their opinion about the top criteria that NDOT should use to determine on which projects CRP funds are used. The following criteria were provided as potential options:

- Carbon reduction: Whether the project significantly reduces carbon.
- Cost-effectiveness: If the project is known to be cost-effective.
- Equity: Beneficial impacts in census tracts where the populations have the most need.
- Innovation: Whether the project is forward-thinking in nature.
- Local support: The amount of community support and engagement related to the project.
- Readiness: If the project is ready to be implemented.
- Replicability: The ability to efficiently put in a similar project elsewhere.
- Safety: Whether the project also increases the safety of the roadway network.

The most popular criteria were (1) carbon reduction, (2) safety, (3) equity, and (4) cost effectiveness, as shown in Figure 25.

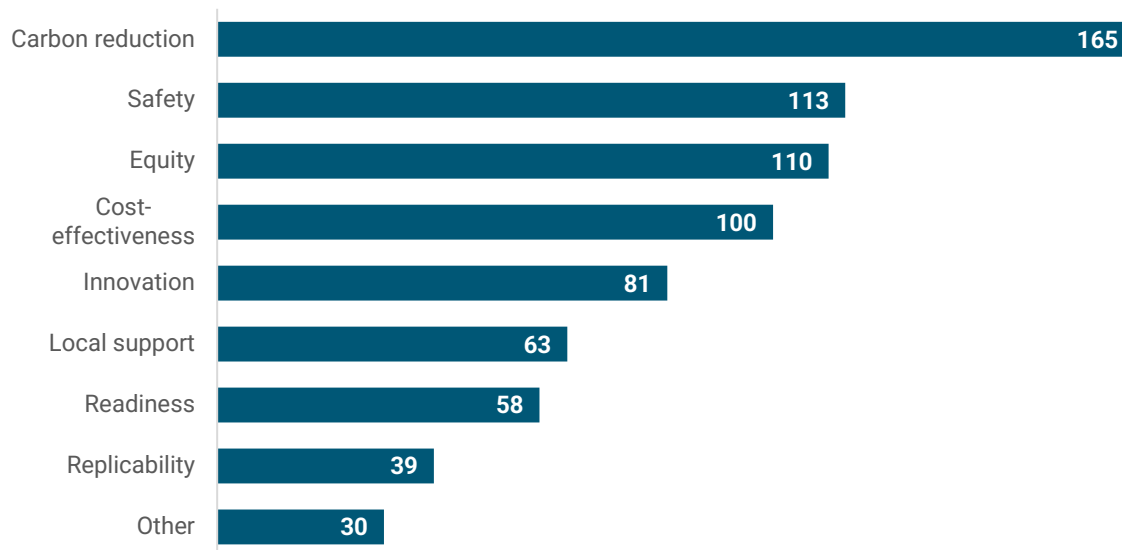


Figure 25. Survey Respondents' Priority Criteria for Use of CRP Funds

In addition to reducing carbon emissions, transportation projects and strategies may have additional co-benefits. We asked respondents which co-benefits were the most important to them. The most popular co-benefits were (1) increasing transportation options, (2) improving air quality, (3) increasing safety, and (4) reducing the cost of transportation for individual households, as shown in, as shown in Figure 26.

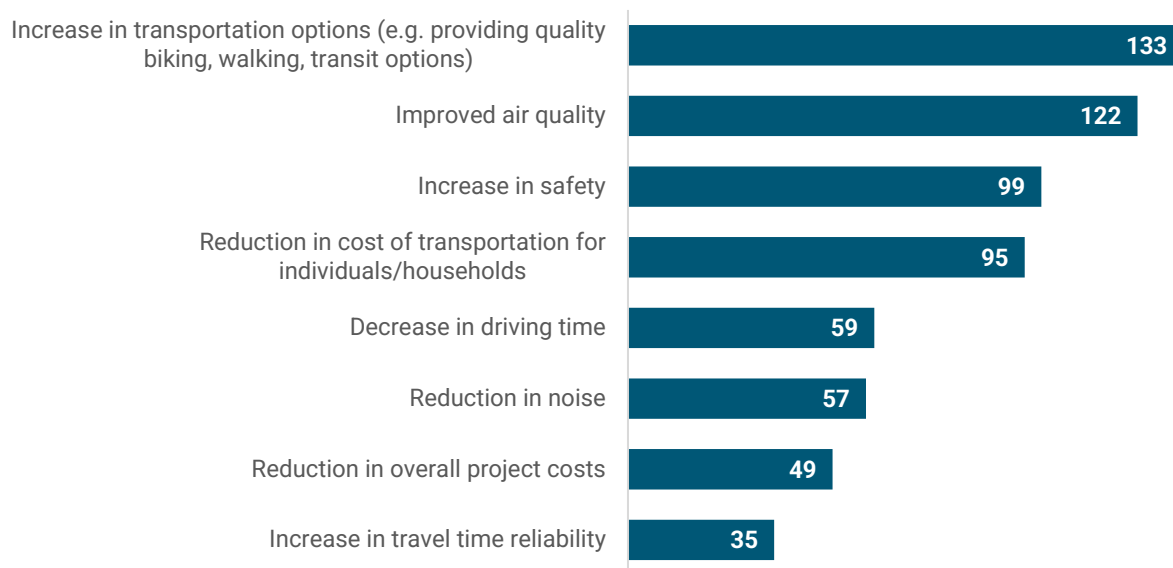


Figure 26. Survey Respondents' Priority Co-Benefits of Carbon Reduction Initiatives

Public Meeting

NDOT held a virtual public meeting to gather input on the development of the CRS. The virtual public meeting was held on September 7th from 5:30pm to 7:00pm. The meeting was announced publicly and highlighted on the NDOT Facebook page (Figure 27). Eight members of the general public attended the virtual meeting.

The presentation covered an introduction to the CRP and approach to how the CRS is being developed. Participants were asked to respond to several polling questions. These questions mirrored the questions asked in the

public survey and the participants' responses were generally consistent with the data shown in the survey results. Interestingly, the pattern of individuals wanting to decrease their EV usage appeared in the public meeting poll as well. Because this was a surprising result in the survey, we asked meeting participants to provide further information as to why they hoped to decrease this mode's use. One participant noted that he only owned an EV because other options are often infeasible. Although we cannot generalize this to all respondents, it suggests that some EV users would rather use public transportation, bike, or walk.

In the general discussion period, participants asked several questions about whether funds would be used for active transportation projects and initiatives that improve safety. The project team confirmed that those types of projects are priorities for both NDOT and MPOs.

One participant provided suggestions for the CRS. These suggestions included increasing funding for public transportation by supporting policy changes that allow for a shift in resources from roads to public transportation, expanding public transit systems, improving the user experience on public transportation, educating the general public, evaluating a vehicle miles traveled system to replace the current gas tax, setting index fees to vehicle size and type, and creating incentives to reduce driving of all types of vehicles.

External Interviews

Interviews were conducted with a diverse range of external stakeholders to help shape and advance the CRS. State government, local government, academic institutions, and nonprofits were considered, with attention paid to the geographic reach, social influence, technical insights, related programs, practical impact, and opportunities for collaboration of each potential stakeholder. Interviews were conducted with five key stakeholders: Nebraska Department of Environment and Energy (NDEE), Nebraska Department of Economic Development (NDED), Bike



Figure 27. NDOT's Facebook Event for the Virtual Public Meeting

Walk Nebraska, City of Lincoln, and the University of Nebraska-Lincoln (UNL). Contributions ranged from regulatory guidance and economic integration to grassroots activism and scholarly research. This rich tapestry of perspectives serves to deepen and diversify NDOT's approach to carbon reduction, ensuring it is both comprehensive and rooted in real-world applications.

Nebraska Department of Environment and Energy (NDEE)

NDEE serves as a vital ally in NDOT's environmental objectives, focusing on reducing emissions and enhancing air quality. One of the significant initiatives where the two agencies' goals intersect is in the development and deployment of EV infrastructure, funded through VW Settlement Funds. By offering technical and regulatory guidance, NDEE acts as a key enabler, helping to set the environmental norms and policies that NDOT can follow. Their role is critical for establishing the environmental baseline upon which NDOT's carbon reduction goals can be measured and achieved.

Nebraska Department of Economic Development (NDED)

Though not a traditional player in the transport sector, NDED plays a crucial role by linking economic development with sustainable practices. Their focus on community planning and energy-efficient strategies provides NDOT with a broader societal and economic context for its projects. Their involvement ensures that NDOT's carbon reduction initiatives are not just environmentally sustainable but also economically viable and beneficial for the community. They act as a bridge between economic aspirations and environmental responsibilities.

Bike Walk Nebraska

Representing the active transportation community, Bike Walk Nebraska brings a specialized focus on non-motorized modes of transport. By pushing for walking and cycling, they offer a substantial opportunity for carbon reduction. Their advocacy for policies and public awareness campaigns complements NDOT's aim of diversifying transport options and reducing reliance on fossil fuels. Their grassroots initiatives can serve as pilot projects that, if successful, could be scaled up through NDOT's larger infrastructure.

City of Lincoln

The City of Lincoln harbors six pivotal initiatives that align with NDOT's and Lincoln MPO carbon reduction strategies. At the heart of these efforts are the Green Light Lincoln project which focuses on enhancing traffic flow and air quality, and the ambitious 2021-2027 Climate Action Plan aiming for an 80% net reduction in GHG emissions by 2050. Notably, the city has earmarked the complete transition of its fleet to electric, renewable, or alternative fuels by 2040, along with strengthening public transit systems and fostering bikeshare and micromobility programs. The city exhibits a preference for utilizing local funding for traffic projects, finding a better synergy with federal funding for physical construction and transportation alternatives. Representatives from the city actively collaborate with Lincoln MPO, working on integrated planning efforts such as the TIP and the LRTP, to synchronize city-level initiatives with broader regional strategies. In light of their ongoing endeavors, the city emphasizes the potential impact of promoting mode shifts away from single-occupancy vehicles, viewing it as a potent strategy to curtail carbon emissions significantly.

