



METROCOG

Regional Comprehensive Safety Action Plan



Metro COG Disclaimer

This plan is made possible by a Planning Grant through the Safe Streets and Roads for All (SS4A) Program. This program provides financial support for planning, design, infrastructure, behavioral, and operational initiatives to prevent death and serious injury on roads and streets.

ACKNOWLEDGEMENTS

The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) Regional Comprehensive Safety Action Plan (CSAP) is a product of a collaborative effort and commitment from Metro COG staff, the Study Review Committee (SRC), Transportation Technical Committee (TTC), and Policy Board. The Project team would also like to acknowledge stakeholders and community members within the region who participated and provided instrumental feedback to guide the CSAP.

Metro COG Staff

- Adam Altenburg, Project Manager
- Ben Griffith, Executive Director
- Jaron Capps, Assistant Project Manager

Study Review Committee

- Aaron Murra, North Dakota Department of Transportation - Fargo District
- Andrew Wrucke, City of West Fargo
- Cheryl Stetz, Metropolitan Bicycle & Pedestrian Committee Representative
- Clay Lexen, City of Moorhead
- Dan Hanson, City of West Fargo
- Don Lorsung, City of Dilworth
- Jace Hellman, City of Horace
- Jonathan Atkins, City of Moorhead
- Jordan Smith, MATBUS
- Justin Sorum, Clay County
- Kelly Krapu, Freight Advisory Committee Representative
- Maegin Elshaug, City of Fargo
- Kristen Sperry, Federal Highway Administration – North Dakota Division
- Kyle McCamy, City of West Fargo
- Mary Safgren, Minnesota Department of Transportation
- Peyton Mastera, City of Dilworth
- Tom Soucy, Cass County

Transportation Technical Committee (TTC)

- Chair, Ben Griffith, Metro COG
- Jonathan Atkins, City of Moorhead
- Julie Bommelman, Fargo Transit
- Nicole Crutchfield, City of Fargo
- Jeremy Gorden, City of Fargo
- Cole Hansen, Cass County
- Jace Hellman, City of Horace
- Robin Huston, City of Moorhead
- Matthew Jacobson, Clay County
- Kelly Krapu, Freight Representative
- Don Lorsung, City of Dilworth
- Aaron Nelson, City of West Fargo
- Joe Raso, GFMEDC
- Mary Safgren, MnDOT – District 4
- Justin Sorum, Clay County
- Tom Soucy, Cass County
- Brit Stevens, NDSU
- Lori Van Beek, Moorhead Transit
- Kyle McCamy, City of West Fargo
- Wayne Zacher, NDDOT Local Government

Policy Board

- Chair, Duane Breitling, Cass County Commission
- Vice Chair, Jenny Mongeau, Clay County Commission
- Chuck Hendrickson, Moorhead City Council
- Rory Jorgenson, West Fargo City Commission
- Denise Kolpack, Fargo City Commission
- Stephanie Landstrom, Horace City Council
- Julie Nash, Dilworth City Council
- Ryan Nelson, Moorhead City Council
- Brad Olson, West Fargo City Commission
- Dave Piepkorn, Fargo City Commission
- Art Rosenberg, Fargo Planning Commission
- John Strand, Fargo City Commission
- Thomas Schmidt, Fargo Planning Commission
- Miranda Tasa, Fargo Planning Commission
- Michelle Turnburg, Fargo City Commission
- Deb White, Moorhead City Council



LETTER FROM METRO COG

Dear Residents,

Every day, over 135,000 residents in the Fargo-Moorhead area rely on our regional transportation network to reach their destinations. Sadly, not everyone makes it home safely. Since 2017, more than 350 people on Fargo-Moorhead roadways have died or suffered severe, life-altering injuries. Disturbingly, both national and local data highlight a sobering truth: vulnerable road users – people bicycling, walking, or traveling by motorcycle - face a higher risk of fatal or serious injuries compared to other road users.

While we cannot reverse lives lost or the terrible life-long consequences of debilitating injuries, we can take proactive steps to prevent future traffic crashes. **This plan is our region's first ever Regional Comprehensive Safety Action Plan.** It provides the Fargo-Moorhead area with a framework of innovative strategies and implementation actions that will ensure crash reductions and support federal safety initiatives. It identifies a high injury network of roads that deserve prioritized safety investments. And it marks our commitment to rethinking how we address safety on our roads.

Central to this plan is the Safe Systems approach, which prioritizes the safety of all road users through comprehensive strategies. This involves designing roadways that are safe for everyone, managing speeds to reduce crash severity, ensuring vehicles are safe, and promoting safe behavior among all users. Achieving these goals demands collaboration across various fields, including planners, engineers, community advocates, public health experts, educators, and

law enforcement, with vital support from local elected officials and policymakers.

This plan affirms Metro COG's commitment to creating environments where human mistakes do not lead to fatalities or serious injuries.

One death on our roadways is one death too many.

Ben Griffith

Fargo Moorhead Transportation Planning
Organization Executive Director



TABLE OF CONTENTS

Chapter 1 Why a Comprehensive Safety Action Plan? 1

 National Context 1

 The Approach to Traffic Safety 1

 Vulnerable Road Users 3

Chapter 2 Multimodal Safety in the Fargo-Moorhead Area 4

 About Metro COG 4

 Why Metro COG Needs a Comprehensive Safety Action Plan 6

 Vision and Goals 6

Chapter 3 State of Practice 7

Chapter 4 Engaging Fargo-Moorhead Area Communities 17

 Phase I - Fall 2023 Engagement Events 17

 Phase II – Spring 2024 Engagement Events 19

 What was heard? 20

Chapter 5 Data Analysis 21

 Crash Summary and Overview 21

Chapter 5 Safety Strategies and Toolkit 36

 Engineering Countermeasures 36

 Non-Engineering Countermeasures 43

Chapter 6 Road to Zero 47

 Growing Safety Culture within Metro COG 47

 Putting the Toolkit into Action 48

 Measuring and Reporting Progress 51

FIGURES

Figure 1 Core Elements of the Safe System Approach 2

Figure 2 Metro COG Map 5

Figure 3 Metro Grow Plan Goals 12

Figure 4 Traffic Calming Measures in West Fargo 16

Figure 5 Interactive Map Results..... 18

Figure 6 Distribution of Crashes in the Fargo-Moorhead Area (2018-2022)..... 22

Figure 7 Passenger Vehicle Crashes (2018-2022): Traffic Related Deaths and Serious Injuries by Speed Limit 24

Figure 8 Pedestrian Crashes (2018-2022): Traffic Related Deaths and Serious Injuries by Speed Limit 25

Figure 9 Crash Severity Trends (2018-2022)..... 25

Figure 10 Crash Severity by Season (2018-2022)..... 27

Figure 11 Crash Severity by Mode (2018-2022)..... 27

Figure 12 Pedestrian Crash Severity by Time of Day (2018-2022)..... 27

Figure 13 All Mode High Injury Network..... 29

Figure 14 Comparison of USDOT (CEJST) and Metro COG Equity Areas..... 35

TABLES

Table 1 Metro COG's Safety Policy 11

Table 2 KABCO Injury Scale..... 21

Table 3 Crash Profiles 31

Table 4 Urban Safety Strategies 36

Table 5 Rural Safety Strategies..... 37

Table 6 Priority Strategies 39

Table 7 Cultural Actions..... 47

Table 8 Potential Countermeasures by Crash Profile 48

Table 9 Project Prioritization Criteria..... 51

APPENDICES

Appendix 1 Literature and Policy Review

Appendix 2 Safety Analysis

Appendix 3 HIN Methodology

Appendix 4 Transportation Equity Review



ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act
BIL	Bipartisan Infrastructure Law
EMS	Emergency Medical Services
FHWA	U.S. Federal Highway Administration
HIN	High Injury Network
HSIP	Highway Safety Improvement Program
KABCO	Injury Severity Scale: <ul style="list-style-type: none"> K: Fatal Injury A: Suspected Serious Injury B: Suspected Minor Injury C: Possible Injury O: No Apparent Injury
LRSP	Local Road Safety Program
Metro COG	Fargo-Moorhead Metropolitan Council of Governments
MnDOT	Minnesota Department of Transportation
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan, called Metro Grow
NCHRP	National Cooperative Highway Research Program
NDDOT	North Dakota Department of Transportation
RRFB	rectangular rapid flash beacon
CSAP	Regional Comprehensive Safety Action Plan for the Fargo-Moorhead Area
SHSP	Strategic Highway Safety Plan
SS4A	Safe Streets and Roads for All
SRC	Study Review Committee
SRTS	Safe Routes to School
TTC	Transportation Technical Committee
VRU	Vulnerable Road User



CHAPTER 1 WHY A COMPREHENSIVE SAFETY ACTION PLAN?

National Context

The Bipartisan Infrastructure Law (BIL) enacted by the U.S. Congress in 2021 established the Safe Streets and Roads for All (SS4A) Grant Program. The SS4A program provides discretionary grants to local, regional, and Tribal governments focused on the prevention of deaths and serious injuries on our local and regional roadway system. The SS4A program helps to implement the U.S. Department of Transportation’s (USDOT) National Roadway Safety Strategy, which focuses on eliminating deaths and serious injuries across the nation’s roadway system.

Fargo-Moorhead’s Regional Comprehensive Safety Action Plan (CSAP) is the basic building block to guiding local and regional approaches through projects and strategies to address safety

risks on the roadway system. The CSAP uses analysis of historic crash information combined with roadway system user and community input to identify projects and strategies. The U.S. Department of Transportation has adopted a Safe System Approach, which is a guiding paradigm in the development of the CSAP.

The Approach to Traffic Safety

The Safe System Approach is the foundational strategy for the Vision Zero movement and is proven to substantially reduce fatalities and serious injuries. USDOT has adopted the Safe System Approach to address contributing crash factors and promote layers of protection to prevent crashes and mitigate crash severity. This approach recognizes that humans make mistakes, humans are vulnerable, and redundant measures are needed to protect all road users.

Traditional Approach

- Traffic deaths are inevitable
- Aims to fix humans
- Expects perfect human behavior
- Prevents crashes
- Exclusively addresses traffic engineering
- Doesn’t consider disproportionate impacts

VS.

Safe System Approach

- Traffic deaths are preventable
- Aims to fix systems
- Humans make mistakes
- Prevents fatal and serious crashes
- Considers the roadway system as a whole
- Considers road safety as an issue of social equity



Metro COG’s CSAP opens the door to SS4A implementation funds for the region:

An adopted Safety Action Plan is required for local jurisdictions to be eligible for discretionary SS4A funding (implementation & planning/demonstration).



The Safe System Approach is guided by five core elements.

Figure 1 Core Elements of the Safe System Approach



Vulnerable Road Users

Vulnerable road users are defined by the Federal Highway Administration (FHWA) as people walking, biking, or rolling. People within a motor vehicle or on a motorcycle are not included in this definition. Vulnerable road users are unprotected from motor vehicles and are therefore especially vulnerable to the devastating impact of a motor vehicle crash. According to the National Highway Traffic Safety Administration, vulnerable road users accounted for a growing share of all roadway fatalities in recent years.¹ Just between the years 2020 and 2021, pedestrian fatalities



were estimated to have increased by 13 percent and bicyclist fatalities by five percent. **The U.S. Department of Transportation labels this increase in fatalities with respect to vulnerable road users as a crisis and that “substantial, comprehensive action to significantly reduce serious and fatal injuries on the Nation’s roadways.”** It must also be added that the conditions and areas with additional risk to vulnerable road users likewise should be included in this call for action.



Vulnerable Road Users are more at risk of injury in crashes:

In the Fargo-Moorhead Area, 22% of vehicular crashes result in injury (KABC), whereas more than 93% of crashes involving a bicyclist or pedestrian result in injury (KABC).

