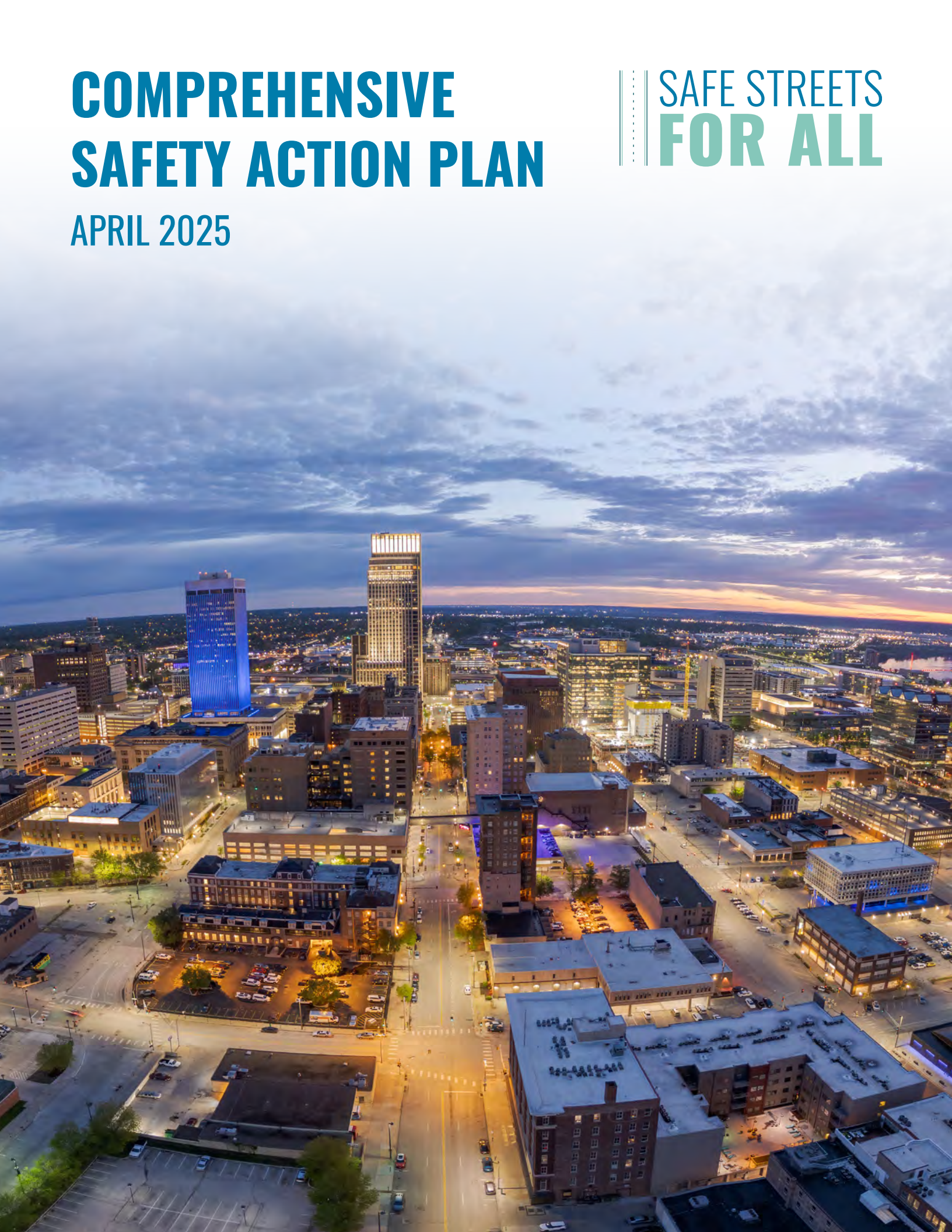
COMPREHENSIVE SAFETY ACTION PLAN

APRIL 2025

SAFE STREETS FOR ALL



INTRODUCTION

Over the last five years, **268 people have died on roads within the plan study area while another 2,266 people have experienced life-altering injuries.** The Safe System Approach is a holistic and comprehensive approach to transportation safety that is grounded in the belief that deaths and serious injuries on our roadways are unacceptable. This Comprehensive Safety Action Plan outlines the path towards zero traffic fatalities and serious injuries by 2040, which will embody the principles of the Safe System Approach.

TABLE OF CONTENTS

PLEDGE PAGE

The Metropolitan Area Planning Agency (MAPA), two state Departments of Transportation, two Nebraska counties, and fifteen municipalities were involved in the planning process to draw upon their knowledge, experience, and ideas; these entities believe in the Safe System Approach and want to support this plan in achieving the goal of zero traffic fatalities.

We recognize that no loss of life is acceptable and strive to incorporate MAPA's Safe Streets for All Regional Comprehensive Safety Action Plan goals, principles, and values into all our efforts.

Iowa Department of Transportation

Nebraska Department of Transportation

Douglas County, NE

Sarpy County, NE

Bellevue, NE

Bennington, NE

Boys Town, NE

Carter Lake, IA

Council Bluffs, IA

Crescent, IA

Gretna, NE

La Vista, NE

McClelland, IA

Omaha, NE

Papillion, NE

Ralston, NE

Springfield, NE

Valley, NE

Waterloo, NE

Metropolitan Area Planning Agency

LETTER FROM MAPA'S EXECUTIVE DIRECTOR

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Executive Director

LETTER FROM THE DIRECTOR OF THE NEBRASKA DEPARTMENT OF TRANSPORTATION

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EXECUTIVE SUMMARY

MAPA's **Comprehensive Safety Action Plan** is the culmination of efforts throughout the region, drawing from the knowledge and experiences of individuals and groups interested in creating safe streets for everyone. Two committees were integral to the development of the plan: the Safety Committee and the Transportation Technical Advisory Committee (TTAC). The Safety Committee built trust among partners from different backgrounds on safety topics and supported consensus around recommendations and the final action plan. The TTAC guided the overall technical direction of the plan.

In addition to the Safety Committee and TTAC, this plan prioritized meeting with members of the community to garner important input on creating safer streets for everyone. Community engagement increases the visibility and understanding of local perspectives, needs, and concerns; this aids the development of effective, tailored countermeasures and, in turn, the plan's implementation and success.

This plan is a comprehensive, data-driven safety plan to reduce and eliminate fatal and serious injury crashes. It uses a systemic analysis—which identifies high-risk roadway features for targeted improvements—and a predictive analysis—which identifies locations with the greatest potential for improvement—to create a High Priority Network (HPN). The HPN prioritizes locations with high fatal and injury crash rates through a combination of need and risk and serves as the basis for identification of a set of candidate projects that suggest targeted safety countermeasures aimed at maximizing reductions in fatal and serious injury crashes across the network.

The goal of the MAPA Regional Comprehensive Safety Action Plan is to reduce and eliminate all traffic fatalities and serious injuries by 2040. The plan outlines the process of achieving this goal, providing a set of recommendations that address the following:

Leadership and Commitment recommends a framework for cross-jurisdictional collaboration and alignment of goals and priorities to make safety the utmost priority in all aspects of the region's transportation system.

Safe Systems provides examples of policies, strategies, or legislation that would provide systemwide safety benefits at the local, regional, and state levels.

Data Transparency and Accountability provides recommendations to enhance the quality of data collection, sharing, and monitoring and reporting to allow for data-informed decision-making.

The plan also provides a set of proposed Safety Metrics to track implementation progress across the region. By taking this first step, we will locate critical areas of safety concern and identify potential solutions that increase safety and reduce traffic fatalities and serious injuries.

WHAT IS MAPA?

Created in 1967, the Metropolitan Area Planning Agency (MAPA) is the designated Metropolitan Planning Organization (MPO) and the voluntary Council of Governments for the Omaha-Council Bluffs Region. An MPO is a federally mandated and funded transportation policy-making organization that is made up of representatives from local government and governmental transportation authorities. Its core functions include developing a long-range transportation plan and identifying projects to implement that vision. In addition to these core functions, MAPA's broader mission is to bring local governments together to address regional concerns. Overall, MAPA's purpose is to promote and preserve the quality of life for a more happy, healthy, and vibrant region. Find out more at **www.mapacog.org.**

MAPA's federal mandate is focused on the Omaha-Council Bluffs Transportation Management Area (TMA); this plan focuses on a subset of this area, including Douglas County and Sarpy County in Nebraska and the communities of Carter Lake, Council Bluffs, Crescent, and McClelland in Iowa. Pottawattamie County, which is a subset of MAPA's TMA, is developing their own Local Road Safety Plan for the rural sections of the TMA.

To get to zero, it will also take close coordination with Nebraska and Iowa Department of Transportations.

MAPA Study Region

GLOSSARY OF TERMS

TERM	MEANING
AACN	Advanced Automatic Collision Notification
AASHTO	American Association of State Highway and Transportation Officials
ACN	Automatic Crash Notification
AE	Automated Enforcement
ASCE	American Society of Civil Engineers
BAC	Blood Alcohol Content
BCA	Benefit-to-Cost Analysis
BCR	Benefit-to-Cost Ratio
CEP	Community Engagement Plan
CIP	Captial Improvement Program
DOT	Department of Transportation
DUI	Driving Under the Influence
EMS	EMS Emergency Medical Services
FHWA	Federal Highway Association
HIN	High Injury Network
HPMS	Highway Performance Monitoring System
HPN	High Priority Network
HSIP	Highway Safety Improvement Program
HRN	High Risk Network
ICE	Intersection Control Evaluation
IDOT	Iowa Department of Transportation
IIHS	Insurance Institute for Highway Safety
ISA	Intelligent Speed Assistance
ITE	Institute of Transportation Engineers
ITS	Intelligent Transportation Systems
KSI	Killed and Seriously Injured
LPI	Leading Pedestrian Interval
LRS	Linear Referencing System
LTAP	Local Technical Assistance Program
MAPA	Metropolitan Area Planning Agency

TERM	MEANING
MIRE	Minimum Inventory of Roadway Elements
MOE	Measures of Effectiveness
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MUT	Median U-Turns
NDOT	Nebraska Department of Transportation
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PCN	Positive Community Norms
PHB	Pedestrian Hybrid Beacons
PROWAG	Public Right-of-Way Accessibility Guidelines
RIRO	Right-in, Right-out
RRFB	Rectangular Rapid-Flashing Beacon
SHSP	Strategic Highway Safety Plan
SMP	Speed Management Plan
SRTS	Safe Routes to School
SS4A	Safe Streets and Roads for All
SSA	SSA Safe System Approach
STEP	Safe Transportation for Every Pedestrian
TIP	Transportation Improvement Program
TSP	Transit Signal Prioirity
TTAC	Transportation Technical Advisory Committee
VRU	Vulnerable Road Users

Safe Streets for All

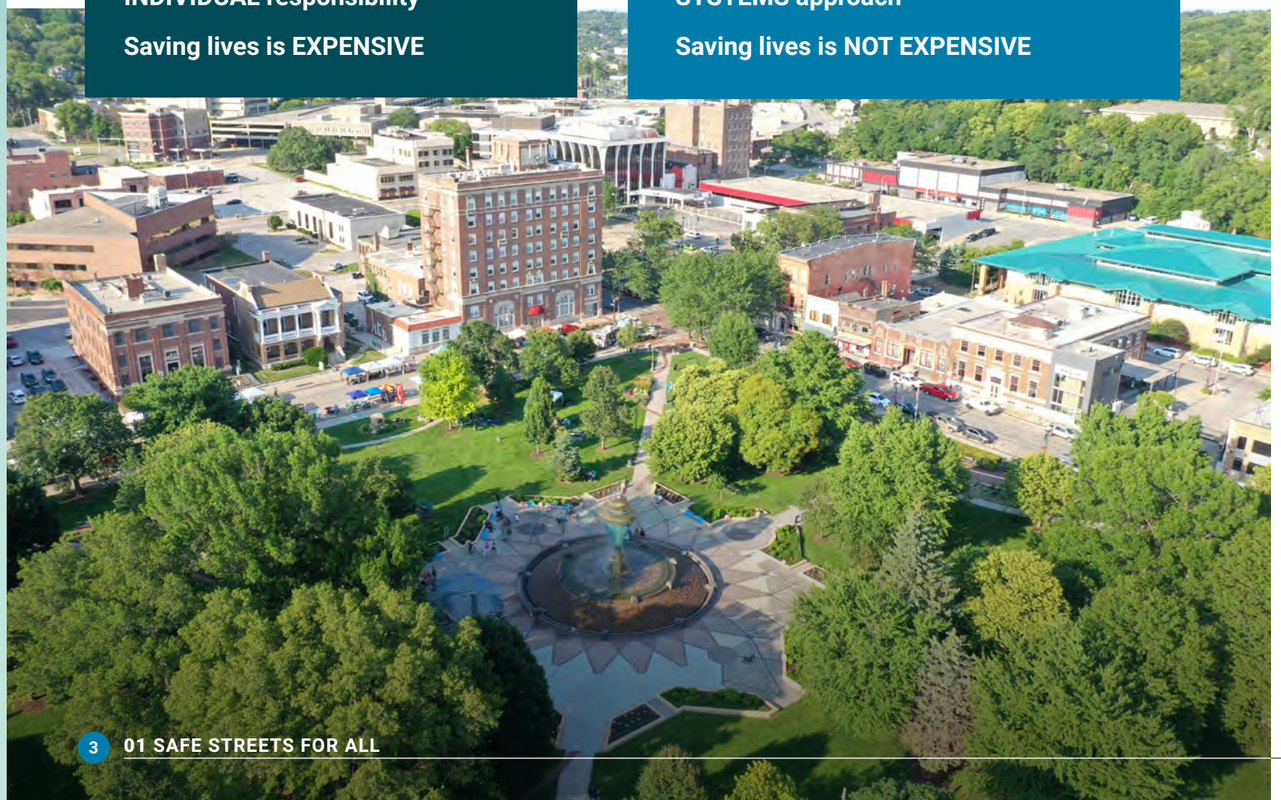
01

SAFE SYSTEM APPROACH

The Safe System Approach is a comprehensive strategy for managing road safety that is closely aligned with Vision Zero principles. Developed by the Federal Highway Administration (FHWA), the goal of the Safe System Approach is to create a transportation system that is forgiving of human error and does not rely on individual road users to be perfect. Instead, the approach recognizes that people will make mistakes and that the transportation system must be designed to the extent possible to protect the road user from the consequences of those mistakes.

Vision Zero is a global traffic safety initiative that originated in Sweden in the late 1990s and is now endorsed by the U.S. Department of Transportation through their Safe Streets for All program and branded as the Safe System Approach (SSA). The core principle of the SSA is the belief that all traffic fatalities and serious injuries are preventable and that no loss of life is acceptable. The goal of the SSA is to create a transportation system that prioritizes safety above all else, using data-driven analyses to identify the root causes of traffic crashes and addressing them with comprehensive strategies rooted in a Safe System Approach.

TRADITIONAL APPROACH		SAFE SYSTEM APPROACH
Traffic deaths are INEVITABLE		Traffic deaths are PREVENTABLE
PERFECT human behavior	VS	Integrate HUMAN FAILING in approach
Prevent COLLISIONS		Prevent FATAL and SEVERE CRASHES
INDIVIDUAL responsibility		SYSTEMS approach
Saving lives is EXPENSIVE		Saving lives is NOT EXPENSIVE



The Safe System Approach is based on six foundational principles*:

- **Deaths and serious injuries are unacceptable:** A Safe System Approach prioritizes the elimination of crashes that result in death and serious injuries.
- **Humans make mistakes:** People will inevitably make mistakes and decisions that can lead or contribute to crashes, but the transportation system can be designed and operated to accommodate certain types and levels of human mistakes and avoid death and serious injuries when a crash occurs.
- **Humans are vulnerable:** Human bodies have physical limits for tolerating crash forces before death or serious injury occurs; therefore, it is critical to design and operate a transportation system that is human-centric and accommodates physical human vulnerabilities.
- **Responsibility is shared:** All stakeholders—including government officials at all levels, industry members, non-profit/advocacy groups, researchers, and the public—are vital to preventing fatalities and serious injuries on our roadways.
- **Safety is proactive:** Proactive tools should be used to identify and address safety issues in the transportation system, rather than waiting for crashes to occur and reacting afterwards.
- **Redundancy is crucial:** Reducing risks requires that all parts of the transportation system be strengthened, so that if one part fails, the other parts still protect people.

Source: U.S. Department of Transportation

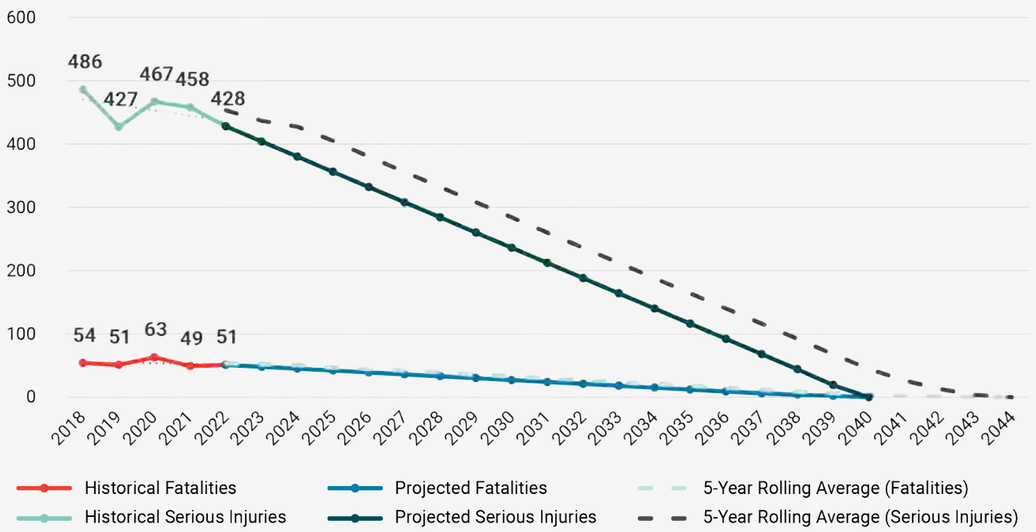
Principles of the Safe System Approach

ZERO TO 2040

Nationwide, traffic deaths are increasing at an alarming rate, particularly in disadvantaged and under represented communities. From 2017 to 2021, MAPA's region has experienced a higher rate of non-motorist fatalities than either Nebraska's or Iowa's average, with a disproportionately high impact on disadvantaged communities. Disadvantaged communities make up 22% of the region's population and experience 33% of the total traffic fatalities and 47% of the pedestrian fatalities on all roads. By taking this first step through the creation of this Comprehensive Safety Action Plan, we will locate critical areas of safety concern and identify potential solutions that increase safety and make progress in our goal:

The goal of the Safe Streets for All MAPA Safety Plan is to eliminate all fatal and serious injury (KSI) crashes by 2040.

KSI Crashes to Zero



MAPA Study Region

Most jurisdictions within Nebraska have lower rates of people being killed or seriously injured and crashes than the state as a whole; however, Valley, Gretna, and Waterloo are overrepresented in this regard due to the proportionally high number of KSI crashes compared to their low populations. Douglas County and Sarpy County have lower rates than the state, but there is still significant room for improvement.

Iowa has nearly half the rates of people being killed and seriously injured in crashes as Nebraska, with Council Bluffs and Carter Lake being below their state's rate. Like other small cities in the region, Cresent has a higher fatality and serious injury rate than the state due to low populations and high killed and seriously injured (KSI) crashes. McClelland and Boys Town has achieved the goal of zero deaths or serious injuries on its roadways but can benefit from the Safe System Approach to maintain this trend.

Crash Fatalities and Serious Injuries

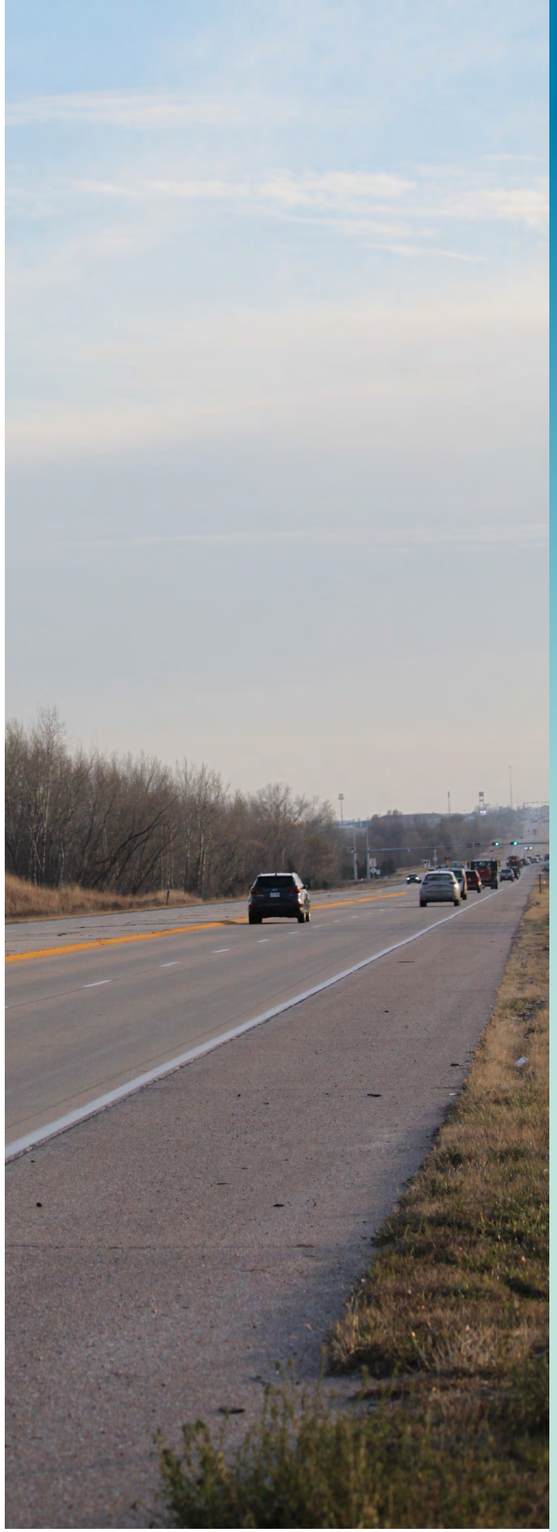
Source: Nebraska DOT, Iowa DOT

Jurisdiction	Persons Killed and Seriously Injured Per 100,000
Valley, NE	59.6
Gretna, NE	50.7
Waterloo, NE	42.8
Nebraska	**40.8**
Omaha, NE	35.6
Douglas County, NE	**33.8**
Crescent, IA	31.8
Springfield, NE	26.5
Iowa	**25.5**
Sarpy County, NE	**23.7**
Council Bluffs, IA	21.9
Papillion, NE	21.4
Ralston, NE	20.1
Bellevue, NE	19.8
La Vista, NE	17.9
Carter Lake, IA	10.5
Bennington, NE	9.9
Boys Town, NE	0.0
McClelland, IA	0.0

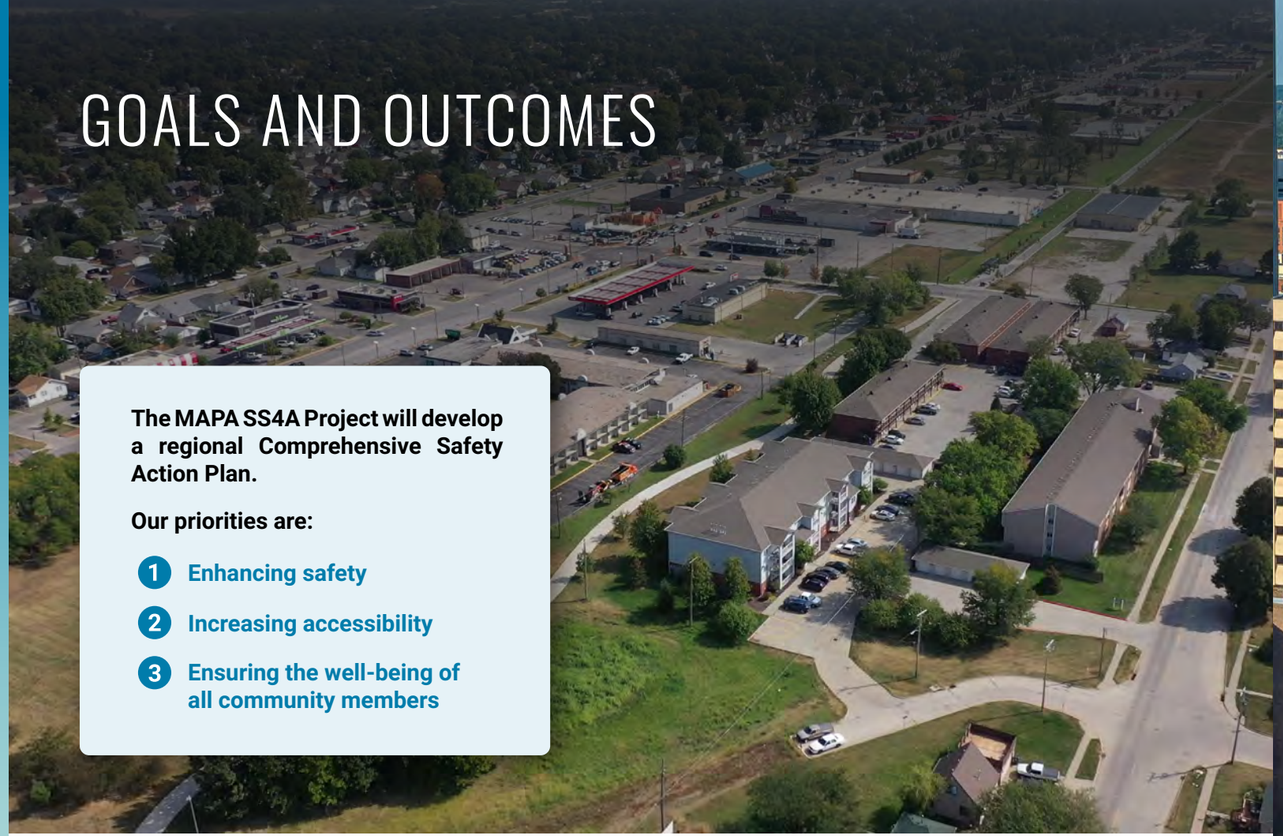
MEASURES OF EFFECTIVENESS

To reach our goal of zero fatalities and serious injuries by 2040, we must track our progress and adjust our course as necessary. Measures of Effectiveness (MOE) are metrics we can use to measure how we're doing and hold ourselves accountable.

MOE utilizes data-driven, evidence-based decision-making to make targeted improvements; we want to make the most meaningful impact with limited resources, relying on known, proven countermeasures. These measures need to demonstrate the impact of these improvements to garner continued support and resource allocation for transportation safety. MOE should be defined based on the identified gaps within the transportation network leading to fatal and serious injury crashes.



GOALS AND OUTCOMES



The MAPA SS4A Project will develop a regional Comprehensive Safety Action Plan.

Our priorities are:

1. **Enhancing safety**
2. **Increasing accessibility**
3. **Ensuring the well-being of all community members**

These priorities rely on continuous monitoring of key safety indicators, regardless of ability or mode of transportation. These key safety indicators (described in later chapters) are detailed measures, such as injury frequency and severity, near miss frequency rates, and crash type rates, that allow us to keep an eye on our progress in achieving our 2040 goal.

CIP PRIORITIZATION BASED ON SAFETY

To accomplish zero by 2040, safety-oriented practices need to be redundant within our system; one such way is to have the jurisdictions within the MAPA region to develop their Capital Improvement Programs (CIP) to prioritize projects based on safety. As CIPs are updated annually, the progress to zero fatalities and serious injuries within each jurisdiction can be recorded and used to make informed decisions regarding future projects.

LEVERAGING OUTSIDE FUNDING

This Comprehensive Safety Action Plan also aligns with and builds upon several state, regional, and local plans, such as the City of Omaha Vision Zero Action Plan, Nebraska and Iowa Strategic Highway Safety Plans (SHSP), Nebraska and Iowa Vulnerable Road User Safety Assessments, MAPA PM1 Safety Performance Measures, and the MAPA Regional Safety Report (2015-2019). The projects and strategies in this plan will require funding to be allocated, much of which may come from non-City funds. The MAPA Comprehensive Safety Action Plan project team reviewed and compiled a list of available programs for funding transportation safety, whether those are infrastructure projects or educational/ enforcement initiatives.