University of Nebraska-Lincoln

University of Nebraska-Lincoln (UNL) provides a research and data-centric viewpoint that is helpful for the empirically driven aspects of NDOT's strategy. Specializing in emission modeling, climate impact studies, and data analytics, UNL can support NDOT in measuring the efficacy of the state's carbon reduction efforts. UNL is also spearheading the creation of a Clean Cities Coalition in Nebraska, aimed at environmental justice and fuel diversity. The program's main goal is to be fuel agnostic by shifting to efficient and clean energy sources through alternative and renewable fuels such as natural gas, propane, hydrogen, electricity, ethanol, and biodiesel. Additionally, the coalition aims to reduce GHG emissions through idle reduction and other fuel-saving technologies and practices. Finally, UNL is developing a K-12 youth education component focused on developing knowledge of transportation's relationship to climate change and the health implications of pollutants.

III. Programs that Fund Carbon Reduction Efforts

Carbon Reduction Program

CRP Background and Project Eligibility

As discussed earlier, the CRP, created through the IIJA, provides \$6.4 billion in formula funding over five years to states and localities for use on a wide range of eligible activities. The purpose of the CRP is to reduce carbon emissions from on-road highway sources. Important considerations and related priorities include safety, complete streets, equity, climate change, job creation, and program evaluation. CRP funded projects must reduce transportation emissions and promote safe, reliable, and cost-effective transportation options. Project types may include:

- Reducing traffic congestion by facilitating the use of alternatives to single-occupant vehicle trips, including public transportation facilities, pedestrian facilities, bicycle facilities, and shared or pooled vehicles.
- Facilitating the use of vehicles or modes of travel that results in lower transportation emissions per person-mile travelled as compared to existing vehicles and modes.
- Facilitating approaches to the construction or installation of transportation assets that result in lower transportation emissions as compared to existing approaches.

A full list of eligible project types is provided in Appendix A.

Nebraska's CRP Funding Allocation

Nebraska will receive over \$9.2 million annually for the next five years from the CRP program. 35 percent of CRP funds may be used in any area of the state. The other 65 percent of CRP funds must be used in specific population areas in proportion to their shares of the population of the state, as shown in Table 2.

Table 2. Nebraska's 2022 CRP Apportionment and Suballocations²⁶

| Nebraska's Total 2022 CRP Apportionment | Suballocated Apportionment (65%) | | | | Apportionment Available for Any Area (35%) | | |
|---|----------------------------------|-------------|-------------------------------|-----------|--|-------------|-------------|
| | Urbanized Areas Over 200K | | Urbanized Areas 50K - 200K | | | | |
| | Lincoln (pop. 258,719) | \$848,370 | Grand Island (pop. 50,440) | \$165,398 | 21 eligible urban areas | | |
| | Omaha (pop. 656,462) | \$2,152,615 | Sioux City (pop. 16,576) | \$54,355 | | | |
| \$9,213,515 | | \$3,000,985 | | \$219,753 | \$963,355 | \$1,804,692 | \$3,224,730 |

²⁶ Source: Revised Fiscal Year (FY) 2022 Supplementary Tables – Apportionments Pursuant to the Infrastructure Investment and Jobs Act (N 4510.868), May 31, 2022

Nebraska's four MPOs include two TMA MPOs (urbanized areas with populations of at least 200,000) – the Lincoln MPO and the Metropolitan Area Planning Agency (MAPA) in the Omaha-Council Bluffs region. These MPOs have authority over their allocated funds, which can be spent anywhere within their MPO boundary. Funds allocated to the two non-TMA MPOs – the Grand Island Area Metropolitan Planning Organization (GIAMPO) and the Siouxland Interstate Metropolitan Planning Council (SIMPCO) – must be spent within the urbanized area boundary (not the MPO boundary). The funding apportionments for GIAMPO and SIMPCO will be included in the FFPP, meaning that NDOT will purchase those federal funds in exchange for state cash, allowing GIAMPO and SIMPCO to tailor projects using state funds to better meet their needs and relieving them from the responsibility of programming federal funds. NDOT will apply the CRP funding to state projects within those regions.

Other Related Funding Programs

Other funding programs can be used to fund strategies and projects that reduce carbon emissions. These include:

- Congestion Mitigation and Air Quality Improvement Program
- Transportation Alternatives Program
- National Electric Vehicle Infrastructure Program
- Charging and Fueling Infrastructure Program
- Low or No Emission Vehicle Program
- Other federal discretionary grant programs

These programs are discussed in more detail below. Beyond these related programs, other programs may fund projects that reduce carbon emissions, such as the Surface Transportation Program and the Highway Safety Improvement Program (HSIP).

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality (CMAQ)²⁷ program provides federal funding for state- and locally selected transportation projects and programs to help meet the requirements of the Clean Air Act. Funding is available to reduce congestion and improve air quality for areas that do not meet the National Ambient Air Quality Standards for ozone, carbon monoxide, or particulate matter (nonattainment areas) and for former nonattainment areas that are now in compliance (maintenance areas). CMAQ projects may also improve equitable access to transportation services, improve safety, and promote application of new and emerging technologies. Many types of projects are eligible under the CMAQ program, including:

- EVs and charging stations
- Diesel engine replacements and retrofits
- Transit improvements
- Bicycle and pedestrian facilities
- Shared micromobility projects (e.g., shared bicycle and scooter systems)
- Signal upgrade projects

²⁷ https://www.fhwa.dot.gov/environment/air_quality/cmaq/

Nebraska is apportioned over \$11 million in annual CMAQ funds. Douglas County, which encompasses part of Omaha, is Nebraska's only maintenance area (for lead emissions). Nebraska does not have any non-attainment areas. Two percent of the funds are set aside for statewide planning and research.

Transportation Alternatives Program

Nebraska's Transportation Alternatives Program (TAP)²⁸ will award \$47 million of federal TAP funds throughout the State in 2023. Awarded projects will be funded with a maximum of 80 percent federal funds and require a minimum 20 percent local match. A project must seek a minimum of \$500,000 of federal reimbursement.

Eligible **TAP** projects must meet one or more of these eligibilities and must relate to surface transportation.

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the ADA.
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.
- Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users.
- Construction of turnouts, overlooks, and viewing areas.
- Historic preservation and rehabilitation of historic transportation facilities.
- Construction of Complete Street/Safe Streets for All improvements

TAP shares cross-eligibilities with other federal programs including projects that meet the criteria for the **Safe Routes to School (SRTS)** Program and the **Recreational Trails Program (RTP)**, as defined in relevant sections of 23 U.S.C.

This inclusivity extends to various project types, encompassing everything from the maintenance and restoration of existing recreational trails to both infrastructure and non-infrastructure projects related to safe school routes. For a comprehensive understanding of these interconnected federal programs and their shared eligibility criteria, refer to 23 U.S.C. sections 133(b)(5), (7), and (22); 133(h)(3); 206; and 208.

Eligible infrastructure-related **SRTS** projects for schools with any students between kindergarten through 12th grade must substantially improve the ability of students to walk and bicycle to school. There is no SRTS dedicated funding, but SRTS projects can be funded through TAP and the Surface Transportation Block Grant program (STBG). The planning, design, and/or construction of infrastructure related SRTS projects include:

- Sidewalk improvements
- Traffic calming and speed reduction improvements

²⁸ <https://dot.nebraska.gov/business-center/lpa/projects/tap/>

- Pedestrian and bicycle crossing improvements
- On-street bicycle facilities
- Off-street bicycle and pedestrian facilities
- Secure bicycle parking facilities
- Traffic diversion improvements in the vicinity of schools
- Non-infrastructure activities such as educational programming and traffic enforcement near schools

Any project eligible under the RTP is eligible under the TA set-aside. Additionally, and unlike SRTS, RTP receives a dedicated set-aside under the TA set-aside. This means that a part of the funds allocated to each state for TAP is reserved for recreational trails, unless the state's Governor decides otherwise ahead of time. Eligible RTP projects include:

- Maintenance and restoration of existing recreational trails.
- Development and rehabilitation of trailside and trailhead facilities and trail linkages including right-of-way acquisition.
- Construction of new recreational trails (with some restrictions for new trails on Federal lands).
- Some states allow RTP funds to be used for educational programs related to outdoor recreation and trail use, which can include safety workshops, interpretive signage, and educational materials.
- Environmental stewardship activities including wetland restoration or wildlife habitat enhancement may be eligible in some cases.

National Electric Vehicle Infrastructure Program

The National Electric Vehicle Infrastructure (NEVI)²⁹ program, enacted under the IIJA, provides funding for the expansion of public EV charging networks. Per NDOT's NEVI plan, these federal funds will be primarily focused on developing EV charging infrastructure on designated Alternative Fuel Corridors (AFCs) in Nebraska, which include Interstate 80 across the state and Nebraska Highway 31 and US Highway 6 in the Omaha area. From 2022 - 2027, NDOT will have access to over \$6 million per year in formula funding for EV charging infrastructure.

However, there are challenges to implementing this funding in Nebraska due to current legislative restrictions at the state level. The state legislation required to allow NDOT to move forward with the NEVI program was not passed in the 2023 legislative session. NDOT is hopeful that a new bill will be introduced and passed in the 2024 legislative session. NDOT has a request for proposals (RFP) ready to release once the new legislation becomes law and is also working on the contracts that will be necessary for recipients of NEVI funds so they will be ready when the RFP is issued.