¹ <https://www-fars.nhtsa.dot.gov/Main/index.aspx>



CHAPTER 2 MULTIMODAL SAFETY IN THE FARGO-MOORHEAD AREA

About Metro COG

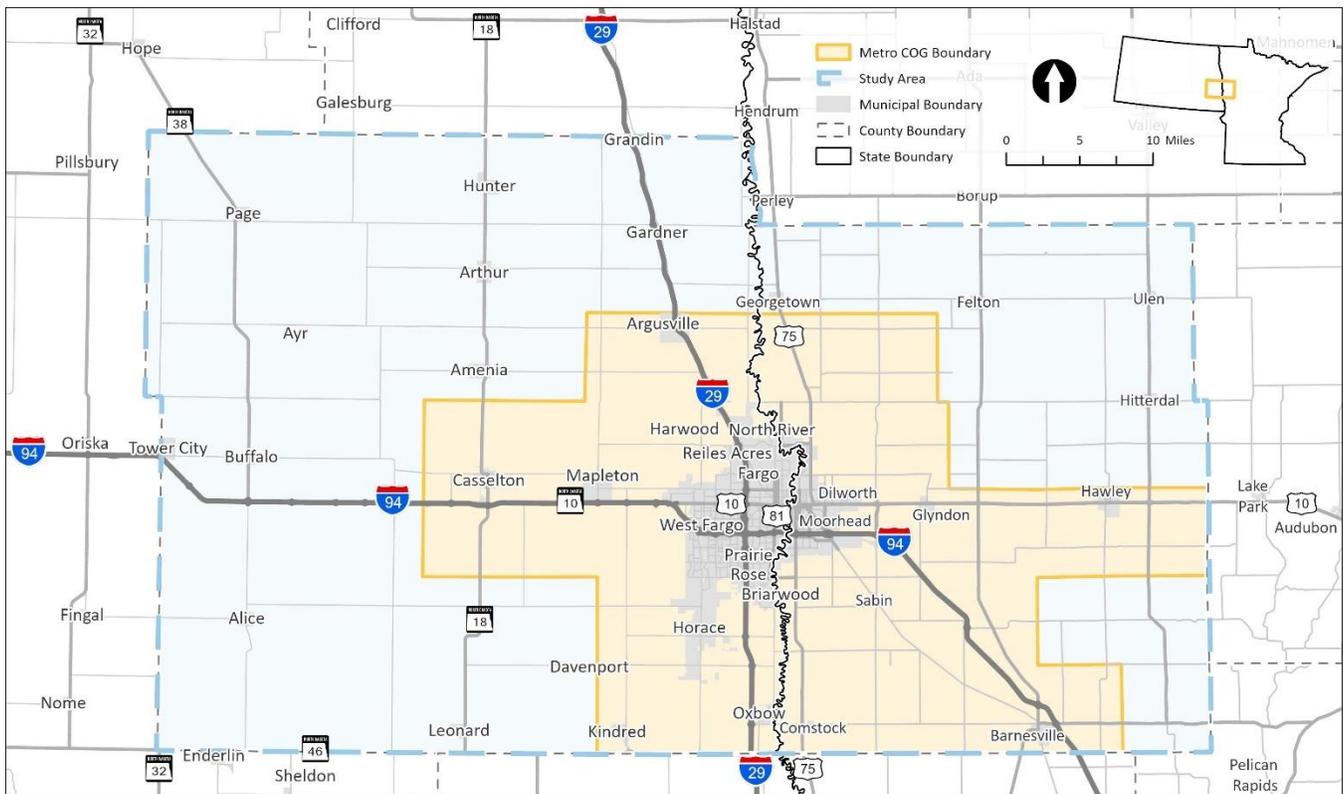
The Fargo-Moorhead Metropolitan Council of Governments (Metro COG) is the federally designated Metropolitan Planning Organization (MPO) for the Fargo-Moorhead Area. MPOs help facilitate implementing agencies (including municipal planning and engineering departments, county highway departments, and state departments of transportation) to prioritize their transportation investments in a coordinated way consistent with regional needs, as outlined in a metropolitan transportation plan. The mission of Metro COG is to harmonize the activities of federal, state, and local agencies, render technical assistance, and encourage public participation in the development of the area. Metro COG brings communities together to prioritize, coordinate, and fund transportation projects in the region, while supporting regional land use, environmental, and economic objectives.

The Fargo-Moorhead Metropolitan Planning Area² serves a bi-state area that includes the cities of Fargo and Moorhead, 10 additional cities, 14 townships in Cass County, North Dakota, and 16 townships in Clay County. Metro COG's boundary was most recently expanded in 2013 and encompasses contiguous areas that

are or are likely to become urbanized within the 20+ year planning period as well as other areas containing important regional transportation corridors, as shown in Figure 2. Federal rules require the designation of MPOs in urbanized areas of 50,000 or more in population as a condition for spending Federal highway and transit funds. Metro COG is the official transportation policy-making organization responsible for administering the cooperative, comprehensive regional transportation planning and decision-making process for the Fargo Moorhead Area.

As the MPO, Metro COG is required to develop and maintain a long-range multi-modal regional transportation plan every five years. It develops special plans and studies and collects data to help inform and drive implementation of the regional transportation plan and approves federal funding for transportation projects through the annual Transportation Improvement Program (TIP). While Metro COG provides regional coordination and approves use of Federal transportation funds within the metropolitan planning area, responsibility for the implementation of specific transportation projects lies with NDDOT, MnDOT, City of Fargo, City of Moorhead, and other local units of government as transportation providers.

Figure 2 Metro COG Map



Metro COG is governed by two committees

The first is the [Policy Board](#), the executive body of Metro COG. The Policy Board is Metro COG’s decision-making arm comprised of 16 voting members who represent the metropolitan planning area. The Policy Board consists of at least three-quarters elected officials, and each jurisdiction’s voting power is based on its approximate share of the area’s population.

The second is the [Transportation Technical Committee \(TTC\)](#). The TTC advises the Policy Board on technical matters related to transportation planning in the region. The committee is made up of planning and engineering from local jurisdictions, transit agencies, and representatives of NDDOT, MnDOT, higher education, freight, economic development, and the Metropolitan Bicycle and Pedestrian Committee, which is a subcommittee of the TTC.

Why Metro COG Needs a Comprehensive Safety Action Plan

The loss of even one human life on a roadway is unacceptable. From 2018 – 2022, 351 people suffered severe injuries or died from roadway crashes within the Metro COG region. Hundreds more experienced life altering and serious injuries. By 2050, the population in the Fargo-Moorhead area is expected to grow to over 357,000, adding approximately 107,000 additional residents and users of the roadway network to drive, bike, walk, and roll. With this increased growth comes increased potential for collisions.

Cities and counties within the region must collaborate with Metro COG, MnDOT and NDDOT to work toward the shared goal of improving safety for all roadway users and access to medical facilities when crashes do occur.



Metro COG also acknowledges that connectivity for all roadway users is imperative. With population growth expected over the next 30 years, the region’s roadways will become burdened, affecting residents’ quality of life. The region must continue to identify and fill gaps within the region’s bicycle, pedestrian, and transit network to encourage healthy communities.

Vision and Goals

Metro COG desires transformative change in order to achieve its vision for the safety of its transportation infrastructure. This plan **establishes a vision of zero traffic deaths and severe injuries** on streets within the Fargo-Moorhead Area, with a specific goal of a 55 percent reduction from 2022 statistics to 39 or fewer fatalities or serious injuries per year by 2040.

Eliminating fatalities and serious injuries requires the region’s transportation leadership and staff to prioritize the issue, and to work closely with its transportation partners to do the same. Achieving the vision requires tremendous effort focused on physical engineering efforts and various non-engineering efforts, such as education, enforcement, and agency collaboration. **Metro COG’s vision will be measured on an annual basis starting in 2025, by the percent reduction in fatal and serious injury crashes.**

Vision

Zero traffic deaths and severe injuries on streets within the Fargo-Moorhead Area

Goal

55 percent reduction in fatal and serious injuries crashes by 2040, which equates to 39 fatal or serious injury crashes or fewer

CHAPTER 3 STATE OF PRACTICE

Several plans, policies, and programs address road safety at the national, state, and local levels. State and local laws governing the operation of motor vehicles are primarily designed to promote road safety.

National policies and programs include the Complete Streets movement, Safe Routes to School (SRTS), Operation Lifesaver, and the Americans with Disabilities Act (ADA). These policies emphasize the need to accommodate all travel modes.

Statewide plans that emphasize enhancing safety include:

- NDDOT Vision Zero Strategic Highway Safety Plan (2024)
- Minnesota Strategic Highway Safety Plan (2020)
- MnDOT Vulnerable Road User Safety Assessment (2023)
- North Dakota Local Road Safety Program (LRSP)
- Minnesota County Road Safety Plans

At the local level, the communities within the Fargo-Moorhead area lead traffic safety efforts focusing on local priorities and recommendations for future road improvements within their jurisdiction. The communities within Fargo-Moorhead Area continue to coordinate with Metro COG; however, their Safety Action Plans and analysis may differ slightly due to the difference in priorities and scale - regional vs. local community-based.



Metro COG and its local partners have also completed the following plans, policies, and programs. These documents include a wide range of activities the region is undergoing to address roadway safety.

- Metro GROW: 2045 Metropolitan Transportation Plan (2020)
- Metro COG's Complete Streets Policy (2010)
- Fargo-Moorhead Metropolitan Bicycle & Pedestrian Plan (2022)
- Fargo Safe Routes to School Plan (2020)
- Fargo Transportation Plan (2024)
- Moorhead Safe Routes to School Plan (anticipated 2024)
- Dilworth-Glyndon-Felton Safe Routes to School Plan (2023)
- West Fargo Traffic Calming Study (2021)
- Fargo-Moorhead Metro Bikeways Gap Analysis (2019)

See **Appendix 1** for additional information on local, regional, and state safety plans and policies guiding the Metro COG region.

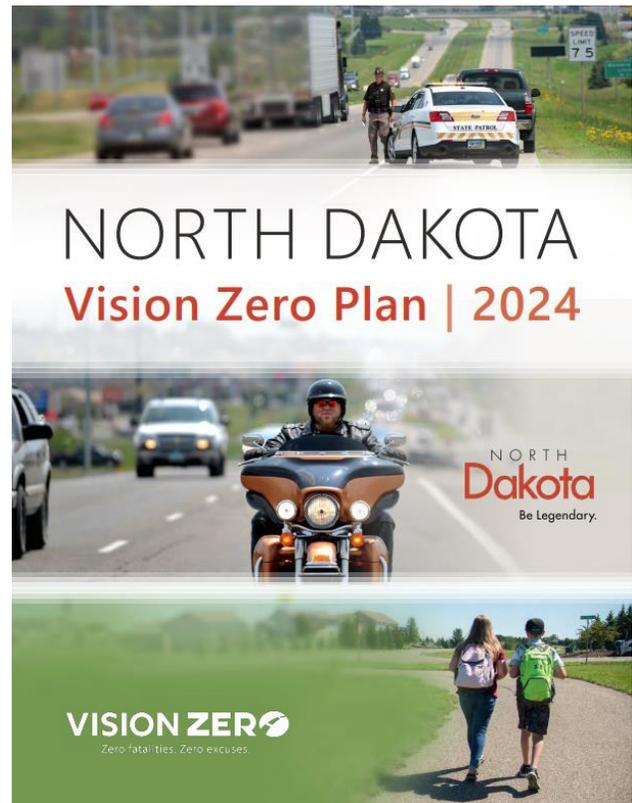
NDDOT Vision Zero Strategic Highway Safety Plan (2024)

The North Dakota Vision Zero Strategic Highway Safety Plan (SHSP) is a policy plan within the North Dakota Vision Zero program that aims to provide a framework to guide all statewide traffic safety activity, including but not limited to:

- Widespread public education/outreach
- Working with the legislature to ensure state laws represent best practices in traffic safety
- High visibility enforcement of existing laws
- Technology advancements
- Infrastructure/road safety improvements

The SHSP is driven by data and collaboration, which includes analyzing recent crash trends, identifying safety emphasis areas, developing and prioritizing comprehensive safety strategies which ultimately lead to project programming, project development, implementation, and progress monitoring and evaluation.

The SHSP is updated every five years to reflect crash trends and emerging safety strategies. Stakeholder and public engagement input is vital



in informing strategies; stakeholder input is collected through webinars, workshops, and steering committee meetings.

Minnesota Strategic Highway Safety Plan (2020)

The MnDOT Strategic Highway Safety Plan (SHSP) is a policy plan within the Minnesota Toward Zero Deaths (TZD) program that aims to provide a framework for strategies involving enforcement, education, engineering, and emergency medical services and trauma systems. The SHSP also serves as a tool to address safety issues on public roads. The SHSP is driven by data and outreach, which includes analyzing recent crash trends, identifying and prioritizing focus areas into one of four categories (core, strategic, support solutions, and connected), strategies with specific actions identified, and implementation to guide traffic safety partners to using this Plan effectively.

The plan is divided into focus areas that represent common crash types or causes of crashes, with associated strategies and tactics for addressing each. While the plan focuses on all modes of transportation, there are key



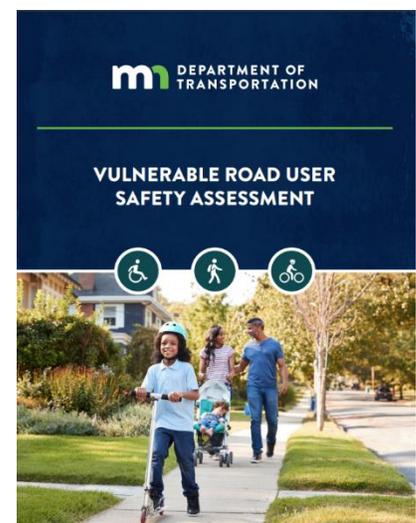
takeaways for people who walk and bike. Specifically, relevant focus areas include pedestrians, bicyclists, and more general categories that pose risks to people walking and biking such as intersections, speed, and inattentive drivers.

MnDOT Vulnerable Road User Safety Assessment (2023)

The Vulnerable Road User Safety Assessment conducted for MnDOT is a comprehensive evaluation identifying high risk areas and developing strategies to improve the safety of people biking, people walking, and other vulnerable road users such as people with disabilities. States are required by federal law to conduct a vulnerable road user safety assessment every five years.

The evaluation aims to understand the most pressing challenges faced by vulnerable road users and identify areas where improvements

can be made across the transportation system. The assessment developed statewide High Injury Network (HIN) specific to people walking, biking, and rolling.



North Dakota Local Road Safety Program (2012-2015)

The Local Road Safety Program (LRSP) was implemented for all of the regions in North Dakota and prepared as part of North Dakota's statewide highway safety planning process between 2012-2015. Although pre-Vision Zero (current SHSP), the LRSP is the result of a data-driven process, with a goal to reduce severe crashes by documenting at-risk locations, identifying effective low-cost safety improvement strategies, and better positioning each region in North Dakota to compete for available safety funds.

The LRSP provides a list of priority safety projects for each region, which is made up of local governments including counties and larger cities. At risk locations along the county/local road system were considered candidates for safety investment, including road segments, horizontal curves, and intersection with multiple severe crashes. At risk locations also considered road geometry and traffic characteristics like

other locations in North Dakota where similar severe crashes have occurred.

Proven, effective, low-cost safety countermeasures, such as rumble strip/stripes, modified intersection design, enhanced signing/markings, ITS signing applications, and lighting, were assigned to high-priority locations. Each plan resulted in a report that highlighted high-priority intersections, segments, and curves and identified projects for implementation. Highway Safety Improvement Plan (HSIP) funding application forms were created for each project to facilitate applying for funding. For each local road agency, a workshop was held with safety partners (enforcement, education, emergency services, and engineering).