Community Engagement

02

NOMAFEST

Community engagement is the cornerstone of the Comprehensive Safety Action Plan, its implementation, and its long-term success within the region.

Ultimately, this planning effort wanted to provide meaningful interactions and build a positive community of support for safety-focused solutions; MAPA wanted to work directly with residents, businesses, community partners, and stakeholders to best understand current perceptions and expectations revolving around transportation safety. As the MAPA SS4A region includes fifteen communities within three counties across Nebraska and Iowa, a Community Engagement Plan (CEP) was developed to identify, outline, and describe outreach and engagement strategies, the different audiences the plan wanted to engage, and messages key to the heart of the plan. Several types of meetings and events were utilized to gather information, knowledge, and experience from individuals from a wide variety of backgrounds and are identified within the CEP.

Appendix A includes a dedicated section detailing our comprehensive community engagement efforts.

COMMUNITY ENGAGEMENT PLAN (CEP)

The CEP outlines how MAPA and the project team conducted community engagement efforts on the Safe Streets and Roads for All (SS4A) project. This plan defined how the community engagement team would inform, consult, involve, collaborate, and empower the public throughout the project, detailing communication goals, key messages, audiences, specific outreach tools, and engagement strategies. The plan also included expected timing for sharing project information with key audiences, including under-served com munities as defined in USDOT's Equitable Transportation Community Explorer.

To help share public outreach and engagement strategies, a Co-Creation Workshop was held on Wednesday, April 22, 2024, collaboratively crafting the project's community engagement approach with direct input form MAPAs network of community partners and advocacy groups.

The desired outcomes from the workshop were:

1. **Educate** and inform workshop participants while facilitating active contributions to the engagement strategy.
2. **Establish** a clear, equitable framework for community engagement.
3. **Incorporate** public feedback into engagement tactics ensuring community perspectives directly shape the CSAP.
4. **Produce** a Community Engagement Plan that integrates community partner feedback and results in a strategy that aligns with community needs.

Two main types of engagement were outlined in the CEP:

In-person Community Engagement

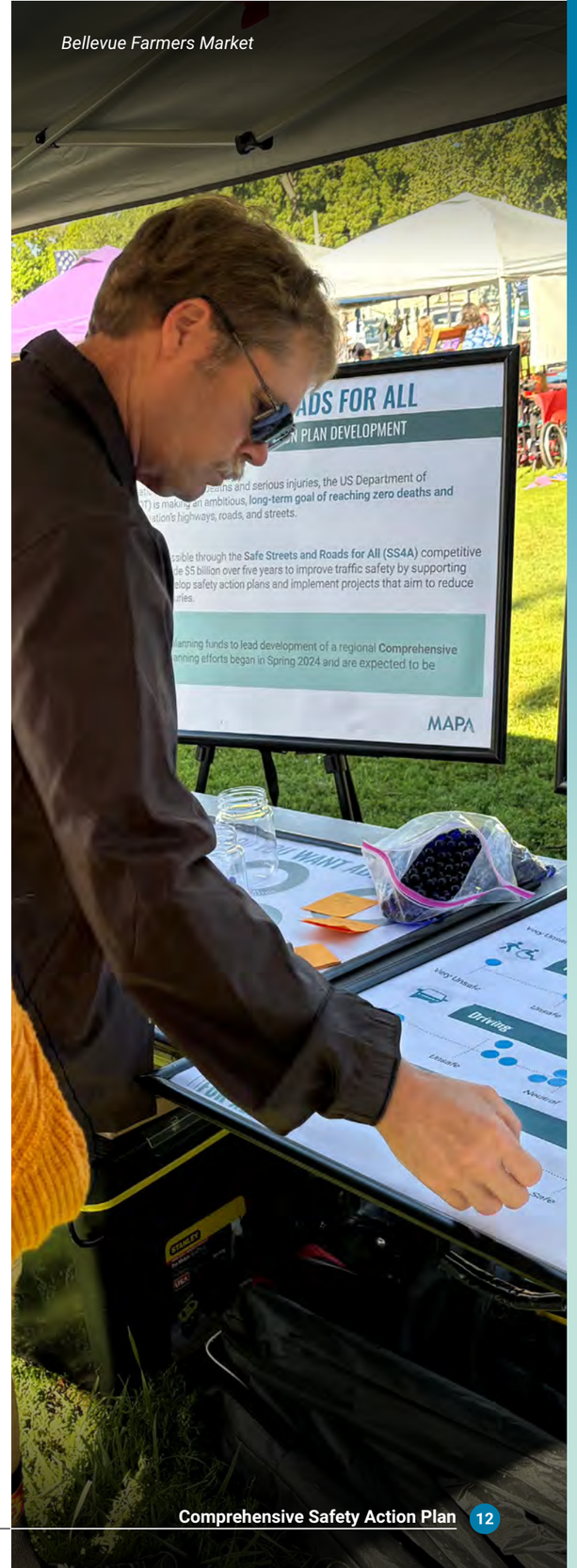
In-person engagement events included committee meetings (Safety Committee and TTAC), leadership commitment and goal setting meetings, engagement booths, focus groups, one-on-one meetings, community presentations.

Digital Engagement

Digital engagement occurred through the SS4A webpage, social media platforms, an online survey, and a self-guided online meeting. More information regarding engagement, in-person or online, are described within the remaining chapter.

EQUITY ENGAGEMENT WORKPLAN

One key component of the CEP is the Equity Engagement Workplan, which identified disadvantaged communities through collaboration with diverse local representatives and utilizing criteria from the USDOT's Disadvantaged Communities Index, Justice 40, and the Social Vulnerability Index. Fifty percent of engagement efforts within the MAPA region were focused on prioritizing engagement within disadvantaged communities, as they are disproportionately affected by traffic and pedestrian fatalities (making up 21% of the region's population but experiencing 33% of total traffic fatalities and 44% of total pedestrian fatalities on all roads).



Bellevue Farmers Market

LEADERSHIP COMMITMENT & GOAL SETTING

Safety is a principle that needs to be present throughout all parts of the transportation system. Leadership commitment and goal setting meetings were hosted with representatives from seventeen jurisdictions across Nebraska and Iowa to define the goals of the CSAP, describe how the project team would work collaboratively to develop tailored safety actions that meet the needs of their communities, and provide draft resolution content for their governing bodies to begin the process to procure formal resolutions. Two rounds of meetings occurred, the first in Fall/Winter 2024 and the second in Spring 2025, to accomplish these items.

SAFE STREETS FOR ALL

METROPOLITAN AREA PLANNING AGENCY
MEMORANDUM OF UNDERSTANDING

A Memorandum of Understanding (MOU) by [NAME OF CITY/JURISDICTION] regarding the Metropolitan Area Planning Agency (MAPA) Comprehensive Safety Action Plan (CSAP) and the commitment to jurisdiction-level actions to reduce traffic fatalities and serious injuries to zero by the year 2040.

One death on our streets is one too many; between 2018 and 2022, there were 268 traffic fatalities and 2,266 serious injuries in the MAPA region. This MOU aims to inform communities within the MAPA region of resources available to them through the development of the CSAP and ensure commitment by [NAME OF CITY/JURISDICTION] to the priorities of the CSAP.

The CSAP is a comprehensive, data-driven document that states the aforementioned overarching goal for the region, informs about the U.S. DOT's Safe System Approach, emphasizes the current state of safety through regional trends, safety focus areas, and the High Priority Network, and provides a Vision Zero Toolbox, prioritized safety projects, recommendations, and safety metrics that communities can measure their progress in achieving zero traffic fatalities and serious injuries by 2040.

Through the Safe System Approach and the Comprehensive Safety Action Plan, communities within the MAPA region can create safer streets and roads for all; for this reason, this MOU states that:

[NAME OF CITY/JURISDICTION] should adopt the Safe System Approach as a comprehensive and holistic approach to eliminating traffic fatalities and severe injuries and should use the Safe System Approach when evaluating projects, conducting traffic studies, and implementing transportation improvements.

[NAME OF CITY/JURISDICTION] should acknowledge and incorporate the CSAP into their approach, plans, design, construction, enforcement, and support of regional safety efforts. Additionally, recommendations and goals from the CSAP should be incorporated, where applicable, into comprehensive and master plans.

[NAME OF CITY/JURISDICTION] should coordinate with MAPA and the [NAME OF STATE] Department of Transportation to share relevant transportation and safety data.

[NAME OF CITY/JURISDICTION] should use the High Priority Network tool (MAPA SS4A App) in assessing safety concerns.

[NAME OF CITY/JURISDICTION] should utilize the Vision Zero Toolbox, which is contained within the CSAP, to quickly implement vetted infrastructure, behavioral, and enforcement countermeasures to create safer roads for all users.

[NAME OF CITY/JURISDICTION] should work to align funding and prioritize projects identified in the CSAP to address systemic safety concerns, such as within their Capital Improvements Program.

[NAME OF CITY/JURISDICTION] should work to adopt and implement applicable recommendations defined within the CSAP.

This Memorandum of Understanding shall take effect immediately upon its adoption.

Signed: _____ Date: _____

Printed: _____

MAPA

SS4A PLANNING STRUCTURE

The TTAC and the Safety Committee were two groups composed of transportation professionals, advocacy groups, and various community stakeholders. These two groups were essential to developing this Regional Comprehensive Safety Action Plan.

TRANSPORTATION TECHNICAL ADVISORY COMMITTEE

The Transportation Technical Advisory Committee (TTAC) advises and provides technical guidance to the MAPA Board of Directors about a variety of transportation matters; the TTAC is comprised of city and county engineers, planners, and public works representatives, as well as planners and engineers from the State of Nebraska and the State of Iowa. The project team attended eight meetings between April 2024 and February 2025 to present and garner feedback from the TTAC on the visioning of the plan, public engagement, results of the comprehensive data analysis, potential policy and process changes, project prioritization, and the draft plan itself.

TTAC Organizations:

- Iowa Department of Transportation
- Nebraska Department of Transportation
- FHWA Nebraska
- Omaha Airport Authority
- City of Bellevue
- City of Council Bluffs
- City of Gretna
- City of La Vista
- City of Omaha
- City of Papillion
- City of Ralston
- Cass County
- Sarpy County
- Metro Transit
- Papio-MO River NRD

SAFETY COMMITTEE

The SS4A Safety Committee was put together to build trust among partners from different backgrounds on safety topics and support consensus around recommendations and final action plan. The SS4A Safety Committee is made up of the previously existing MAPA Safety Committee, MAPA staff, trusted community action groups, community stakeholders, and safety advocates. The project team attended six meetings between May 2024 and April 2025.

The Safety Committee worked alongside the TTAC to give input on key safety issues and strategies, validate safety data and outreach findings, and support the CSAP development. Additionally, the Safety Committee provided oversight of the CSAP development, implementation, and monitoring.

Council Bluffs Farmers Market

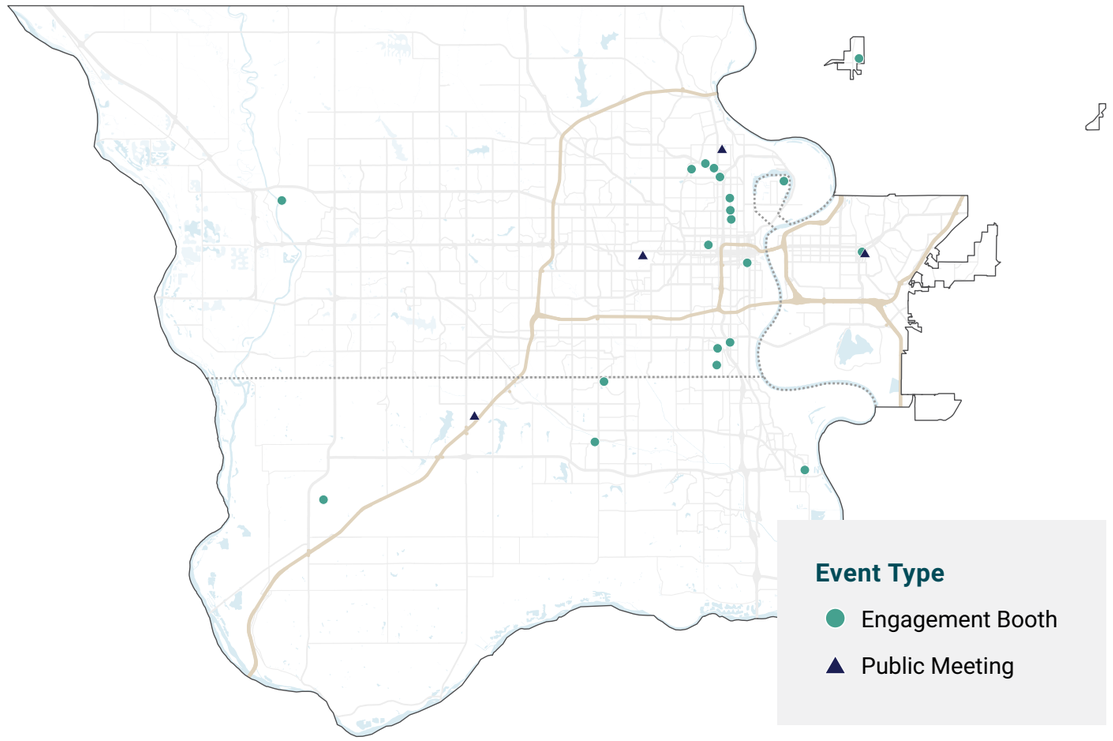
COMMUNITY OUTREACH OVERVIEW

Let's Talk, La Vista!

From pop-up events at local festivals, Faires, and markets to more formal meetings in traditional settings, community outreach happened across the entire MAPA region. We had 61 events ranging in size, location, and targeted demographics across the MAPA CSAP project area, including engagement booths, focus groups, public meetings, one-on-one meetings, and community presentations.

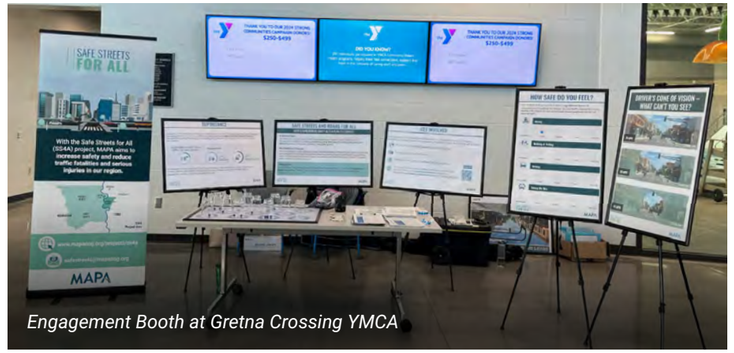
Type of Engagement	# of Meetings
Engagement Booths	20
Focus Groups	8
Public Meetings	4
One-on-One Meetings	21
Community Presentations	6

ENGAGEMENT BOOTH AND PUBLIC MEETING LOCATIONS



ENGAGEMENT BOOTHS

Pop-up events provided great opportunities to engage with the community by meeting them in places where they already planned to be, leveraging existing venues and events like farmers markets, festivals, and pancake feeds. Twenty pop-up events were held between July 2024 and March 2025, with more than 1,160 number of attendees. These kinds of events allowed for everyone's voice to be heard, as we all play a part in creating safe streets.



Engagement Booth at Gretna Crossing YMCA

Participants in the pop-up engagement booths had the opportunity to have a conversation about safety and the role that they play in it through several different activities; a marble jar activity, a sticker board, and a "cone of vision" exercise, as well as the opportunity to fill out a survey. The marble jar activity had jars representing different safety issues; participants would place their marbles in the jars associated with safety issues they would like addressed. The sticker board asked participants to use stickers to describe how safe they feel using different types of transportation (driving, riding the bus, walking, and biking), making along the scale from very unsafe to very safe. The "cone of vision" exercise, using different sheets of paper, simulated what participants vision is like when driving 25, 35, and 45 miles per hour, allowing them to experience how their field of view becomes more limited the faster they drive.

POP-UP EVENT LOCATIONS*

07/27/2024: Carter Lake Days

08/03/2024: NOMAFEST

08/15/2024: Papillion Farmers Market

08/22/2024: Council Bluffs Farmers Market

08/24/2024: Nebraska Renaissance Faire

08/31/2024: Crescent Farmers Market

09/07/2024: Bellevue Farmers Market

09/14/2024: Fiestas Patrias

09/21/2024: Railroad Days

09/27/2024: Gifford Park Neighborhood Market

09/28/2024: Gretna Crossing YMCA Atrium

10/12/2024: Let's Talk, La Vista!

11/09/2024: Cradle to Career Summit

12/02/2024: Washington Library

12/03/2024: One Omaha Holiday Party

12/05/2024: South Omaha Neighborhood Alliance Holiday Party

12/07/2024: Christmas in the Village

01/12/2025: Mt. Moriah Church

01/12/2025: Downtown Omaha Library

01/25/2025: State of North Omaha

*List is non-comprehensive, see Appendix A for full details on engagement locations.

FOCUS GROUPS

Focus group meetings allow for more targeted conversations regarding specific geographic areas or safety topics, involving different community groups, business owners, and representatives to gather vital insights into safety concerns within specific communities.

09/25/2024
Valley Block Talk

11/22/2024
Work Zones

12/02/2024
Road Maintenance and Construction

12/04/2024
Traffic Incident Management and Traffic Enforcement

12/05/2024
Vulnerable Populations

12/11/2024
EMS and Fire Departments

12/13/2024
Emergency Rooms and Trauma Centers

02/06/2025
Schools

PUBLIC MEETINGS

The project team hosted four public meetings throughout the project area during the draft plan stage, alongside a self-guided online meeting option for convenience and accessibility. These public meetings introduced MAPA, gave context to the project and its importance to the region, and provided progress to date in developing the plan (i.e., public engagement efforts, data analysis results, etc.). The public meetings hosted activities for children and adults alike, engaging with traffic safety concepts; the highlight of these events were the scroll maps, which allowed attendees to mark which countermeasures and recommendations resonated with them best.

ONE-ON-ONE MEETINGS

Our team utilized twenty one-on-one interviews or conversations to have in-depth discussions about a specific geographic area or safety concern with various organizations or individuals.

2/18/2025
Public Meeting at UNO Community Engagement Center

2/20/2025
Public Meeting at Miller Park Pavilion

2/25/2025
Public Meeting at Council Bluffs Library

2/27/2027
Public Meeting at Meadows Community Center

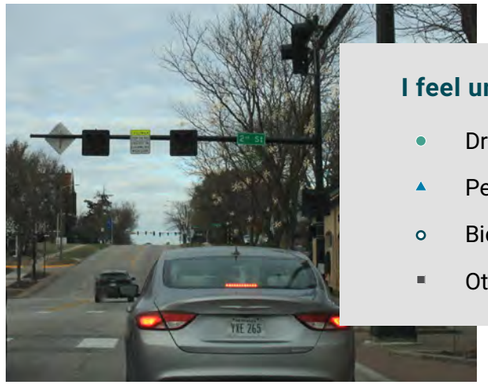
ONLINE ENGAGEMENT

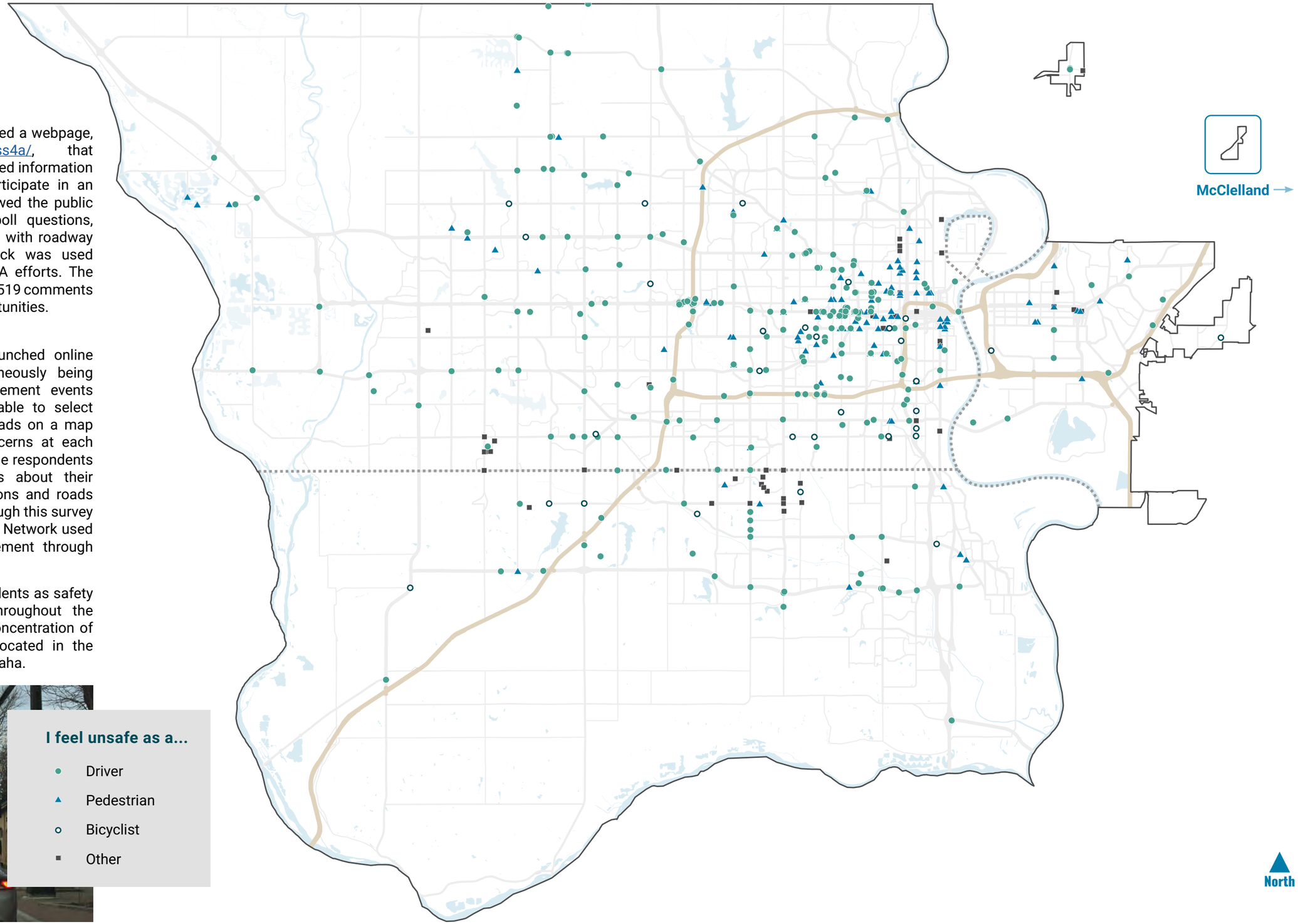
The Safe Streets team developed a webpage, https://mapacog.org/projects/ss4a/, that allowed the public to find updated information about the project, and to participate in an online survey. The survey allowed the public provide comments, answer poll questions, and pinpoint specific locations with roadway safety concerns. The feedback was used to help influence MAPA's SS4A efforts. The project team received a total of 519 comments from online engagement opportunities.

Community Survey

A Community Survey was launched online in July 2024, while simultaneously being offered at community engagement events in-person. Participants were able to select multiple intersection points/roads on a map and indicate their safety concerns at each point; this survey allowed for the respondents to create multiple responses about their safety concerns for intersections and roads around the MAPA region. Although this survey remains open, the High Priority Network used feedback from online engagement through early October 2024.

Locations identified by respondents as safety concerns were distributed throughout the study area, with the highest concentration of community safety concerns located in the midtown area of the City of Omaha.





KEY THEMES

The following were common themes in the input provided during engagement booths, public open houses, one-on-one engagement, and community surveys.

From Engagement Booths

Participants in engagement booths expressed concerns about speeding vehicles, reckless/careless driving, and cars failing to yield. Bike lane concerns weren't prioritized, but approximately a third of participants felt either unsafe or very unsafe while biking.

From Public Meetings

A countermeasures "dotmocracy" activity prioritized infrastructure improvements like stop-control modifications, roundabouts, and roadway reconfigurations. Pedestrian and cyclist safety was emphasized with protected bike lanes and raised crossings, while behavioral measures such as speed limits and automated enforcement were also favored.

From One-on-One Engagement

MAPA held highly detailed one-on-one meetings with area organizations, enforcement agencies and neighborhood groups to discuss specific needs, including safety countermeasures, technology, and/or data needs.

From the Community Input Survey

Regarding how people choose to move in the MAPA region:

- Speeding was the most common concern across all respondent groups (drivers, pedestrians, and cyclists)
- Drivers were most concerned with speeding, red light running, and distracted driving
- Pedestrians were most concerned with speeding, crosswalks, and distracted driving
- Bicyclist were most concerned with bike protection, speeding, distracted driving, and crosswalks

Regarding the geometry of the transportation network:

- Speeding and redlight running were the top two concerns at intersections, followed by the design of the intersection, distracted driving, and "other."
- Speeding was the top safety concern for midblock roadway segments, followed by concerns about roadway design and "other."

The most common themes in "other" responses included concerns about:

- Driver behavior like speeding, aggressive driving, stop-sign running, and failure to yield to pedestrians at crosswalks and at intersections.
- Surface condition of roads, traffic congestion, and roads/intersections with poorly marked lanes or confusing signage.
- A lack of crosswalks and sidewalks.
- Poor visibility at intersetions.

State of Safety

03

THE "STATE OF SAFETY" CHAPTER ANALYZES REGIONAL SAFETY TRENDS AND PATTERNS AND PROVIDES AN EXPLORATION OF SAFETY FOCUS AREAS IDENTIFIED THROUGH CRASH DATA ANALYSES AND THE PUBLIC ENGAGEMENT PROCESS.

The safety focus areas are pivotal in addressing the region's safety challenges and have been categorized into five broader focus groups.

We begin by presenting an overview of MAPA regional trends, setting the stage for a detailed discussion on each focus area's relationship with fatal and serious injury crashes. A standard metric in the focus areas is the representation ratio, or likelihood of a fatal or serious injury crash occurring, which addresses the over- or under-representation of various factors in the data. This helps show what characteristics in each focus area cause or contribute to severe crashes.

Much of the previous data influenced the High Priority Network's (HPN) creation. The HPN is a critical component in the region's safety improvement strategy, composed of the High Injury Network (HIN), the High Risk Network (HRN), and data from the Community Survey Map. The HIN identifies road segments with a high concentration of severe crashes, allowing for targeted interventions in areas most needing safety enhancements. The HRN highlights infrastructure that poses significant risks to road users, focusing on systemic improvements to mitigate potential hazards. The Community Survey Map integrates public input with technical analysis, ensuring that community concerns and lived experiences inform safety priorities. Together, these elements create a comprehensive framework for identifying and addressing regional safety issues.

OUR GOAL IS TO PROVIDE A THOROUGH UNDERSTANDING OF THE REGION'S SAFETY LANDSCAPE, HIGHLIGHTING KEY ISSUES AND OPPORTUNITIES FOR IMPROVEMENT.