Charging and Fueling Infrastructure Program

The federal Charging and Fueling Infrastructure (CFI)³⁰ discretionary grants are awarded competitively to strategically deliver the Community Program and the Corridor Program. Under the Community Program, funds may be used for projects that deploy EV charging infrastructure,

²⁹ <https://dot.nebraska.gov/travel/nevi>

³⁰ <https://www.grants.gov/web/grants/view-opportunity.html?oppld=346798>

hydrogen fueling infrastructure, propane fueling infrastructure, and natural gas fueling infrastructure located on public roads or in other publicly accessible locations. Under the Corridor Program, funds may be used for projects that deploy charging and alternative fueling infrastructure located along designated alternative fuel corridors. The same legislative restrictions in Nebraska that are delaying implementation of the NEVI program are also a challenge for CFI grant implementation. While NDOT is not currently pursuing CFI grants and is not aware of any local government interest, these grants may provide an opportunity to fund additional EV charging infrastructure in the future.

Low or No Emission Vehicle Program

Low or No Emission Vehicle³¹ program funds are awarded competitively by the Federal Transit Administration (FTA) to assist in the purchase or lease of zero-emission and low-emission transit buses, including acquisition, construction, and leasing of required supported facilities. The program objectives are to (1) reduce energy consumption, (2) reduce harmful emissions, and (3) reduce direct carbon emissions. NDOT is working with StarTran in Lincoln and Metro Transit in Omaha to raise awareness about these grant opportunities and explore potential interest.

Other Discretionary Grants

The **Rebuilding American Infrastructure Sustainability and Equitably (RAISE)**³² discretionary grant program provides a unique opportunity to invest in road, rail, transit, and port projects that promise to achieve national objectives.

- *Relevance to the CRS:* One of the merit criteria is “Environmental Sustainability.”

The **National Infrastructure Project Assistance (MEGA)**³³ discretionary grant program funds major projects that are too large or complex for traditional funding programs. The program supports multijurisdictional or regional projects of significance that may also cut across multiple modes of transportation.

- *Relevance to the CRS:* One of the program objectives is “Climate Change, Resiliency, and the Environment”.

The **Infrastructure for Rebuilding America (INFRA)**³⁴ discretionary grant program advances USDOT’s priorities of rebuilding America’s infrastructure and creating jobs by funding highway and rail projects of regional and national economic significance that position America to win the 21st Century.

- *Relevance to the CRS:* One of the program objectives is “Climate Change, Resiliency, and the Environment”.

The **Port Infrastructure Development Program (PIDP)**³⁵ aims to strengthen American supply chains and advance President Biden’s Port Action Plan, which calls for rapid action to relieve

³¹ <https://www.transit.dot.gov/lowno>

³² <https://www.transportation.gov/RAISEgrants/about>

³³ <https://www.transportation.gov/grants/mega-grant-program>

³⁴ <https://www.transportation.gov/sites/dot.gov/files/2020-01/fy-2020-infra-notice-funding-opportunity-final-web.pdf>

³⁵ <https://www.maritime.dot.gov/PIDPgrants>

supply chain constraints at American ports through significant investments in the near, medium and long term.

- *Relevance to the CRS:* One of the merit criteria is “Addressing Climate Change and Environmental Justice Impacts”.

The **Bus and Bus Facilities Program (BBFP)**³⁶ funds are awarded competitively by FTA to assist in the financing of capital projects to replace, rehabilitate, purchase or lease buses and related equipment, and to rehabilitate, purchase, construct, or lease bus-related facilities.

- *Relevance to the CRS:* One of the program objectives is to reduce GHG emissions from public transportation.

The **Safe Streets and Roads for All (SS4A)**³⁷ grants are awarded on a competitive basis to support planning, infrastructure, behavioral, and operations initiatives to prevent death and serious injury on roads and streets involving all roadway users, including pedestrians; bicyclists; public transportation, personal conveyance, and micromobility users; motorists; and commercial vehicle operators.

- *Relevance to the CRS:* One of the program objectives is to align with USDOT’s mission and with priorities such as climate change and sustainability.

The **Reconnecting Communities and Neighborhoods (RCN)**³⁸ program aims to support projects that advance community-centered connections. The program places a priority on projects that benefit disadvantaged communities by improving access to daily needs such as jobs, education, health care, food, nature and recreation; fostering equitable development and restoration; and reconnecting communities by removing, retrofitting, or mitigating highway or other transportation facilities that create barriers to community connectivity, including to mobility, access, or economic development.

- *Relevance to the CRS:* One of the program objectives is “Climate and Sustainability”.

The **Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)**³⁹ discretionary grant program funds are awarded on a competitive basis to make transportation infrastructure and service more resilient to climate change and extreme weather events. Funds can only be used for activities that are primarily for the purpose of resiliency or inherently resilience related.

- *Relevance to the CRS:* One of the merit criteria for the resiliency grants is “Climate Change and Sustainability”.

The **Thriving Communities Program (TCP)**⁴⁰ provides technical assistance, planning, and capacity building support to advance a pipeline of transportation and community revitalization activities.

- *Relevance to the CRS:* One of the types of transportation and community revitalization activities covered under this program is reducing pollution from transportation sources.

³⁶ <https://www.transit.dot.gov/bus-program>

³⁷ <https://www.transportation.gov/grants/SS4A>

³⁸ <https://www.transportation.gov/grants/rcnprogram>

³⁹ https://www.fhwa.dot.gov/bipartisan-infrastructure-law/protect_fact_sheet.cfm

⁴⁰ <https://www.transportation.gov/grants/thriving-communities>

The **Strengthening Mobility and Revolutionizing Transportation (SMART)**⁴¹ grants program funds projects that incorporate advanced smart technologies and systems to improve transportation efficiency and safety.

- *Relevance to the CRS:* One of the program objectives is “Climate”.

The **Railroad Crossing Elimination (RCE)**⁴² program funds highway-rail or pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods.

- *Relevance to the CRS:* One of the program objectives is “Climate Change and Sustainability”. The program also aims to improve the health and safety of communities, as well as reduce the impacts that freight movement and railroad operations have on underserved communities.

The **Bridge Investment Program (BIP)**⁴³ grants are awarded to projects that improve the safety, efficiency, and reliability of the movement of people and freight over bridges, improve the condition of bridges, and provide financial assistance that leverages and encourages non-federal contributions from sponsors and stakeholders involved in the planning, design, and construction of eligible projects.

- *Relevance to the CRS:* One of the project outcome criteria is “Climate Change, Resiliency, and the Environment”.

NDOT’s Approach to Program Management

NDOT is highly adept at program management and coordinating funding across various federal program categories to support national priorities while also satisfying statewide, regional, and local priorities and needs. In fact, NDOT is among the top five states who leverage their authority to transfer the initial distribution of funding between program categories to better match their needs. In this way, NDOT’s program management efforts support the agency’s mission and strategic goals, which include fiscal responsibility and ensuring successful project delivery. In considering how CRP funds would be used, it became immediately apparent that maximizing the benefits of the funding across NDOT’s strategic goals, ensuring no lapse in funding, developing investment strategies that support Justice40 initiatives, and ensuring the funding is be used for immediately deliverable projects would be key considerations. These considerations fed into the development of NDOT’s CRS goals and into its approach to identifying strategies and projects. In the early years of the CRP, NDOT plans to transfer the majority of the 35 percent of CRP funding that may be obligated in any area of the state to other eligible programs when CRP eligible projects are not available for investment.

One key program management tool used by NDOT is the Federal Funds Purchase Program (FFPP). The FFPP was enacted in Nebraska in 2011 through Legislative Bill 98. This legislation granted NDOT the authority to purchase federal aid transportation funds allocated to Local Public

⁴¹ <https://www.transportation.gov/grants/SMART>

⁴² <https://railroads.dot.gov/grants-loans/competitive-discretionary-grant-programs/railroad-crossing-elimination-grant-program>

⁴³ <https://www.fhwa.dot.gov/bridge/bip/>

Agencies (LPAs) at a discounted rate with state cash. This exchange eliminates federal requirements of the LPAs thereby granting flexibility to meet specific needs.

NDOT decided to include the federal CRP funds allocated to GIAMPO and the Nebraska portion of funds allocated to SIMPCO in to the FFPP. GIAMPO and SIMPCO receive only a small annual amount of CRP funding making it impractical to identify appropriate opportunities and efficiently administer the requirements associated with federal funding. The FFPP procedure for CRP funds will take place in accordance with the existing annual FFPP process.

IV. Nebraska’s Carbon Reduction Strategies and Example Projects

Approach to Identifying Strategies

Maximizing Benefits Across NDOT Strategic Goals

NDOT’s mission is to provide the best possible statewide transportation system for the movement of people and goods. This mission informs NDOT’s existing strategic goals: Safety; Fiscal Responsibility; Environmental Stewardship; Project Delivery; Asset Management; Mobility; Communication, Coordination, Collaboration, and Cooperation; and Workforce Development. From this mission and strategic goals, CRS goals were developed to guide the development of the CRS, the use of CRP funds, and CRS implementation activities. NDOT’s CRS goals are (1) maximize benefits, (2) reduce carbon emissions, (3) invest 100% of funds, (4) promote equity, (5) use established methods and practices, and (6) engage stakeholders. The strategies and example projects that are presented in the following sections were generated as a means to meet these goals in the most effective manner possible (Figure 28).

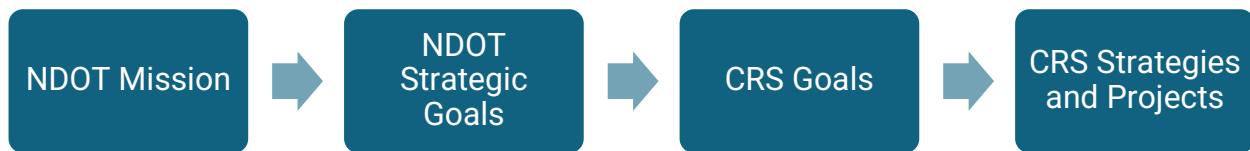


Figure 28. NDOT’s Approach to Identifying CRS Strategies and Projects

Supporting MPO and Other Stakeholder Priorities

From the outset, NDOT envisioned the development of a comprehensive CRS that would effectively showcase the diverse range of carbon reduction initiatives and efforts throughout the state’s transportation system. External stakeholder engagement was conducted to ensure alignment between CRS strategies and existing stakeholder priorities and initiatives. External stakeholders include MPOs, local governments, sister state agencies, academic institutions, advocacy organizations, the private sector, tribal governments, and the general public.