Local jurisdictions are encouraged to update their LRSP in a timely manner to reflect SHSP policy direction, current crash trends, and changes to traffic including the transportation system.

Minnesota County Road Safety Plans (2008-Present)

The initial County Road Safety Plans were completed between 2008 and 2013. MnDOT began working with counties to update the plans in 2016 and to date has completed 30 updated plans, with an additional 12 estimated to be completed by the end of 2024.

The goal is to develop a plan that provides a prioritized list of safety projects for the counties to implement. Key steps included analysis of severe crashes, data collection of existing roadway features and data-driven systemic analysis to prioritize locations. Proven, effective,

low-cost safety countermeasures, such as rumble strip/stripes, modified intersection design, enhanced signing/markings, ITS signing applications, and lighting, were assigned to high-priority locations. Each plan resulted in a report that highlighted high-priority intersections, segments, and curves and identified projects for implementation. Highway Safety Improvement Plan (HSIP) funding application forms were created for each project to facilitate applying for funding. For each county, a workshop was held with safety partners (enforcement, education, emergency services, and engineering).

Metro Grow: 2045 Metropolitan Transportation Plan (2020)

Metro Grow is the Fargo-Moorhead Area’s which looks at the region’s transportation system needs through the year 2045. As the recognized MPO for the area, Metro COG updates its MTP every five years to establish a locally-rooted vision for how the region’s transportation system should evolve over time. It identifies community

goals, needs, priorities, and future investments. The MTP considers motor vehicle, transit/MATBUS, bicycle, pedestrian, and freight systems in the Metro COG area.

Metro COG’s current safety policy comes directly from the organization’s adopted MTP.

Table 1 Metro COG’s Safety Policy

Goal	
System Safety & Security – Provide a transportation system that is safer for all users and resilient to incidents.	
Objectives	Project Prioritization Metrics
Reduce the number and rate of crashes.	Review crash modification factors to determine potential project impact on safety categories.
Reduce the number and rate of serious injury and fatal crashes.	
Reduce the number of bicycle and pedestrian crashes.	
Reduce the number of bus-involved crashes.	Project has potential to reduce bus-involved crashes along an existing bus route.
Identify strategies to make transportation infrastructure more resilient to natural and manmade events.	Project has potential to reduce flooding or other hazard risk.
<u>Policy Objective:</u> collect better bicycle and pedestrian data for future planning efforts.	Policy Objective. Could provide bonus points to projects that include bike and pedestrian counting technology.
<u>Policy Objective:</u> improve transit system security.	Policy Objective. No project scoring.

Several other Metro Grow plan goals weave together other elements that have auxiliary safety benefits through enhanced walking and biking facilities, maintenance of existing facilities, and improved access.

Plan Goals

The plan goals that established the overall direction for the Metro Grow plan focused on eight areas:

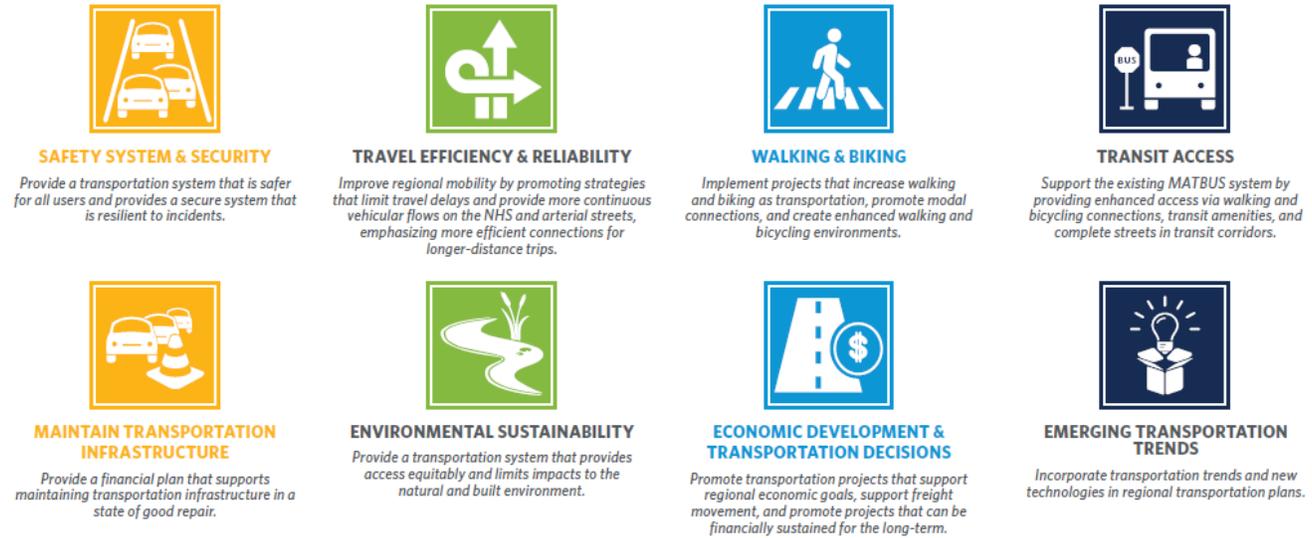


Figure 3 Metro Grow Plan Goals

Metro COG’s Complete Streets Policy (2010)

Consistent with federal guidance and regulation, Metro COG’s complete streets policy incorporates safety of all roadway users as a primary component.



Policy Statement: Complete Streets is an on-going and comprehensive planning, design, construction, and operations process, with a long-range perspective, aimed at improving safety, usability, and quality of life. By embracing Complete Streets, Metro COG seeks to plan and

program public rights-of-way that fully integrate and balance the needs of all street users, including bicyclists, pedestrians, transit users, commercial vehicles, emergency services vehicles and passenger vehicles. Users of all ages and abilities will be considered. The Complete Streets process will apply to street projects, including construction, reconstruction, and maintenance. Because Complete Streets are context sensitive, a Complete Street in one neighborhood may look very different from a Complete Street in another neighborhood, but both are designed to balance the safety and convenience for everyone using the public right-of-way. Successful achievement of this vision will result in the creation of a complete transportation network for all modes of travel (as opposed to trying to make each street perfect for every traveler), and may result in fewer crashes, lower severity crashes, improved public health, less air, water, and noise pollution, as well as lower overall transportation costs for the public and for their governing bodies.

As part of the adoption of this policy, Metro COG agreed to take the following action steps:

- 1) Integrate Complete Streets criteria in the development of the TIP, the Unified Planning Work Program (UPWP), and MTP
- 2) Promote the use of Context Sensitive Solutions planning
- 3) Support the development of a complete system of bikeways and pedestrian facilities, connected across the FM Metropolitan Area.

Fargo-Moorhead Metropolitan Bicycle & Pedestrian Plan (2022)

Updated every five years, the bicycle and pedestrian plan provides new and updated details about the people and communities in the Fargo-Moorhead area and includes information about how regional transportation systems support and/or inhibit people from walking and biking to desired destinations.

The plan provides recommendations for Metro COG's member jurisdictions, non-profit organizations, and community members to create better bicycle and pedestrian transportation systems, policies, and programs. The recommendations include: a bicycle network for people of all ages and abilities, improvements to pedestrian crossings, design guidelines, policy and program recommendations, and process improvements.

Many of the design and operations strategies in the policy include improvements to safety, such as roadway design that slows motor vehicles and/or limits access to provide greater safety for bicyclists, pedestrians, and motorists, narrowing pedestrian crossing distances, using traffic calming features, changing traffic signals to provide adequate pedestrian crossing time, and developing a maintenance schedule for bicycle facilities.

Guiding principles and objectives of the bicycle and pedestrian plan include: health and safety; maintenance; connectivity; equity; collaboration; and sustainability/environment.



Fargo Safe Routes to School Plan (2020)

The City of Fargo Safe Routes to School Plan was completed and adopted in February 2020. This plan updates the previous plan by including newly constructed schools and identifying areas of improvement surrounding each school throughout the City of Fargo. The plan also provides guidance on new installations, improvements, and suggested routes to each school.

Plan objectives include increasing the safety of students in the City of Fargo.



Moorhead Safe Routes to School Plan (Anticipated 2024)

The Safe Routes to School initiative aims to create physical and social environments to empower students, their families, and communities to walk and bike more often through policy change, infrastructure improvements, and programs.

Ultimately, a final report will be developed which will include identified issues and recommendations that can be used by the school district and local jurisdictions to make

non-motorized travel to/from school safer and more attractive for students and families.



Fargo Transportation Plan (2024)

Traffic safety is a high priority in the Fargo Transportation Plan, with support for a vision of zero traffic-related fatalities using a safe system approach. The plan includes a five-year crash analysis spanning 2016-2020, identifying intersections and segments with crash rates above the average. The Fargo Transportation Plan calls out specific implementation activities,

including Safe Routes to Schools programming and infrastructure improvements, the city's traffic calming policy, taking a safety-centered approach, and embracing innovative design. It includes a policy on complete streets to develop a transportation network that provides opportunities for multiple modes of travel and users of all ages and abilities.

Dilworth – Glyndon – Felton Safe Routes to School Plan (2023)

With changes to the school layouts and grade assignments at both the DGF Elementary School in Dilworth and DGF Middle/High School in Glyndon in 2022, it was necessary to develop a district-wide Safe Routes to School (SRTS) plan which would optimize students' safety as they walk and bike to school.

Ultimately, a final report has been developed which includes identified issues, and recommendations that can be used by the school district and local jurisdictions to make non-motorized travel to/from school safer and more attractive for students.

West Fargo Traffic Calming Study (2022)

The West Fargo Traffic Calming Study will address complaints received from West Fargo residents about excessive traffic speeds by researching and understanding the traffic calming issue, identifying traffic calming techniques, engaging the public for feedback throughout the study process, providing planning-level cost estimates, identifying funding sources for implementation, providing tools for the City to make decisions about future traffic calming issues, and compiling an approachable and user-friendly study document for West Fargo regarding traffic calming within the city.

Six (6) priority locations have been identified by the City of West Fargo due to complaints from residents about excessive traffic speeds:

- 2nd Street East, south of 32nd Ave E
- 15th Avenue East, between 6th and 9th St E
- 16th Street East, south of 13th Ave E
- 7th Street West, between 15th and 19th Ave W
- 10th Street West, south of 13th Ave W
- Beaton Drive, between Sheyenne St and 9th St E

Analysis found that in many cases, local and collector classified neighborhood roadways in West Fargo are built much wider than the recommended minimums for an urban neighborhood setting, with existing driving-lanes ranging anywhere from 12 to 20 feet wide.



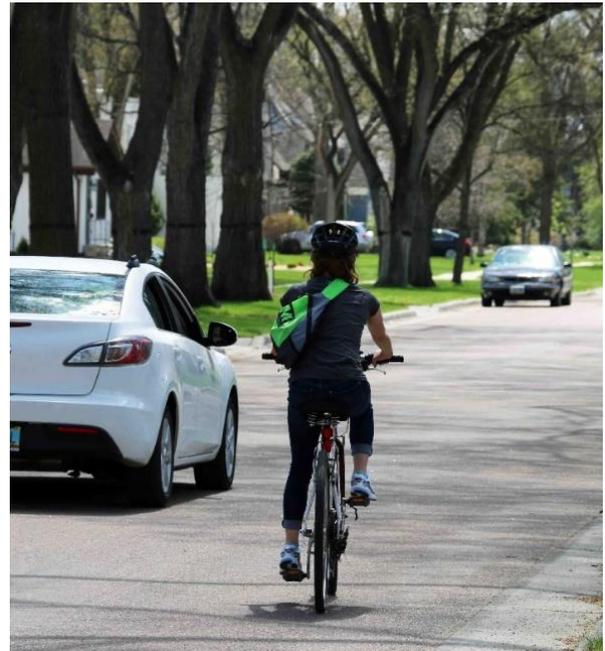
Figure 4 Traffic Calming Measures in West Fargo

Fargo-Moorhead Metro Bikeways Gap Analysis (2019)

The gap analysis developed planning-level concept alternatives for closing 16 gaps in the existing bikeway network in the Fargo-Moorhead Area.

The project team considered a number of factors, including safety of people traveling on bicycles, when developing recommendations. From the over 600 total comments and over 300 community members engaged in the analysis, the top three bikeway gaps receiving the most support included:

- Gap 9: A crossing of the Red River near 40th Avenue South (Fargo) to Bluestem Performing Arts Center (Moorhead)
- Gap 8: One mile corridor on 25th Avenue South and 24th Avenue South between 18th Street South and 5th Street South (Fargo)
- Gap 5: Two miles of open space/park land adjacent to the Red River between 15th Avenue North and 32nd Avenue Northeast (Fargo)



CHAPTER 4 ENGAGING COMMUNITIES

FARGO-MOORHEAD

AREA

Stakeholder and public engagement is critical in ensuring the applicability and implementation of the safety strategies included in this plan. Community outreach was an important part of this plan and ensuring that decisions impacting the community adequately represent key concerns.

Phase I - Fall 2023 Engagement Events

The project team conducted various engagement activities in November and December of 2023, including:

- Pangea Event (in person)
- Online Survey
- Interactive Map (online)

The public shared ideas on their transportation experience, with a focus on better understanding the multimodal transportation experience and safety concerns. The team also sought to raise awareness on the general work of Metro COG and safety action plans.