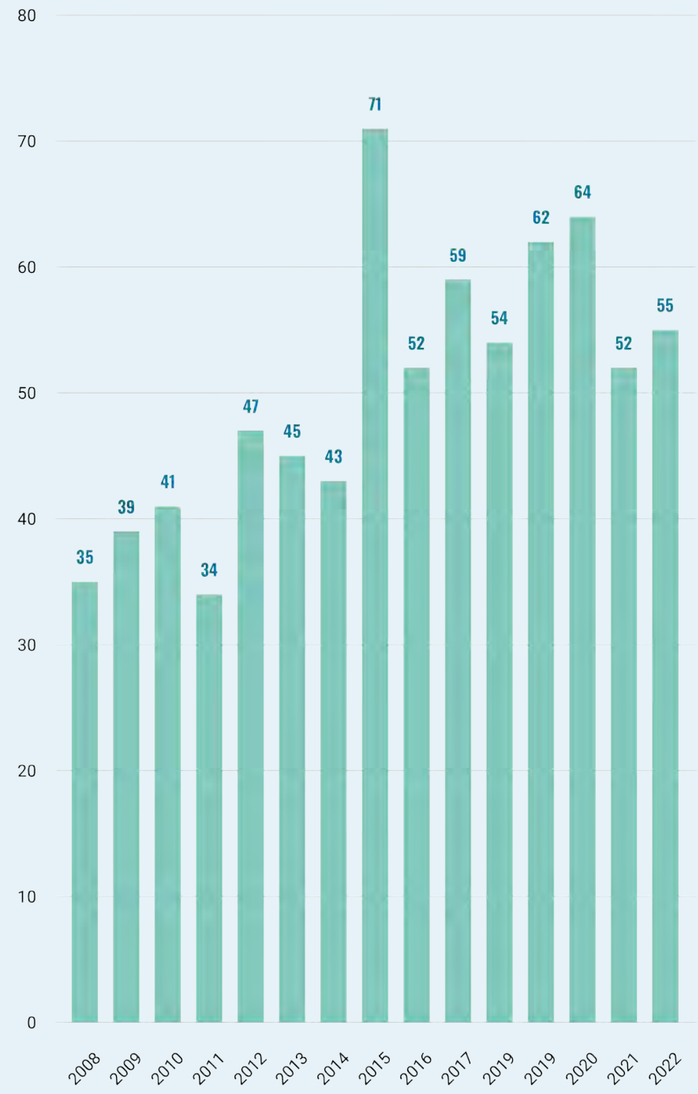
By the end of this chapter, you will have a clearer picture of the issues that require strategic measures needed to enhance safety and reduce fatal and serious injury crashes across the region.

Note: Unless otherwise noted, the data presented in this chapter was derived from the 2018-2022 crash data (provided by Nebraska DOT and Iowa DOT) for the CSAP study area.

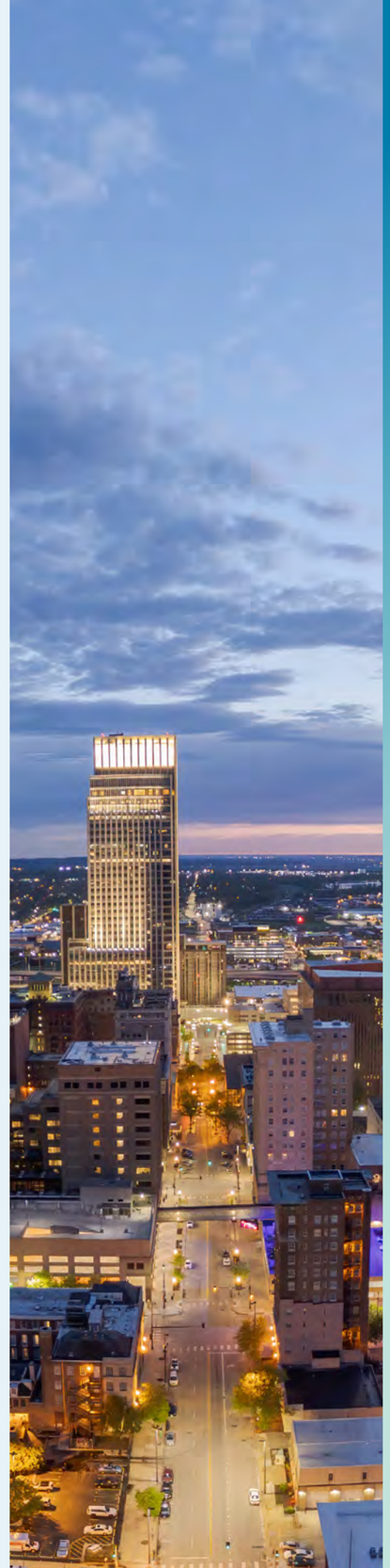
All references to "the MAPA region" or "the region" refer to the CSAP study area, which includes Douglas and Sarpy Counties in Nebraska, as well as the cities of Council Bluffs, Carter Lake, Crescent, and McLelland in Iowa.

MAPA REGIONAL TRENDS

In examining the MAPA regional trends, fatal crashes have slowly been increasing over the last 15 years.



Total Crash Fatalities, 2008-2022 (MAPA CSAP Study Area)
Source: NHTSA Fatality Analysis Reporting System (FARS)



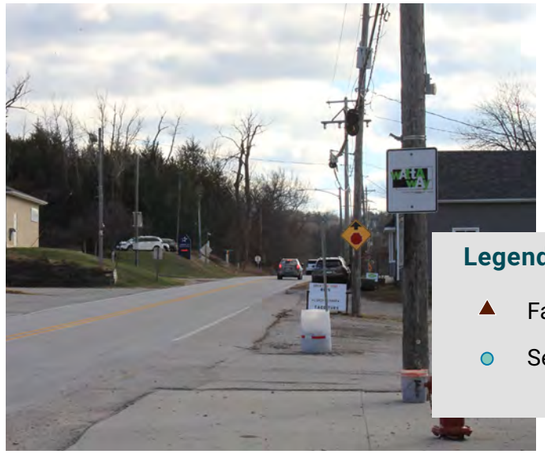
2018-2022 FATAL AND SERIOUS INJURY CRASHES

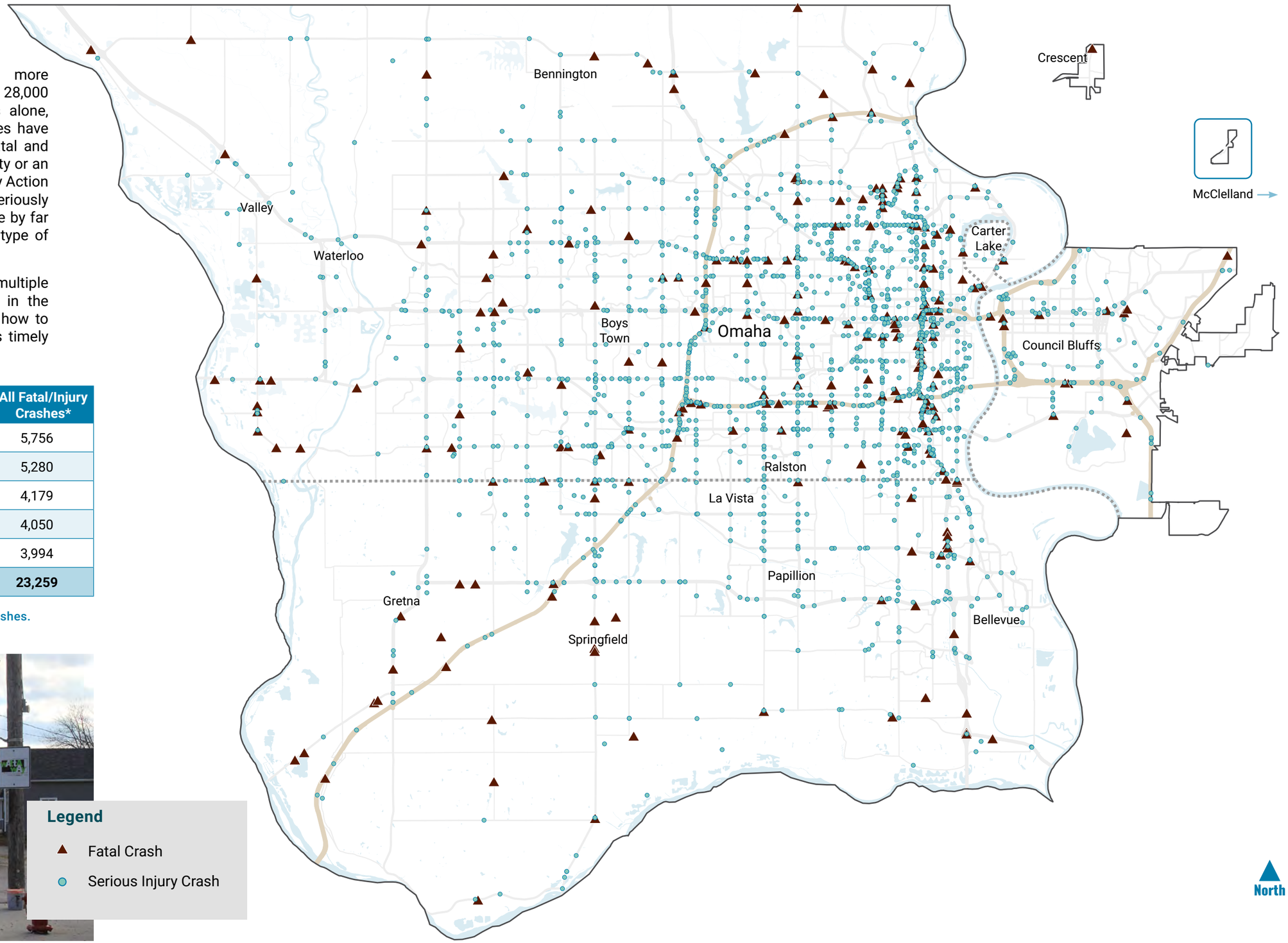
The MAPA region encompasses more than 5,400 miles of roadway and 28,000 intersections; in the last five years alone, 2,160 fatal and serious injury crashes have occurred, a portion of the 23,259 fatal and injury crashes that resulted in a fatality or an injury. The data analysis for the Safety Action Plan focuses only on Killed and Seriously Injured (KSI) crashes. KSI crashes are by far the most impactful and life-altering type of crashes.

By mapping crashes through multiple methods (described in more detail in the following sections), we can identify how to make the most impactful change as timely as possible with limited resources.

Year	KSI Crashes	All Fatal/Injury Crashes*
2018	460	5,756
2019	404	5,280
2020	442	4,179
2021	429	4,050
2022	425	3,994
Total	**2,160**	**23,259**

*Excludes Property Damage Only (PDO) crashes.





SAFETY FOCUS AREAS

Through the crash data analysis and the CSAP engagement process, fourteen Focus Areas were identified that emerged as key issues or opportunities to address the region's safety challenges. These focus areas were grouped into a set of five broader Focus Groups.

The following section discusses each of these focus areas, their relationship with KSI crashes, and their over- or under-representation in the data.

Focus Group	Focus Areas
 High-Risk Infrastructure	Arterial Roadways
	Signalized Intersections
	Rural Roads and Highways
	Roadway Lighting
 Safety Zones	Maintenance and Work Zones
	School and Pedestrian Zones
 Vulnerable Road Users	Pedestrians & Bicyclists
	Motorcyclists
	Young and Male Drivers
 Contributing Crash Factors	Impairment & Inattention
	Occupant Protection
	Speed
 Safe System	Safer Vehicles
	Post-crash Care

HIGH-RISK INFRASTRUCTURE

The physical characteristics of roadways can influence the likelihood and severity of crashes. Arterials, signalized intersections, and a lack of roadway lighting are all infrastructure factors that correlate with an increased prevalence of fatal and serious injury crashes. While rural roads and highways have a lower KSI crash rate than urban streets, they are included as a focus area due to the unique crash characteristics of those crashes and of the solutions put into place.

SAFETY ZONES

The Safety Zones focus group looks at the safety concerns of an area, as opposed to High-Risk Infrastructure, which are exact locations; this focus group is dedicated to addressing critical areas in traffic safety, emphasizing two primary focus areas: (1) Maintenance and Work Zones and (2) School and Pedestrian Zones. The group aims to enhance the protection of construction workers, road maintenance personnel, and pedestrians, particularly around schools and work zones. By analyzing crash data and identifying trends, the focus group seeks to implement strategies that minimize risks and improve safety in these vulnerable areas.

VULNERABLE ROAD USERS

The Vulnerable Road Users focus group looks into the people that are most affected, namely (1) Pedestrians and Bicyclists, (2) Motorcyclists, and (3) Young and Male Drivers. The first two, pedestrians/bicyclists and motorcyclists, are vulnerable to traffic itself and, therefore, are much more likely to be involved in a crash and for that crash to be severe. Young and male drivers, on the other hand, have a "self-imposed" vulnerability to more frequent crashes and severity due to lack of experience (young), aggressive driving behavior (male), and risk-taking (both).

CONTRIBUTING CRASH FACTORS

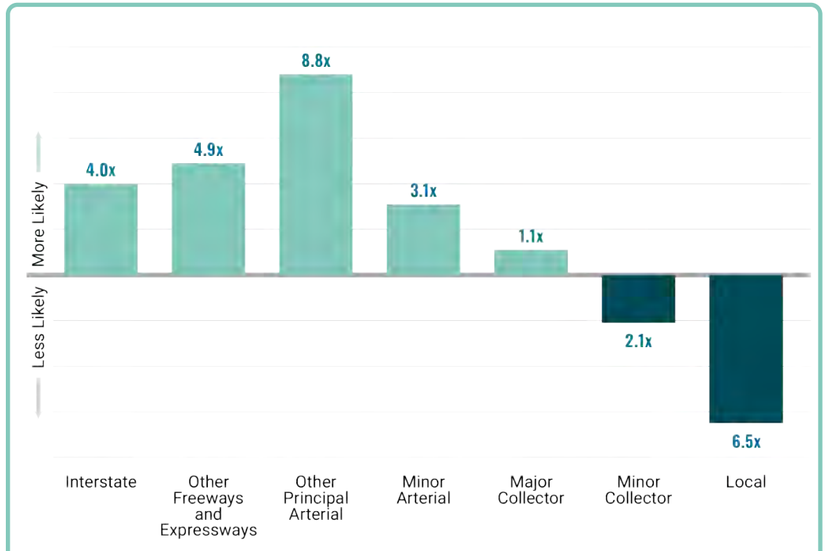
Contributing Crash Factors look at the underlying features and corroborating circumstances that lead to KSI crashes. These include (1) Impairment and Inattention, (2) Occupant Protection, and (3) Speed.

SAFE SYSTEMS

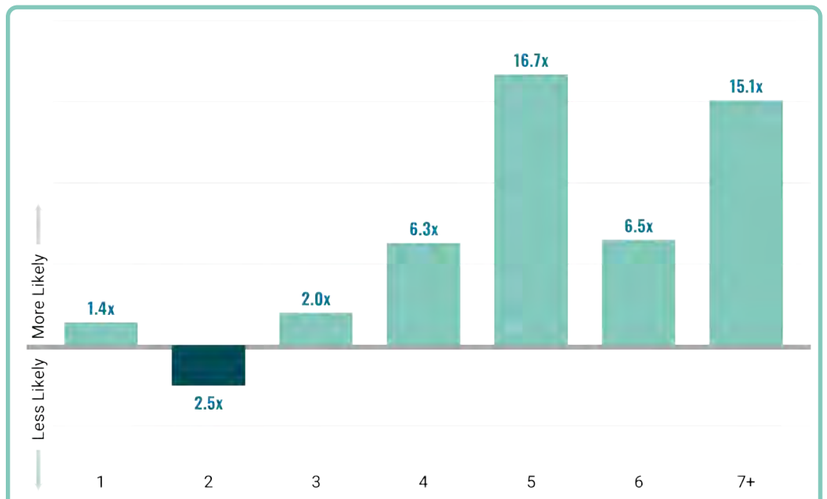
The last focus group is Safe Systems, which includes (1) Safe Vehicles and (2) Post-crash Care. The other Safe Systems (Roads, Users, and Speeds) were imbedded in the other focus categories/areas. Additionally, both Safer Vehicles and Post-crash Care, require systemic coordination at high-levels to measure data and implement countermeasures.

ARTERIAL ROADWAYS

As roadways get busier (i.e., the roadway volume increases) and get wider (i.e., the number of lanes increase), the risk of being involved in a KSI crash generally increases. Principal arterial roadways are the most overrepresented, when accounting for their share of total roadway network mileage. Interstates, other freeways and expressways, and minor arterials also show significant over-representation in the KSI crash data.



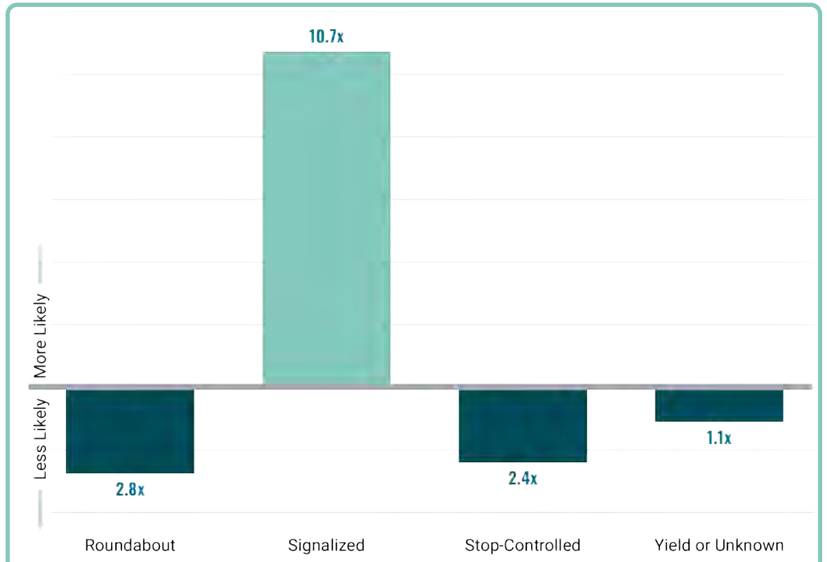
Likelihood of KSI Crashes by Functional Class



Likelihood of KSI Crashes by Number of Through Lanes

SIGNALIZED INTERSECTIONS

Signalized intersections, as compared to other intersection control types, are more than ten times more likely to have a KSI crash occur. In contrast, the data indicates that roundabouts are nearly three times less likely to have a KSI crash occur than average for all intersections.



Likelihood of KSI Crashes by Intersection Control Type

Control Type	# of Intersections	% of Intersections	# KSI Crashes	% of KSI Crashes
Roundabout	125	0.4%	2	0.2%
Signalized	1,557	5.5%	734	59.3%
Stop-Controlled	25,723	91.4%	472	38.2%
Yield or Unknown	727	2.6%	29	2.3%
Total	**28,132**	**100.0%**	**1,237**	**100.0%**

RURAL ROADS AND HIGHWAYS

While urban areas in the region are more represented in terms of the number of KSI crashes, crashes that occur on rural roads and highways are nearly twice as likely to result in a serious injury and are nearly six times more likely to result in a fatality.

***CRASHES IN RURAL AREAS ARE:**

1.8x more likely TO RESULT IN A SERIOUS INJURY

5.7x more likely TO RESULT IN A FATALITY

***Certain crash types are significantly more represented in rural areas, compared to urban areas:**

Fixed object crashes are 1.6x more likely

Sideswipe/opposite direction crashes are 1.8x more likely

Other single vehicle crashes are 1.9x more likely

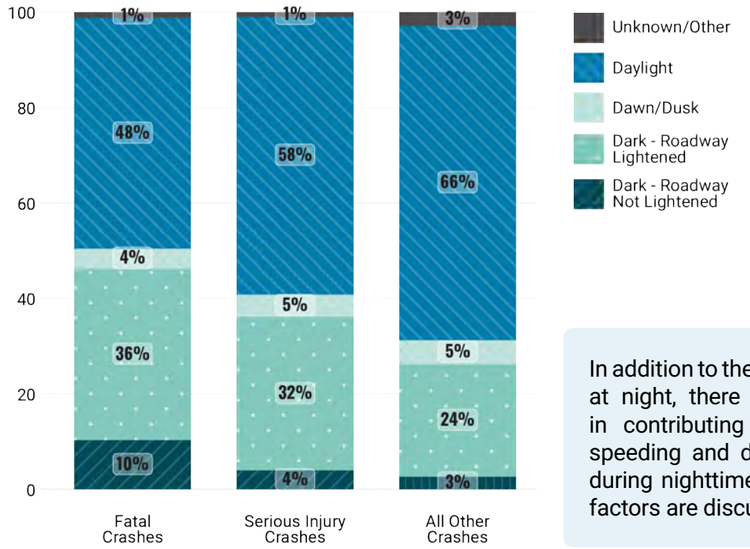
Overturn/rollover crashes are 6.2x more likely

Collisions with animals are 20.6x more likely

**Compared to crashes in urban areas, using the 2020 Census defined urban area boundary.*

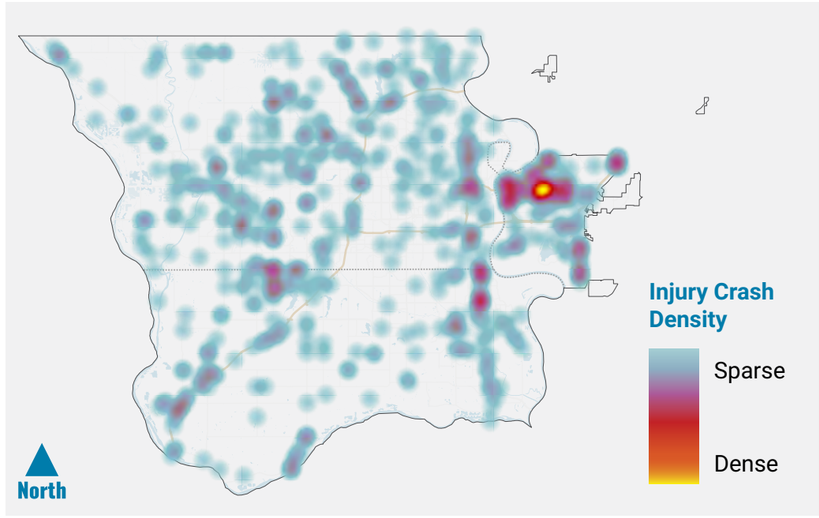
ROADWAY LIGHTING

KSI crashes disproportionately occur in dark or nighttime conditions, when compared to all crashes. Nearly half of fatal crashes occurred in dark conditions, with about one in five of these nighttime crashes also being reported as occurring where roadway lighting was not present. Injury crashes that occurred in dark, unlit conditions are distributed throughout the region, but higher concentrations and clusters of these crashes can be found in certain areas, most notably within Council Bluffs, along portions of US-75, and in suburban areas along arterials that have not been reconstructed as urban sections.

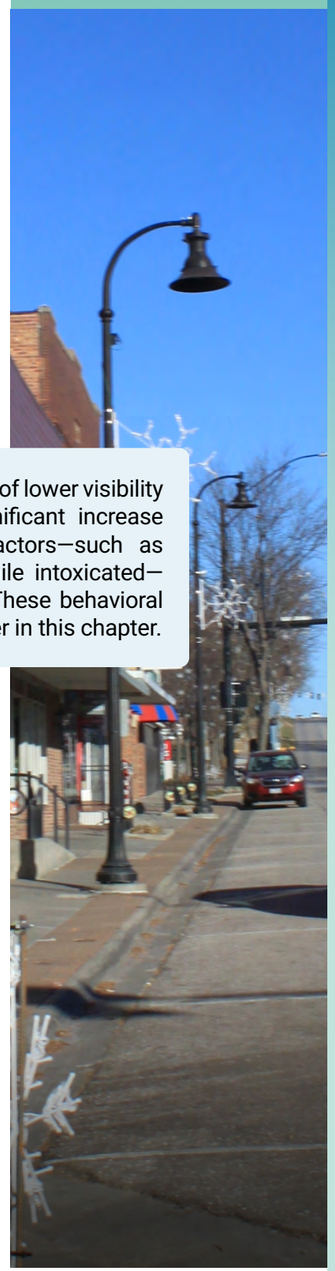


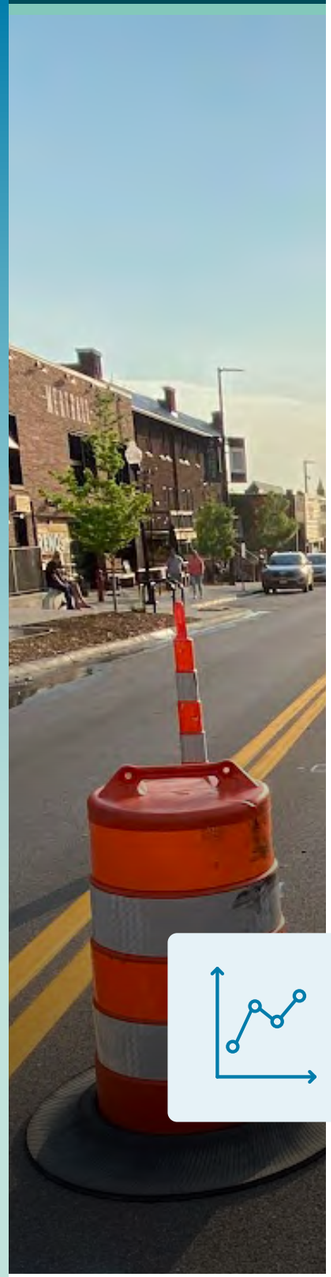
Proportion of Crashes by Lighting Condition

In addition to the problem of lower visibility at night, there is a significant increase in contributing crash factors—such as speeding and driving while intoxicated—during nighttime hours. These behavioral factors are discussed later in this chapter.



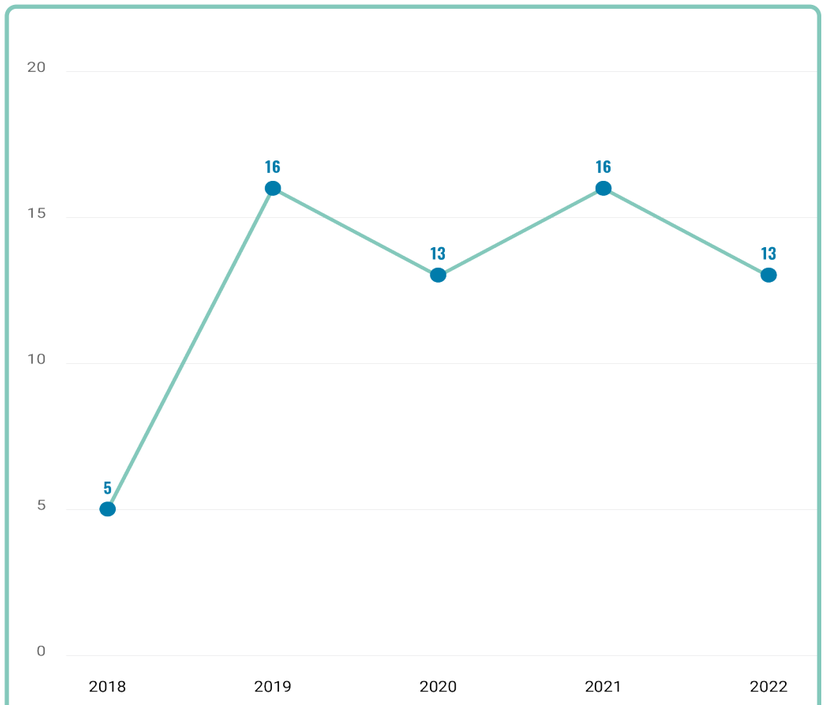
Heatmap of All Injury Crashes Reported as Occurring in Dark, Unlit Conditions



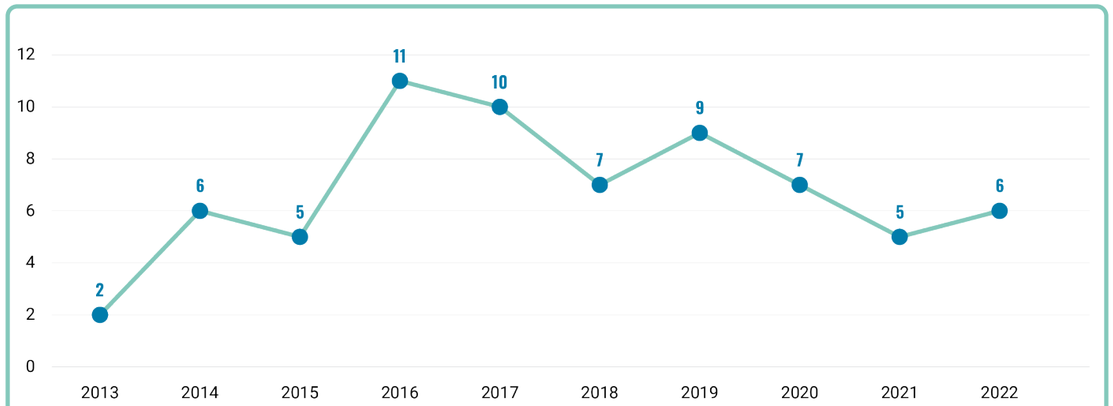


MAINTENANCE AND WORK ZONES

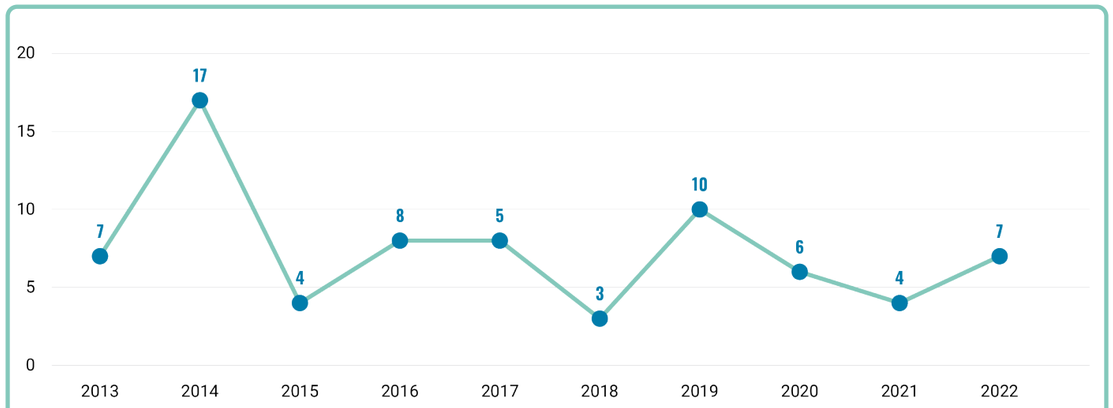
Approximately 3% of the fatal and serious injury crashes in the region from 2018-2022 were noted as work zone-related. Construction workers and road maintenance personnel are highly vulnerable in work zones, where traffic is often moving in close proximity. The workers being injured and killed are the ones who voluntarily put their lives at risk to maintain our roadways.