Nebraska’s four MPOs are the most critical stakeholders for development of the CRS and consultation with them is mandated by FHWA. The MPOs provided input on their priorities through three rounds of engagement as described earlier. Priority areas for the MPOs fell under two main themes and several supportive sub-themes which include:

- Travel efficiency, options, and choice
 - Efficient and Effective Transportation System
 - Multimodal Transportation (including transit)
 - Connectivity and Accessibility
- Quality of life and livelihood
 - Environmental Sustainability
 - Livability
 - Safety
 - Economic Development

Regarding travel efficiency, options, and choice, there was a clear emphasis on efficient and effective transportation systems between NDOT and the four MPOs. MPO projects and activities were also centered around multimodal transportation, connectivity, and accessibility. Under the quality of life and livelihood theme, environmental sustainability demonstrated a strong correlation between NDOT and the MPOs. Additionally, sub-themes like livability, bicycle and pedestrian safety, and economic development were also well-represented by the MPOs.

Internal Agency Strategies and Example Projects

Sustainable Construction Materials and Methods

| | |
|-----------------------------------|--|
| Strategy | Continue to implement sustainable construction materials and methods for highway construction. |
| Description | <p>NDOT employs a multi-faceted approach to sustainable construction materials, significantly reducing carbon emissions compared to many other agencies' typical practice. The strategy primarily involves the use of Portland Cement Concrete (PCC) integrated with Supplementary Cementitious Materials (SCMs), such as Fly Ash, slag, and calcined clay, as well as asphalt mixes containing high levels of Recycled Asphalt Pavement (RAP). NDOT also encourages the use of warm mix asphalt (WMA) additives which reduce the energy needed to produce asphalt and compact it. These methods not only aim for environmental sustainability but also focus on creating durable, long-lasting roadways, and infrastructure.</p> <p>NDOT's approach includes:</p> <ul style="list-style-type: none"> • SCM in concrete: By replacing up to 25% of Portland Cement with SCMs like Fly Ash, slag, and calcined clay, NDOT has reduced the CO₂ emissions substantially. Recently approved cements containing 38% SCMs will further improve this reduction. • High RAP content in asphalt: NDOT began widespread use of high RAP mixes in 2006. Using high RAP content not only reduces the need for new asphalt binders but also lessens the energy involved in mining, processing, and trucking of new aggregate. • WMA: All of NDOT's mainline mixes use WMA, compared to an average of about half of DOT mix tonnages around the United States. <p>Overall, in FY 2022, post-consumer recycled content made up 34.8% of NDOT's raw material. Recycled construction materials include, but are not limited to, fly ash in Portland Cement Concrete, crushed concrete or asphalt millings in foundation courses, and RAP in new asphaltic concrete.</p> |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> • Economic: Cost savings from using recycled and durable materials. • Longevity: Extended lifespan of roads and infrastructure. • Waste Diversion: Diverting by-products like fly ash and slag from landfills. • Health: Reduced emissions lead to improved air quality. |
| Key Collaborators | NDOT Materials and Research. |
| Timeframe | Current practice and planned future implementation. |

| | |
|---|---|
| Barriers to Implementation | <ul style="list-style-type: none"> • Quality Assurance: Ensuring that the use of recycled or alternative materials does not compromise quality. • Technological Limitations: Adoption of newer, sustainable technologies could be slow and costly. • Regulatory Hurdles: Potential challenges with regulatory compliance when introducing new materials. • Economic Constraints: Initial costs associated with the adoption of new sustainable practices. |
| Examples of Current Projects and CRP Funding Priorities | Federal Aid highway construction projects that appear on the STIP or TIP and incorporate material sustainability technologies that reduce embodied carbon during the manufacturing and/or construction of highway projects will be assessed for CRP fund use. |

Energy Efficiency

Energy Efficient Streetlights and Traffic Controls

| | |
|---|---|
| Strategy | Leverage cost-saving technology to reduce energy used by streetlights and traffic control devices. |
| Description | NDOT will replace outdoor street lighting with more efficient LEDs bulbs. According to the World Bank ⁴⁴ , LED streetlights are 40 to 60 percent more efficient than traditional lighting technologies. They also last 10 to 15 years longer. Similarly, NDOT will replace traditional incandescent bulbs used in traffic control devices with LED bulbs. |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> • Cost savings: NDOT can realize reductions in operational costs through increasing energy efficiency. • Air Quality: Less energy use typically means less harmful emissions from power generating stations. In 2022, Nebraska received 49 percent of its power from coal⁴⁵. |
| Key Collaborators | NDOT Operations, MAPA, Lincoln MPO, GIAMPO, SIMPCO. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | Barriers to implementation are low. |
| Examples of Current Projects and CRP Funding Priorities | CRP funds may be obligated to support the reduction of transportation emissions and upgrade and implement new and existing ITS devices across the state through various strategies. ITS projects may include, but are not limited to, traffic monitoring, traffic management, and congestion management technologies. CRP funds could be utilized to establish and upgrade street lighting and traffic control devices. |

⁴⁴ <https://blogs.worldbank.org/energy/led-street-lighting-unburdening-our-cities>

⁴⁵ <https://www.eia.gov/state/?sid=NE#:~:text=In%202022%2C%20Nebraska%20obtained%2049,and%2014%25%20from%20nuclear%20power>

Energy Efficient Buildings and Indoor Lighting

| | |
|---|---|
| Strategy | Leverage cost-saving technology to reduce energy used by facilities and buildings. |
| Description | NDOT has and will continue to implement cost-effective measures to increase the energy efficiency of buildings. |
| Co-benefits / Maximizing Benefits | Same as above (cost savings and air quality). |
| Key Collaborators | NDOT Operations. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | Barriers to implementation are low. |
| Examples of Current Projects and CRP Funding Priorities | NDOT has improved the energy efficiency at its headquarters campus through implementation of LED lighting, occupancy sensors, radiant heat, updated chillers, upgraded insulation, sensors for fans, and a controlled centralized HVAC system that maintains the temperature within a predetermined range. NDOT has decreased energy used from 4.6 million KWH in 2016 to about 2 million in 2022. This 56 percent reduction in energy use results in annual savings of about \$234,000 (based on 9 cents per KWH ⁴⁶). Accounting for 0.855 pounds of carbon produced per KWH ⁴⁷ , NDOT has reduced its headquarters' annual carbon footprint by about 1,100 tons. |



Figure 29. NDOT Has Dramatically Improved Energy Efficiency at its Headquarters Campus

⁴⁶ <https://neo.ne.gov/programs/stats/inf/50.html>

⁴⁷ <https://www.eia.gov/tools/faqs/faq.php?id=74&t=11>

Alternative Fuel Vehicles

| | |
|---|--|
| Strategy | Transition NDOT fleet and support public partners as they transition transit vehicles and municipal fleets to alternative fuels that emit less carbon emissions compared to gasoline or diesel-powered vehicles. |
| Description | Transportation agencies in Nebraska have made concerted efforts to transition public fleets toward more efficient and less carbon intensive options. Based on conversations throughout the CRS development process, there is a recognition among NDOT and partners that this trend will not only continue but accelerate. |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> • Cost Savings: While prices of all fuels can fluctuate, CNG, biodiesel, and electricity all generally cost less than gasoline or diesel. • Air Quality: Comparisons of CNG⁴⁸ and electricity⁴⁹ powered vehicles can vary but all options provide drastically lower particulate matter, Nitrous Oxide (NOx), and volatile organic compounds, especially compared to older model diesel vehicles. • Noise: Lower noise is a welcomed co-benefit to many people in urban communities where EV transit vehicles are now in service. |
| Key Collaborators | NDOT Operations, local and county governments, StarTran, Omaha Metro, CRANE Public Transit, Sioux City Transit System, MAPA, SIMPCO, GIAMPO, Lincoln MPO. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | Cost associated with procuring new vehicles and adapting facilities and workforce to service the vehicles. |
| Examples of Current Projects and CRP Funding Priorities | <ul style="list-style-type: none"> • NDOT purchases flexible-fuel fleet vehicles and diesel vehicles whenever practical, and employees fuel those vehicles with E85 (a high-level blend of ethanol and gasoline) and two percent blends of biodiesel, respectively. • StarTran is nationally recognized as a leader in adopting the use of alternative fuels including CNG, biodiesel, ethanol, and electricity. StarTran now has 14 electric buses that together reduce carbon emissions by an estimated 1,820 tons compared to a typical clean diesel bus⁵⁰. • South Sioux City has aggressively transitioned its municipal fleet to EVs and has installed electric charging infrastructure. |

⁴⁸ https://cdn.catf.us/wp-content/uploads/2019/02/21093821/CATF_Pub_Diesel_VS_CNG.pdf

⁴⁹ <https://www.vox.com/energy-and-environment/2017/10/24/16519364/electric-buses>

⁵⁰ <https://www.greencarcongress.com/2020/02/20200228-startran.html#:~:text=StarTran%20has%20been%20nationally%20acknowledged,%2C%20and%2060%2Dfoot%20lengths.>

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| | <ul style="list-style-type: none"> Omaha Metro added three new electric buses to its fleet in 2022 which are anticipated to reduce carbon emissions by about 400 tons per year compared to clean diesel models⁵¹. These new buses have debuted with a new bike rack that can accommodate three bikes instead of two. |
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Transportation System Strategies and Example Projects

Advanced Traffic Management, Congestion Management, and Intelligent Transportation Systems (ITS)