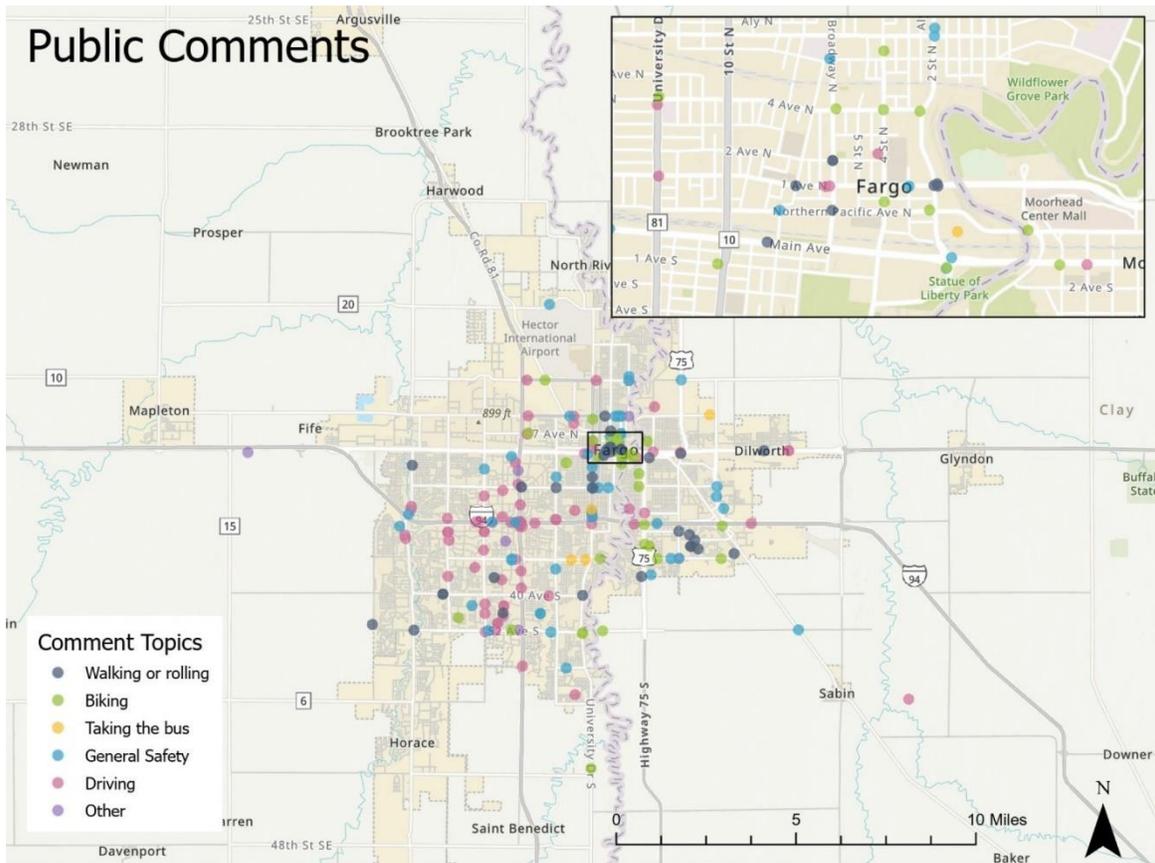
In addition to the in-person event, Metro COG invited the public to provide feedback through an interactive map of the existing transportation system in the Fargo-Moorhead area. Participants were able to add pins and lines to indicate the location of their comments. The map was available for comment in Fall 2023 and received over 212 unique comments.

In total, overall engagement resulted in feedback from over 500 people encompassing many different themes by geography, safety concern, and mode of travel.



 <p>COMMON THEMES</p>	<p>Where do you feel unsafe traveling?</p> <ul style="list-style-type: none"> • 45th Street, Fargo • 13th Ave S, Fargo • Downtown Fargo River Path • Interstate 29 (I-29) • Interstate 94 (I-94) Interchanges 	<p>What safety concerns do you have traveling in this area?</p> <ul style="list-style-type: none"> • High vehicle speeds • Roadway signage and striping • Bike and pedestrian infrastructure • Lack of adequate lighting • Lack of snow removal 										
 <p>INVESTMENTS PRIORITIES</p>	<p>What ideas do you have for improving transportation in the Fargo-Moorhead Area?</p> <table border="0"> <tr> <td data-bbox="527 609 625 703"></td> <td data-bbox="714 609 812 703"></td> <td data-bbox="909 609 1006 703"></td> <td data-bbox="1112 609 1209 703"></td> <td data-bbox="1307 609 1404 703"></td> </tr> <tr> <td>Traffic calming measures with a focus on speed reduction</td> <td>Pedestrian signals and crosswalk striping</td> <td>Roadway signage to improve wayfinding</td> <td>Bike infrastructure such as separate bike lanes</td> <td>Driver education with an emphasis on safety</td> </tr> </table>							Traffic calming measures with a focus on speed reduction	Pedestrian signals and crosswalk striping	Roadway signage to improve wayfinding	Bike infrastructure such as separate bike lanes	Driver education with an emphasis on safety
Traffic calming measures with a focus on speed reduction	Pedestrian signals and crosswalk striping	Roadway signage to improve wayfinding	Bike infrastructure such as separate bike lanes	Driver education with an emphasis on safety								

Figure 5 Interactive Map Results

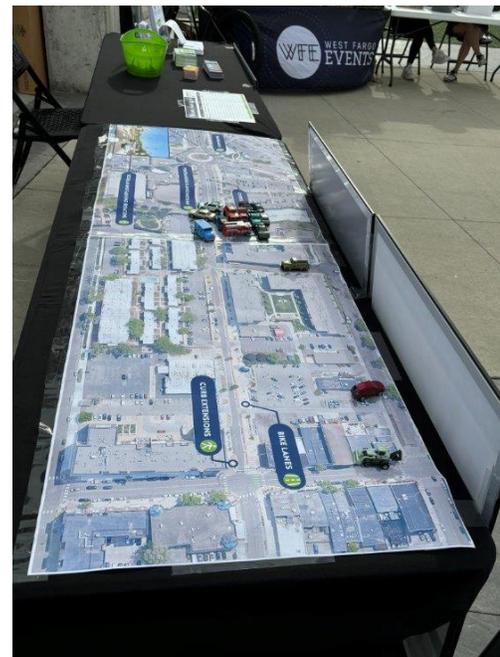


Phase II – Spring 2024 Engagement Events

The second round of engagement occurred in May and June 2024 and focused on sharing what the project team had learned thus far as well as testing ideas with the community. The engagement activities included:

- Pop-Up Event at the International Market Plaza
- Bike Safety Rodeo

Key outcomes of the safety analysis, equity analysis, and list of potential transportation safety countermeasures were shared, along with the identified regional safety goals.



How can we
make our
streets safer?

METROCOG

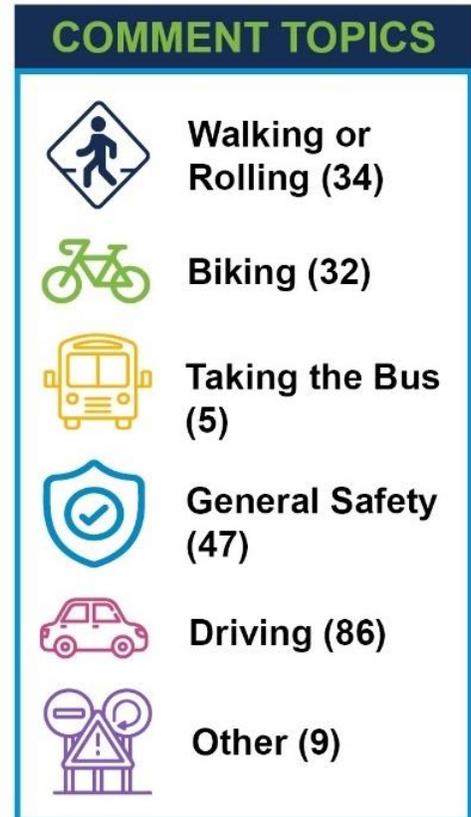
Regional Comprehensive Safety Action Plan



What was heard?

As a result of the robust public outreach and stakeholder engagement, the following key themes were gathered. These key themes assisted in informing recommended countermeasures as a part of this Safety Action Plan.

- Implement traffic calming measures to address high vehicle speeds in residential areas near school ones and recreational facilities.
- Improve traffic signals that cause traffic congestion due to delayed timing.
- Lack of Americans with Disabilities Act (ADA) facilities due to poor road conditions and pedestrian infrastructure.
- Expand pedestrian and bike networks to increase connectivity and promote mobility.
- Implement roadway striping improvements to address user visibility.
- Construct dedicated turn lanes to limit traffic congestion and vehicle collisions.
- Ensure adequate traffic signage and signals to improve user safety at identified locations such as intersection crossing, stop signs, yield signs, etc.
- Promote safe driving through traffic law enforcement.
- Address narrow roadways that limit ADA accessibility due to poor snow removal.



CHAPTER 5 DATA ANALYSIS

Crash Summary and Overview

Between 2018 and 2022, almost 19,000 crashes were recorded within the Fargo-Moorhead area, of which over 350 resulted in fatal or severe injuries. An analysis of these crashes was completed to identify crash trends among five modes: automobile, bicycle, pedestrian, motorcycle, and heavy vehicle. The analysis includes an examination of the crashes by mode by basic crash report variables such as crash characteristics and contextual roadway factors. The crash trends identified Metro COG’s crash profiles which highlight specific conditions that account for a large share of fatal and severe injury crashes. These crash profiles may be used by Metro COG and the Fargo-Moorhead region to help prioritize roadway safety investments in the future (See **Appendix 2** for the Safety Analysis).



Throughout the safety analysis, crash trends are summarized by “KA” indicating fatal and serious injury crashes and “BCO,” which includes non-serious injuries. The KABCO injury scale is used and includes the designations shown in Table 2.

Table 2 KABCO Injury Scale

Severe (more injurious)	Non-Severe (less injurious)
<p>K – involves a fatal injury</p> <p>A – incapacitating injury (serious injury)</p>	<p>B – non- incapacitating injury</p> <p>C – possible injury</p> <p>O – no injury or a property damage-only (PDO) crash</p>

The crash analysis also analyzed key emphasis areas from crash data between 2018-2022, such as impairment, age, speeding, distracted driving, and use of seatbelts.

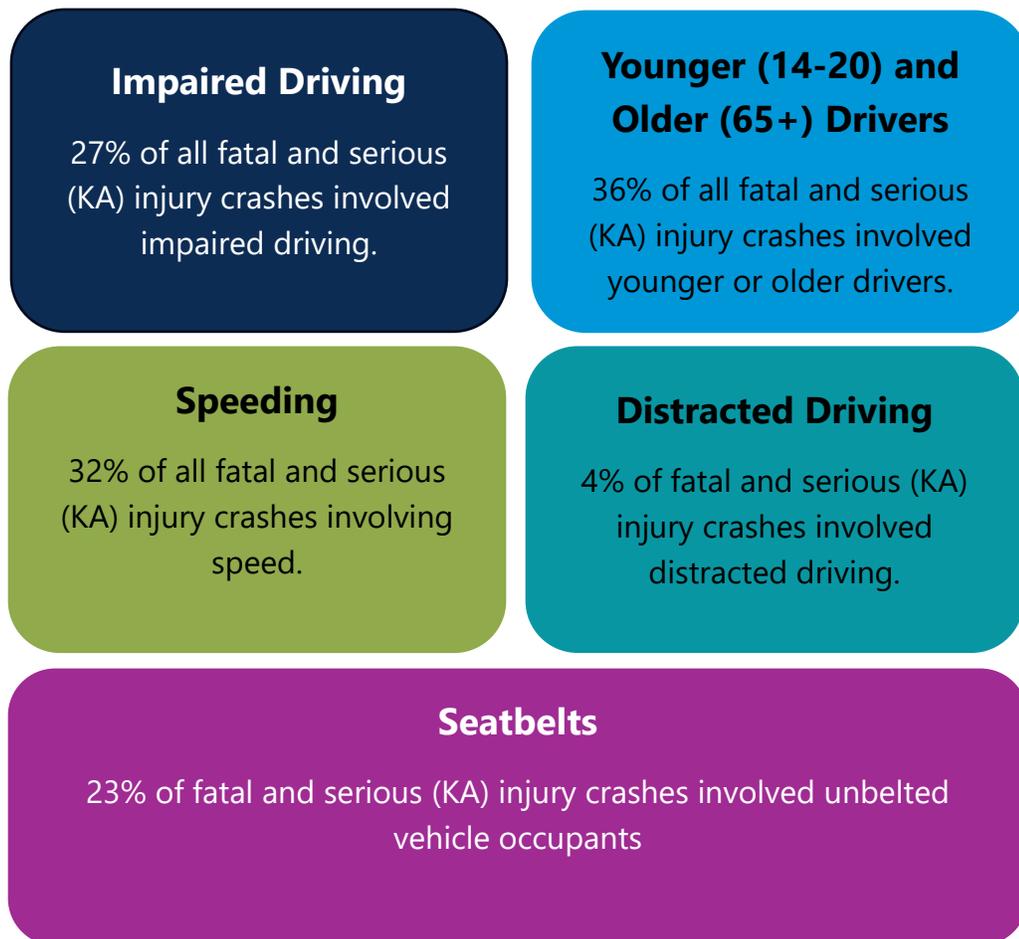
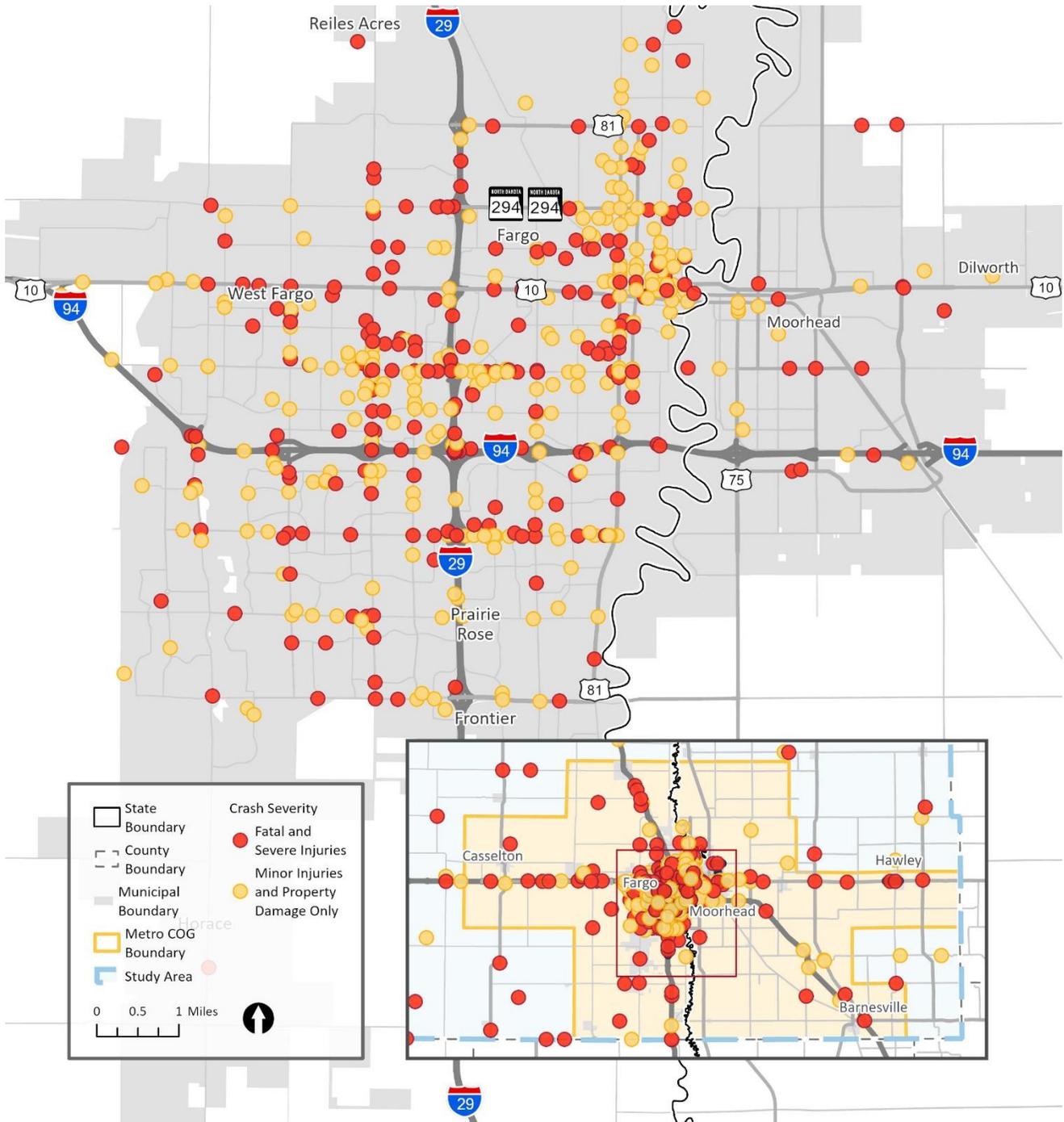