MAPA Region Work Zone KSI Crashes, 2018-2022



Iowa Work Zone Fatal Crashes, 2013-2022
Source: NHTSA FARS[1]



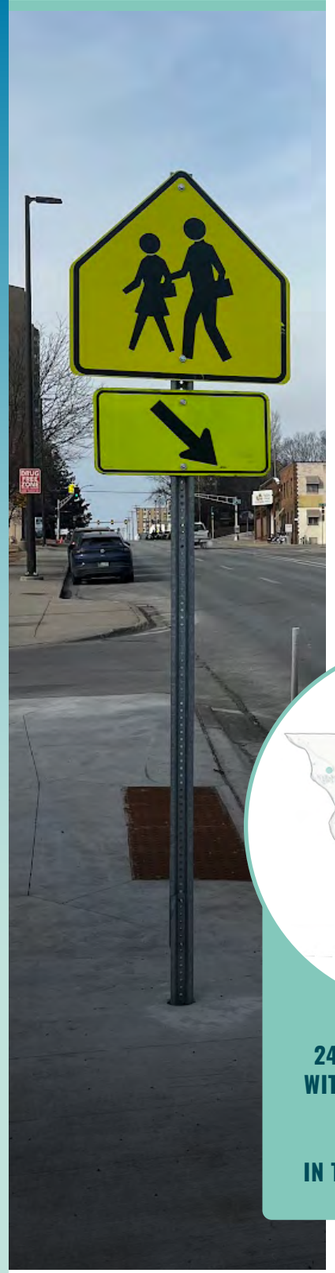
Nebraska Work Zone Fatal Crashes, 2013-2022
Source: NHTSA FARS[1]

Statewide 2013-2022 crash data shows an average of 6.8 fatal work zone related crashes per year in Iowa and 7.4 per year in Nebraska, with Iowa data showing a slight upward trend and Nebraska showing a slight downward trend over these ten years.

NATIONALLY, THERE HAS BEEN A CLEAR UPWARD TREND IN WORK ZONE RELATED FATALITIES, WITH AN INCREASE FROM **593 Fatalities IN 2013** **TO** **891 Fatalities IN 2022**

Source: NHTSA FARS, GES, and CRSS[2]

1 https://workzonesafety.org/work-zone-data/work-zone-fatal-crashes-and-fatalities/
2 https://workzonesafety.org/work-zone-data/work-zone-traffic-crash-trends-and-statistics/



SCHOOLS AND PEDESTRIAN ZONES

Schools and Pedestrian Zones are critical areas of focus for enhancing traffic safety, particularly for the most vulnerable road users, such as children and pedestrians. These zones are characterized by their high potential for conflicts between pedestrians and motor vehicles, necessitating targeted strategies to mitigate risks and ensure the safety of those on foot and during peak hours of pickup and drop off.

CRASHES IN THE REGION THAT OCCURRED WITHIN 1,000 FEET OF SCHOOLS WERE

2.4x more likely

TO HAVE INVOLVED A CHILD PEDESTRIAN

Additionally, it is known that the perceived safety of urban areas and school zones leads to higher rates of walking and biking. Maintaining the highest safety standards in these locations is essential to creating and maintaining vibrant communities.

IN THE REGION, CHILDREN MAKE UP:

9%
of all fatally or seriously injured vehicle occupants

19%
of all fatally or seriously injured pedestrians and bicyclists

24% OF THE REGION IS WITHIN A HALF MILE OF A SCHOOL.

IN THESE SCHOOL AREAS:

60% of fatal or serious injury crashes involving children occur in school areas.

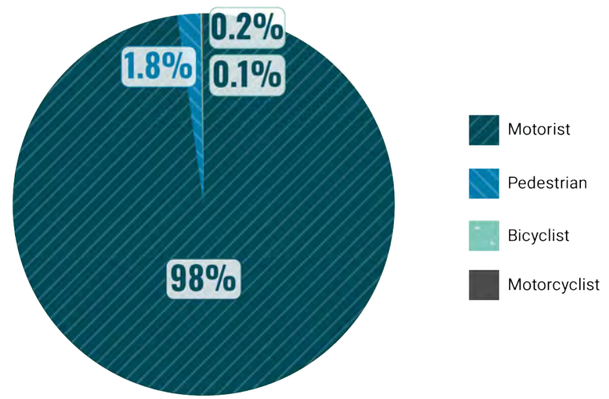
44% of fatal or serious injury crashes involving child vehicle occupants occur in school areas.

76% of fatal or serious injury crashes involving child pedestrians and bicyclists occur in school areas.

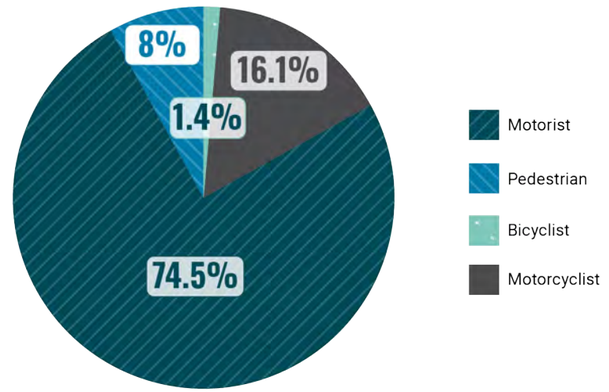
PEDESTRIANS AND BICYCLISTS

After decreasing for three decades and reaching a historic low in 2009, pedestrian, bicyclist, and other nonmotorist fatalities in the United States have risen dramatically. Between 2013 and 2022, nonmotorist fatalities have increased by 56.5%. Nonmotorist fatalities have increased at nearly double the rate of total traffic fatalities, which increased by 29.2% over the same period.

Within the MAPA region, pedestrians and bicyclists' KSI crashes are also increasing. In addition to this, pedestrians and bicyclists are overrepresented in these crashes; although they make up 2% of the region's total commuting populating, they are involved in more than 9% of KSI crashes. One out of seven fatal crashes involve a pedestrian.



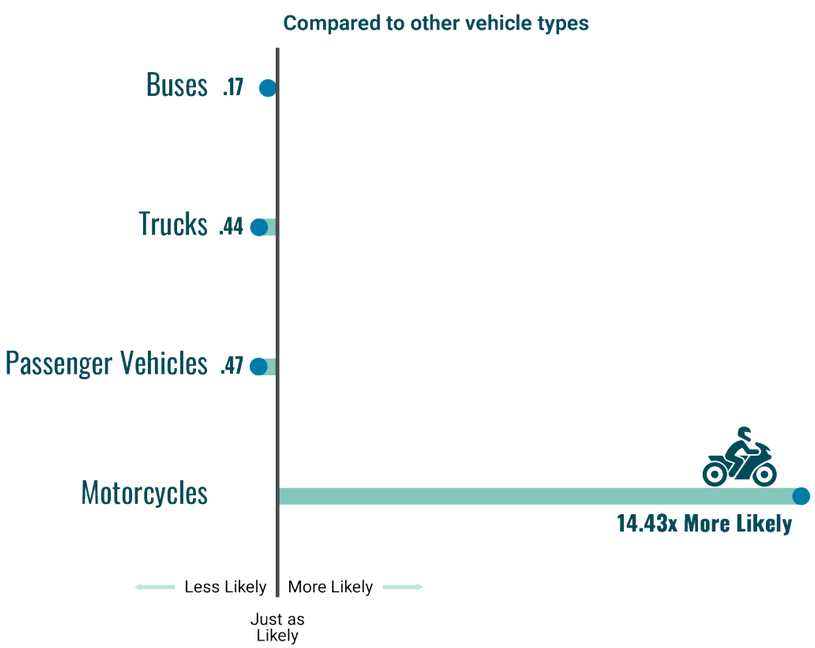
Commute Mode Share
Source: 2022 American Community Survey 5-Year Estimates, aggregated for all jurisdictions in the CSAP study area



KSI Crashes by Mode

MOTORCYCLISTS

Motorcyclists are the most overrepresented group involved in KSI crashes based on how residents of the MAPA CSAP area choose to travel. They are involved in nearly 16% of all KSI crashes, yet they only account for 0.1% of the commuting population.[3] When involved in a crash, motorcyclists are over 14x more likely to be fatally or seriously injured than occupants of other vehicle types.



Risk Ratio of Vehicle Occupants that are Fatally and Seriously Injured, by Vehicle Type

One contributing factor to this overrepresentation could be lower rates of helmet and safety gear usage by motorcyclists. Currently, both Iowa and Nebraska do not require all riders to wear a helmet by law.

MOTORCYCLE HELMET USAGE IS ESTIMATED TO

REDUCE THE RISK OF DEATH BY 42%

REDUCE THE RISK OF HEAD INJURY BY 61%

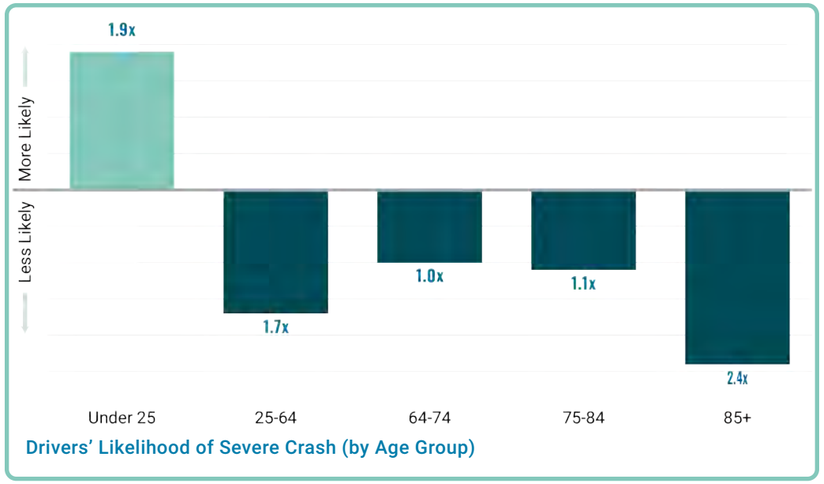
Find out more about motorcyclists through the Safe Streets and Roads for All: Motorcycles One-Pager[4]

3 Motorcyclists' share of all (including non-commute) trips would likely be significantly larger than 0.1%, but this data is unavailable.

4 https://mapacog.org/wp-content/uploads/2024/11/SS4A-One-Pagers_MOTORCYCLE_2024.11.26.pdf

YOUNG AND MALE DRIVERS

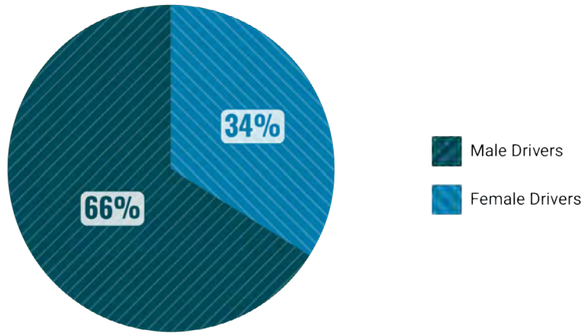
Drivers under the age of 25 are the most overrepresented in KSI crashes by age group relative to their share of the overall population in the study area.



Drivers' Likelihood of Severe Crash (by Age Group)

Regarding crash trends by sex, male drivers are involved in more crashes than female drivers; nearly two-thirds of drivers involved in KSI Crashes are male.

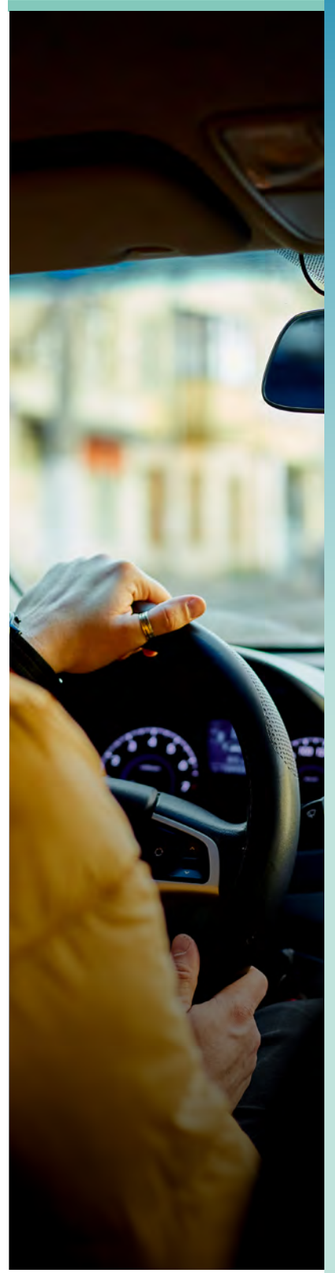
Young (under 25) male drivers in particular are much more likely to engage in risky behaviors. They are nearly three times more likely to be involved in a KSI crash than the average person. Data shows that males on average drive more vehicle miles than females and are more likely to participate in risky driving behaviors, including driving under the influence of alcohol, lack of seat belt use, and driving aggressively. Male drivers of all ages are about twice as likely to be involved in a KSI crash as female drivers.

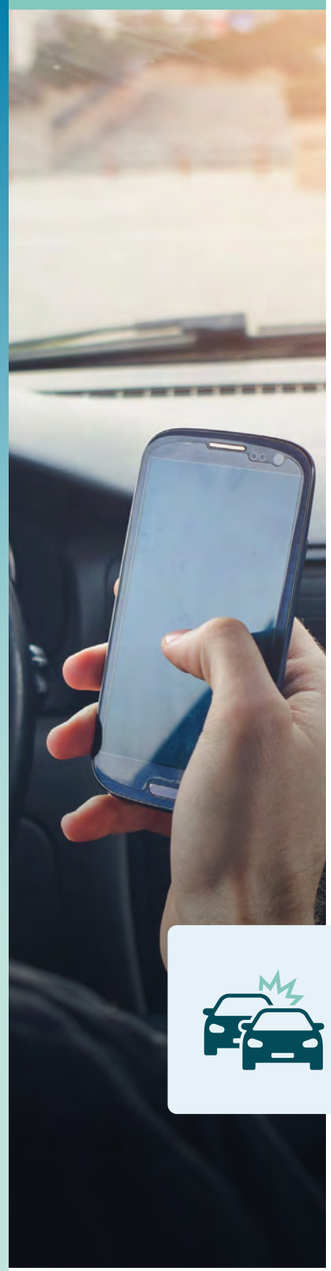


KSI Crashes by Sex

Find out more about young drivers through the Safe Streets and Roads for All: Young Drivers One-Pager[5]

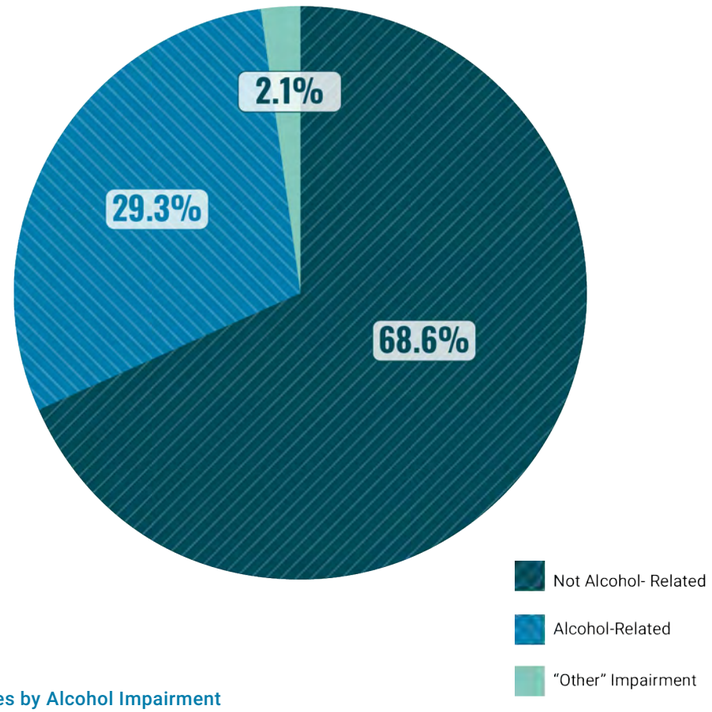
5 https://mapacog.org/wp-content/uploads/2024/11/SS4A-One-Pagers_YOUNG_2024.11.26.pdf





IMPAIRMENT AND INATTENTION

Impairment, the use of alcohol or drugs while traveling, was noted as a factor in approximately 31% of fatal crashes and 19% of serious injury crashes. Focusing on alcohol-related crashes only, approximately 29% of fatal crashes and 17% of serious injury crashes were noted as having at least one party involved test above the statutory limit for blood alcohol content.



Fatal Crashes by Alcohol Impairment

Another two percent of these fatal and serious injury crashes were noted as some "Other" form of being under the influence, including drugs, medications, or alcohol less than the statutory limit.

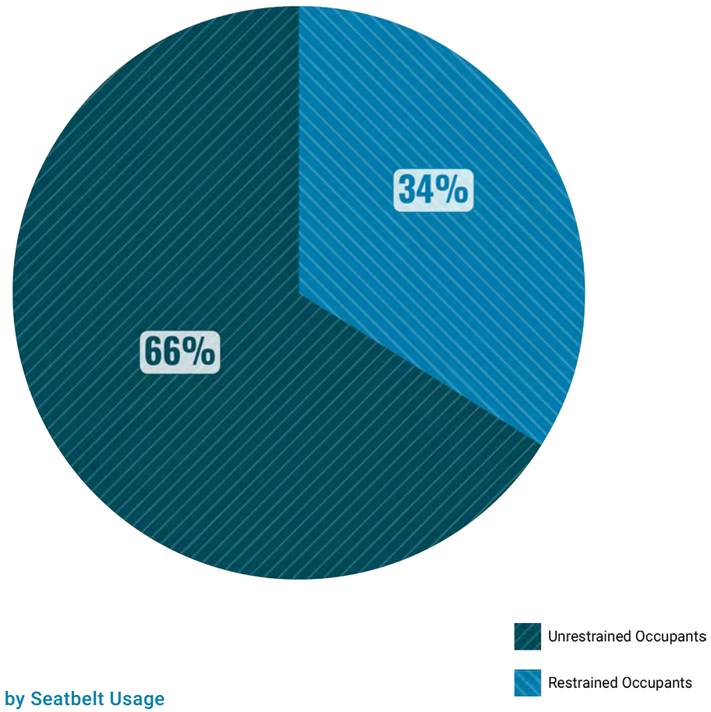
Driving while distracted is another behavior that may be considered reckless or negligent, as drivers keep their attention away from their environment and other road users. Distracted driving was reported as a factor in 4% of all crashes.

Find out more about impaired driving through the Safe Streets and Roads for All: Impaired Driving One-Pager[6]

6 https://mapacog.org/wp-content/uploads/2024/11/SS4A-One-Pagers_IMPAIR_2024.11.26.pdf

OCCUPANT PROTECTION

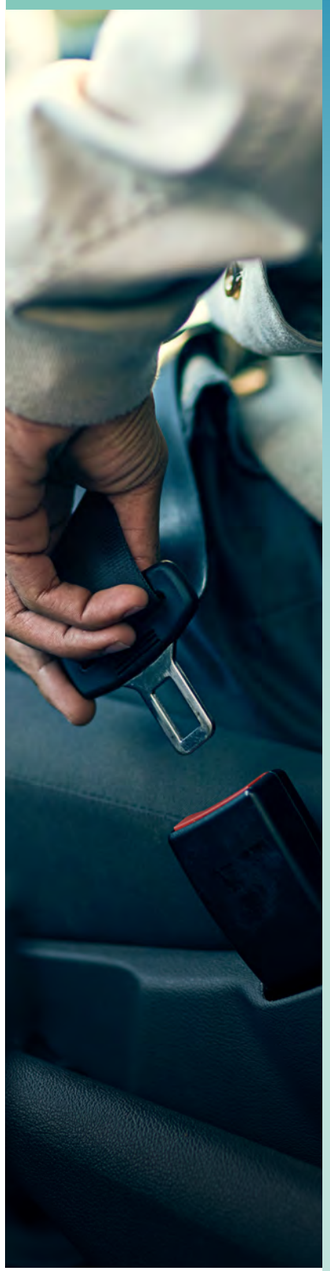
Studies indicate that seatbelts reduce crash fatalities and serious injuries by about half.[7] Nearly two thirds of all 2018-2022 KSI crashes in the region involved at least one occupant not wearing a seatbelt, and 80% of fatal crashes involved at least one occupant not wearing a seatbelt.



KSI Crashes by Seatbelt Usage

While the data available for this analysis does not indicate whether the unbelted occupant(s) account for the fatality or serious injury, studies have shown that unbelted occupants contribute to increased injury and fatality risk for belted occupants in the same vehicle.[8]

7 https://www.cdc.gov/seat-belts/facts/index.html.
8 https://pmc.ncbi.nlm.nih.gov/articles/PMC1730165/



SPEED

Speed is a key factor in traffic fatalities and serious injuries and it is often the deciding factor that separates these from minor injury or property damage crashes. Approximately 77% of KSI crashes in the region occurred on roads with a posted speed limit of 35 mph or higher. National studies have shown that the likelihood of a fatality increases exponentially with vehicle speed, approximately doubling for every 10 mph increase.

SPEED IS A PARTICULARLY INFLUENTIAL FACTOR IN CRASHES FOR SEVERAL REASONS:

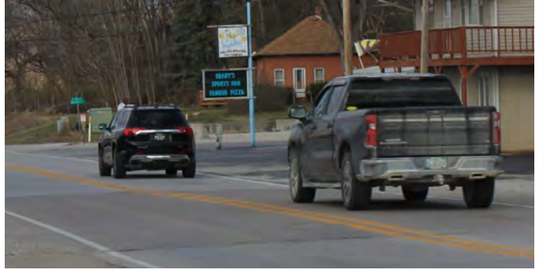
- HIGHER SPEED MEANS MORE **more forceful collisions**
- AT HIGHER SPEEDS, DRIVERS HAVE A **narrower field of vision**
- AS SPEED INCREASES, DRIVERS HAVE **less time to react**
- HIGHER SPEEDS ALSO EXTEND BRAKING DISTANCES, MEANING **drivers may not be able to stop in time**

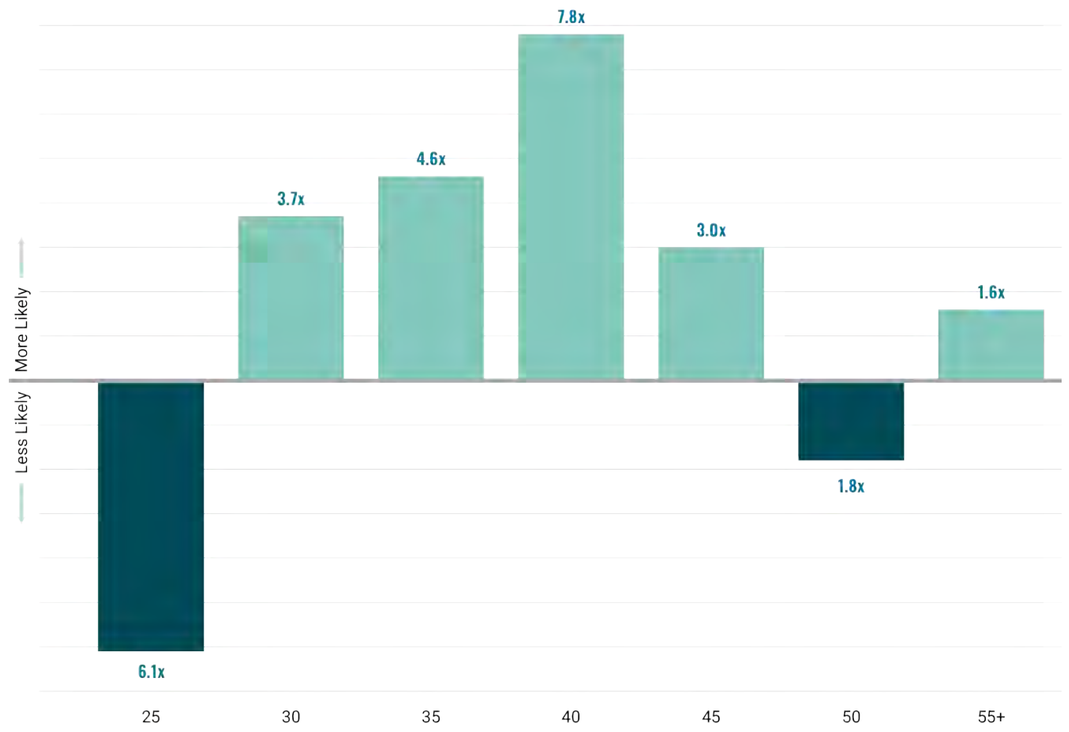
In the MAPA CSAP study area, as in other areas, roads with higher speed limits are associated with a greater likelihood of injury crashes or fatalities. However, for roadways with a posted speed limit above 40 mph, the trend dips before increasing slightly again.

This is primarily due to most roadway facilities with higher speeds having increased safety infrastructure such as medians, separated pedestrian/bicycle paths, access management, and improved shoulders.

IT IS THE MISMATCH OF HIGHER SPEEDS ON LOCAL ROADS THAT CONTRIBUTES TO INJURIES AND FATALITIES.

Speeding-related driver behaviors (where drivers were noted as having “exceeded authorized speed limit” or were “driving too fast for conditions”) were a contributing factor in approximately 8% of all KSI crashes.





Likelihood of Fatal or Severe Injury Crash (by Posted Speed Limit)

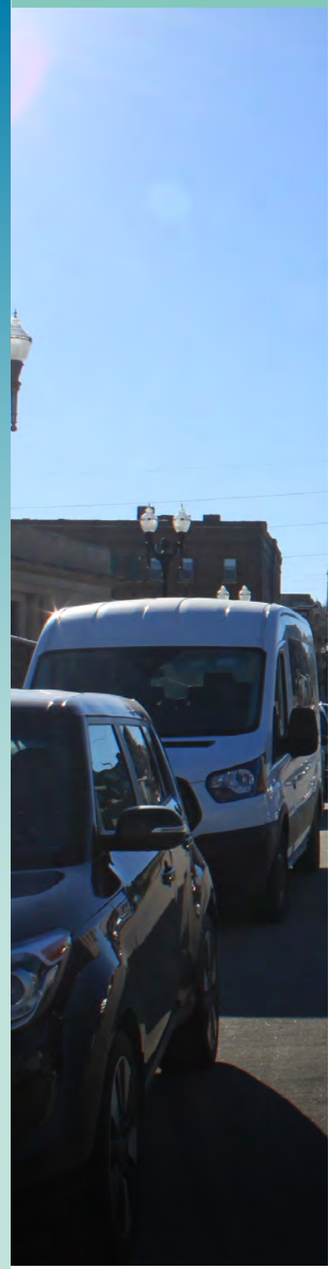
***CRASHES WHERE DRIVERS WERE NOTED TO BE SPEEDING OR DRIVING TOO FAST FOR CONDITIONS ARE:**

- **6.5x** MORE LIKELY TO RESULT IN A FATALITY
- **3.0x** MORE LIKELY TO RESULT IN A SERIOUS INJURY

**When compared to crashes where speeding-related driver behaviors were not noted as contributing factors.*

SAFER VEHICLES

Safer Vehicles refers to the improvement/inclusion of vehicle systems and features that help to prevent crashes and minimize the impact of crashes on both vehicle occupants and non-occupants. Two considerations of this could be the design of the vehicle body itself (shape and size) and the systems it uses internally.