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|-----------------------------------|---|
| Strategy | Leverage technology and partnerships to reduce carbon emissions associated with roadway congestion. |
| Description | NDOT has identified using technology to better manage roadway congestion as a priority. Specifically, NDOT sees portable dynamic message signs (PDMS) and traffic cameras as technology tools that can help them manage non-recurring congestion caused by weather events, crashes, or construction. MAPA also expressed an interest in addressing recurring congestion through Travel Demand Management (TDM) and non-recurring congestion through Transportation Incident Management (TIM). Together, these efforts can reduce delay and carbon emissions associated with roadways clogged with idling vehicles. |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> Quality of Life: Traffic congestion will get worse in the future, which will contribute to more delays and inconveniencing more people. Health: Improve air quality and reduce stress associated with unexpected travel delays. Economic: Reduce costs associated with lost time and fuel consumption. Optimizing existing infrastructure can help avoid expensive expansion projects which can lead to induced demand and more congestion over time. Safety: Decrease the risk of crashes as roadways reach their full capacity creating unpredictable traffic flows. |
| Key Collaborators | MAPA, Lincoln MPO, GIAMPO, SIMPCO, Omaha Metro, Heartland Bike Share, private stakeholders. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | Staff capacity needed to engage, support, and coordinate partners and stakeholders. To bring on new or improved technologies, system engineering plans must first be conducted prior to verifying a worthwhile and feasible effort. Systems engineering plans are not an eligible CRP project type but are needed to shape a project that is eligible for CRP funding. Finding funding and staff capacity to conduct systems engineering efforts is a challenge. |

⁵¹ <https://www.ometro.com/metro-news/metro-charges-forward-with-first-electric-buses-in-omaha/>

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| <p>Examples of Current Projects and CRP Funding Priorities</p> | <p>Travel Demand Management (TDM):</p> <ul style="list-style-type: none"> MAPA’s Long Range Transportation Plan predicts through a “business as usual” scenario that average traffic speeds will decrease from 38 mph to 25 mph resulting in 915,000 more person-hours of driving every weekday in the Omaha region. MAPA is seeking to partner with public agencies like Omaha Metro and large private employers to shift commuting behavior towards more space-efficient modes such as transit and biking. <p>Transportation Incident Management (TIM):</p> <ul style="list-style-type: none"> NDOT, MAPA, and other partners recognize that traffic incidents and construction are major drivers of congestion. NDOT’s TIM program trains response professionals, educates drivers, and provides TIM resources to stakeholders and the general public. NDOT’s “TIMEX” is a free, full-day live TIM field exercise designed to give all disciplines a better understanding of TIM best practices. <p>Portable Dynamic Message Signs and Traffic Cameras:</p> <ul style="list-style-type: none"> NDOT is using PDMS to communicate information with motorists. NDOT’s new operations center will enhance the utility of this capability. NDOT is also using PDMS to implement variable speed advisories (VSA). VSAs can adapt speed limits to roadway conditions thereby reducing the risk of hard braking and crashes. Highway 370 between I-80 and I-375 is a specific example of how NDOT is implementing VSAs to improve traffic flows and safety. |
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Multimodal Transportation

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| <p>Strategy</p> | <p>Promote mode shift to less carbon intensive travel options by enhancing multimodal transportation services, partnerships, and infrastructure.</p> |
| <p>Description</p> | <p>Multimodal transportation can include a range of modes that can work together to provide attractive, affordable, and convenient options other than relying on a vehicle for every trip. Multimodal transportation is also about improving the quality of life and livelihood throughout neighborhoods and communities. From the elementary student riding her bike to school on Grand Island’s extensive trail network, to a worker in South Sioux City using NDOT’s vanpool service to commute, and to Nebraska’s larger urban centers leveraging transit infrastructure to promote economic development, there are many benefits and reasons to promote multimodal transportation.</p> <p>Enhancing multimodal services and partnerships:</p> <ul style="list-style-type: none"> Expand fixed route transit service by adding or extending routes, extending the span of service, and/or increasing the frequency of service. Expand bike share and micromobility by adding stations for bike share and developing clear policies that promote the safe and appropriate use and storage of scooters within the public way. |

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| | <ul style="list-style-type: none"> • Create new van pool partnerships with large employers in small communities and rural areas outside of fixed route transit service areas. <p>Enhancing multimodal infrastructure:</p> <ul style="list-style-type: none"> • Expand and improve existing off-street trail networks. • Advance implementation of Complete Streets policies which can include: <ul style="list-style-type: none"> ○ On-street bus priority and bus stop amenity improvements (i.e., transit signal priority, bus lanes, bus boarding islands, bus stop shelters, lighting, seating). ○ Pedestrian improvements that make walking safer and more comfortable (i.e., sidewalk corner bump outs at intersections, median refuge island, leading pedestrian signal interval, lighting). ○ New on-street bicycle facility and facility upgrades (i.e., on-street bicycle lanes, off-street multiuse paths, bike boulevards, safety treatments at intersections such as bike boxes.) |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> • Quality of Life: People value having access to convenient transportation options that help to make day-to-day living easier, more affordable, and more enjoyable. • Health: Improve air quality and increase active transportation opportunities. • Economic: Improve access to economic opportunities for those without vehicles or the ability to operate a vehicle. Transit can support higher concentrations and specialized economic activity through more intensive land use and can provide more affordable travel options over owning and maintaining a vehicle. • Safety: Complete Street treatments have proven safety benefits for all roadway users, particularly for the most vulnerable. • Congestion Management: Multimodal transportation can play a big part in helping to reduce peak demand for roadway capacity. This supports NDOT's priority to address congestion. |
| Key Collaborators | Local and county governments, StarTran, Omaha Metro, CRANE Public Transit, Sioux City Transit System, MAPA, SIMPCO, GIAMPO, Lincoln MPO. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | Securing resources, especially revenue sources to sustain and expand operations, which are not eligible for CRP funding, in coordination with capital improvements. |
| Examples of Current Projects and CRP Funding Priorities | <p>Enhancing multimodal services and partnerships:</p> <ul style="list-style-type: none"> • GIAMPO has recently re-established their non-motorized committee which assisted in the creation of the Bike/Ped Master Plan and advises the Technical Advisory Committee (TAC) as a subcommittee. |

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| | <p>GIAMPO is working to inform the non-motorized committee about work completed in the intervening years and is expected to advise on upcoming projects and initiatives.</p> <ul style="list-style-type: none"> Although unlikely to be eligible for CRP funding, MAPA is interested in developing an electric bike rebate program. MAPA has seen the success of mode shift related to Heartland Bike Share’s expansion and is looking for ways to further this success. An ebike rebate program would assist individuals with the upfront costs of obtaining an electric bike, which is well-suited for the Omaha region’s hilly topography. <p>Enhancing multimodal infrastructure:</p> <ul style="list-style-type: none"> Lincoln MPO is looking to leverage CRP funding to enhance bicycle and pedestrian access and amenities related to the proposed Lincoln Multimodal Transportation Center. This includes a connecting multiuse path, shower facilities for cycling commuters, a bicycle repair station, improved pedestrian lighting and more. South Sioux City’s “Safe Systems for All” approach supports non-motorized pedestrian and bicycle use by focusing on sidewalk gaps, bike facility gaps, quality of both types of facilities, and safety at crossings. This effort can amplify investments made to improve the trail network which includes two planned future trail connections: <ul style="list-style-type: none"> From G St. and 137th St. to a future trail connection near 25th St. and Veterans Dr. From Siouxland Freedom Park to an existing trail connection at E. 39th St. and C St. |
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EV Infrastructure

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|-----------------------------------|--|
| Strategy | Work with public and private partners to deploy EV charging infrastructure as outlined in Nebraska’s State Plan for Electric Vehicle (EV) Infrastructure Deployment (NEVI plan). |
| Description | Through NEVI, NDOT will focus designated formula funding towards Alternative Fuel Corridors (AFCs) and other corridors identified in the state. NDOT will first focus on installing publicly accessible DC fast charging along the I-80 corridor. FHWA approved Nebraska’s NEVI plan in September 2022. |
| Co-benefits / Maximizing Benefits | <ul style="list-style-type: none"> Quality of Life: People value having access to convenient transportation options that help to make day-to-day living easier, affordable, and more enjoyable. Access to DC fast chargers for EVs will make traveling within the state of Nebraska not only possible but also convenient. Health: Improve air quality. A study by the University of Southern California⁵² has shown at the zip code level that for every 20 additional zero emission vehicles adopted per 1,000 people there was a decrease of 3.2 percent in the rate of asthma-related emergency visits. |

⁵² <https://keck.usc.edu/study-links-adoption-of-electric-vehicles-with-less-air-pollution-and-improved-health/>

| | |
|---|---|
| | <ul style="list-style-type: none"> Economic: Accommodate tourism and existing economic activity as more people choose to purchase EVs. EVs generally save owners money⁵³ compared to gasoline powered vehicles through tax credits, fuel, and maintenance cost savings. Prices for electricity tend to be much more stable compared to gasoline prices which can experience market disruptions which cause prices to spike. |
| Key Collaborators | Nebraska Department of Environment and Energy, local governments, MAPA, SIMPCO, GIAMPO, Lincoln MPO, local businesses, private sector EV charging companies. |
| Timeframe | Current practice and planned future implementation. |
| Barriers to Implementation | The biggest barrier to implementation of publicly available charging infrastructure in Nebraska is the current legislative restriction on charging money for EV charging. Staff capacity, funding, and finding suitable sites are also barriers to implementation. |
| Examples of Current Projects and CRP Funding Priorities | <p>Nebraska’s NEVI plan covers the following project needs:</p> <ul style="list-style-type: none"> EV infrastructure operations and maintenance Identifying EV charging service providers and station owners Data collection and sharing Resilience, emergency evacuation, snow removal and other seasonal considerations Establishment of labor, safety, training, and installations standards |

⁵³ <https://www.energy.gov/energysaver/articles/saving-money-electric-vehicles>

V. Implementation, Coordination, Program Evaluation, and Future Updates

Implementation of the Carbon Reduction Strategy

The primary mechanism for implementing the CRS will be the delivery of strategies and projects around the state that reduce carbon, utilizing CRP funds as well as funding from related programs such as CMAQ, TAP, and NEVI. In planning and delivering carbon reduction projects, NDOT will use its typical public involvement processes, engaging with and considering the needs of traditionally underserved communities such as low-income and minority households.