Figure 6 shows the crash density of fatal and serious injury crashes occurring between 2018 to 2022 within the region. The vast majority of serious injury crashes are concentrated around the state’s trunk highway system.

Figure 6 Distribution of Crashes in the Fargo-Moorhead Area (2018-2022)



Key Takeaways from the crash and safety analysis include:

- 1) Arterials are the most dangerous streets in the Fargo-Moorhead area.
- 2) Severe and fatal crashes have increased over the past five years.
- 3) Winter is safer, despite more minor or property damage crashes.

- 4) People on bicycles, on foot, and driving motorcycles account disproportionately for severe and fatal crashes.
- 5) Pedestrian crash severity is worse at night.

Crash and Safety Analysis

Arterials are the most dangerous streets in the Fargo-Moorhead area

Best practices in safety action plans call for an analysis and prioritization of the most dangerous streets, creating thresholds that prioritize the top 1-3 percent of streets in the network. All roads across all functional classes and jurisdictions were analyzed. Interstate highways were excluded from the analysis.

Results from the analysis indicate that the vast majority of severe and fatal crashes occur on streets classified as arterials. In the road hierarchy, arterials sit right below interstates and typically are high-capacity roads, often with higher speeds. In the Fargo-Moorhead area, arterials are under the jurisdiction of cities,

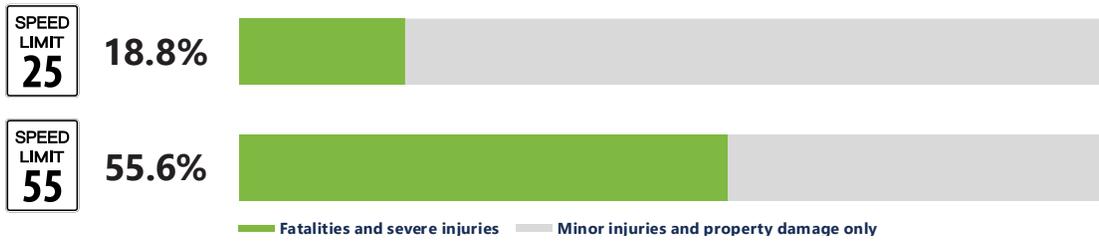
counties, and state departments of transportation.

Arterials frequently have higher speed limits. Higher driving speeds make a crash more likely due to reduced driver reaction time and longer braking distances. Higher speeds also correlate with increased severity of crashes and increased likelihood of fatal crashes. Vulnerable road users and motorcyclists are particularly at risk as speeds increase because of lack of exterior protection. Figure 7 and Figure 8 illustrate how the severity of crashes in the Fargo-Moorhead Area increases as speed increases, with a disproportionate impact to pedestrians.

Figure 7 Passenger Vehicle Crashes (2018-2022): Traffic Related Deaths and Serious Injuries by Speed Limit



Figure 8 Pedestrian Crashes (2018-2022): Traffic Related Deaths and Serious Injuries by Speed Limit

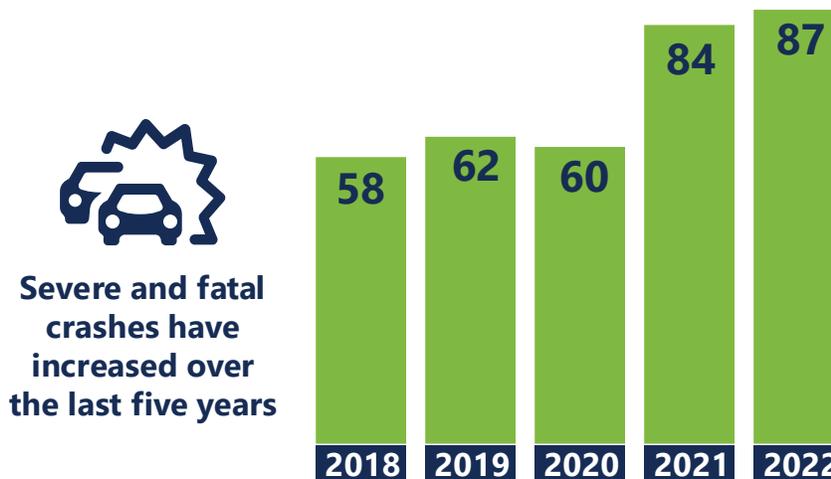


Severe and fatal crashes have increased over the past five years

Within the Fargo-Moorhead area, over 18,900 crashes involving passenger vehicles, heavy vehicles, pedestrians, bicyclists, and motorcycles were recorded over the five-year period from

2018 to 2022. From the beginning to the end of the time period, severe and fatal crashes rose by eight percent. On average during this period there were 70 severe or fatal crashes annually.

Figure 9 Crash Severity Trends (2018-2022)



Severe and fatal crashes have increased over the last five years

Winter is safer, despite more minor or property damage crashes

Severe and fatal crashes peak in early summer and then again in the fall, while property damage only crashes peak during the winter months

(November through March). This trend in crash severity suggests that behavioral elements could be influencing relatively safer driving behavior during winter months (such as lower speeds). Winter weather, such as ice and snow could

result in elevated levels of property damage only crashes.

Figure 10 Crash Severity by Season (2018-2022)



People on bicycles, on foot, and driving motorcycles account disproportionately for severe and fatal crashes.

While the vast majority of crashes between 2018 and 2022 involved passenger vehicles, motorcyclists, pedestrians, and bicyclists were involved in a disproportionate number of serious

injury and fatal (KA) crashes compared to passenger vehicles and heavy vehicles (Figure 11).

Figure 11 Crash Severity by Mode (2018-2022)



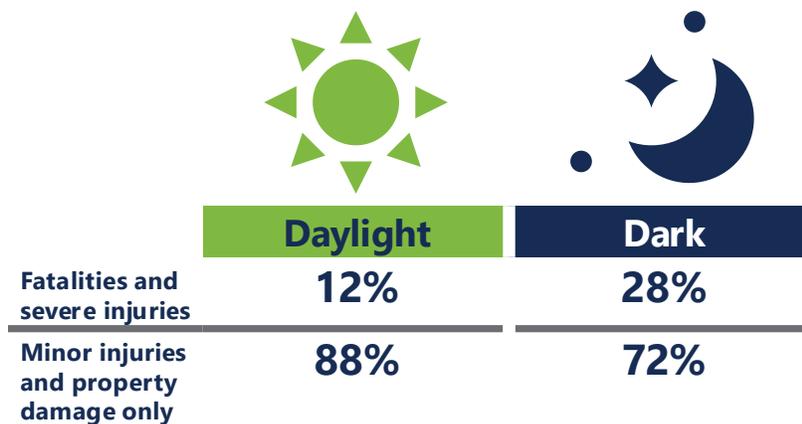
People riding motorcycles are particularly vulnerable - severe motorcycle crashes make up 29 percent of all motorcycle-involved crashes. By comparison, severe passenger vehicle crashes make up one percent of all passenger vehicle-involved crashes.

Pedestrian Crash Severity is Worse at Night

Lighting condition is listed on crash reports with options including daylight, sunrise or sunset,

dark – lighted, and dark – not lighted. Most pedestrian-involved crashes regardless of severity occurred during daylight conditions. However, the likelihood of crash severity increased at night. When the sun was out, only 12 percent of pedestrian crashes resulted in fatalities or severe injuries. By comparison, at night, pedestrian crashes resulting in a fatality or severe injury increased to 28 percent.

Figure 12 Pedestrian Crash Severity by Time of Day (2018-2022)



Development of the High Injury Network

One of the outcomes of this plan is a High Injury Network (HIN) and a public dashboard [<https://metrocoog-ss4a-fmcog.hub.arcgis.com/>]. A HIN consists of roadway corridors where a majority of severe crashes are occurring and serves to prioritize high risk locations and guide

safety investments in the region. This moves beyond typical historical crash analysis and allows for a better description of the types of roadways and intersections in the Fargo-Moorhead area where users are the most at risk. This analysis included all roadways within Metro COG’s boundaries except for interstate highways,

What is a High Injury Network?

The HIN identifies streets or locations where a high number of severe crash concentrations have occurred along a corridor-level segment for the most recent 5-year period (2018-2022). The high injury network represents a prioritized subset of Metro COG’s overall regional transportation network, focusing on streets with the highest prevalence of severe crashes.

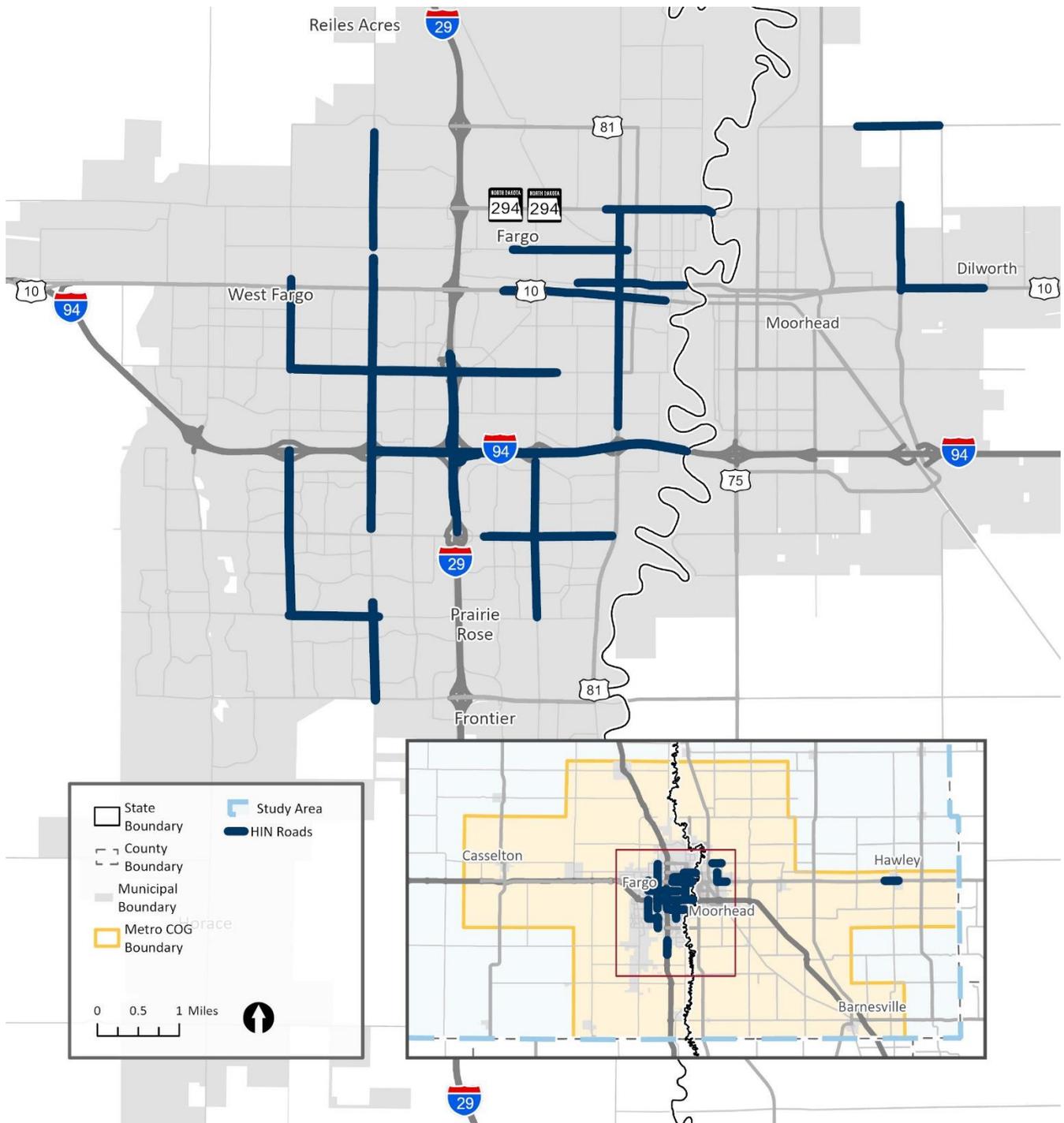
which were excluded from the analysis. The HIN systematic analysis allows Metro COG and partners to proactively work to minimize the occurrence and severity of crashes into the future.