Although larger vehicles (e.g., pickups and SUVs) tend to provide more protection for their occupants in a crash, they are significantly more likely to result in fatalities or serious injuries to other vehicle occupants and particularly to pedestrians.

BETWEEN 2013 AND 2016, CAR OCCUPANTS WERE[9]

28% more likely
TO DIE IN COLLISIONS WITH SUVS THAN WITH CARS

PICKUPS WERE

2.5x times as likely
TO KILL THE DRIVER OF A CAR THEY CRASHED INTO THAN A CAR COLLIDING WITH ANOTHER CAR

Over the past several decades, several vehicle systems have emerged and can be found in a variety of different vehicle makes and models, including automatic emergency breaking, lane departure warnings, intelligent speed assistance (ISA), and automatic crash notification (ACN). These introduced features have impacted crashes, including:

- In the European Union (who is fitting all new cars, vans, buses, and heavy good vehicles with ISAs), ISA is estimated to eventually cut road deaths by 20% across the European Union.[10]
- ACN is estimated (with the full implementation of advanced ACN and the availability of universal cellular coverage) to reduce fatalities from vehicle crashes by 1.6% to 3.3% per year.[11]
- Automatic emergency braking reduced rear-end crashes by 50% and reduced rear-end crashes that caused injuries by 5%.[12]
- Lane departure warning systems have reduced all relevant crashes by 11% and all relevant injury. crashes by 21%.[13]

9 IIHS | Vehicle Size and Weight
10 https://www.iihs.org/news/detail/front-crash-prevention-slashes-police-reported-rear-end-crashes
11 https://www.itskrs.its.dot.gov/2017-b01175
12 NHTSA | Intelligent Speed Assistance
13 ITE | Advanced Automatic Collision Notification (AACN)
14 http://mapacog.org/wp-content/uploads/2025/02/SS4A-One-Pagers_EMERGENCY_2025.02.12.pdf

POST-CRASH CARE

After a crash, timely intervention by emergency first responders can make a significant difference in survival and recovery. These responders play a vital role in quickly assessing and stabilizing injuries and ensuring safe transport to medical facilities where further care is provided.

THE NEED

285
FATALITIES
(2018 - 2022 FARS DATA)

51%
OF CRASHES REQUESTED EMERGENCY TRANSPORT TO A MEDICAL FACILITY

45%
OF THOSE TRANSPORTED PASSED AWAY WITHIN THE FIRST HOUR OF THE CRASH

THE RESPONSE

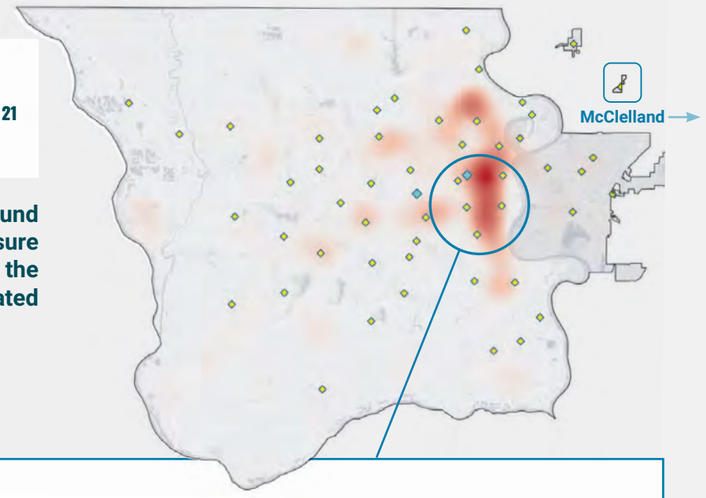
ON AVERAGE, EMS ARRIVED ON THE SCENE WITHIN
7 MINUTES
OF A CRASH

Find out more about Post Crash Care: Emergency Services through the Safe Streets and Roads for All: Post Crash Care One-Pager[14]

SAFETY COVERAGE MAP

Emergency Facilities
- Fire Station
- Level 1 Trauma Hospital

Fatalities
0 — 21



Fatality hotspots are concentrated around emergency facilities. It is important to ensure these nearby emergency facilities have the resources needed to handle crash-related incidents effectively.

Highlighted Emergency Facilities:

- The Nebraska Medical Center
- CHI Health Creighton University Medical Center
- Omaha Fire Department Station 1
- Omaha Fire Department Station3
- Omaha Fire Department Station 31
- Omaha Fire and Rescue Station 33
- Omaha Fire and Rescue Station 34

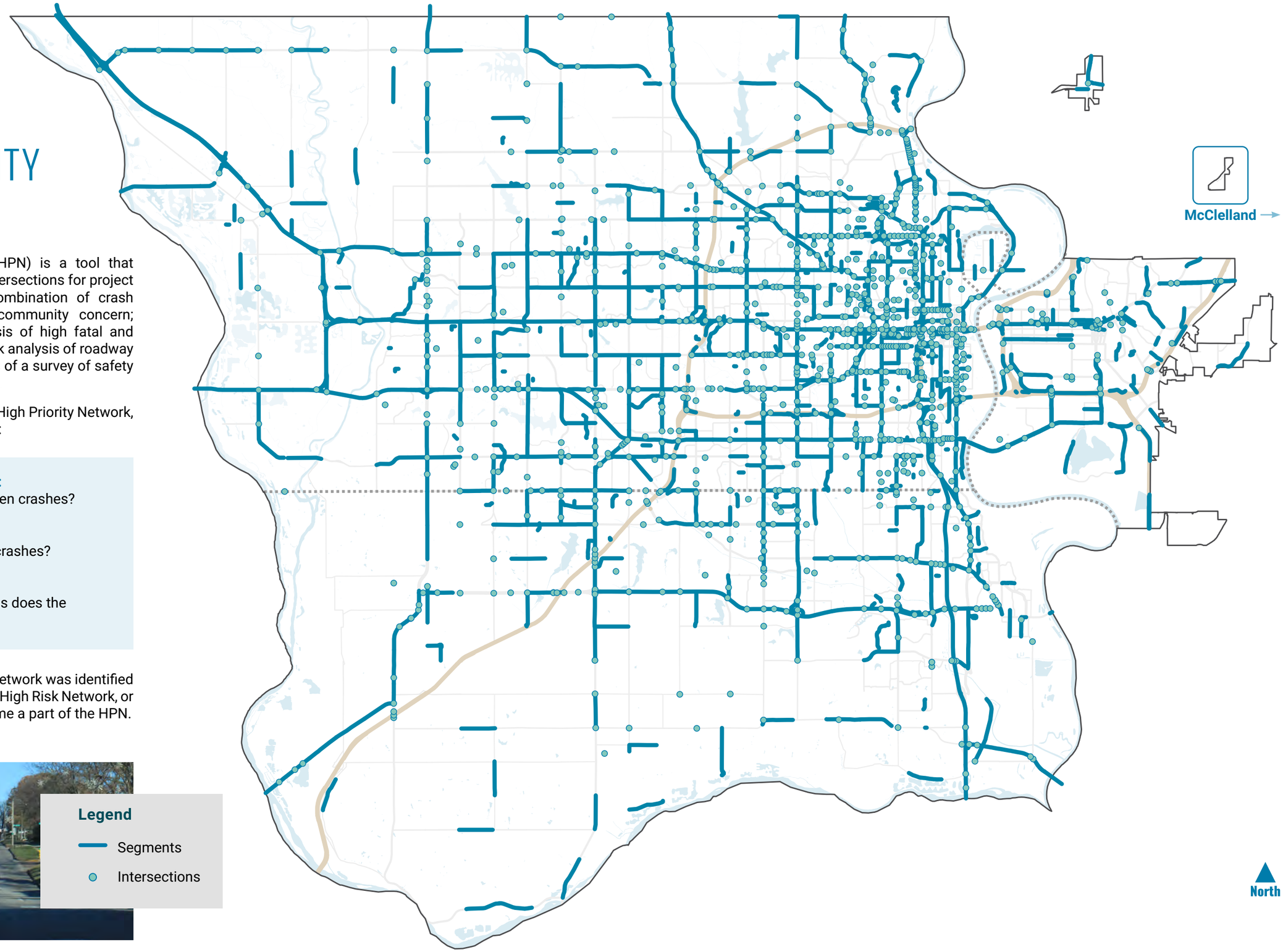
HIGH PRIORITY NETWORK

The High Priority Network (HPN) is a tool that identified priority roads and intersections for project implementation through a combination of crash history, potential risk, and community concern; it combines a hotspot analysis of high fatal and serious injury crash rates, a risk analysis of roadway characteristics, and the results of a survey of safety conditions in the MAPA region.

Three tools contributed to the High Priority Network, answering three key questions:

1. **High Injury Network:**
   Where have there been crashes?
2. **High Risk Network:**
   Where will there be crashes?
3. **Community Survey:**
   What safety concerns does the community have?

If a part of the transportation network was identified on the High Injury Network, the High Risk Network, or the community survey, it became a part of the HPN.

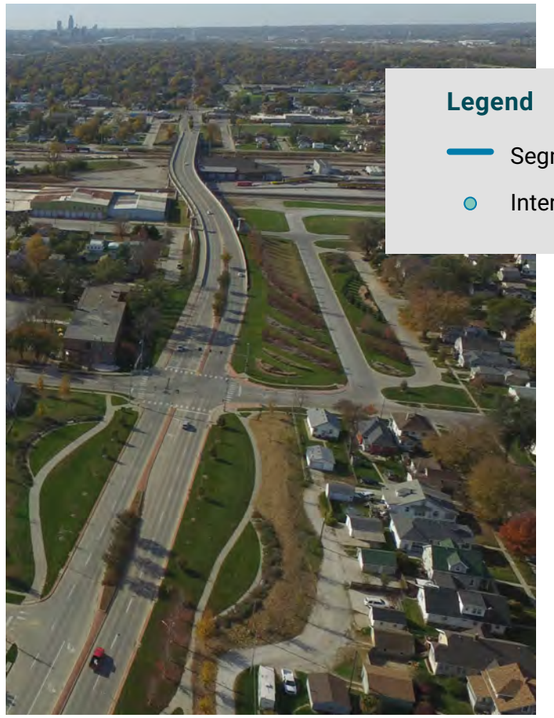


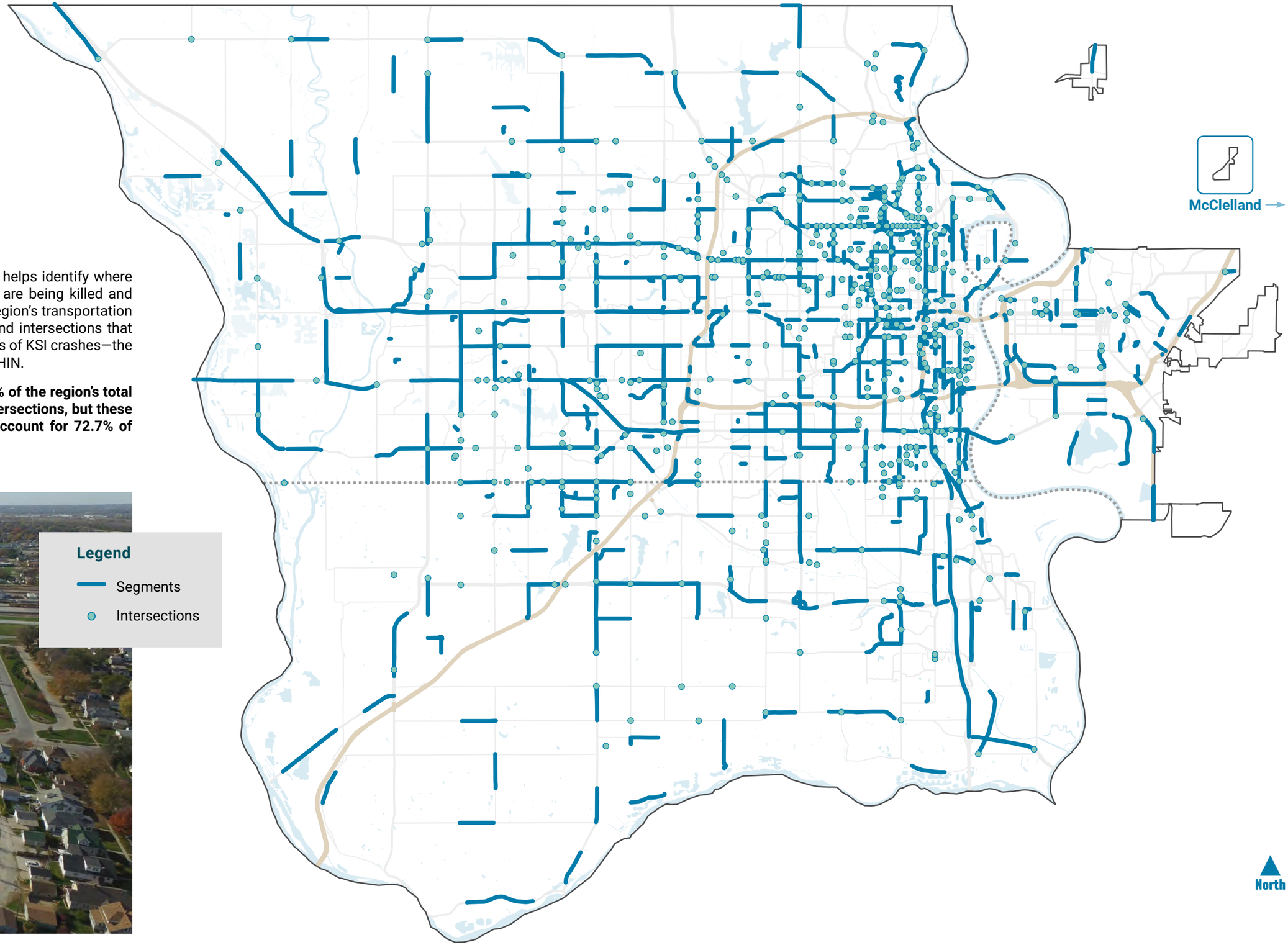
1

HIGH INJURY NETWORK

The High Injury Network (HIN) helps identify where the highest number of people are being killed and seriously injured (KSI) on the region's transportation system. Roadway segments and intersections that have the highest concentrations of KSI crashes—the top two percent—make up the HIN.

The HIN accounts for just 7.0% of the region's total roadway miles and 2.0% of intersections, but these segments and intersections account for 72.7% of all KSI crashes.



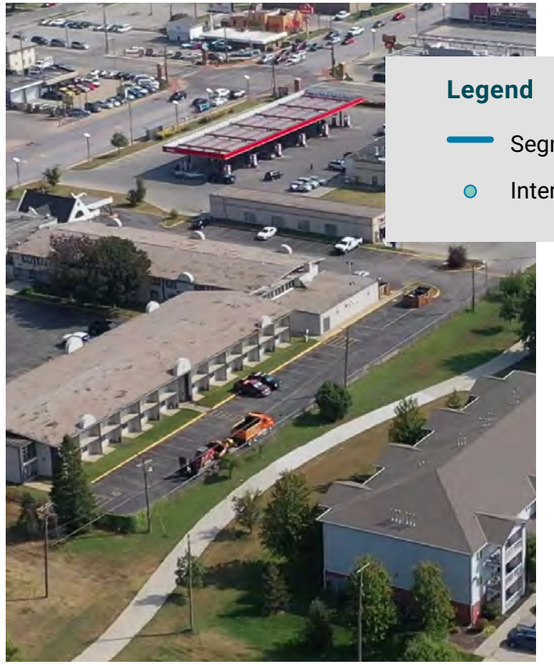


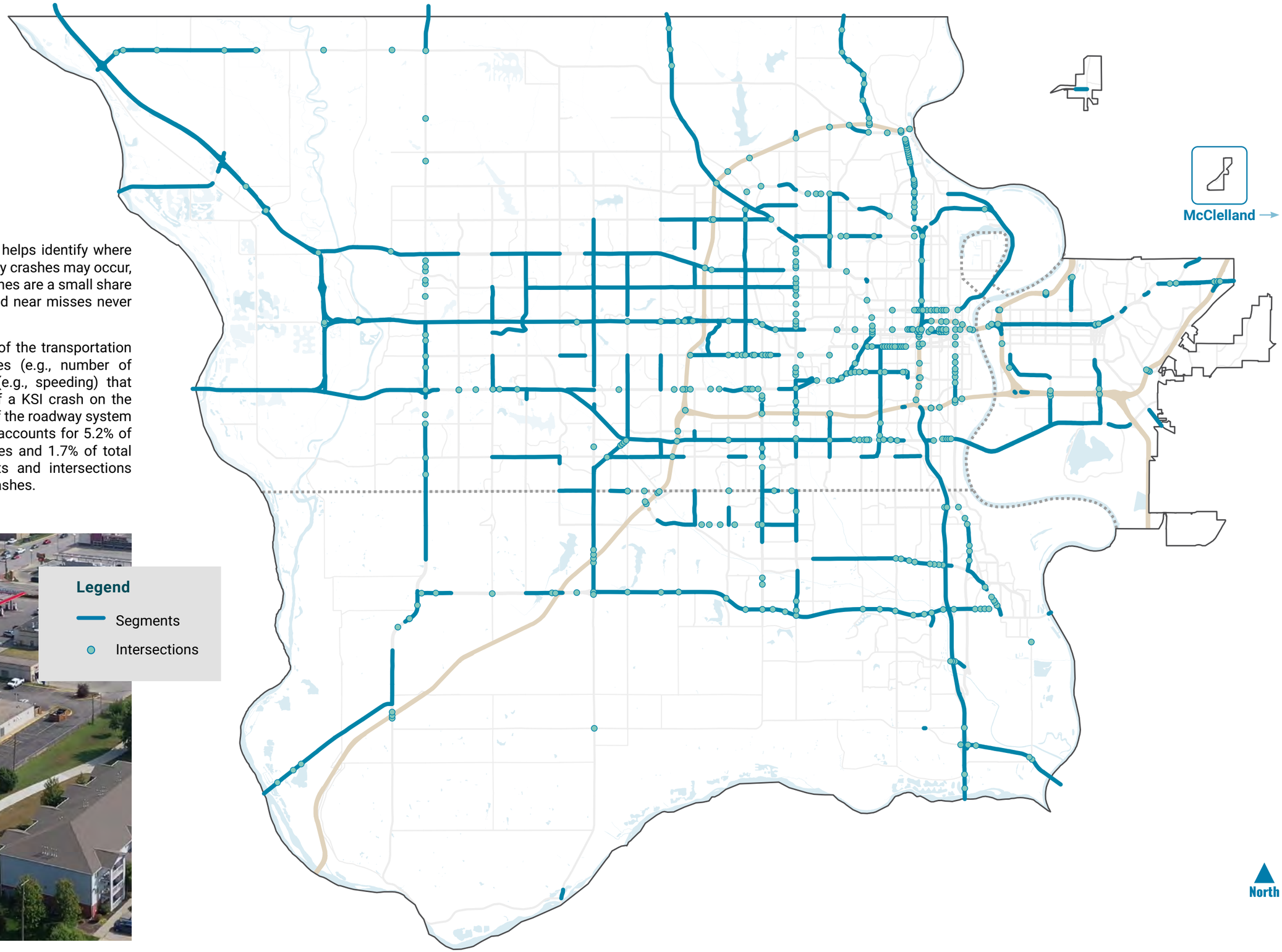
2

HIGH RISK NETWORK

The High Risk Network (HRN) helps identify where potential fatal and serious injury crashes may occur, as fatal and serious injury crashes are a small share of total vehicle interactions and near misses never get reported.

The goal is to highlight parts of the transportation system with roadway features (e.g., number of lanes) and driver behaviors (e.g., speeding) that may increase the likelihood of a KSI crash on the network; the top two percent of the roadway system flagged is the HRN. The HRN accounts for 5.2% of the region's total roadway miles and 1.7% of total intersections. These segments and intersections account for 24.5% of all KSI crashes.



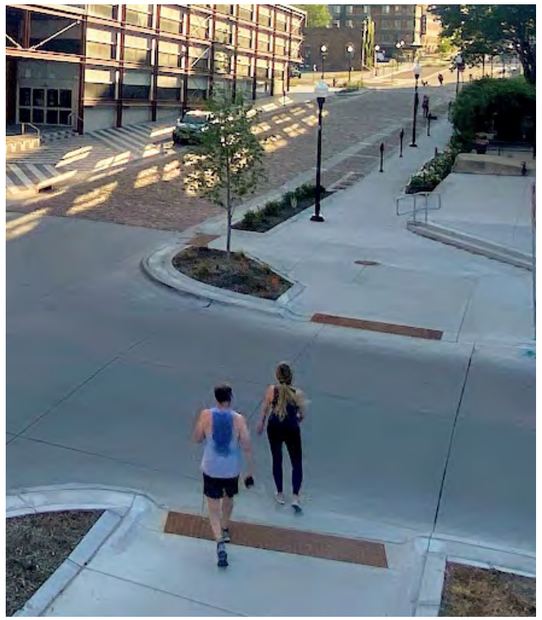


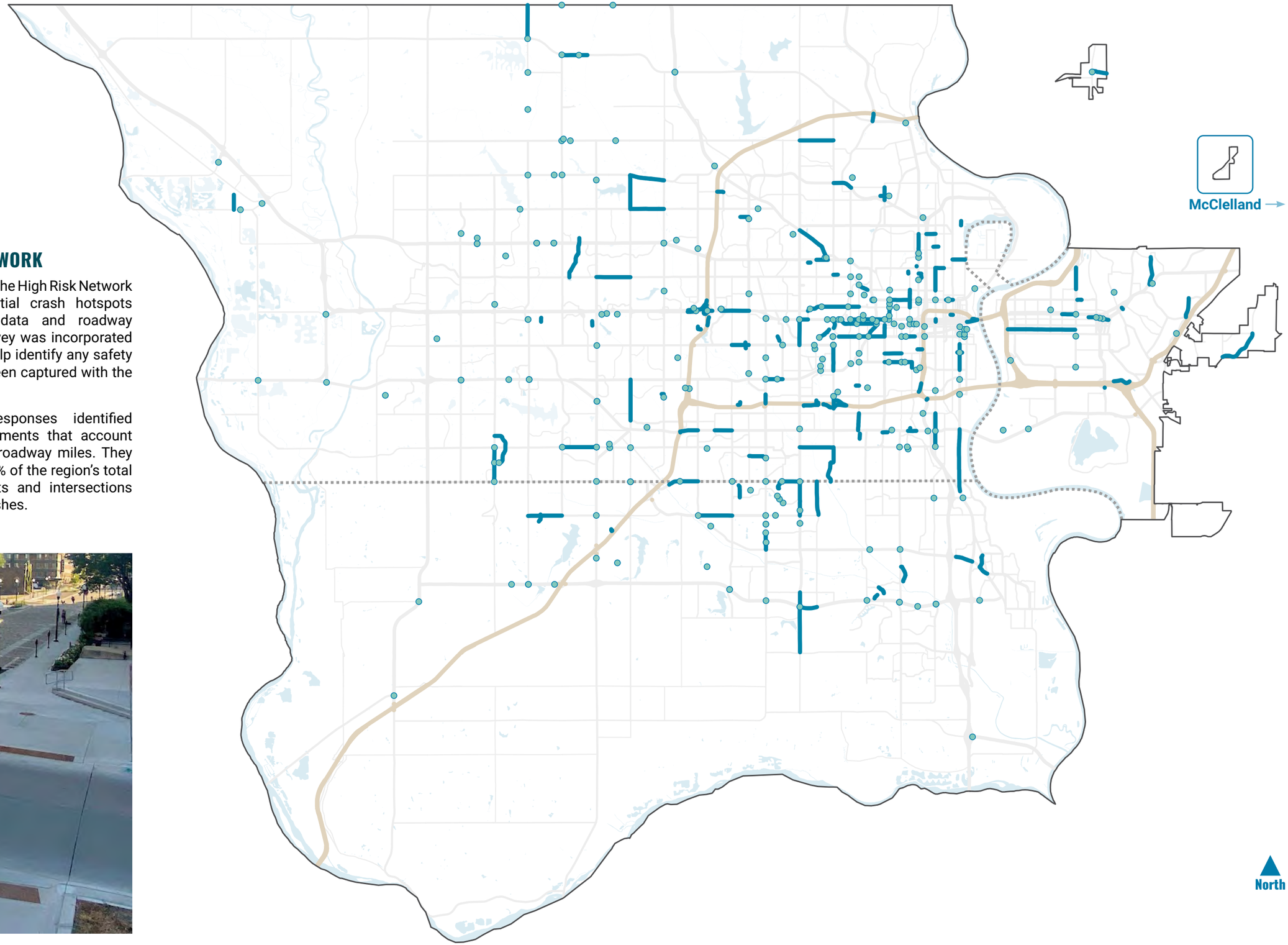
3

COMMUNITY SURVEY NETWORK

As the High Injury Network and the High Risk Network identify historical and potential crash hotspots considering existing crash data and roadway attributes, the community survey was incorporated into the High Priority tool to help identify any safety concerns that may not have been captured with the other tools.

The Community Survey responses identified concerns along roadway segments that account for 1.2% of the region's total roadway miles. They also identified concerns at 0.9% of the region's total intersections. These segments and intersections account for 7.8% of all KSI crashes.

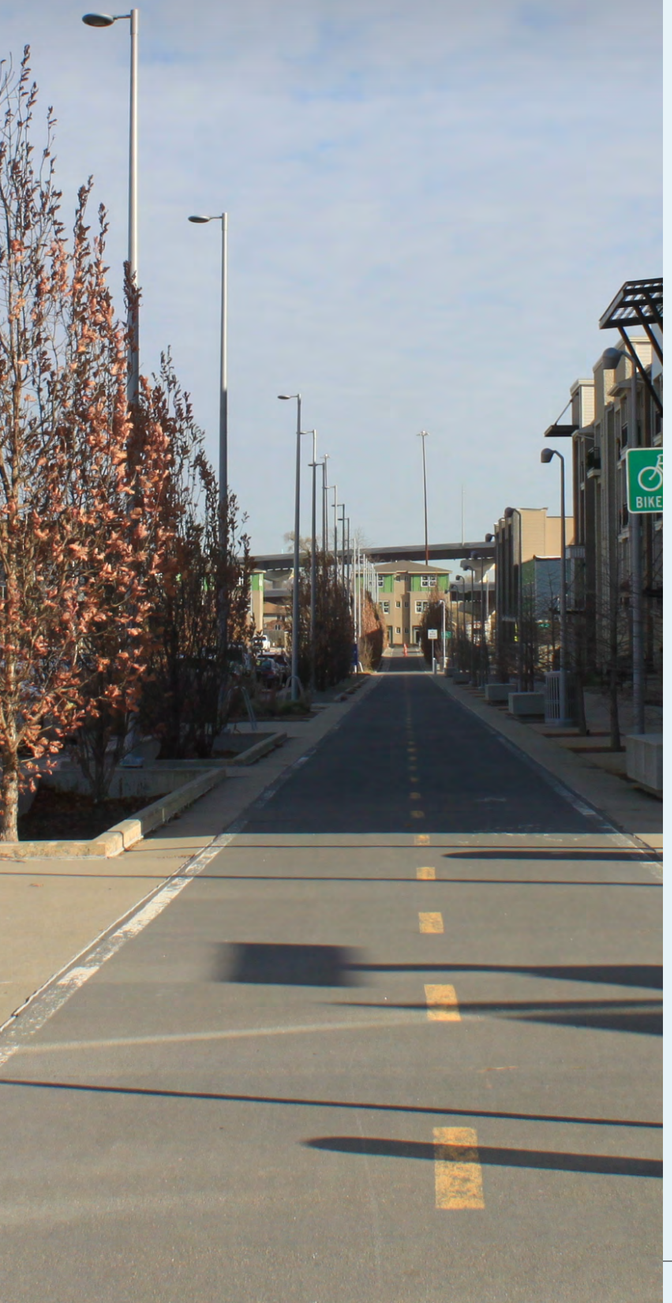




Vision Zero Toolbox

04

COUNTERMEASURES THAT WORK



The Vision Zero Toolbox is a resource compiling useful information regarding transportation countermeasures with known safety benefits.