External Consultation and Coordination

NDOT will continue to actively consult with its MPO partners and coordinate with other key agencies and stakeholders in implementing the CRS and using CRP funds. NDOT foresees an ongoing collaborative engagement process with the MPOs in the state. For the large TMA MPOs (MAPA and Lincoln MPO), NDOT will engage in robust consultation and provide input to their proposed uses of CRP funds to help ensure alignment with statewide goals. For the smaller non-TMA MPOs (GIAMPO and SIMPCO), NDOT will purchase the federal CRP funds in exchange for state cash and apply the CRP funding to state projects within those regions in consultation with GIAMPO and SIMPCO.

NDOT will also continue to coordinate with other external partners to advance carbon reduction initiatives in the state. For example, the development of NDEE's Priority Climate Action Plan (PCAP) by March 2024 and the Comprehensive Climate Action Plan (CCAP) slated for late summer 2025, provides an opportunity for NDOT to support a strategic and collaborative approach. NDEE will focus on both immediate, high-priority actions as well as comprehensive, long-term strategies to reduce GHG emissions across various sectors, including transportation. NDOT will actively participate in one or more sector-based workgroups organized by NDEE to discuss and propose priority measures for GHG emission reduction, especially in the transportation sector. Another example is the new Clean Cities Coalition that will be led by the University of Nebraska-Lincoln. NDOT sees an opportunity for a multi-disciplinary approach, fostering a closer relationship with UNL to facilitate the application of academic research and innovation to accelerate carbon reduction.

Methods and Frequency of Program Evaluation

NDOT will evaluate its use of CRP funds in the coming years in order to learn from the initial rollout of the program, ensure effective project delivery, and inform future efforts. NDOT anticipates undertaking evaluation at the program level, using a combination of informal and formal evaluation efforts and a mix of qualitative and quantitative performance measures to evaluate progress against NDOT's CRS goals. Example measures that will be considered by NDOT as the program is implemented are shown in Table 3.

Table 3. Example Performance Measures for Consideration

| CRS Goal | Possible Measures |
|---------------------------------------|--|
| Maximize Benefits | <ul style="list-style-type: none"> Based on NDOT's Strategic Goals, to what degree are co-benefits achieved in: <ul style="list-style-type: none"> Safety Fiscal Responsibility Environmental Stewardship Project Delivery Asset Management Mobility Communication, Coordination, Collaboration, and Cooperation Workforce Development |
| Reduce Carbon Emissions | <ul style="list-style-type: none"> How much has transportation's contribution to carbon emission been reduced in Nebraska? How much has NDOT's contribution to carbon emissions as an agency been reduced? |
| Invest 100% of Funds | <ul style="list-style-type: none"> Program available CRP apportionment to prevent lapse in funding. A process is in place to work collaboratively and proactively with partners to program future CRP funds. |
| Promote Equity | <ul style="list-style-type: none"> The degree to which benefits from the use of CRP funds accrue to disadvantaged areas. Compliance with federal Justice40 requirements. |
| Use Established Methods and Practices | <ul style="list-style-type: none"> Projects are selected that are practical, readily implemented, and have previously proven successful. |
| Engage Stakeholders | <ul style="list-style-type: none"> Number and type of engagement activities targeting key stakeholders and the general public. |

Informal program evaluation efforts will include regular discussions and updates among the core CRS team and other key internal stakeholders as the program rolls out. Formal evaluation efforts may include updates to NDOT leadership by the core CRS team and inclusion of program evaluation information as a new section in the NDOT Annual Report (Figure 30).

NDOT will also consider the need for, and usefulness of, evaluation at the project level. NDOT recognizes that beyond the CRP program, various other federal mandates, statutes, and related efforts are resulting in a convergence of drivers for project-level carbon emissions analyses. These include the current CEQ guidance on project-level GHG analysis under NEPA, the possible addition of carbon dioxide reduction targets as part of FHWA's national performance management measures, and FHWA's EDC-7 initiative to support state DOTs and MPOs with GHG target setting, measurement, and reduction. NDOT



Figure 30. NDOT's Annual Report

will monitor the evolution of these federal initiatives and consider whether and how to more systematically quantify carbon emissions reduction associated with specific projects.

Plans for Future Updates and Alignment with Other Plans

NDOT plans to update this CRS in consultation with its MPO partners and other stakeholders at least once every four years. Updates will be undertaken as part of the typical transportation planning processes in the state and aligned with NDOT's LRTP and the MPOs' RTPs.

Appendices

Appendix A: Full List of CRP-Eligible Project Types

Subject to the general eligibility requirements, the following activities are listed as eligible under the FHWA's CRP Guidance⁵⁴:

- A. a project described in 23 U.S.C. 149(b)(4) to establish or operate a traffic monitoring, management, and control facility or program, including advanced truck stop electrification systems.
- B. a public transportation project eligible for assistance under 23 U.S.C. 142 (this includes eligible capital projects for the construction of a bus rapid transit corridor or dedicated bus lanes as provided for in BIL Section 11130 (23 U.S.C. 142(a)(3)).
- C. a transportation alternatives project⁵⁵ as described in 23 U.S.C. 101(a)(29) as in effect prior to the enactment of the FAST Act,⁵⁶ including the construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation.
- D. a project described in section 23 U.S.C. 503(c)(4)(E) for advanced transportation and congestion management technologies.
- E. a project for the deployment of infrastructure-based intelligent transportation systems capital improvements and the installation of vehicle-to-infrastructure communications equipment, including retrofitting dedicated short-range communications (DSRC) technology deployed as part of an existing pilot program to cellular vehicle-to-everything (C-V2X) technology.
- F. a project to replace street lighting and traffic control devices with energy-efficient alternatives.
- G. development of a carbon reduction strategy (as described in the Carbon Reduction Strategies section above).
- H. a project or strategy designed to support congestion pricing, shifting transportation demand to nonpeak hours or other transportation modes, increasing vehicle occupancy rates, or otherwise reducing demand for roads, including electronic toll collection, and travel demand management strategies and programs.
- I. efforts to reduce the environmental and community impacts of freight movement.
- J. a project to support deployment of alternative fuel vehicles, including—
 - (i.) the acquisition, installation, or operation of publicly accessible electric vehicle charging infrastructure or hydrogen, natural gas, or propane vehicle fueling infrastructure; and
 - (ii.) the purchase or lease of zero-emission construction equipment and vehicles, including the acquisition, construction, or leasing of required supporting facilities.
- K. a project described under 23 U.S.C. 149(b)(8) for a diesel engine retrofit.
- L. certain types of projects to improve traffic flow that are eligible under the CMAQ program, and that do not involve construction of new capacity; (23 U.S.C. 149(b)(5) and 175(c)(1)(L)).

⁵⁴ https://www.fhwa.dot.gov/environment/sustainability/energy/policy/crp_guidance.pdf

⁵⁵ https://www.fhwa.dot.gov/environment/transportation_alternatives/

⁵⁶ https://www.fhwa.dot.gov/environment/transportation_alternatives/guidance/ta_guidance_2022.pdf

- M. a project that reduces transportation emissions at port facilities, including through the advancement of port electrification.

Other projects that are not listed above may be eligible for CRP funds if they can demonstrate reductions in transportation emissions over the project's lifecycle. Consistent with the CRP's goal of reducing transportation emissions, projects to add general-purpose lane capacity for single occupant vehicle use will not be eligible absent analyses demonstrating emissions reductions over the project's lifecycle. The following project types may be eligible for CRP funding:

- **Sustainable pavements and construction materials** that reduce embodied carbon during the manufacture and/or construction of highway projects are eligible for CRP if a lifecycle assessment (LCA) demonstrates substantial reductions in CO₂ compared to the implementing Agency's typical pavement-related practices.
- Projects that include **Climate Uses of Highway Right-of-Way (ROW)** that reduce transportation emissions are also eligible for CRP. For example, renewable energy generation facilities, such as solar arrays and wind turbines, can reduce transportation emissions. Additionally, biologic carbon sequestration practices along highway ROW to capture and store CO₂ may demonstrate potential for substantial long-term transportation emissions reductions.
- Projects that incorporate **Mode Shift** and maximize the existing right-of-way for accommodation of nonmotorized modes and transit options that increase safety, equity, accessibility, and connectivity may be eligible. Projects that separate motor vehicles from pedestrians and bicyclists, match vehicle speeds to the built environment, increase visibility (e.g., lighting), and advance implementation of a Safe System approach and improve safety for vulnerable road users may also be eligible. Micromobility and electric bike projects, including charging infrastructure, may also be eligible.

Appendix B: Additional Details on Foundational Research

Strategic Direction Inventory

The following tables document the goals, objectives, strategies, performance measures, and project scoring criteria identified in state and regional plans.

Goals

The following goals were identified in state and regional plans in the foundational research.

Table 4. Goals Identified in Foundational Research

| Goal | Goal Language | Source |
|-----------------------------------|---|-------------|
| Stewardship and Environment | Address air quality concerns, consider land use in all improvements, and incorporate economic, social, and environmental criteria in project selection and programming decisions. | MTIS |
| Mobility and Accessibility | Reduce the growth of peak-period travel times for all modes and increase transit access and ridership. | |
| Environment | Preserve and enhance the area's unique and natural environmental features by protecting the integrity of air, land, water, energy, cultural, and aesthetic resources. | SIMPCO |
| Livability | Promote a transportation system that encourages the use of environmentally sustainable modes as a vital means of transport, including transit, walking, and bicycling to support the creation of livable communities. | |
| Environmental Sustainability | A transportation system that enhances the natural, cultural, and built environment. | Lincoln MPO |
| Environment and System Resiliency | Promote energy conservation, limit impacts to the natural and build environment, invest in alternative and renewable fuel infrastructure, and identify strategies to make transportation infrastructure more resilient. | GIAMPO |

Objectives

The following objectives were identified in state and regional plans in the foundational research.