To determine inclusion in the HIN, minimum thresholds were set high enough to imply a spatial pattern of severe crashes. The purpose of

this is to ensure that the high priority locations in the HIN are not driven by just one severe crash. In general, the HIN represents composite crash score thresholds of 6.0 for all modes or above, which equates to the equivalent of at least two life-changing crashes per mile over the past five years. (See **Appendix 3** for the HIN Methodology.) For Metro COG, severe crashes are greatly concentrated in the urbanized area.



Figure 13 All Mode High Injury Network



Highest crash scores are concentrated on:

- 13th Avenue S. from 21st Street S. to 9th Street E.

- 45th Street from Main Avenue to 23rd Avenue S.
- University Drive from 19th Avenue N. to 13th Avenue S.
- Main Avenue from Broadway to 18th Street.

Crash Profiles

In addition to the development of a HIN, this plan also developed crash profiles, which compares typologies of geographically similar roadways along with common crash types. These crash profiles considered various crash attributes, roadway characteristics, and land use context to identify the most prevalent factors of severe crashes to better inform implementation recommendations. Crash profiles represent sub-groupings of roadways that form part of the HIN.

The three identified crash profiles include:

- Confined Residential Arterials
- Downtown Arterials
- Multilane Arterials



Confined Residential Arterials

Typical Characteristics: On-street parking, adjacent land use mostly residential, 3 or fewer lanes, narrower right of way, dense access point spacing, low speed limit (30-35 mph)



Downtown Arterials

Typical Characteristics: On-street parking, mixed land use (retail, dining, offices), 2-4 lanes, narrower right of way, moderate access point spacing, low speed limit (30-35 mph)





Multilane Arterials

Typical Characteristics: No on-street parking, adjacent land use usually large-scale retail, residential, or office space, 3+ lanes (often divided by median), very wide right of way, sparse access point spacing, higher speed limit (30-55 mph)

Table 3 shows typical attributes by crash profile for fatal and severe injury (KA) crashes.

Table 3 Crash Profiles

Crash Profile	# of KA Crashes	% of Crash Profile KA Crashes
Confined Residential Arterials	15	--
Passenger vehicle crashes at intersections	7	47%
Drivers (in passenger vehicles) failing to yield to cyclists and pedestrians at intersections	4	27%
Intoxicated drivers	7	47%
Downtown Arterials	11	--
Drivers (in passenger vehicles) failing to obey signal or yield to other drivers at signalized intersections	5	45%
Drivers (in passenger vehicles) speeding	5	45%
Intoxicated road users	2	18%
Multilane Arterials	73	--
Passenger vehicle crashes at intersections	32	44%
Bicycle and pedestrian crashes at intersections	7	10%
Bicycle crashes on roads with no bicycle facilities	4	5%
Motorcyclists speeding or driving recklessly	6	8%
Drivers (in passenger vehicles) speeding	13	18%

Transportation Equity Review

The Transportation Equity Review examines vulnerable populations in the Fargo-Moorhead Area which includes all of Cass County, North Dakota and Clay County, Minnesota. Vulnerable populations are people more susceptible to

impacts caused by the transportation system. In the Fargo-Moorhead area for example, a family with no vehicle or dependent-aged residents who cannot drive may face higher risk walking or biking across an intersection or street, just to go



about their daily lives or meet essential needs. The Transportation Equity Review identifies several key indicators of vulnerability and disadvantage, introduces a preliminary prioritization process based on equity considerations, and summarizes how transportation safety improvement projects will positively impact vulnerable populations.

What does Equity Mean?



According to the U.S. Department of Transportation, equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. A central goal of transportation is to facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options based on the needs of the populations being served, particularly populations that are traditionally disadvantaged.

Does Equity Apply to the Fargo-Moorhead Area?

Yes. In accordance with Metro COG’s Title VI Non-Discrimination Plan, the organization provides guidance to consider the participation and mobility of vulnerable and disadvantaged populations during the metropolitan transportation planning and programming process. The organization identifies two critical ways in which to consider said participation and

mobility: (1) Public outreach and engagement with vulnerable and disadvantaged populations; and (2) Geospatial socioeconomic analysis of the location of vulnerable and disadvantaged population concentrations relative to regional travel patterns, employment and services, including future employment and services.

Metro COG currently identifies two specific vulnerable population groups, defined by the organization as environmental justice (EJ) areas including:

- Low-Income Population
 - Defined in Census Block Groups with an annual median household income less than \$21,624 in 2024 (regionally-adjusted threshold).
- Minority Population
 - Defined in Census Blocks with minority populations equaling or exceeding 25 percent.

The Safety Action Plan aligns closely with the guidance established by: (1) following Metro COG’s *Public Participation Plan* to provide inclusive and meaningful engagement; and (2) including a Transportation Equity Review to analyze where various vulnerable and disadvantaged populations are located across the region. The Safety Action Plan’s Transportation Equity Review provides a more robust analysis, expanding upon Metro COG’s EJ area identification.

Metro COG Equity Analysis

Expanding on the Metro COG’s defined EJ Areas, the organization also reviewed the Climate and Economic Justice Screening Tool (CEJST) from the US Council on Environmental Quality, the Equitable Transportation Community (ETC) Explorer from the US Department of



Transportation, and 2018-2022 five-year data from the US Census Bureau's American Community (ACS).

- Climate and Economic Justice Screening Tool (CEJST)
 - The White House published tool provided to screen for Justice40 disadvantaged communities, provides an interactive web application utilizing Census Tract geographies and data to present cumulative disadvantages and vulnerabilities. CEJST designation of disadvantaged areas is considered the official designation of disadvantaged community, when pursuing SS4A implementation grants and/or other Federal discretionary grant programs. There are eight components tracked by the CEJST:

<ul style="list-style-type: none"> ▪ Climate Change ▪ Energy ▪ Health ▪ Housing 	<ul style="list-style-type: none"> ▪ Legacy Pollution ▪ Transportation ▪ Water and Wastewater ▪ Workforce Development
---	---
- Equitable Transportation Community (ETC) Explorer
 - The USDOT published tool provides an interactive web application utilizing Census Tract geographies and data to present cumulative disadvantages and vulnerabilities. There are five components tracked by ETC Explorer:

<ul style="list-style-type: none"> ▪ Transportation Insecurity ▪ Climate and Disaster Risk Burden 	<ul style="list-style-type: none"> ▪ Environmental Burden ▪ Health Vulnerability ▪ Social Vulnerability
---	--
- American Community Survey (ACS) Data
 - Outside of the federal screening tools such as CEJST and ETC Explorer, Metro COG utilized the US Census Bureau's 2018-2022 five-year ACS datasets. The organization identified key indicators to analyze in the Transportation Equity Review:

<ul style="list-style-type: none"> ▪ Zero Vehicle Households ▪ Disabled Population ▪ Median Household Income ▪ Housing Cost Burden ▪ Commute Time ▪ Single-Parent Households ▪ Veteran Population ▪ Population Aged Younger Than 18 years ▪ Population Aged 65 Years or Older 	<ul style="list-style-type: none"> ▪ Non-White or Minority Population ▪ Limited English Proficiency Population ▪ Population Below Poverty Line ▪ Areas of Persistent Poverty (APP) ▪ Historically Disadvantaged Communities (HDC)
--	--

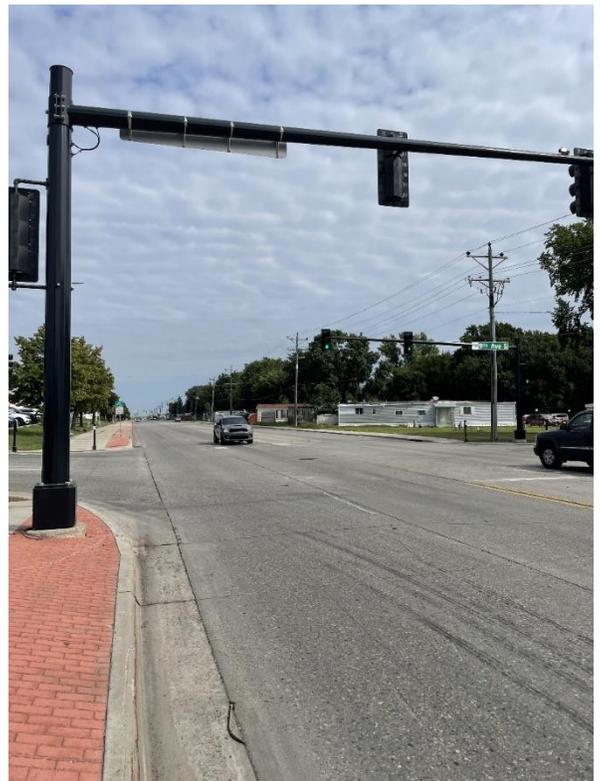
Equity Considerations and Prioritization

Metro COG used the Federal screening tools and ACS data to review and score Census Block Group geographies with an equity prioritization score. There were 18 factors considered when assigning geographies with the prioritization score, the equation of which is shown below:

(ETC components above 65-percentile threshold) [max. of 5 points]	+
(ETC designation as ‘Disadvantaged Community’) [max. of 1 point]	+
(APP designation and/or HDC designation) [max. of 2 point]	+
<u>(Census indicators higher than highest rate of comparison) [max. of 18 points]</u>	_____
	= Equity Score

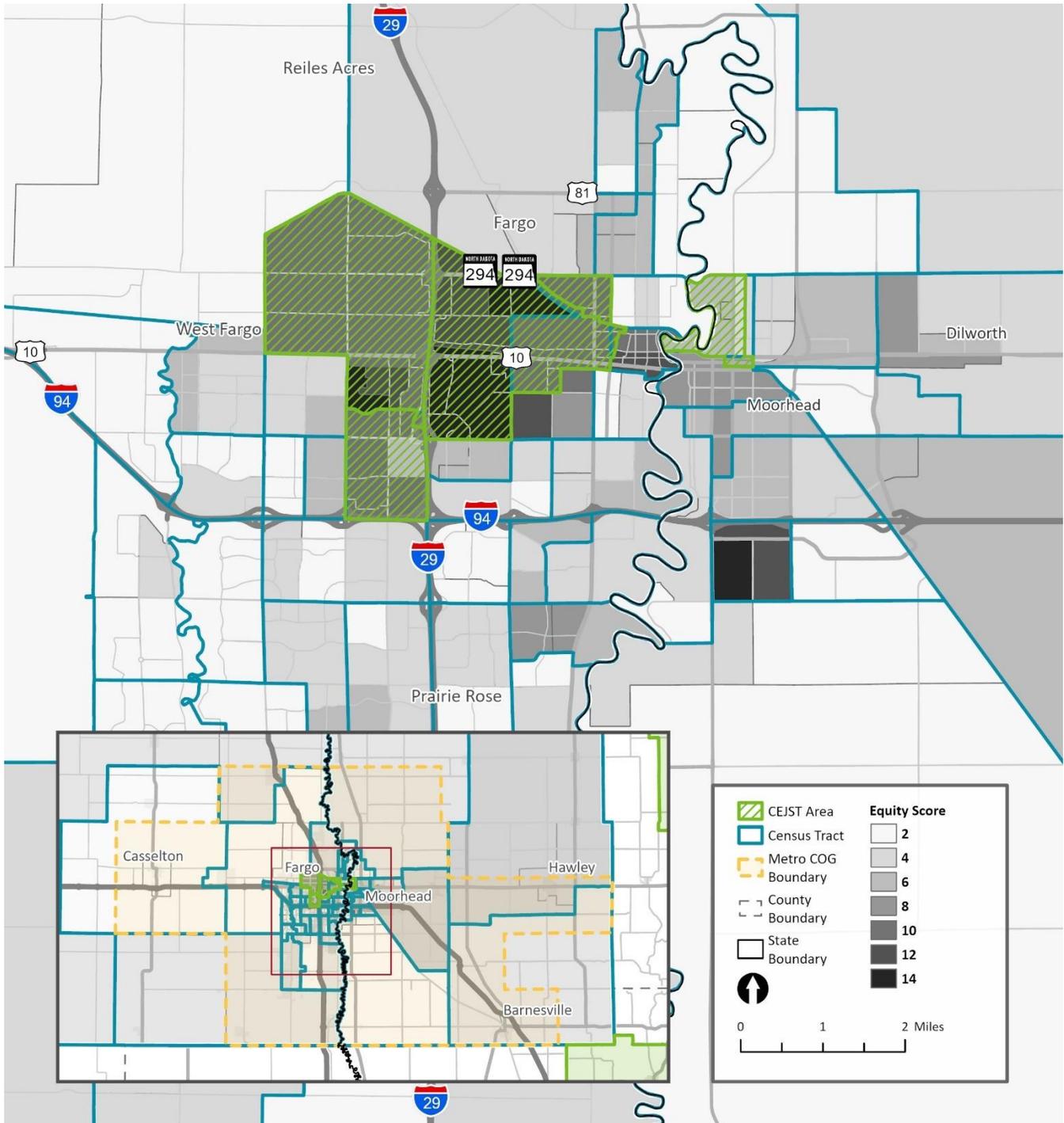
Figure 14 highlights the equity score of each geography overlaid by the CEJST. Metro COG’s equity prioritization methodology will be used to identify potential locations where future multimodal roadway safety investments could be made.