The toolbox features five major categories of countermeasures, including:

1. Segment Countermeasures
2. Intersection Countermeasures
3. Safety Countermeasures for Pedestrians and Bicyclists
4. Rural and Highway Countermeasures
5. Behavioral Countermeasures

These countermeasures are included to help make the transportation network safer and more accessible for all road users, regardless of ability, age, or preferred travel method. The toolbox can be utilized in conversations around safety, especially in reaching a shared understanding about creating a safer roadway system for all. As communities across the MAPA region come in all different shapes and sizes, it's important to include a variety of countermeasures within the toolbox so that each community can handpick countermeasures and tailor them to improve connectivity and safety.

AUDIENCE

This toolbox is simple, straightforward, and easily understandable. Although the primary audience is transportation professionals and safety advocates in roles where they have an impact on what projects are implemented within their community (such as members of Planning or Public Works departments, MAPA, etc.)., this toolbox was designed to ensure that anyone could pick it up and understand what these countermeasures are, their benefits, and where they are applicable to be used.

APPLICATION

The Vision Zero Toolbox aims to provide a variety of countermeasures that are targeted for different contexts. These countermeasures can be used independently or in conjunction with each other, giving communities flexibility in choosing countermeasures best suited to their needs and existing conditions.

KEY CONSIDERATIONS

Each countermeasure includes the following; a helpful legend is included on the right-hand portion of the toolbox for convenience.

Name:

The title of each countermeasure

Description:

1-2 sentences describing the countermeasure.

Applicable Crash Types:

The crash profile relationship with crash types shown on police reports. For the first four sections, these are identified symbolically; for behavioral countermeasures, these are identified by key words.

Lane Departure: Fixed Object, Head-on, Overturn, Sideswipe, Parked Vehicle, Single Vehicle

Rear-end

Angle: Left Turn, Right Angle

Bike/Ped: Bicyclists /Pedestrians

Other: Animal, Train, Other

Crash Reduction Factor:

The potential reduction of crashes due to the implementation of a countermeasure for all crash severities and types, with exceptions for roadway lighting, cable median barrier, and all pedestrian and bicycle safety-related countermeasures.

Quick-Build Capable:

A symbolic indication of whether a countermeasure is quick-build capable or not, dependent on factors like right of way, cost, and time to implement. **Criteria include:**

1. Little to no impact of right-of-way or roadway geometry
2. Cost of quick-build version is less than 50% of the capital cost
3. Can be completed in less than a year, from concept to completion

Cost:

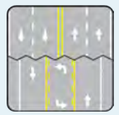
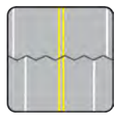
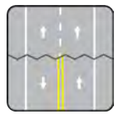
The relative cost for the countermeasure.

$ <$10k **$$** $10k - $100k **$$$** $100k - $1M **$$$$** $1M +

Traffic Considerations:

Traffic considerations are factors (such as roadway geometry, traffic volume, number of lanes, and more) that help users decide if a countermeasure may be a good fit for a potential area or project; as behavioral countermeasures are not dependent on the existing geometry of the roadway network, General Considerations (such as crash history) are the factors considered.

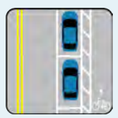
SEGMENTS COUNTERMEASURES

	Description	Applicable Crash Types	Crash Reduction Factor	Quick Build Capable	Cost	Traffic Considerations
 **Roadway Reconfiguration**	Roadway reconfigurations reduce the number of lanes, cutting conflict points, crossing distances, and vehicle speeds.		30%	✓	$$-$$$	**4-to-2 thru lanes:** <18,000 ADT **6-to-4 thru lanes:** <36,000 ADT
 **Lane Narrowing**	Lane narrowing shrinks roadway width while keeping lane count, slowing traffic, shortening pedestrian crossings, and adding bike/pedestrian areas.		25%	✓	$$	Avoid on Truck Routes
 **Landscaped Buffers / On-Street Parking**	Landscaped buffers, on-street parking, and street trees implemented in conjunction or separately can slow traffic and improves safety.		-		$$$	Evaluate Line of Sight at Intersections
 **One-way to Two-way Street Conversions**	Converting one-way to two-way streets calms traffic, increases connectivity, and creates safer streets for all users.		30%		$$$	Evaluate Signal Modifications, Access, and Turn-lanes
 **Horizontal Traffic Calming**	Horizontal traffic calming techniques, such as road narrowing, chicane installation, and roundabouts, slows traffic and improves safety.		30%	✓	$	<20,000 ADT
 **Vertical Traffic Calming**	Vertical traffic calming techniques, such as speed humps, raised crosswalks/ intersections, and traffic circles, slows traffic and improves safety.		30%		$$	<10,000 ADT Ensure Compliant with EMS Vehicles
 **Roadway Lighting**	Street lighting improves visibility, especially at intersections, crosswalks, and other high-traffic areas, reducing crashes and enhancing pedestrian safety.		20%		$$	-
 **Raised Medians and Access Management**	Medians separate traffic, reducing head-on collisions and providing safe havens for pedestrians. Limiting driveways improves access management and reduces traffic conflicts.		40%	✓	$$$$	>12,000 ADT

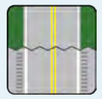
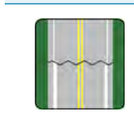
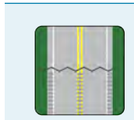
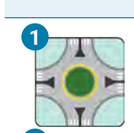
INTERSECTIONS COUNTERMEASURES

	Description	Applicable Crash Types	Crash Reduction Factor	Quick Build Capable	Cost	Traffic Considerations
 **Single-lane Roundabouts** **Multi-lane Roundabouts** **Mini-Roundabouts**	1. Single-lane roundabouts reduce traffic speed, eliminate dangerous angle crashes, and shorten crossing distances for pedestrians. 2. Multi-lane roundabouts handle more traffic but have more conflicts than single-lane roundabouts. Turbo roundabouts add dividers to improve safety. 3. Mini-roundabouts are smaller, single-lane versions of traditional roundabouts with traversable centers for larger vehicles without requiring additional ROW.	 ✓			$$-$$$$ $$$$ $$-$$$	<30,000 EADT <45,000 EADT <20,000 EADT
 **All-way Stop Control Conversion**	All-way stop control converts either two-stops or unwarranted signals to four-way stops, reducing wait times and making intersections more predictable.			✓	$	<12,000 ADT(each approach) <=2 thru-lanes (each approach)
 **Reduced Conflict Intersections**	• Reduced left-turn conflict intersections redesign left turns to reduce crashes and improve safety. Common types include RCUTS and MUTs. • Right-in, right-out (RIRO) and three quarter intersections simplify traffic flow by restricting side-street movements, forcing right turns, and reducing crossing paths.				$$$$	Prior Condition Stop-Controlled
 **Systemic Traffic Signal Modifications**	Traffic signal modifications improve safety and efficiency through both hardware and software upgrades, such as: • **Hardware:** Signal Light Upgrades, Retroreflective Backplates, Ped. Countdowns, and Stop-bar/Crosswalk Striping • **Software:** Updated Timings, Leading Pedestrian Intervals, and Intelligent Transportation Systems (ITS) Implementation.			✓	$$	-
 **Intersection Daylighting and Curb Extensions**	• Intersection daylighting improves visibility by restricting parking near intersections using pavement markings and flexible posts. • Curb extensions and bulb-outs shorten crossing distances, improve visibility, and increase pedestrian comfort at intersections.			✓	$$	Avoid at High Truck-Volume Intersections
 **Left-turn Hardening**	Left-turn Hardening reduces vehicle turning speed and increases vehicle yielding to pedestrians by guiding vehicles to take wider turns.			✓	$$	Avoid at High Truck-Volume Intersections

SAFETY COUNTERMEASURES FOR PEDESTRIANS & BICYCLISTS

	Description	Applicable Crash Types	Crash Reduction Factor	Quick Build Capable	Cost	Traffic Considerations
 **Rectangular Rapid-Flashing Beacon**	RRFBs use flashing lights to improve safety at unsignalized crosswalks, especially crossings of two lanes or less and under 40 mph.		45%		$$	See FHWA STEP Guide, Table 1
 **Pedestrian Hybrid Beacon**	PHBs use flashing lights to improve driver yielding to pedestrians at unsignalized crossings, especially on higher-speed roadways.		55%		$$$	See FHWA STEP Guide, Table 1
 **Systemic Crossing Modifications**	Systemic crossing modifications improve pedestrian safety and accessibility across busy streets with marked crosswalks, lighting, refuge islands, and clear signage.		30%	✓	$$	See FHWA STEP Guide, Table 1
 **Raised Crossing**	Raised crossings improve pedestrian safety and accessibility by slowing traffic and providing a level crossing surface.		30%		$$	See FHWA STEP Guide, Table 1
 **Sidewalks**	Sidewalks improve pedestrian and cyclist safety by providing designated spaces separate from traffic, including ADA-compliant features.		90% Where Sidewalks are Missing		$$-$$$	-
 **Bicycle Lanes**	Bicycle lanes make cycling safer and more comfortable by separating cyclists from traffic and pedestrian facilities using paint or physical barriers.		45%	✓	$$	<6,000 ADT and <35 MPH
 **Protected Bicycle Lanes / Cycle Tracks**	Protected bike lanes separate cyclists from traffic with physical barriers, significantly reducing collisions and improving safety.		55%	✓	$$$	6,000 - 20,000 ADT and <45 MPH Evaluation Exclusive Turn-lanes and Protected Turn Signal Phasing
 **Shared-use Paths**	Shared-use paths (off-street trails) improve safety and accessibility for active transportation and recreation by separating users from traffic.		25%		$$-$$$	>20,000 or >45 MPH
 **Safe Routes to School**	Safe Routes to School encourages walking and biking to school, educates students, and supports projects that create safe, active routes.		35%		$$-$$$	-

RURAL & HIGHWAY COUNTERMEASURES

	Description	Applicable Crash Types	Crash Reduction Factor	Quick Build Capable	Cost	Traffic Considerations
 **Systemic Stop-control Modifications**	Systemic stop-control modifications improve intersection visibility with advanced warning signs, retroreflective panels, enlarged signs, rumble strips, and cross-traffic warning signs.		40%	✓	$$	History of Stop-sign Running or Nighttime Crashes
 **Safety Edge**	Safety Edges provide a smooth transition between paved roadway and shoulders, preventing tire damage and vehicle loss of control while increasing pavement durability.		50%		$$$	Curb-less/Guardrail-less Roadways
 **Shoulder Installation/ Widening**	Installing or widening shoulders provides space for disabled vehicles, maintenance, and other safety activities. Safety edges can be installed on new or widened existing shoulders.		25%		$$$	Most Effective When ADTs >1,000
 **Turn-lane Additions**	Adding auxiliary lanes separates turning traffic, reducing crashes while improving visibility.		45%		$$$	Visibility Concerns History of Left-turn Related of Rear-end Crashes
 **Pavement Friction Management**	Pavement Friction Management measures, monitors, and maintains pavement friction to improve safety, especially at intersections, crosswalks, and crash-prone locations.		55%		$$$$	More Effective on Curves
 **Cable Median Barrier**	Cable Median Barriers protect against fixed roadside hazards, reducing fatal and serious crashes.		40%		$$$	History of Median Crossover or Head-on Crashes
 **Curve Delineation Modifications**	Enhanced Curve Delineation uses reflective chevrons and advance warning signs to significantly reduce curve crashes, especially at night and in rural areas.		30%	✓	$$	Existing Sideslope and Distance to Roadside Features History of Roadway Departure or Nighttime Crashes
 **Wider Edge Lines**	Wider edge lines improve visibility, reducing roadway departure crashes, especially on rural two-lane highways. Adding center and edge lines where they are missing further improves safety.		15%	✓	$$	Presence of Curves History of Single-Vehicle or Nighttime Crashes
 **Rumble Strips**	Rumble strips alert drivers to lane departure, reducing head-on and run-off-the-road crashes.		15%		$$	History of Lane Departure Crashes Consider Potential Noise Concerns
 **Single-lane Roundabouts** **Multi-lane Roundabouts**	1. Single-lane roundabouts reduce conflict points, speed, and angle crashes, improving safety for all road users. 2. Multi-lane roundabouts handle more traffic but have more conflicts than single-lane roundabouts. Turbo roundabouts add dividers to improve safety.		50%	✓	$$$$	<30,000 EADT <45,000 EADT

BEHAVIORAL COUNTERMEASURES

	Description	Applicable Crash Types	Crash Reduction Factor	Quick Build Capable	Cost	General Considerations
 **Automated Enforcement**	Automated enforcement uses cameras to detect and document traffic violations like red light running and speeding, notifying vehicle owners by mail. Currently legal in Iowa but not Nebraska.	Speeding			$$$	Data-driven Location Selection
 **Speed Feedback Signs**	Speed feedback signs display approaching drivers' speeds to make them aware of their current speed, with flashing numbers indicating speeding.	Speeding		✓	$	-
 **Speed Limit Reduction**  **Slow Zone**	1. Speed limit reductions, based on context and activity level, reduce crashes by lowering speeds and increasing sign frequency. 2. Slow zones designate lower speeds (15 - 20 mph) in areas with vulnerable populations, like parks, school zones, and neighborhoods	Speeding All		✓	$$$	<5,000 ADT
 **High-Visibility Saturation Patrols**	Saturation patrols deter drunk driving by increasing the perceived risk of arrest in high-risk areas. These programs should be regular and highly publicized.	Impaired	-		-	See NHTSA Countermeasures That Work: High-Visibility Saturation Patrols
 **Publicized Sobriety Checkpoints**	Sobriety checkpoints deter drunk driving by visibly removing impaired drivers from the road.	Impaired	-		$-$$$	See NHTSA Countermeasures That Work: Publicized Sobriety Checkpoints
 **Increased Traffic Safety Enforcement Efforts**	Traffic enforcement focuses on behaviors like drunk driving, speeding, distracted driving, and seatbelt use. Specialized patrols and checkpoints target impaired drivers, especially at night.	Impaired	-		-	See NHTSA Countermeasures That Work
 **Sober Ride Home Programs**	Alternative transportation programs reduce drunk driving by providing options like rideshare services, nonprofit safe rides, and public transportation.	Impaired	-		$$	See NHTSA Countermeasures That Work: Alternative Transportation
 **Mass Media Campaigns**	Mass media campaigns use radio, TV, and social media to promote safety and tailor messages to make maximum impact.	Impaired	-		$$$	See NHTSA Countermeasures That Work: Mass Media Campaigns

COUNTERMEASURE SPOTLIGHTS

As the MAPA region encompasses a variety of communities big and small, rural and urban, different communities need tailored countermeasures and strategies to improve safety within their jurisdictions. Five countermeasures from within the Vision Zero toolbox are especially noteworthy and are featured here as countermeasure spotlights:

- Roundabouts
- Lane Reconfiguration
- Red Light Running and Speed Cameras
- Systemic Signal Modifications
- Traffic Calming

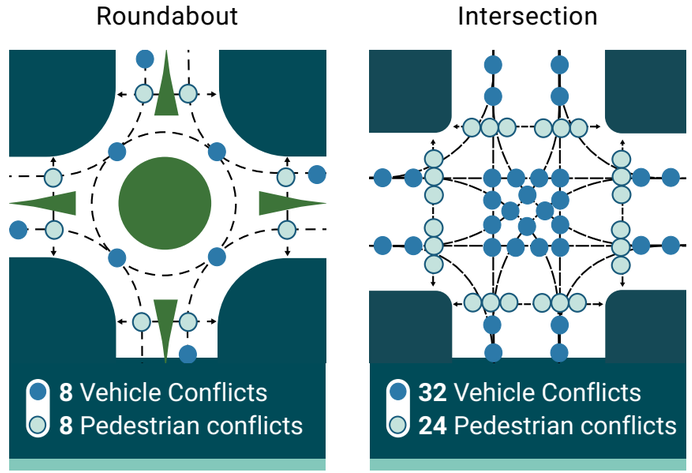
EACH COUNTERMEASURE SPOTLIGHT TAKES A DEEPER DIVE INTO THE COUNTERMEASURE, PROVIDING SAFETY JUSTIFICATIONS, COMMON CONCERNS AND SOLUTIONS, AND LISTS SEVERAL BEST PRACTICE REFERENCES.

ROUNDABOUTS

Roundabouts are circular intersections designed to promote a continuous flow of traffic. Unlike traditional intersections, roundabouts do not use traffic signals. Instead, vehicles enter the roundabout and yield to traffic already circulating. This design reduces the likelihood of severe collisions, with vehicles moving counterclockwise in right-hand traffic countries and clockwise in left-hand traffic countries. Roundabouts are known for their safety and efficiency in managing traffic volumes.

Safety Justification

Roundabouts have been proven to enhance road safety significantly. Studies indicate that roundabouts reduce the occurrence of fatal and severe injury crashes by up to 90% compared to traditional intersections (FHWA, 2021). The primary safety benefit comes from the reduced speed of vehicles, as the circular design requires motorists to slow down. Moreover, eliminating traffic signals means fewer points of conflict, such as head-on or high-speed right-angle collisions. The continuous movement also reduces rear-end collisions commonly associated with traffic light intersections (IIHS, 2020).



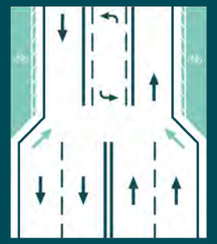
Common Concern	Solutions
Confusion: Drivers unfamiliar with roundabouts may find them confusing, leading to potential hesitation or incorrect navigation.	Driver confusion can be addressed through public education campaigns and clear, intuitive signage that guides drivers through the roundabout.
Pedestrian Safety: There are concerns about pedestrian safety, especially for those with disabilities, who must cross multiple lanes of moving traffic.	Implementing pedestrian crossings with clear markings and actuated crossing lights at multi-lane crossings to ensure safe passage.
Large Vehicles: Concerns regarding the maneuverability of trucks and emergency vehicles within the roundabout's tight curves.	Roundabouts are designed with truck aprons that allow sufficient space to accommodate larger vehicles, and some middle islands are built to be mountable.
Cyclist Safety: Cyclists may feel vulnerable navigating roundabouts alongside motor vehicles, mainly if dedicated cycling lanes are not provided.	Incorporating dedicated cycling paths or lanes that separate cyclists from motor traffic and following the latest guidance from FHWA and AASHTO.
Construction Costs: The initial cost of constructing a roundabout can be higher than installing traffic signals, leading to budgetary concerns.	Highlighting the long-term benefits and cost savings associated with reduced crash rates, improved traffic flow, and no cost of traffic signal maintenance.

BEST PRACTICE & REFERENCES:

Roundabouts: An Informational Guide (FHWA)

Guidelines for the Planning and Design of Roundabouts (mssDOT)

Guide for Roundabouts (NCHRP)



LANE RECONFIGURATION

Lane Reconfiguration, commonly known as a Road Diet, involves reducing the number of travel lanes and reassigning that space for other purposes, such as bike lanes, pedestrian pathways, or parking. This approach aims to improve road safety, enhance mobility, and create more livable streetscapes.

Safety Justification

Research indicates that road diets can significantly enhance road safety by reducing speeds and minimizing the number of lanes pedestrians must cross. According to the FHWA, implementing a road diet can reduce overall crashes by an average of 19-47% (FHWA, 2021). This is achieved through a combination of lower vehicular speeds, improved visibility, and less lane changing, which lowers the chances of side-swipe and rear-end collisions. Additionally, converting a 4-lane roadway to a 3-lane adds a two-way center-turn lane that removes turning vehicles from the traffic flow and allows EMS to bypass congestion.

Iowa DOT

BEST PRACTICE & REFERENCES:

Road Diet Informational Guide (FHWA)

4- to 3-lane Conversion (Iowa DOT)

Urban Street Design Guide (NACTO)

Common Concern	Solutions
Traffic Congestion: Concerns that removing travel lanes will lead to increased congestion and longer travel times.	Studies show that road diets often have minimal impact on traffic flow, especially on roads with lower volumes. Implementing traffic signal timing adjustments and adding turn lanes can help maintain efficient traffic movement.
Emergency Response: Fears that lane reductions will impede emergency vehicle access and response times.	Road diets can include designated lanes or shoulder spaces for emergency vehicles. Additionally, improved traffic flow and reduced incidents can actually enhance response times.
Business Impact: Local business owners may worry about reduced customer access and visibility.	Road diets can create a more inviting environment for pedestrians and cyclists, potentially increasing foot traffic and business activity. Clear signage and adequate parking solutions can mitigate negative impacts.
Pedestrian Safety: Concerns about pedestrian safety, particularly in areas where crossing distances are increased.	Incorporating pedestrian refuge islands, enhanced crosswalks, and signalized crossings can provide safe and easy passage for pedestrians.
Construction Costs: The initial cost of constructing a roundabout can be higher than installing traffic signals, leading to budgetary concerns.	Highlighting the long-term benefits and cost savings associated with reduced crash rates, improved traffic flow, and no cost of traffic signal maintenance.

RED-LIGHT RUNNING AND SPEED SAFETY CAMERAS

Red-light running and speed safety cameras are increasingly being used as tools to promote road safety and improve compliance with traffic laws. These automated enforcement systems capture images or videos of vehicles committing traffic violations, such as running red lights or exceeding speed limits, and issue citations to the registered owners.

Safety Justification

Research has shown that red-light running and speed safety cameras can significantly reduce the incidence of dangerous driving behaviors and associated crashes. According to the Insurance Institute for Highway Safety (IIHS), red-light cameras can reduce fatal red-light running crashes by up to 21%. Speed safety cameras have been found to lower the likelihood of crashes by reducing speeds and deterring aggressive driving. These cameras contribute to an overall safer driving environment by encouraging motorists to adhere to traffic laws.

https://www.villageofworth.com/180/Photo-Enforcement

Common Concern	Solutions
Privacy Issues: Concerns about the invasion of privacy due to constant surveillance.	Enforcement agencies ensure that cameras are only used to capture and process images of traffic violations. Clear policies and regular audits can help maintain public trust and protect privacy rights.
Revenue Generation: Perceptions that cameras are used primarily to generate revenue rather than enhance safety.	Transparency in the use of funds and clear communication about the safety benefits can address these concerns. Revenue generated can be reinvested in road safety initiatives and infrastructure improvements.
Accuracy of Citations: Fears that automated systems may incorrectly issue citations.	Robust verification processes and opportunities for drivers to contest citations can ensure accuracy and fairness. Regular maintenance and calibration of equipment are also essential.
Driver Behavior: Concerns that cameras may cause drivers to abruptly stop or slow down, leading to rear-end collisions.	Proper placement and signage can alert drivers to the presence of cameras, encouraging consistent compliance without sudden maneuvers. Studies indicate that overall crash rates tend to decrease with the implementation of safety cameras.

BEST PRACTICE & REFERENCES:

Automated Enforcement in a New Era (GHSA)

Automated Enforcement Program Checklist (IIHS)

System Analysis of Automated Speed Enforcement Implementation (NHTSA)

SYSTEMIC SIGNAL MODIFICATIONS

Traffic signal modifications improve safety and efficiency through both hardware and software upgrades, such as:

Hardware	**Signal Light Upgrades**	Signal light upgrades is the improvement of a signalized intersection through one or multiple upgrades, such as using LED lights in the signal head for better visibility and energy efficiency, having a signal head per lane of traffic, or switching from a pole light to a mast-arm light.
	Retroreflective Backplates	Retroreflective backplates improve the visibility of the illuminate face of the signal by framing the signal with a 1- to 3-inch yellow retroreflective border; this signal modification improves visibility and conspicuity during daytime and nighttime conditions.
	Pedestrian Countdowns	Pedestrian Countdowns are signal heads that have a countdown timer module. These signal modifications clearly indicate to pedestrians how much time left before the crossing phase ends, allowing them to know when to start crossing and when to wait to cross.
	Stop-bar / Crosswalk Striping	Stop-bar and crosswalk striping improve visibility of crossing locations at intersections, indicating clearly where vehicles should stop and the space for pedestrians and bicyclists to cross.
Software	**Updated Signal Timings**	Updating signal timings are the adjustment of green light duration and cycle length, yellow signal light duration, or changes in traffic timing to better reflect existing traffic conditions.
	Leading Pedestrian Intervals	Leading pedestrian intervals (LPI) give pedestrians 3-7 seconds of crossing time before vehicles are given a green light; LPIs increase pedestrian visibility, increase the yielding behavior of motorists, and can provide additional time to cross.
	ITS Implementation	Intelligent Transportation System (ITS) Implementation refers to the use of technology to improve safety and efficiency through multiple measures, such as adaptive traffic control, advance detection, and coordinated signal systems.

BEST PRACTICE & REFERENCES:

Proven Safety Countermeasures (FHWA)

STEP Studio (FHWA)

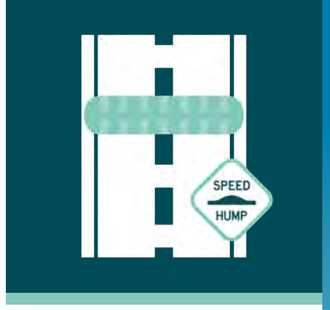
Safety Justification

The implementation of traffic signal modifications can provide improvements in adherence to traffic signal cycles, yielding behavior to pedestrians and bicyclists crossing, red-light-running, and crashes at signalized intersections. Several of these hardware and software upgrades are proven safety countermeasures by the FHWA, such as:

- Retroreflective backplates see a 15% reduction in total crashes at intersections
- Yellow change intervals see a 36-50% reduction in red-light running and 8-14% reduction in total crashes
- LPIs see a 13% reduction in pedestrian-vehicle crashes at intersections

TRAFFIC CALMING

Traffic calming is a set of countermeasures that encourage safer vehicle speeds by changing the built environment around the transportation network. These countermeasures consist of lane narrowing, horizontal features, vertical features, roadside features, and other features that changes the perception of the roadway to improve safety, mobility, and comfort. Traffic calming countermeasures can be implemented individually or combined with other countermeasures.



Horizontal	**Lane Narrowing**	Lane narrowing is the reduction of the width of the roadway without adjusting the number of lanes; the reclaimed space can be used for on-street parking, pedestrian or bicycle facilities, or greenery. Narrow lanes encourage slower speeds and shortens crossing distances for pedestrians.
	Chicane Installation	A chicane installation creates an S-shaped curve in the road using curb extensions, edge islands, or alternating on-street parking. The change in the orientation in the roadway encourages slower speeds.
	Curb Extensions / Bulb-outs	Curb extensions and bulb-outs can be implemented at mid-block crossings or at intersections to narrow crossing distances for pedestrians while encouraging safer speeds for motorists. Curb extensions can also narrow corner radii, which slows turning speeds and improves yield behavior.
Vertical	**Speed Humps / Speed Cushions**	Speed humps are raised sections in a roadway that can be tailored to a street and match the target speed; speed cushions—speed humps with cutouts to the street level—allow emergency vehicles to pass through without having to reduce speeds.
	Raised Crosswalks / Raised Intersections	Raised crossings are flush with the sidewalk, encouraging motorists to yield to pedestrians in the crosswalk and reinforcing slower speeds. Raised crossings allow pedestrians to cross at the same height as the sidewalk, improving accessibility. Raised crosswalks can be implemented at mid-block locations or as a raised intersection.
	Raised Medians / Refuge Islands	Medians separate opposing traffic, reducing the number of head-on, cross-median crashes. Raised medians—medians built higher than the road level—offer pedestrians and bicyclists refuges mid-crossing, limit motor vehicle turns, and mitigate head-on collisions.

Safety Justification

According to the FHWA, "implementation of traffic calming measures can reduce traffic speed, reduce motor-vehicle collisions, and improve safety for pedestrians and cyclists. These measures can also increase pedestrian and bicycling activity."[15] Many traffic calming measures are proven safety countermeasures by the FHWA and have measurable reductions in all types of injury crashes.