Table 5. Objectives Identified in Foundational Research

| Category | Objective | Source |
|-----------------------|---|-------------|
| Active Transportation | Increase the connectivity of the bicycle and pedestrian system. | Lincoln MPO |
| | Pursue further development of the regional trail system and create connections to existing and future trails. | |
| | Identify potential on-street corridors where bicycle and pedestrian facilities could be sited on low-volume and low-speed streets. | |
| | Provide active transportation options that promote the health and well-being of residents. | |
| | Increase the connectivity of the bicycle and pedestrian system. | GIAMPO |
| Air Quality | Maintain compliance with national ambient air quality standards. | Lincoln MPO |
| Alternative Fuel | Invest in alternative and renewable fuel infrastructure when practical. | Lincoln MPO |
| | Reduce fossil fuel consumption by providing access to alternative modes and fuels. | |
| | Promote energy conservation, especially for non-renewable energy sources. | GIAMPO |
| | Invest in alternative and renewable fuel infrastructure when practical. | |
| Asset Preservation | Invest in the preservation of other important transportation assets including aviation, bicycle and pedestrian systems, transit facilities and vehicles, ITS, and rest areas. | NDOT LRTP |

| Category | Objective | Source |
|---------------------------|---|-------------|
| | Identify strategies to make transportation infrastructure more resilient to natural and manmade events. | GIAMPO |
| Stewardship | Avoid, minimize, and mitigate environmental impacts of transportation projects to the extent reasonably practical. | Lincoln MPO |
| | Avoid, minimize, and mitigate adverse impacts of transportation systems on the environment, such as noise and water runoff. | SIMPCO |
| | Initiate, promote, and support projects, programs, and services that are designed to improve the SIMPCO MPO Planning area's air quality and energy conservation in the transportation system. | |
| | Transportation projects should limit impacts to the natural and build environment. | GIAMPO |
| Multimodal Transportation | Minimize conflicts between and within roadways, public transit, rail, bicycle, and pedestrian facilities. | SIMPCO |
| | Give priority consideration to transportation projects that consider all modes of transportation. | |
| | Promote land use patterns and development that allow for the use of sustainable transportation. | |
| | Promote consideration of actions that make better use of the existing system such as carpooling, van pools, etc. | |

Strategies (Action Steps and Recommendations)

The following strategies were identified in state and regional plans in the foundational research.

Table 6. Strategies Identified in Foundational Research

| Category | Action Steps, Recommendations, and Strategies | Plan |
|--|--|----------------|
| Congestion Mitigation | Develop a Travel Demand Management program. | Lincoln MPO |
| Electric Vehicles | Incentivize the adoption of electric vehicles by City employees. | Lincoln MPO |
| | Add electric charging stations with public access. | |
| | Electrify municipal fleet with electric vehicles and charging stations. | |
| | Continue to assess alternative transportation options for public transit and city/county fleets. This includes the consideration of electric or hybrid buses and fleet vehicles reducing environmental impacts in the MPO. | SIMPCO |
| Encourage the use of electric vehicles throughout the metro area by increasing the number of electric charging stations available to the public. | | |
| Active Transportation | Coordinate with businesses to ensure workplaces have adequate facilities for active commuters. | Lincoln MPO |
| | Promote active commuter incentives. | Heartland 2050 |
| | Make it convenient to walk or bike to neighborhood stores, businesses, and schools. | |
| | Shared Lanes: Use markings on street pavement that indicate a shared lane environment for road users and offer proper positioning and directional guidance for cyclists. | GIAMPO |
| | Bicycle Boulevards: Improvements that prioritize bicycle usage on roads that have low motorized vehicle traffic and low speeds. | |
| | Multi-Use Shoulders: Roadway shoulder designed to serve bicycle traffic and parking. | |
| | Advisory Bike Lanes: Marked bicycle lanes within vehicular travel lanes with low vehicular traffic. | |
| | Protected Bike Lanes: Bicycle Lane separated from vehicular traffic by a physical barrier (i.e., raised curb, vehicle parking, concrete barrier). | |

| Category | Action Steps, Recommendations, and Strategies | Plan |
|-------------------------------------|--|-------------|
| | Pedestrian Crossing Improvements: Improved intersection crossing infrastructure for pedestrians (i.e., curb extensions, enhanced median crossings). | SIMPCO |
| | Multi-Use Trail: Bicycle and pedestrian trail separated from vehicle traffic | |
| | Side paths: A bicycle and pedestrian path separated from vehicular traffic. | |
| | Incorporate public transit, bicycle, and pedestrian accessibility in the review of all development. | |
| | Include the construction of bicycle/pedestrian infrastructure in conjunction with the construction, reconstruction, or changes in any State facilities, and assure that all transportation improvements address the needs of bicyclists and pedestrians where bikeways and sidewalks are needed. | |
| | Improve cycling signage by encouraging the placement of signs, sharrow, and/or roadway markings on roadways with on-street bicycle facility designation. | |
| | Obtain funding to expand nonmotorized transportation opportunities. | |
| | Promote and market alternative modes of transportation and their benefits. | |
| | Pursue and support transportation programs (e.g., express buses, high occupancy vehicles, public transit alternatives, and bikeways) that reduce air quality degradation, help conserve energy, and provide the community with travel alternatives. | |
| | Increase access to public transit, bicycle, and pedestrian facilities. | |
| Air Quality | Apply to grants annually for projects that benefit air quality. | SIMPCO |
| Complete Streets | Encourage Complete Street projects throughout the metropolitan area by considering comprehensive street design. | SIMPCO |
| | Encourage development that is accessible by all modes of transportation. | |
| | Provide safe, efficient non-motorized access between major traffic generators like schools, major employers, commercial districts, public facilities, and residential areas. | |
| | Develop and extend the pedestrian and bicycle network by tying the street system with greenway systems and major activity centers. | |
| | Develop and adopt a 'complete streets' policy: NDOT should develop and adopt its own 'complete streets' policy and produce a 'complete streets' manual. | |
| Safety | Promote safety education for bicyclists and pedestrians. | SIMPCO |
| | Educate the community on bicycle and pedestrian safety practices. | |
| Development | Minimize motor vehicles, truck, bus, train, bicycle, and pedestrian conflicts. | SIMPCO |
| | Continue to improve connections between trails and other facilities. | |
| | Provide enhancements to the properties including possible enhancements to the pedestrian/bicycle networks around these areas. | |
| | Maintain the various types of transportation facilities properly, including streets, buses, sidewalks, trails, and other modes. | |
| Coordination of Efforts | Support the Lincoln Climate Action Plan to build a decarbonized and efficient transportation system. | Lincoln MPO |
| | Support the Sioux City Active Transportation Plan's goals, as well as any other cities' plans that may be adopted. | SIMPCO |
| | Coordinate transportation amongst various modes, jurisdictions, and organizations. | |
| | Encourage member agencies to develop non-motorized plans, maintenance policies, bicycle and pedestrian programs like active transportation plans, complete streets, safe routes to school, and walking school bus. | |
| Data Collection and Analysis | Acquire bicycle/pedestrian counters and develop an annual count-collecting program. | SIMPCO |
| | Develop and maintain a sidewalk dataset to highlight areas in need of improvement. | |

Performance Measures

The following performance measures were identified in state and regional plans in the foundational research.

Table 7. Performance Measures Identified in Foundational Research

| Performance Measure | Target | Plan |
|---|--|-------------|
| Percent of Non-SOV Travel | N/A | Lincoln MPO |
| Daily vehicle miles of travel (VMT) per capita | Slow or reduce from baseline | |
| Mobile source emissions | Slow or reduce emissions | |
| Number of alternatively fueled vehicles (AFVs) in fleet | Increase from baseline | |
| Miles of minimal impact projects completed | Increase the number of cross section streets | |

Project Scoring Criteria

The following project scoring criteria were identified in state and regional plans in the foundational research.

Table 8. Project Scoring Criteria Identified in Foundational Research

| Criteria | Weight | Plan |
|--|------------|--------|
| Multimodal Connectivity | | GIAMPO |
| Vehicular Travel Reduction | | |
| Project Impact Screening | | |
| Project overlaps an environmentally sensitive area or is in the floodway | -10 Points | SIMPCO |
| Project contributes to improved water quality and/or quantity by implementing strategies from the IDNR's Stormwater Manual | 3 points | |
| Project minimizes conflicts between and within roadways, transit, rail, bike, and pedestrian facilities | 3 points | |
| Project includes bike facility | 3 points | |
| Project includes sidewalks | 3 points | |
| Project includes transit amenities | 3 points | |
| Project incorporates pedestrian safety features at intersections (crosswalk, pedestrian signals, and median refuge) | 5 points | |
| Project minimizes motor vehicle, truck, bus, train, bike, and pedestrian conflicts | 3 points | |
| Project has multimodal impacts (road, transit, bike facility) | 5 points | |
| Project would encourage walking or biking | 2 points | |

Appendix C: Additional Details on MPO Consultation

MPO CRS Kick-off Meeting

March 27, 2023

Attendees

| Attendees |
|--|
| NDOT <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Ryan Huff, Chief Strategy Officer • Curtis Nosal, Strategic Planning Engineer |
| FHWA Division Office <ul style="list-style-type: none"> • Justin Luther, Transportation Planner, Acting Program Delivery Team Leader |
| GIAMPO <ul style="list-style-type: none"> • Allan Zafft, MPO Program Manager • Chad Nability, Regional Planning Director |
| MAPA <ul style="list-style-type: none"> • Michael Helgerson, Executive Director • Carlos Morales, Transportation and Data Manager • Jim Boerner, Transportation Planner • Lindsey Button, Transportation Planner • Court Barber, Transportation Planner and Local Projects Liaison |
| Lincoln MPO <ul style="list-style-type: none"> • Rachel Christopher, Transportation Planner • Stephanie Rouse, Transportation Planner |
| SIMPCO <ul style="list-style-type: none"> • Erin Berzina, Regional Planning Director • Corinne Erickson, Regional Planner • Ryan Brauer, Regional Planner |
| High Street <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant • Ngani Ndimbie, Senior Consultant • Ryan Caro, Consultant |

Main Takeaways

- NDOT is looking to use CRP funds to fund easy to deliver projects that are already in the project pipeline.
- MPOs and their local partners have a range of current carbon reduction related goals, projects, initiatives, and plans that may help develop common CRS strategies.
- MAPA indicated interest in using CRP funds to fund multimodal projects (walking/biking/transit) since that project type was not included in NDOT's Transportation Alternatives Program, but they think it is well suited to meeting Justice40 requirements.