Proposed implementation strategies will positively impact disadvantaged and vulnerable populations within the Fargo-Moorhead Area. Strategic safety countermeasures on roadways and intersections will increase safety for travelers, helping to ensure people can go about their daily lives without being put at a higher risk for going wherever and however they travel. By reducing the risks associated with ‘high injury’ locations in the region, safety will be improved to ensure equitable accessibility to destinations for vulnerable and disadvantaged people. The multimodal transportation network improvements will enhance the safety of all residents and visitors from all walks of life to meet basic needs, go to work, get an education including higher education, participate in cultural events, receive healthcare, and ultimately sustain a higher quality of life in the Fargo-Moorhead Area.



For more information on the Equity Analysis methodology and results, see **Appendix 4**.

Figure 14 Comparison of USDOT (CEJST) and Metro COG Equity Areas



CHAPTER 5 SAFETY STRATEGIES AND TOOLKIT

Metro COG identified the following countermeasures for consideration to address the region’s high-risk themes (See crash profiles for more information). The countermeasures include data-driven and proven safety strategies from [Federal Highway Administration \(FHWA\) Proven Safety Countermeasures](#), [FHWA Step Guide for Improving Pedestrian Safety at Uncontrolled Intersections](#), and [Crash Modification Factor Clearinghouse](#). The Technical Coordinating Committee and communities within the region also provided input on potential countermeasures they would consider; therefore, consolidating the list to a focused toolkit. Each countermeasure addresses at least one of the high-risk themes identified in the crash profiles. See the following chapter (Chapter 6 Road to Zero) for the systematic implementation of these countermeasures.



Engineering Countermeasures

Metro COG and the communities within the region may consider the following engineering design countermeasures to address high priority locations identified within this plan.

Table 4 Urban Safety Strategies

Urban Safety Strategies								
Intersections	Estimated Implementation Cost	Estimated Effectiveness	Segments	Estimated Implementation Cost	Estimated Effectiveness	Pedestrian	Estimated Implementation Cost	Estimated Effectiveness
Roundabout / Mini Roundabout	High (\$1,800,000 to \$2,400,000)	High (78-82% crash reduction)	Corridor Access Management	High (\$360,000 per mile)	Moderate (25-31% crash reduction)	Rectangular Rapid Flashing Beacons	Low (\$15,000)	Moderate /High (47-75% crash reduction)
Dedicated Left / Right Turn Lanes	High (\$250,000)	Low / Moderate (14-26% crash reduction)	Road Diet (Lane Reconfiguration)	Moderate / High (25,000 to \$100,000)	Low / Moderate (19-47% crash reduction)	Curb Extension	Moderate / High (\$50,000 to \$100,000)	Moderate (30% crash reduction)
Backplates with Retroreflective Borders	Low (\$4,000)	Low (15% crash reduction)	Bicycle Lanes / Boulevard	Low (\$1,000 to 11,000 per mile)	Moderate (30-49% crash reduction)	Pedestrian Refuge Islands	Low / Moderate (\$2,140 to \$41,170 per mile)	Low (14% crash reduction)

Urban Safety Strategies								
Intersections	Estimated Implementation Cost	Estimated Effectiveness	Segments	Estimated Implementation Cost	Estimated Effectiveness	Pedestrian	Estimated Implementation Cost	Estimated Effectiveness
Flashing Yellow Arrow	Moderate (\$50,000 to \$100,000)	Moderate (37% crash reduction)	Median Barriers	Moderate (\$25,000 to \$50,000)	High (44-56% crash reduction)	Sidewalks	Moderate (\$80,000 per mile)	Moderate (40% crash reduction)
Lighting	Low	Low	Variable Speed Limits	Low	Moderate (34% crash reduction)	Pedestrian Countdown Timers	Low (\$12,000)	Low (9% crash reduction)
No Right Turn on Red	High (\$100,000)	Not available	Dynamic Speed Feedback Sign	Moderate (\$30,000 per location)	Low (5-7% crash reduction)	In-Street Pedestrian Crossing Sign	Low (\$240 per sign)	Not available
Removed Sightline Obstructions	Not available	Moderate (38% crash reduction)	Appropriate Speeds	Low	Moderate (26% decrease in fatalities)	Pedestrian Hybrid Beacons	High (\$100,000 to \$170,000)	High (69% crash reduction)
Retroreflective Strips on Stop Sign Posts	Low (\$2,500)	Not available	Reduced Lane Widths	Low (\$2,000 to \$25,000)	High	Parking Restriction on Crosswalk Approach	Low (\$15,000)	Low (20% crash reduction)
Advanced "Yield Here" Sign and Stop Bar	Low (\$300 per sign)	Moderate (25% crash reduction)				Leading Pedestrian Interval	Low	Low

Table 5 Rural Safety Strategies

Rural Safety Strategies								
Intersections	Estimated Implementation Cost	Estimated Effectiveness	Segments	Estimated Implementation Cost	Estimated Effectiveness	Curves	Estimated Implementation Cost	Estimated Effectiveness
Restricted Crossing U-Turn	High (\$750,000 per intersection)	Moderate / High (35-71% reduction in crashes)	Safety Edge	Low	Moderate (34.5% reduction in crashes)	Dynamic Curve Signing	Low / Moderate (\$20,000 to \$40,000)	Moderate (44% reduction in crashes)
Roundabout	High (\$1,800,000 to \$2,400,000)	High (78-82% crash reduction)	Centerline Rumble Strip	Low	Moderate	Chevrons	Low	Low
High Friction Surface Treatment (Hfst)	High	Moderate	Enhanced Edgeline (6" and 8")	Low (\$9,000)	Low (18% crash reduction)	High Friction Surface Treatment (Hfst)	High	Moderate
All-Way Stop / Yield	Low	High	Clear Zone Maintenance / Enhancements	Not available	Not available	Paved Shoulders	Low (\$5,000 per mile)	Moderate (30-49% crash reduction)
Removed Skew / Realigned Intersections	High	Moderate	Ditch / Embankments / Side Slope Improvements	Not available	Not available	Upgraded Signs / Oversized Regulatory Signs	Low	Not available



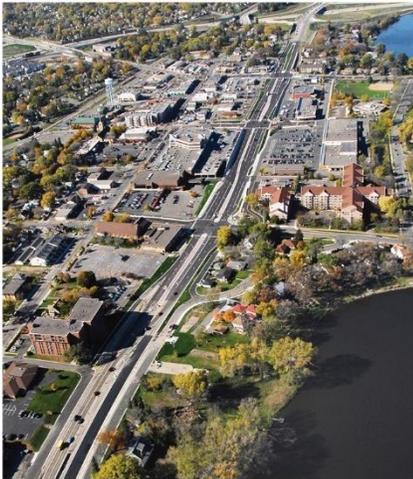
Rural Safety Strategies								
Intersections	Estimated Implementation Cost	Estimated Effectiveness	Segments	Estimated Implementation Cost	Estimated Effectiveness	Curves	Estimated Implementation Cost	Estimated Effectiveness
Continuous Green T	High	Low	Shoulder / Edge Line Rumble Strip	Low	Moderate	Roadside Barrier / Guardrail	Not available	Not available
Streetlights	Low (\$4,800 per streetlight)	Moderate (42% crash reduction)	Upgraded Signs / Oversized Regulatory Signs	Low	Moderate (54% crash reduction)	6" or 8" Pavement Markings	Not available	Not available

Priority strategies are described in more detail in Table 6.



Table 6 Priority Strategies

Corridor Access Management



Cost:

Varies depending on a length of roadway and number of driveways.

Purpose:

Access management reduces conflict points by consolidating access points.

Effectiveness:

Reducing driveway density:

5-23% reduction in total crashes along 2 lane rural roads.

25-31% reduction in fatal and injury crashes along urban/suburban arterials.

Road Diet (Lane Reconfiguration)



Cost:

About 25,000 to \$100,000 per mile.

Purpose:

Reconfigured roadway to change the total number of lanes. Typically, an existing 4-lane undivided roadway is changed to a 3-lane roadway with a two-way left turn lane.

Effectiveness:

4-lane to 3-lane, Road diet conversions:

19-47% reduction in total crashes

Bicycle Lanes / Boulevard



Cost:

\$1,000 to \$11,000 per mile of striping.

Purpose:

Dedicated bicycle lane on a vehicular roadway.

Effectiveness:

Bicycle lane additions can reduce crashes up to:

49% for total crashes on urban 4-lane undivided collectors and local roads.

30% for total crashes on urban 2-lane undivided collectors and local roads. Separated bicycle lanes may provide further safety benefits.

Rectangular Rapid Flashing Beacons



Cost:

\$15,000 per unit.

Purpose:

RRFBs can be added to all non-signalized crossings to increase awareness of drivers of crossings traffic by flashing lights when the system is activated either by push button or permissive detection.

Effectiveness:

75% of drivers yield to pedestrians.

47% reduction in pedestrian crashes.

Curb Extension



Cost:

\$50,000 to \$100,000.

Purpose:

Curb extensions and bump-outs are an extension of the sidewalk in the roadway to decrease the crossing distance and improve pedestrian visibility to drivers.

Effectiveness:

30% reduction in total crashes.

Source: <https://www.dot.state.mn.us/complete-streets/case-studies/annandale-hwy24.html>



Pedestrian Refuge Islands



Cost:
\$2,140 to \$41,170 per island depending in the design, site and construction project.

Purpose:
Median space in the roadway where pedestrians have protection from vehicular traffic.

Effectiveness:
14% reduction in total crashes.

Restricted Crossing U-Turn



Cost:
\$750,000 per intersection.

Purpose:
Restricted crossing intersections decrease the amount of conflict points caused by traditional left turns and require drivers to take a right and U-turn rather than a left-turn.

Effectiveness:
35% reduction in fatal and injury crashes.
71% reduction in severe crashes.

Roundabout



Cost:
\$1.8 to \$2.4 million.

Purpose:
A circular intersection where traffic flow is slowed and severe conflict points are reduced.

Effectiveness:
Two-way stop intersection to a roundabout:
82% reduction in fatal and injury crashes.
Signalized intersection to a roundabout:
78% reduction in fatal and injury crashes.

Safety Edge



Cost:

Less than 1% of total paving cost.

Purpose:

Paving roadway edge with an angle rather than a straight edge that drops off.

Effectiveness:

34.5% reduction in drop-off-related crashes on two-lane rural highways.

Dynamic Curve Signing



Cost:

\$20,000 to \$40,000.

Purpose:

Dynamic curve signing is blinking chevron signs used along curves to inform drivers of the upcoming curve in the road.

Effectiveness:

44% reduction in total crashes.



Non-Engineering Countermeasures

Not all approaches to improving roadway safety in the Fargo-Moorhead Area include physical improvements or changes to the system. A theme for non-engineering countermeasures to improving roadway safety is ongoing diligence on the part of Metro COG and its partners in having a comprehensive approach to roadway safety. These solutions are vital components of a comprehensive safety strategy. These measures focus on policy, education, enforcement, and community engagement, aiming to foster a culture of safety and awareness among all road users.

Corridor Studies

A corridor study is a planning project that characterizes and evaluates roadway conditions, whether existing or for the future. The goal of the study is to provide recommendations for infrastructure projects that address concerns highlighted by the study. Once the corridor study is adopted, implementation can begin which can lead to funding for the project, additional studies and/or policy updates.

Speed Management

Speed management programs provide a framework on how to create a safe environment for all road users across a specific road network. A speed management program aims to address factors that influence speeding. This includes user behavior, roadway design, land use, traffic behavior and law enforcement. Along with identifying issues, countermeasures are to be identified that are effective in management speeds. The outcome of developing the plan is to evaluate the effectiveness of the solutions and thus reduce speeding-related fatalities and

injuries as well as increasing the safety experience for all road users.

Lighting Management

Lighting management programs create a plan to strategically place lighting infrastructure for the benefit of all road users. Lighting management plans particularly emphasize resolving pedestrian safety issues as this vulnerable user group is at significant risk during the night. Once implemented, lighting infrastructure will provide a visual environment that is safe for road users during hours of darkness. Lighting management plans may also consider and investigate using new lighting technology to enhance the safety of the network.

New Education Campaign

A new education campaign helps connect people to their transportation options which leads to the promotion of safety and wellbeing of all users. Key services of a campaign may include social media, graphic design, web development and in person engagement as well as research and innovation to involve stakeholders in the deployment of a new or existing program, policy, or infrastructure improvement.