15 https://web.archive.org/web/20250204233102/https://www.transportation.gov/mission/health/Traffic-Calming-to-Slow-Vehicle-Speeds

BEST PRACTICE & REFERENCES:

Speed Reduction Mechanisms (NACTO)

Vertical Speed Elements (NACTO)

Traffic Calming ePrimer (FHWA)

SYSTEMIC COUNTERMEASURES MAP

This map highlights potential opportunities for selected types of safety countermeasures, based on existing roadway characteristics data. These opportunities correspond to Safety Metrics found on the last page of Chapter 6 in this plan.

Existing Undivided Roadway Reconfiguration Opportunities

This identifies undivided (no median present) multi-lane roadways that may be candidates for roadway reconfigurations. It includes 4-lane undivided segments that have estimated annual average daily traffic volumes below 18,000 vehicles per day.

It also includes the undivided section of Dodge Street, which may be a candidate for installation of a median replacing the center lane.

Shoulder Installation Opportunities

This identifies rural roadway sections that currently lack paved shoulders. Shoulder candidates that have annual average daily traffic exceeding 1,000 vehicles per day may be especially good candidates for shoulder installation. NDOT's Highway Safety Improvement Program will fund installation of two-foot shoulders and Safety EdgeSM as part of mill and overlay projects along rural roadways with greater than 1,000 AADT.

Signalized Intersection Modification Opportunities

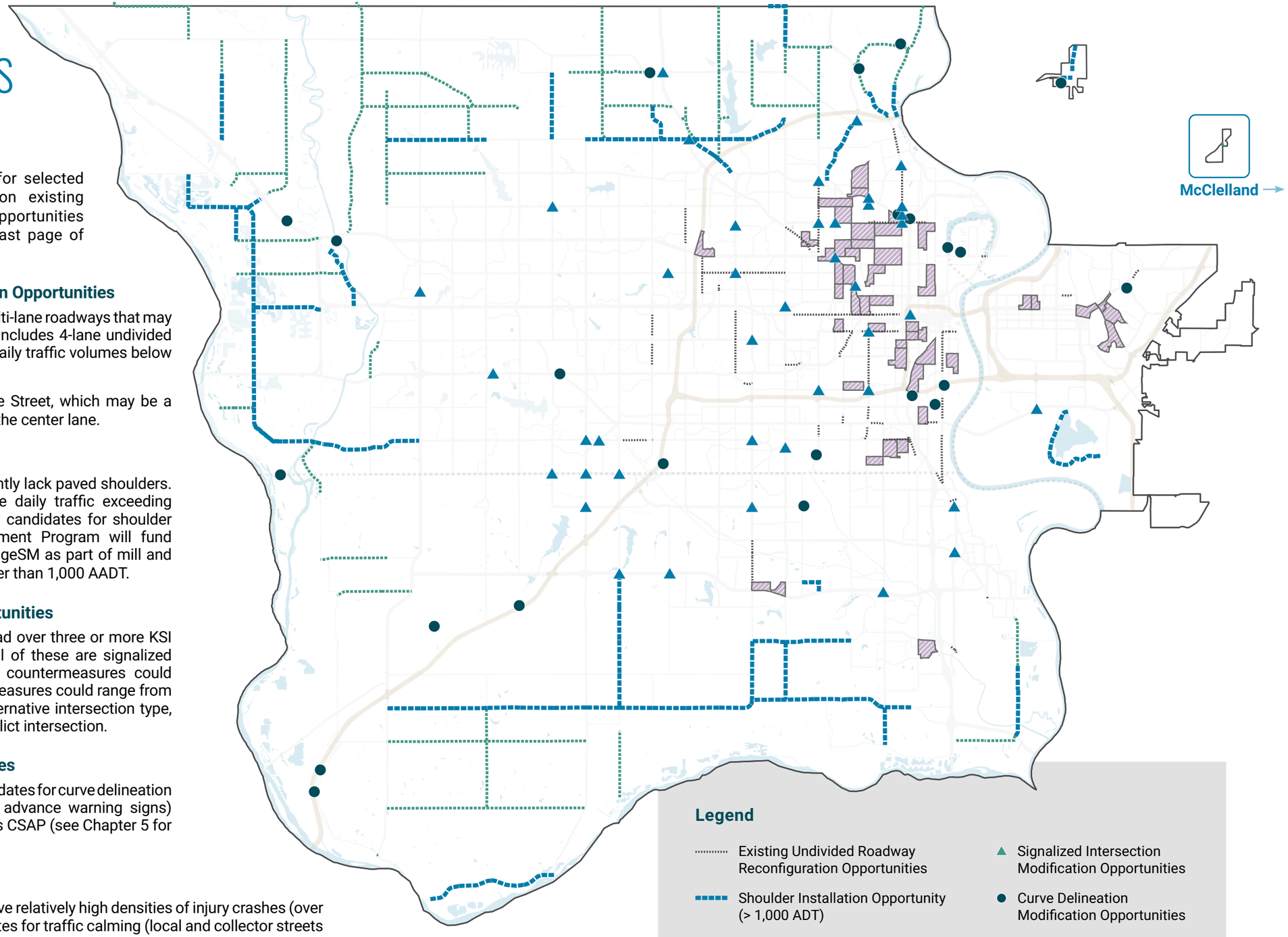
These locations identify all intersections that had over three or more KSI crashes during the 2018-2022 study period. All of these are signalized intersections where implementation of safety countermeasures could have an especially high impact. These countermeasures could range from signal modifications to reconstruction to an alternative intersection type, such as a roundabout or a reduced-left turn conflict intersection.

Curve Delineation Modification Opportunities

This identifies curves that were identified as candidates for curve delineation modifications (adding reflective chevrons and advance warning signs) through the project identification process for this CSAP (see Chapter 5 for more information).

Traffic Calming Priority Areas

These neighborhoods (Census Block Groups) have relatively high densities of injury crashes (over 0.5 per mile) along streets that could be candidates for traffic calming (local and collector streets with posted speed limits of 35 mph or less).



Priority Safety Projects

05

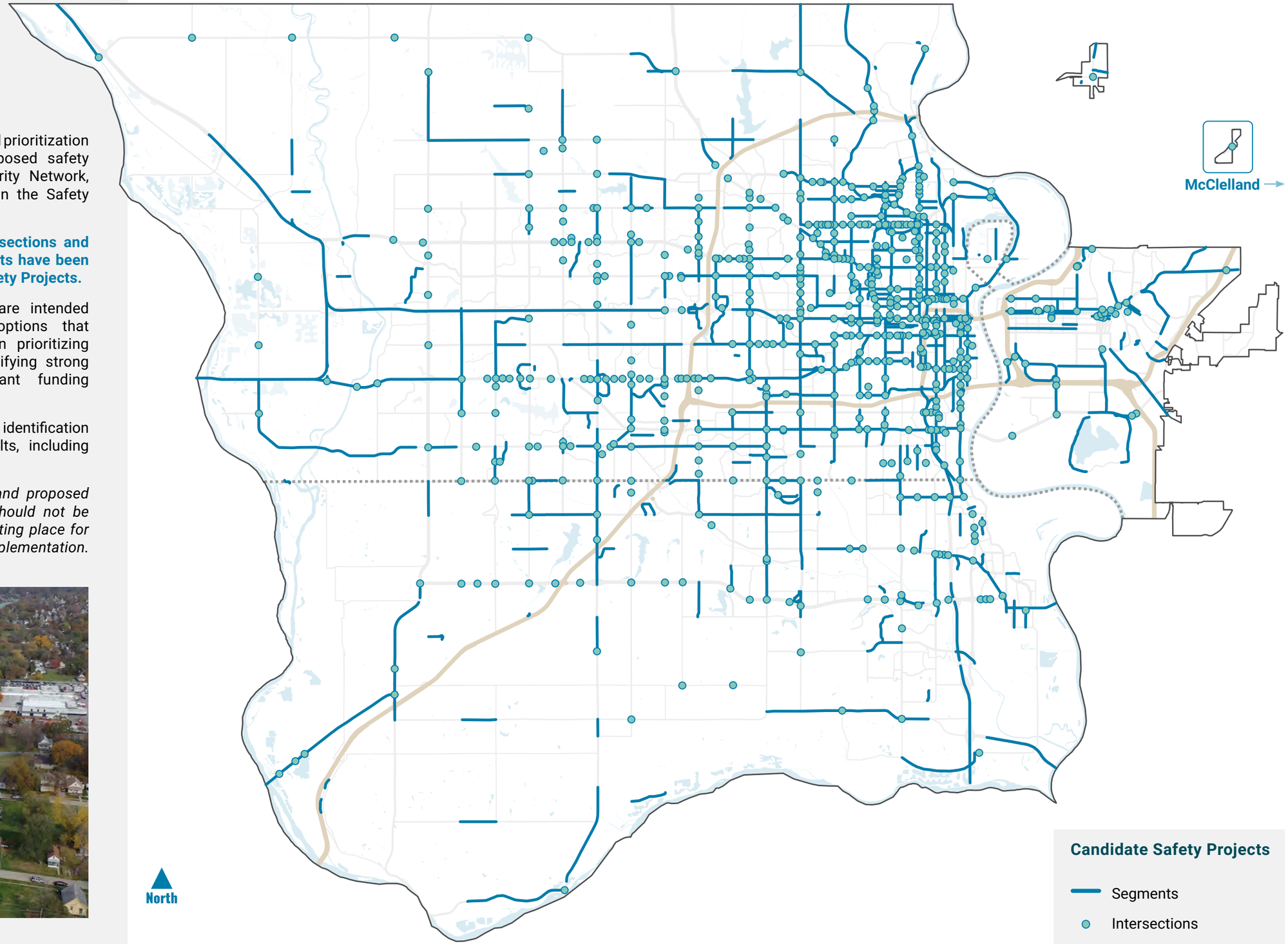
A data-driven project identification and prioritization process was used to identify proposed safety improvements along the High Priority Network, drawing on the tools summarized in the Safety Countermeasures Toolbox.

In total, improvements at 597 intersections and along 451 miles of roadway segments have been identified as potential Candidate Safety Projects.

These Candidate Safety Projects are intended to provide a broad menu of options that communities may draw from when prioritizing street improvements or when identifying strong candidates for safety-related grant funding opportunities.

The following pages outline the project identification and prioritization process and results, including maps of the prioritized projects.

It should be noted that the scope and proposed recommendations of each project should not be taken as conclusive, but rather a starting place for further study when moving towards implementation.



PROJECT IDENTIFICATION

THE PROJECT IDENTIFICATION PROCESS INCLUDED A HIGH-LEVEL REVIEW OF ALL HIGH PRIORITY NETWORK ROADWAY SEGMENTS AND INTERSECTIONS TO IDENTIFY POTENTIAL SAFETY COUNTERMEASURES THAT COULD ADDRESS THE SPECIFIC SAFETY NEEDS AND RISK FACTORS AT EACH LOCATION.

Proposed countermeasures were linked to each project through a high-level planning analysis. Each proposed segment and intersection improvement location was assigned one of the project types listed in the tables at right. These project types draw from the Vision Zero Toolbox in Chapter 4, with the specific countermeasures being grouped into broader project types appropriate for the generalized planning-level nature of this project identification process. Throughout this process, the 2018-2022 crash history was referenced to gain a general understanding of crash patterns at each potential project location and to determine which project types would likely be most effective at mitigating those crash patterns.

Note:

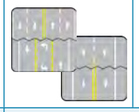
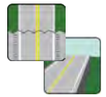
Some of the priority projects extend beyond the specific bounds of the High Priority Network (HPN) and some HPN segments and intersections are not covered by recommended priority projects. The typical reasons for recommending projects that extend outside of the HPN include:

- *To achieve logical project termini*
- *To address HPN intersections where the crash history and/or risk factors could logically be mitigated by a segment-level project that extends across/beyond the intersection.*
- *To address a significant grouping of crashes that lay just beyond the extents of an HPN segment or intersection.*

The typical reasons for not recommending projects along an HPN segment or at an HPN intersection include:

- *Recently completed or planned improvements are likely to have mitigated historical crash patterns or risk factors*
- *The crash history or risk factors at a HPN intersection would be mitigated by a proposed overlapping segment project (or vice versa)*
- *There is no clear potential for crash mitigation or prevention through physical design countermeasures*
- *The planning-level benefit-to-cost ratios for a proposed project at the location would not exceed target thresholds to be considered a priority (see the "Project Prioritization" section that follows)*

Segment Project Types

	Lane Reconfiguration	Raised Medians & Access Management	VRU Facilities and Traffic Calming	Traffic Calming	Shoulder Modifications	Lane Departure Mitigation	Curve Delieation Modifications	Cable Median Barrier	Roadway Lighting	Road Safety Audit & Improvements
Crash Reduction Factor	29%	39%	32%	32%	25%	15%	28%	38%	20%	25%
Constr. Cost (Per Mile)	$650,000	$1,500,000	$500,000	$70,000	$250,000	$85,000	$300,000	$1,500,000	$300,000	$1,500,000
Primary Countermeasures*										?
Typical Secondary Countermeasures*									-	?
Generalized Project Type (and Symbol for Maps)	Lane Reconfiguration	Raised Medians & Access Management	Traffic Calming		Roadway Departure Mitigation				Roadway Lighting	RSA & Improvements

Intersection Project Types

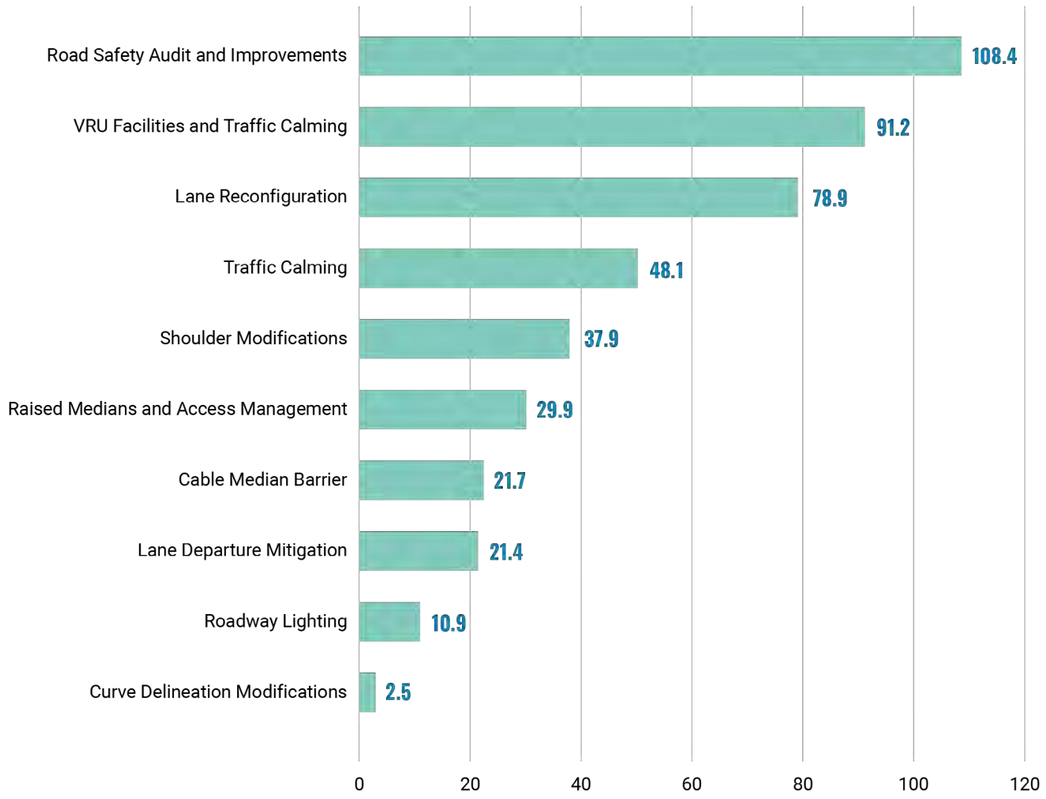
	Mini Round-About	Single-Lane Round-About	Multi-Lane Round-About	Systemic Traffic Signal Modifications	*Curb Hardening / Crossing Modifications	Access / Median Modifications	RCUT or MUT	All-Way Stop Conversion	Systemic Stop-Control Modifications	Turn Lane Additions	Roadway Lighting	Road Safety Audit & Improvements
Crash Reduction Factor	67%	67%	67%	15%	32%	22%	35%	48%	40%	44%	20%	25%
Constr. Cost (Per Mile)	$500k	$1.5 M (urban) $4 M (rural)	$2.5 M	$50k	$44k	$150k	$2 M	$5.5k	$30k	$350k	$30k	$1 M
Primary Countermeasures*												?
Typical Secondary Countermeasures*											-	?
Generalized Project Type (and Symbol for Maps)	Roundabout			Systemic Traffic Signal Modifications	Curb Hardening/ Crossing Modifications	Access / Median Modification		Stop Control Modifications		RSA & Improvements		

** Planning level cost estimates and crash reduction factors for each project type are based on its Primary Countermeasures. The Typical Secondary Countermeasures represent other potential additional countermeasures that may commonly be included within each project type.*

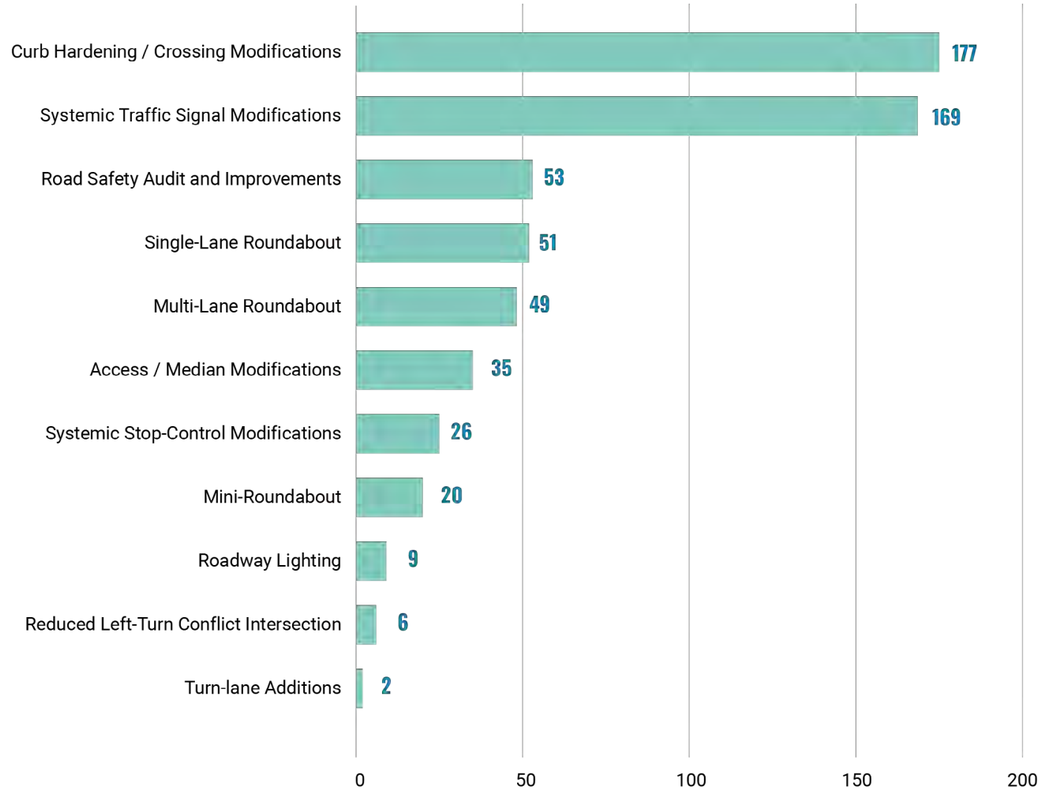
*** "Curb hardening" refers to geometric changes to an intersection to reduce the overall footprint of the intersection, slow turning speeds, improve sightlines, and reduce pedestrian exposure. For example, this could include adding curb extensions at the corners, reducing curb radii, or extending a median nose to create a pedestrian refuge in the crosswalk.*

The candidate safety projects include a wide range of the different project types as shown in the maps on the following pages and the charts below.

Candidate Project Segments (# of Miles) by Project Type



Candidate Project Intersections by Project Type



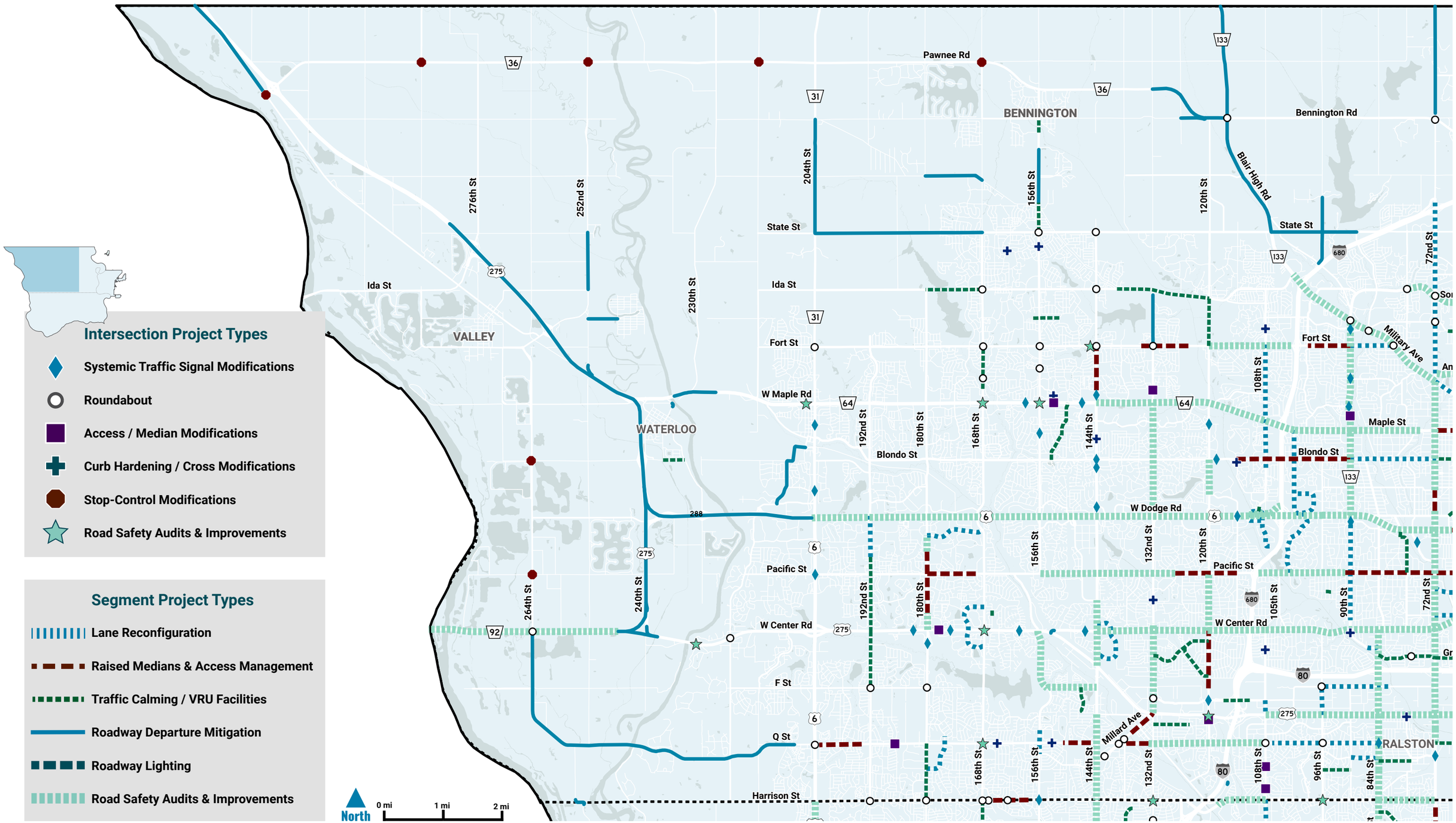
Notes:

(1) For purposes of map readability and accessibility, the maps on the following pages consolidate some of the above project types into more general categories and also do not display intersection project candidates that are located along segment projects (except for roundabouts).

(2) Scan this QR code or click the link below to view an online map where you can click on each project location to see more details.

https://experience.arcgis.com/experience/79b2b4e07e2c4add9e7636e8d798e736

WESTERN DOUGLAS COUNTY



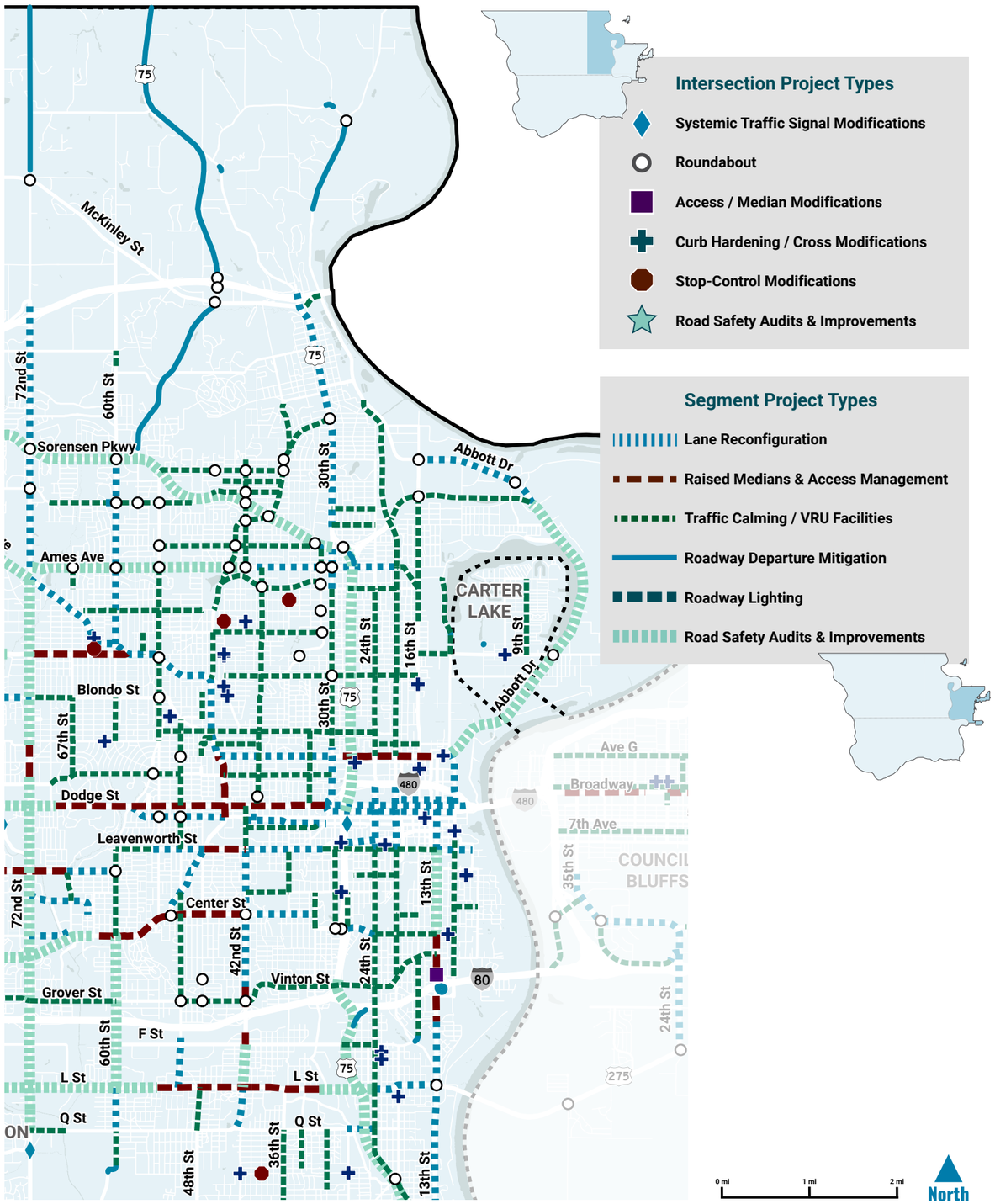
Intersection Project Types

- Systemic Traffic Signal Modifications
- Roundabout
- Access / Median Modifications
- Curb Hardening / Cross Modifications
- Stop-Control Modifications
- Road Safety Audits & Improvements

Segment Project Types

- Lane Reconfiguration
- Raised Medians & Access Management
- Traffic Calming / VRU Facilities
- Roadway Departure Mitigation
- Roadway Lighting
- Road Safety Audits & Improvements