GIAMPO In-depth Consultation Meeting

May 15, 2023

Attendees

| Attendees |
|--|
| NDOT <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Ryan Huff, Chief Strategy Officer • Curtis Nosal, Strategic Planning Engineer |
| GIAMPO <ul style="list-style-type: none"> • Allan Zafft, MPO Program Manager • Keith Kurz, Assistant Public Works Director • Chad Nability, Regional Planning Director |
| High Street <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant • Ngani Ndimbie, Senior Consultant |

Main Takeaways

- Because GIAMPO has adopted the [NDOT System Operations Performance Measures](#) there is alignment in how GIAMPO measures direct or supportive carbon reduction initiatives and activities.
- GIAMPO's [2045 Long Range Transportation Plan](#) goals directly or indirectly call for carbon reduction initiatives and activities. These goals can help identify unifying carbon reduction strategy themes between NDOT and Nebraska's three other MPOs.
- GIAMPO supports carbon reduction through mode shift by promoting non-motorized, multi-modal travel options. Specific actions include:
 - the creation of the [Bike Ped Master Plan](#),
 - the ongoing development of the Grand Island trail network, and
 - the re-establishment of the non-motorized committee.
- GIAMPO is implementing energy efficient traffic control devices and roundabouts to reduce congestion and improve safety. They are also extending roadways in another effort to reduce congestion in the case of the Claude Road extension.

MAPA In-depth Consultation Meeting

May 15, 2023

Attendees

| Attendees |
|--|
| NDOT <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Ryan Huff, Chief Strategy Officer • Curtis Nosal, Strategic Planning Engineer |
| MAPA <ul style="list-style-type: none"> • Michael Helgerson, Executive Director • Lindsey Button, Transportation Planner |
| High Street <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant • Ngani Ndimbie, Senior Consultant |

Main Takeaways

- MAPA does not foresee issues with spending CRP funding and has identified about a dozen current CRP eligible projects (not exhaustive) in their TIP.
- MAPA has several carbon reducing supportive goals, strategies, and performance measures that align with NDOT's.
- FHWA is still finalizing a determination, but it is unlikely that CRP funding can be used to support an ebike program.
- MAPA's activities that support mode shift to lower carbon options:
 - Address traffic congestion and reduce single-occupancy vehicle usage by partnering with private sector organizations like Omaha Metro Transit and bikeshare programs. Statewide programs like vanpooling and carpooling are also being promoted.
 - Invest in active mobility plans, including biking, walking, and trail expansion, to make transportation more people-centered and reduce reliance on cars.
- MAPA is working on an EV strategy and supports the Nebraska Clean Energy Alliance's efforts to build a network of charging stations. The focus is on sustainable transportation and reducing carbon emissions.
- MAPA has a Transportation Incident Management Plan to address incidents that lead to congestion and increased GHG emissions. The goal is to improve traffic flow and reliability.
- MAPA is implementing carbon emissions measurement as part of the Climate Action Plan to assess the impact of transportation on emissions and air quality.

Lincoln MPO In-depth Consultation Meeting

May 16, 2023

Attendees

| Attendees | |
|--------------------|--|
| NDOT | <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Ryan Huff, Chief Strategy Officer • Curtis Nosal, Strategic Planning Engineer |
| Lincoln MPO | <ul style="list-style-type: none"> • Paul Barnes, City of Lincoln, Long Range Planning Manager • Stephanie Rouse, City of Lincoln, Transportation Planner • Rachel Christopher, Lincoln MPO, Transportation Planner |
| High Street | <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant • Ngani Ndimbie, Senior Consultant |

Main Takeaways

- FHWA’s responses support Lincoln MPO’s stated desired CRP approach to improve non-motorized access and mobility in support of the StarTran Multimodal Center project.
- Lincoln’s [2050 Long Range Transportation Plan](#) goals directly or indirectly call for carbon reduction initiatives and activities. These goals can help identify unifying carbon reduction strategy themes between NDOT and Nebraska’s three other MPOs.
- The City of Lincoln and StarTran are transitioning their vehicle fleets to alternatively fueled vehicles.
- The City of Lincoln developed an [EV Readiness Plan](#) in collaboration with the University of Nebraska-Lincoln, Lincoln Electric System (LES), and Lincoln Public Schools (LPS).
- To reduce congestion and improve the flow of traffic, the [Green Light Lincoln program](#) has helped reduce delays and emissions (121,700 kilograms of emission annually).
- Lincoln MPO promotes non-motorized travel options through the ongoing development of BikeLNK (Lincoln’s bikeshare program), their now permanent electric scooter program, expansion of their trail network, complete street initiatives, and on-street bike facilities.
- These initiatives all support mode shift and provide other alternatives to motorized travel that help reduce carbon emissions.

SIMPCO In-depth Consultation Meeting

May 16, 2023

Attendees

| Attendees |
|--|
| NDOT <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Curtis Nosal, Strategic Planning Engineer |
| SIMPCO <ul style="list-style-type: none"> • Michelle Bostinelos, Executive Director • Erin Berzina, Regional Planning Director • Corinne Erickson, Regional Planner • Ryan Brauer, Regional Planner |
| High Street <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant • Ngani Ndimbie, Senior Consultant |

Main Takeaways

- SIMPCO's [2045 Long Range Transportation Plan](#) goals directly or indirectly calls for carbon reduction initiatives and activities. These goals can help identify unifying carbon reduction strategy themes between NDOT and Nebraska's three other MPOs.
- Because SIMPCO adopts [NDOT's performance measures](#), there is alignment on how SIMPCO measures direct or supportive carbon reduction initiatives and activities.
- Promotion of non-motorized travel options through the ongoing development of South Sioux City's trail network is a high priority and supports carbon reduction through mode shift.
 - South Sioux City's Safe Systems for All approach further supports non-motorized pedestrian and bicycle use by focusing on sidewalk gaps, bike facility gaps, quality of both types of facilities, and safety at crossings. This effort can amplify investments made to improve the trail network.
- SIMPCO identified the need to expand transit service to the industrial corridor along Dakota Avenue (US Route Business 20) between I-129 and Vine Street in Dakota City.
 - This industrial corridor is regionally important and supports over 6,000 jobs.
 - Programmed and planned trail extensions will improve pedestrian and bicycle access to this corridor.
 - Nebraska's existing Go 'NE'Where Vanpool Program can help provide a competitive alternative to commuting by vehicle to this industrial corridor.
- South Sioux City is on the forefront in Nebraska for transitioning its municipal vehicle fleet to EVs.

MPO CRS Approach Validation Meeting

August 9, 2023

Attendees

| Attendees |
|---|
| NDOT <ul style="list-style-type: none"> • Craig Wacker, Highway Planning Manager • Curtis Nosal, Strategic Planning Engineer |
| SIMPCO <ul style="list-style-type: none"> • Michelle Bostinelos, Executive Director • Erin Berzina, Regional Planning Director • Ryan Brauer, Regional Planner |
| Lincoln MPO <ul style="list-style-type: none"> • Paul Barnes, City of Lincoln, Long Range Planning Manager • Rachel Christopher, Lincoln MPO, Transportation Planner • Stephanie Rouse, City of Lincoln, Transportation Planner |
| GIAMPO <ul style="list-style-type: none"> • Allan Zafft, MPO Program Manager • Chad Nability, Regional Planning Director • Keith Kurz, Assistant Public Works Director |
| MAPA <ul style="list-style-type: none"> • Carlos Morales, Transportation and Data Manager • Jim Boerner, Transportation Planner • Lindsey Button, Transportation Planner • Court Barber, Transportation Planner and Local Projects Liaison |
| High Street <ul style="list-style-type: none"> • Damon Fordham, Project Manager • Jason Biernat, Senior Consultant |

Main Takeaways

- MPOs to receive, review, and comment on draft CRS document.
- Discussion of NDOT’s newly-established CRS goals, aligning with NDOT’s mission.
- Public survey is open through August 25th and the virtual public meeting will be held on September 7th.
- FHWA response to questions has provided clarity on some project types while others such as the use of sustainable materials will require a case-by-case approach, proving efforts beyond typical practice, or proving carbon reduction benefits.
- MPO consultation themes center on “travel efficiency options and choice” and “quality of life and livelihood.” These theme areas will be incorporated into the CRS outline framework.
 - There was strong alignment between NDOT and MPOs regarding travel efficiency and sustainability. MPO activities were strongly represented in sub-themes covering, multimodal (including transit), accessibility, connectivity, livability, bicycle/pedestrian safety, and economic development.

- MPOs can commence programming CRP funding prior to FHWA's approval of NDOT's CRS.
- NDOT expects approval of the CRS in part due to ongoing feedback and dialogue with FHWA.



NEBRASKA

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