Road Safety Audit

A Road Safety Audit estimates and reports road safety issues as well as identifying specific improvements for all road users. A team independent from the project conducts the audit. Road safety audits may specifically focus on vehicles, pedestrians, motorcycles or a specific combination of users. Road user capabilities and limitations are essential for a road safety audit. These audits can be utilized at any stage in the project development process.

Road safety audits can be used for projects ranging from minor to major in size.

Pedestrian Education/Visibility

The visibility of pedestrians can be affected by obstructed views, lighting conditions, and parked vehicles. The safety issues that arise from this can be resolved with pedestrian education campaigns that engage the community in the planning process to



make the transportation network more visible and safer to all road users. Brochures, news articles, social media announcements and videos, and poster materials can be developed to educate road users about pedestrian safety to improve user experience.

Safe Routes Studies

“Safe Routes to School” has been a longstanding program that uses a variety of education, engineering and enforcement strategies that help make routes safer for children to walk and bicycle to school and encouragement strategies to entice more children to walk and bike. Various Metro COG Safe Routes to School plans have identified improving walking and biking access to schools as a priority.

Based on public input and analysis of crash data, a Safe Routes to School is highlighted as a potential countermeasure to consider in this Plan that will improve walking and biking access near schools. However, additional infrastructure

improvements and other strategies may be necessary to improve walking and biking access to schools and parks. Allocating additional funding at the local level to supplement programming and infrastructure development is a possible strategy for Metro COG to pursue.

HIN Corridor Enhanced Enforcement

The high injury network (HIN) developed through this Plan’s in-depth analysis of crash data provides an opportunity to focus not only on engineering countermeasures, but also non-engineering countermeasures, such as focused law enforcement and traffic monitoring efforts.

Community-Based Safety Workshops

Community-based safety workshops bring together residents, local businesses, and community organizations to discuss transportation safety concerns and solutions. These workshops include hands-on activities such as bicycle safety checks, pedestrian safety drills, and interactive demonstrations on safe driving practices.

Collaborative Safety Partnerships

Through partnerships with local businesses, schools, non-profits, and healthcare providers, promote a culture of safety across the community. Collaborative efforts include hosting safety awareness days, creating public service announcements, and offering transportation safety training sessions tailored to specific groups such as young drivers and senior citizens.

Motorcycle Awareness Campaigns

A series of motorcycle awareness campaigns are aimed at both motorcyclists and other road users. These campaigns focus on educating motorcyclists about safe riding practices, such as wearing helmets and protective gear,

maintaining a safe speed, and using defensive driving techniques. Additionally, the campaigns educate drivers of other vehicles about the importance of being vigilant for motorcycles, understanding their vulnerability on the road, and providing them with sufficient space.



Improving Traffic Records and Coordination

Capturing accurate and thorough crash data is a constant challenge experienced nationally. Although accuracy can be improved by automating crash data with the use of cameras that capture images of violations or crashes; the use of cameras is controversial. In 2024, Minnesota legalized a pilot program to use traffic cameras for speed management on a limited basis.

The coding and classification of crash data can also be assessed and improved by making training programs available for law enforcement to report on bicycle and pedestrian crashes as well as racial demographics. This can also include the expansion of data attributes to identify more information about the given crash. Near miss incidents are another major gap in our understanding of roadside safety. Near miss reporting can improve the understanding of how

the circumstances of a crash can arise. Continued coordination is also necessary with law enforcement, emergency medical services, and hospital records.

Demonstration Projects

Demonstration projects use materials such as plastic bollards and paint to temporarily make a change to a roadway, to show what future changes may look like to public agencies, partners, and the public. They are designed for the short-term, and the cost of a demonstration project is significantly less than a final infrastructure project. Demonstration projects are useful as stakeholders can evaluate the project before making any permanent infrastructure changes. These projects also inspire action, help gather data and increase public engagement. See [MnDOT Demonstration Project Implementation Guide, 2019](#) for more information on best practices for a quick-build approach.

Traffic calming demonstration

Traffic calming demonstration projects may include using temporary materials to create a median island, traffic circle, or a parklet to reduce or slow traffic in the short-term. The goal of the demonstration may also aim to increase the safety of active transportation methods. To evaluate the effectiveness, surveys, interviews, and counts may also be recorded during the process.

Bike lanes/ trail demo

Using temporary materials, bike lanes can be added by creating a buffer to prevent cars from utilizing the given demo project's location. Materials may include paint, tape, bike lane-related signs, or flexible posts for separated bike lanes. Existing lanes for automobiles can also be

reduced to make space for a bike lane demonstration project. Bike lane demos are generally low-cost.

Midblock crosswalk installation demo

Midblock crosswalks can be demonstrated using spray paint. The crosswalk markings may be applied to a project location where pedestrian traffic is anticipated and encouraged. The goal of the project is to see if the crosswalk will reduce potential conflicts between motorists and pedestrians. The effectiveness of a midblock crosswalk demo can be evaluated by driver stop/yield compliance, interviews, and surveys.



CHAPTER 6 ROAD TO ZERO

Growing Safety Culture within Metro COG

Foundational change has already begun within Metro COG. Through the process of creating this plan, Metro COG engaged communities within the region to continue to identify opportunities to address transportation safety and change the safety culture.

Plan Leadership and Structure

Metro COG, in coordination with local jurisdictions, assumes leadership of the Regional Comprehensive Safety Action Plan and its vision. Metro COG and members of the Transportation Technical Committee will evaluate the data and review the components of the Regional Comprehensive Safety Action Plan. Metro COG will also continue to collaborate with partners at the local, county, and state levels in support of data-driven safety priorities and implementation.

The cultural actions listed below in Table 7 will support the region's vision to achieve zero traffic deaths and severe injuries on streets within the Fargo-Moorhead Area with a specific goal of 39 or fewer fatalities and serious injuries by 2040. Further, they will serve as the groundwork for the implementation of countermeasures identified through this Safety Action Plan's prioritization process.

Table 7 Cultural Actions

#	Action	Timeline
CA.1	Metro COG Policy Board adopts this Regional Comprehensive Safety Action Plan and its safety goal	Q4 2024
CA.2	Share the Regional Comprehensive Safety Action Plan analysis including GIS data to all local agencies within the region for local analysis and identification of countermeasures to implement.	Q4 2024
CA.3	Continue to engage Metro COG's Transportation Technical Committee to monitor progress on the Regional Comprehensive Safety Action Plan.	Continuous
CA.4	Update High-Injury Network (HIN) map and adjust thresholds annually per guidance and best practices found in Appendix 3.	Continuous
CA.5	Maintain dashboard and other resources so that local agencies and the general public have easy access to data to conduct analysis	Continuous
CA.6	Coordinate joint regional applications to address regional roadway safety priorities to include an application for the Safe Streets and Roads for All Grant program	Q1 2025
CA.7	Identify safety scoring considerations to incorporate the results of this plan into local program and project funding.	Q1 2025
CA.8	Incorporate the HIN and Crash Profiles into long range transportation planning.	Continuous
CA.9	Continue to update datasets and evaluate crash data for future plan updates.	Continuous

Putting the Toolkit into Action

Based on the results of the analysis, the proven engineering and non-engineering countermeasures listed in Table 4 were identified as potential safety improvements to consider when addressing the crash profiles. The potential countermeasures were based on FHWA’s Proven Safety Countermeasures and reviewed with Metro COG staff and the SRC.

Table 8 Potential Countermeasures by Crash Profile

Crash Profile	Type	Engineering Countermeasure	Non-Engineering Countermeasure
Confined Residential Arterials			
<p>Located within residential areas and typically have lower speed limits (usually 30-35 mph). Designed to prioritize local access over through traffic.</p>	Intersection	<ul style="list-style-type: none"> • Mini Roundabout • All-Way Stop / Yield • LED Stop Signs / Flashing Beacon Stop Signs • No Right Turn on Red • Retro Reflective Strips on Stop Sign Posts • Remove Skew / Realign Intersections • Streetlights • Advance “Yield Here” Sign and Stop Bar 	<ul style="list-style-type: none"> • Community-Based Safety Workshops • Pedestrian Education / Visibility • Speed Management • Safe Routes Studies • New Education Campaign • Traffic Calming Demonstration
	Segment	<ul style="list-style-type: none"> • Reduced Lane Widths • Corridor Access Management • Road Diet (Lane Reconfiguration) • Dynamic Speed Feedback Sign • Safety Edge • Enhanced Edge line (6” and 8”) • Clear Zone Maintenance/Enhancements • Upgraded Signs / Oversized Regulatory Signs 	
	Pedestrian	<ul style="list-style-type: none"> • Curb extension • Sidewalks • Parking Restriction on Crosswalk Approach • Rectangular Rapid Flashing Beacons • In-Street Pedestrian Crossing Sign • Pedestrian Countdown Timers • Leading Pedestrian Interval • Upgraded Signs / Oversized Regulatory Signs 	

Downtown Arterials			
<p>Found in central business districts, these roads typically have lower speed limits (usually 30-35 mph). Designed to accommodate high pedestrian traffic and mixed-use activities.</p>	Intersection	<ul style="list-style-type: none"> • Roundabout / Mini Roundabout • Dedicated Left / Right Turn Lanes • Flashing Yellow Arrow • Lighting • No Right Turn on Red • Removed Sightline Obstructions • Retro Reflective Strips on Stop Sign Posts • Advanced "Yield Here" Sign and Stop Bar • All-Way Stop / Yield • Streetlights • High Friction Surface Treatment (HFST) 	<ul style="list-style-type: none"> • Collaborative Safety Partnerships • Pedestrian Education / Visibility • HIN Corridor Enhanced Enforcement • Lighting Management • Bike Lanes / Trail Demo • Midblock Crosswalk Installation Demo
	Segment	<ul style="list-style-type: none"> • Corridor Access Management • Road Diet (Lane Reconfiguration) • Bicycle Lanes / Boulevard • Variable Speed Limits • Dynamic Speed Feedback Sign • Reduce Lane Widths • Safety Edge • Enhanced Edge line • Centerline Rumble Strip • Shoulder / Edge line Rumble Strip • Upgraded Signs / Oversized Regulatory Signs 	
	Pedestrian	<ul style="list-style-type: none"> • Medians and Pedestrian Refuge Islands • Sidewalks • Rectangular Rapid Pedestrian Countdown Timers • Pedestrian Hybrid Beacons • Parking Restriction on Crosswalk Approach • Leading Pedestrian Interval Lighting • Upgraded Signs / Oversized Regulatory Signs • Paved Shoulders 	
Multilane Arterials			
	Intersection	<ul style="list-style-type: none"> • Roundabout • Dedicated Left/Right Turn Lanes 	

<p>Multiple lanes in each direction, with higher speed limits (usually between 30-55 mph) and higher traffic volumes. Designed to accommodate higher speeds and a larger volume of vehicles.</p>		<ul style="list-style-type: none"> • Backplates with Retroreflective Borders • Flashing Yellow Arrow • Lighting • Removed Sightline Obstructions • Retro Reflective Strips on Stop Sign Posts • Restricted Crossing U-Turn • Advance "Yield Here" Sign and Stop Bar • Removed Skew / Realigned Intersections • High Friction Surface Treatment (HFST) • Streetlights 	<ul style="list-style-type: none"> • Corridor Studies • Road Safety Audit • Speed Management • Improving Traffic Records and Coordination • Motorcycle Awareness Campaigns • Demonstration Projects • Safe Routes Studies • Lighting Management • New Education Campaign
	Segment	<ul style="list-style-type: none"> • Corridor Access Management • Road Diet (Lane Reconfiguration) • Median Barriers • Variable Speed Limits • Dynamic Speed Feedback Sign • Reduced Lane Widths • Safety Edge • Centerline Rumble Strip • Shoulder / Edge line Rumble Strip • Enhanced Edge line (6" and 8") • Clear Zone • Maintenance / Enhancements • Ditch / Embankments / Side Slope Improvements • Speed Safety Cameras • Upgraded Signs / Oversized Regulatory Signs 	
	Pedestrian	<ul style="list-style-type: none"> • Medians and Pedestrian Refuge Islands • Pedestrian Hybrid Beacons • Rectangular Rapid Flashing Beacons • Sidewalks • Pedestrian Countdown Timers • Parking Restriction on Crosswalk Approach • Lighting • High Friction Surface Treatment (HFST) • Upgraded Signs / Oversized Regulatory Signs 	



Project Prioritization Criteria

The infrastructure investments needed to address safety issues within the Fargo-Moorhead Area likely exceed annual budgets, so Metro COG will need to prioritize locations and strategies to implement first. Metro COG will use the following project prioritization criteria to determine the highest priority projects. These metrics take into account the severity of crashes, location in relation to the HIN and environmental justice populations, as well public engagement.

Table 9 Project Prioritization Criteria

Metric	Weight
Number of Fatal and Severe Injury (KA) Crashes	30%
On the overall HIN	25%
Equity Score	20%
Total Crashes	15%
Number of Unsafe Location Comments from the Public	10%
Total	100%

Measuring and Reporting Progress

Evaluation and Tracking

Metro COG will develop an annual report to evaluate progress toward this plan’s vision and safety goal. The yearly reporting will be posted on Metro COG’s website and will include the status of project implementation and the most recent crash statistics. The Transportation Technical Committee will convene annually to review the annual report.

Specific performance measures will include:

- Number fatal and serious injury crashes by modes and locations
- Number of safety engineering projects implemented by type of strategy, location, and investment amount
- Number of non-engineering countermeasures implemented by type of strategy, location (if applicable), and investment amount

From the date of adoption, Metro COG will revise the goal, countermeasures, and actions or fully update the Regional Comprehensive Safety Action Plan every five years to ensure the data evaluation is up to date and reflects the evolving policies, programs and projects within the region.