EASTERN DOUGLAS COUNTY



Intersection Project Types

- Systemic Traffic Signal Modifications
- Roundabout
- Access / Median Modifications
- Curb Hardening / Cross Modifications
- Stop-Control Modifications
- Road Safety Audits & Improvements

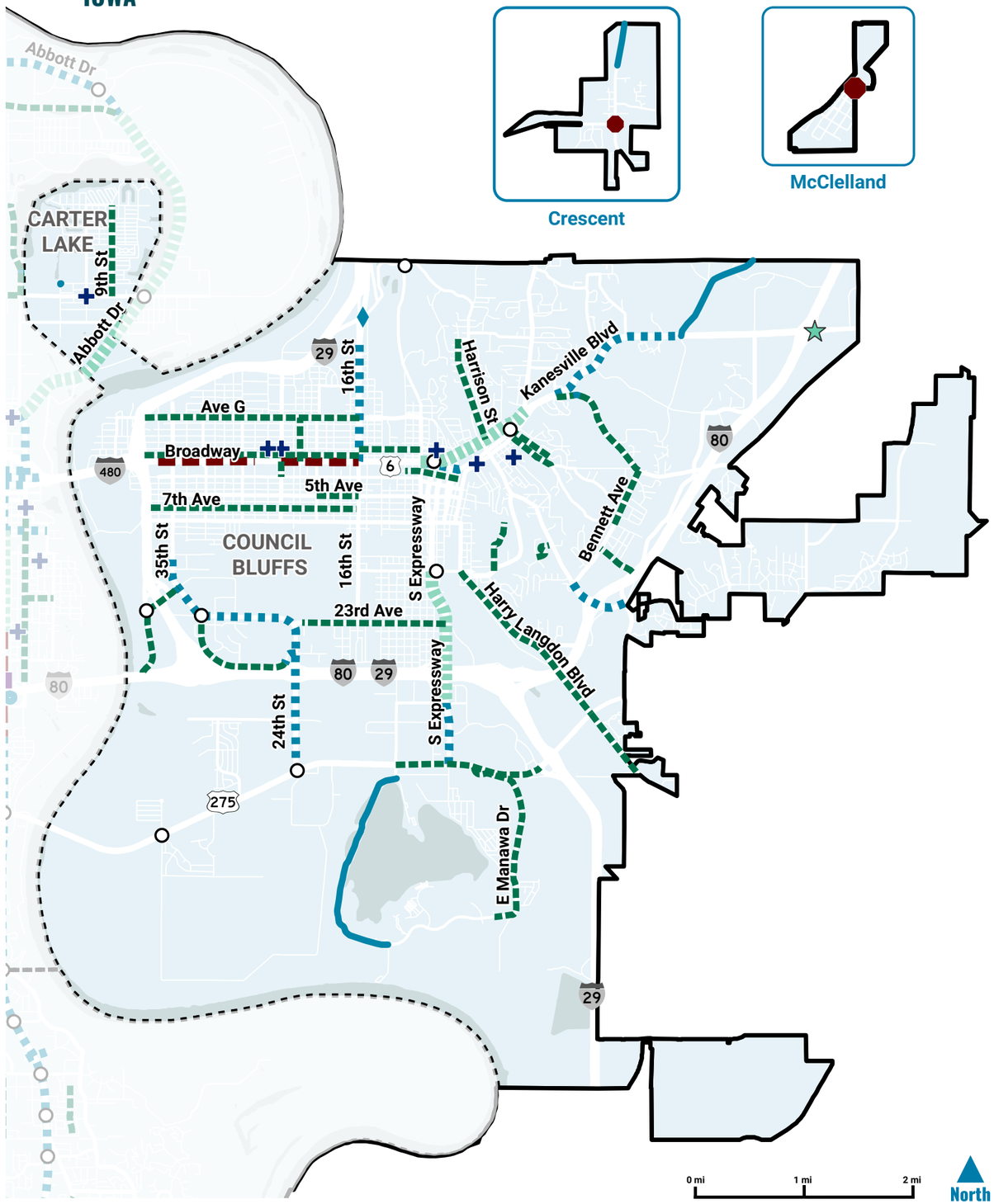
Segment Project Types

- Lane Reconfiguration
- Raised Medians & Access Management
- Traffic Calming / VRU Facilities
- Roadway Departure Mitigation
- Roadway Lighting
- Road Safety Audits & Improvements

0 mi 1 mi 2 mi

North

IOWA



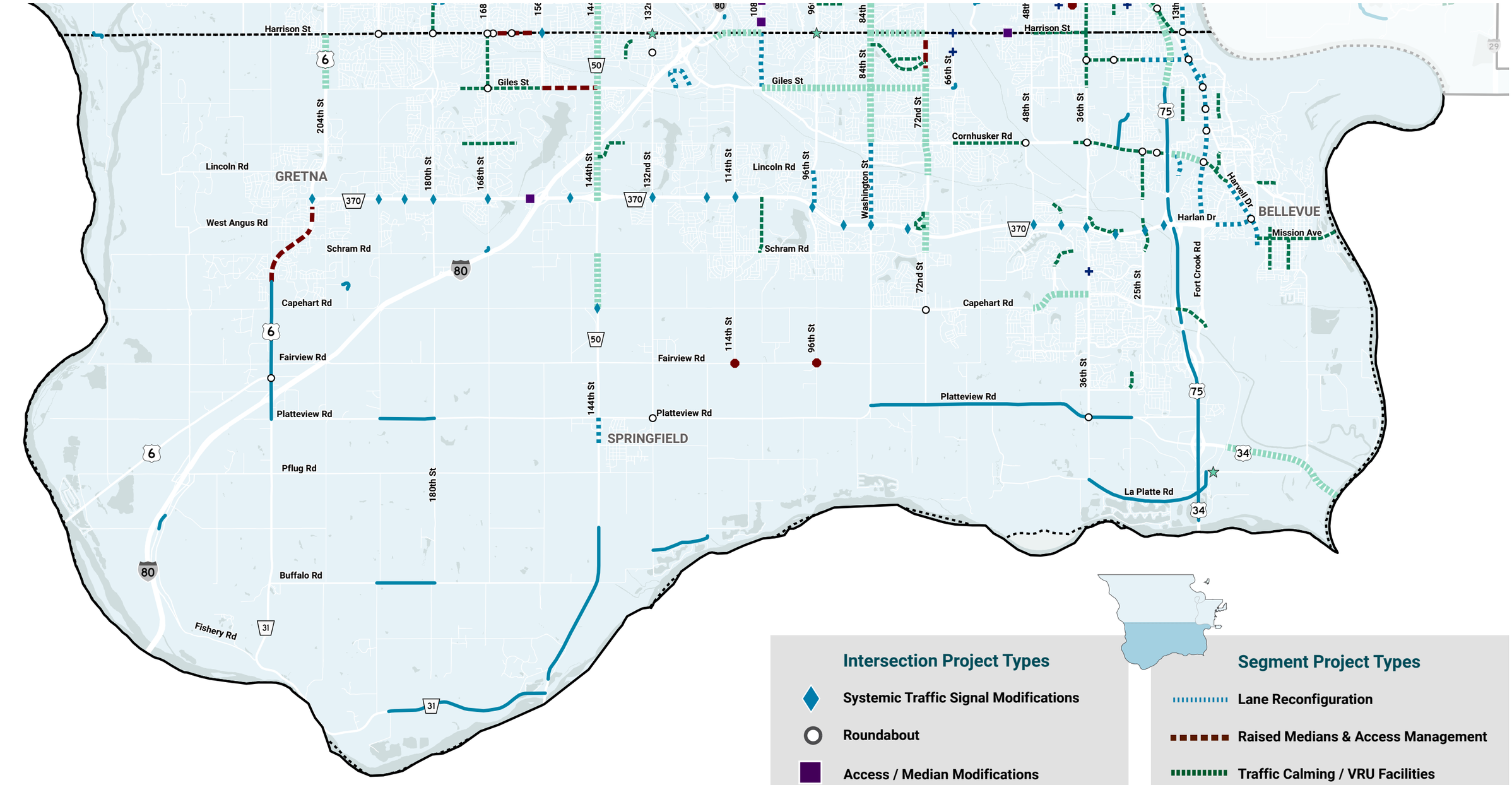
Crescent

McClelland

0 mi 1 mi 2 mi

North

SARPY COUNTY



Intersection Project Types

- Systemic Traffic Signal Modifications
- Roundabout
- Access / Median Modifications
- Curb Hardening / Cross Modifications
- Stop-Control Modifications
- Road Safety Audits & Improvements

Segment Project Types

- Lane Reconfiguration
- Raised Medians & Access Management
- Traffic Calming / VRU Facilities
- Roadway Departure Mitigation
- Roadway Lighting
- Road Safety Audits & Improvements

PROJECT PRIORITIZATION

A safety benefit-to-cost ratio (BCR) was calculated for each project using three different benefit-to-cost analysis (BCA) methods, based on guidance for:

- USDOT's Discretionary Grants
- NDOT's Highway Safety Improvement Program (HSIP)
- IDOT's Safety Programs

All three of the BCA methods use planning-level cost estimates of each project (based on their project type) and a projection of the project's 20-year crash reduction benefit. The table below outlines the different assumptions used in calculating the BCRs for CSAP projects using the three different benefit-to-cost analysis methods.

Specific target level BCRs were used to ensure that the list of Candidate Safety Projects only includes projects that are likely to be eligible candidates for federal and state funding opportunities. In order to be considered a Candidate Safety Project, an identified project candidate in Nebraska needed to have a USDOT-method BCR exceeding 2.0 **or** an NDOT-method BCR exceeding 5.0. Project candidates in Iowa needed to have a USDOT-method BCR exceeding 2.0 **or** an IDOT-method BCR exceeding 1.0.

PRIORITIZATION RESULTS

The maps on the following pages show the relative benefit-to-cost ratios of the Candidate Safety Projects using each benefit-to-cost analysis method. Overall, the prioritization results show a widespread distribution of strong candidates for federal and state safety program funding across the MAPA region. Projects with a safety benefit-to-cost ratio exceeding 1.0 were identified in all jurisdictions*, with the highest concentration of Candidate Safety Projects occurring within older, more urbanized areas of the region (e.g., Omaha east of 72nd Street and Council Bluffs).

* Boys Town is the only exception. All streets within Boy Town are privately-owned, generally low-speed (25 mph or less) streets with roundabouts at key intersections, and no project candidates that would exceed target benefit-to-cost ratios were identified within Boys Town. However, projects that border Boys Town were identified.

Benefit-to-Cost Analysis Assumptions

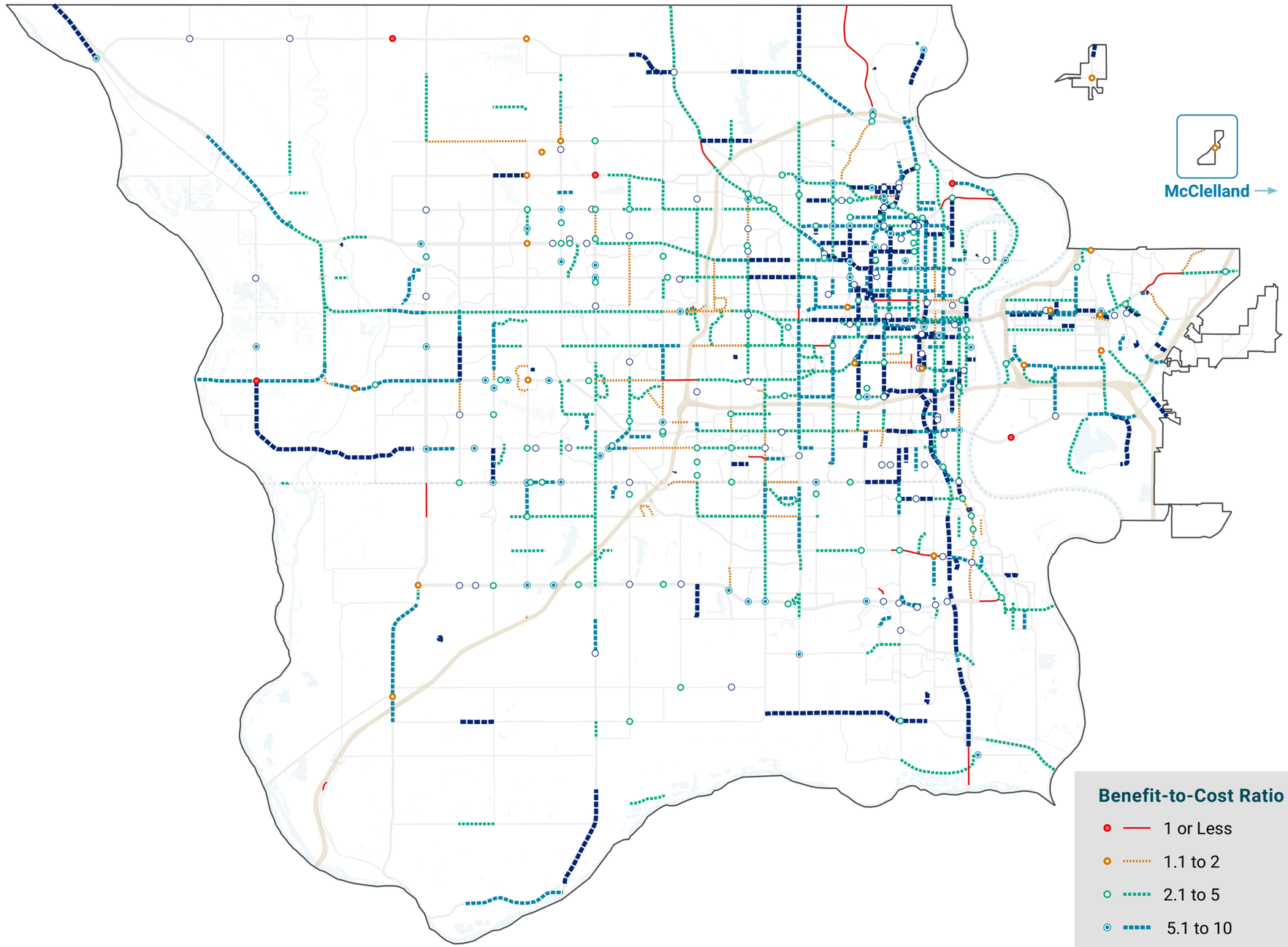
		USDOT Discretionary Grants BCA Method	NDOT HSIP BCA Method	IDOT Safety Programs BCA Method
Benefits Calculations	**Urban intersection crash assignment**	All crashes within 250 ft of intersection	Crashes within 0.05 mi (264 ft) of intersection AND flagged as "Intersection" or "Intersection Related"	All crashes within 250 ft of intersection
	Rural intersection crash assignment	All crashes within 250 ft of intersection	Crashes within 0.1 mi (528 ft) of intersection AND flagged as "Intersection" or "Intersection Related"	All crashes within 250 ft of intersection
	Segment crash assignment	Crashes located along and within 50 ft of segment (roadway centerline) and NOT assigned to an intersection or interchange project location are assigned to the project segment		
	Crash reduction benefit (crash societal cost) calculation	Use the societal costs per **person by their KABCO injury severity** (and per vehicle for property damage) as recommended by "USDOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs" (2025 Update)[16]	Use NDOT's standard societal costs for each **crash type** and context (urban/rural) based on the severity levels of all statewide crashes of that type and context[17]	Use IDOT's standard societal costs based on the **crash severity** (KABCO scale)
	Crash history included	All reported crashes (all severity levels) from 2018-2022 in the MAPA CSAP Study Area		
Cost Calculations	**Cost**	Total upfront project cost (design, construction, CE, etc.) + Replacement costs if service life is less than 20 years + Projected annual maintenance costs over 20 years (assume 2% of construction cost annually)	Construction cost + Replacement costs if service life is less than 20 years	Construction cost + Replacement costs if service life is less than 20 years + Projected annual maintenance costs over 20 years (assume 2% of construction cost annually)
	Service Life (for calculating replacement costs)	No detailed guidance - used IDOT's recommended service life assumptions as they are generally more conservative than NDOT's	Used the service life column from NDOT's Crash Modification Factors table For countermeasures not listed in the NDOT table, used service life of countermeasures with similar scope	Used the "Service Life" sheet in IDOT's TSIP Benefit-Cost Worksheet For countermeasures not listed in the worksheet, used service life of countermeasures with similar scope

16 https://www.transportation.gov/mission/office-secretary/office-policy/transportation-policy/benefit-cost-analysis-guidance

17 https://dot.nebraska.gov/media/vpsgcssy/societal-cost-2023.pdf

CANDIDATE SAFETY PROJECT BENEFIT-TO-COST RATIO

Using USDOT Discretionary Grants BCA Method[18]



18 See USDOT's Benefit-Cost Analysis Guidance for Discretionary Grant Programs (2025 Update) - https://www.transportation.gov/mission/office-secretary/office-policy/transportation-policy/benefit-cost-analysis-guidance

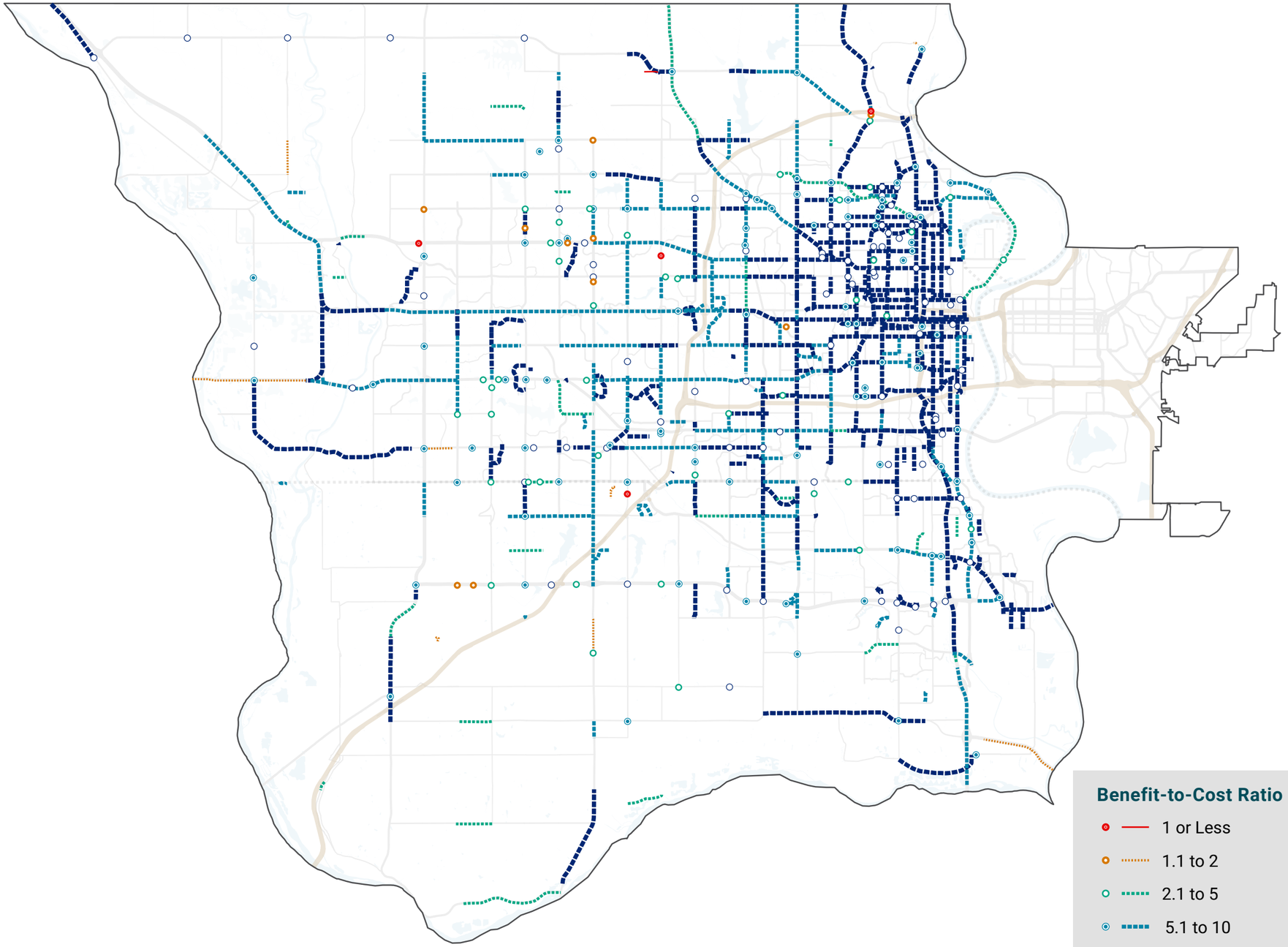
Summary by Jurisdiction

Jurisdiction	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-Cost Ratio
Omaha	697	157.2	1,463.9	6.21
Ralston	5	-	6.6	3.39
Valley	2	1.5	7.2	5.95
Bennington	1	-	-	2.13
Waterloo	2	-	2.4	6.51
Boys Town	-	-	-	n/a
Unincorporated Douglas County	64	38.1	107.1	6.74
*Ralston & Omaha	6	0.6	9.6	5.01
All Douglas County Total	**777**	**197**	**1,597**	**6.23**
Bellevue	61	61	128.8	7.48
Papillion	19	19	32.7	4.41
La Vista	11	11	14.7	3.78
Gretna	9	9	14.8	4.24
Springfield	1	1	-	2.49
Unincorporated Sarpy County	44	44	106.3	6.92
***La Vista & Papillion**	2	2	1.0	2.14
***Papillion & Springfield**	1	1	-	16.92
All Sarpy County Total	**148**	**53**	**298**	**6.24**
*Bellevue & Omaha	3	2.7	12.8	12.20
*La Vista & Omaha	6	2.0	6.0	4.31
*Omaha & Unincorporated Sarpy County	10	7.4	33.2	6.73
*Unincorporated Douglas County & Unincorporated Sarpy County	1	-	1.1	4.59
***Douglas/Sarpy Multi-Jurisdictional Total**	**20**	**12**	**53**	**6.60**
Nebraska Jurisdictions Total	**945**	**263**	**1,948**	**6.24**
Council Bluffs	77	9.8	99.8	5.30
Carter Lake	3	-	5.0	6.51
Crescent	2	0.6	0.6	14.33
McClelland	1	-	-	0.83
Iowa Jurisdictions Total	**83**	**10**	**105**	**5.35**
All Region Total	**1,028**	**273**	**2,053**	**6.19**

* *Multi-jurisdictional projects*

CANDIDATE SAFETY PROJECT BENEFIT-TO-COST RATIO

Using NDOT HSIP BCA Method[19]



19 See NDOT's HSIP Webpage - https://dot.nebraska.gov/business-center/lpa/projects/programs/hsip/

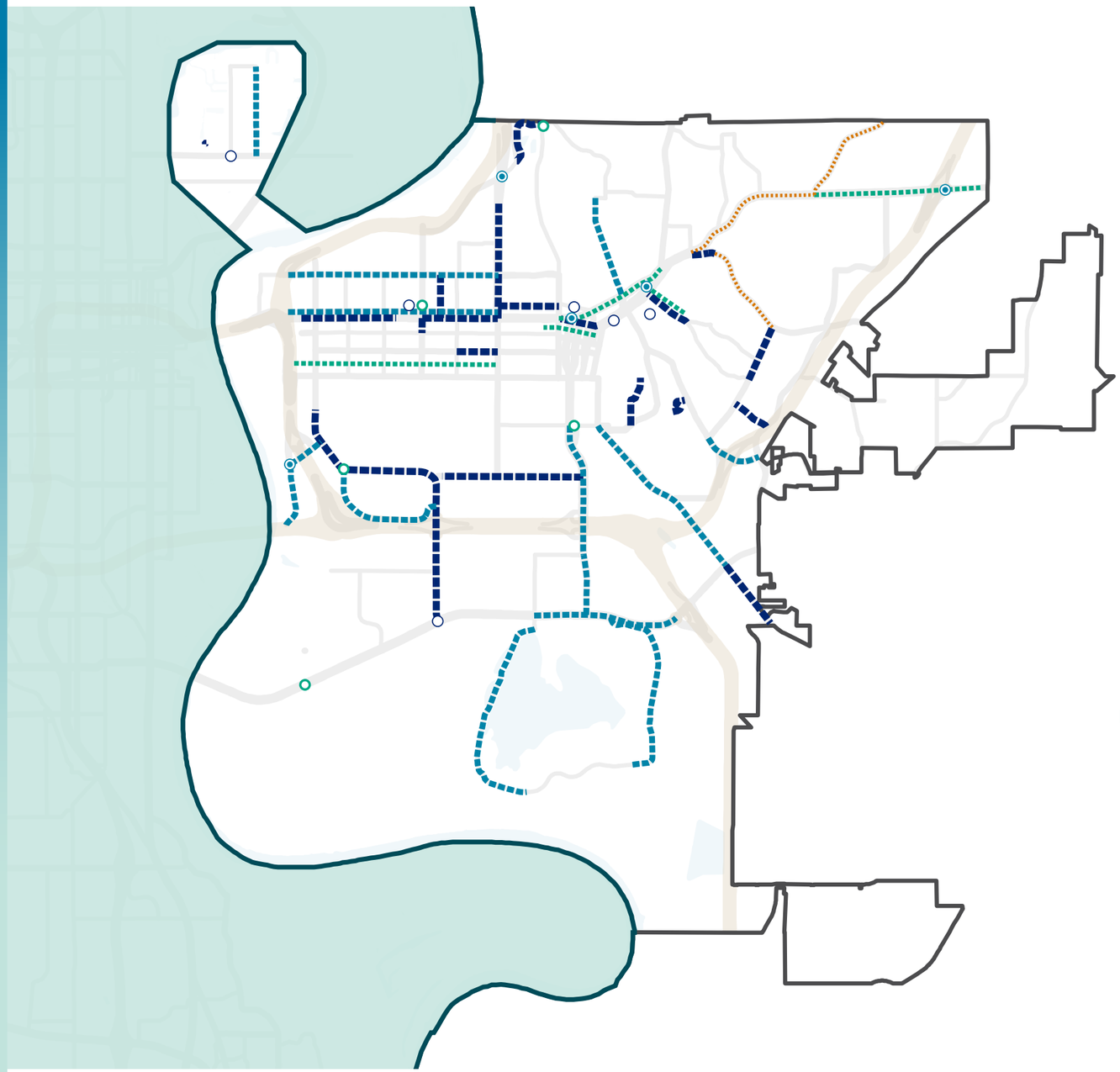
Summary by Jurisdiction

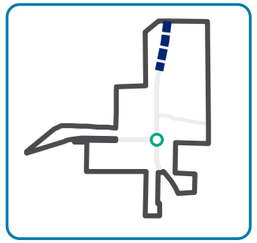
Jurisdiction	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-Cost Ratio
Omaha	697	150.4	1,447.1	12.20
Ralston	5	-	6.6	9.47
Valley	2	1.5	7.2	8.74
Bennington	1	-	-	5.67
Waterloo	2	-	2.4	6.17
Boys Town	-	-	-	n/a
Unincorporated Douglas County	64	39.8	107.8	8.14
*Ralston & Omaha	6	-	4.6	9.03
All Douglas County Total	**777**	**192**	**1,576**	**11.81**
Bellevue	61	24.5	126.0	10.51
Papillion	19	2.0	33.6	8.61
La Vista	11	-	14.7	10.18
Gretna	9	4.4	14.8	7.23
Springfield	1	-	-	7.56
Unincorporated Sarpy County	44	21.4	106.5	7.26
*Papillion & Springfield	2	-	1.0	6.44
*La Vista & Papillion	1	0.6	-	3.26
All Sarpy County Total	**148**	**53**	**297**	**8.83**
*Bellevue & Omaha	3	2.7	12.8	14.33
*La Vista & Omaha	6	2.0	6.0	7.31
*Omaha & Unincorporated Sarpy County	10	7.4	30.8	6.45
*Unincorporated Douglas County & Unincorporated Sarpy County	1	-	1.1	9.00
***Douglas/Sarpy Multi-Jurisdictional Total**	**20**	**12**	**51**	**7.58**
Nebraska Jurisdictions Total	**945**	**257**	**1,923**	**11.19**

* *Multi-jurisdictional projects*

CANDIDATE SAFETY PROJECT BENEFIT-TO-COST RATIO

Using IDOT Safety Programs BCA Method [20]





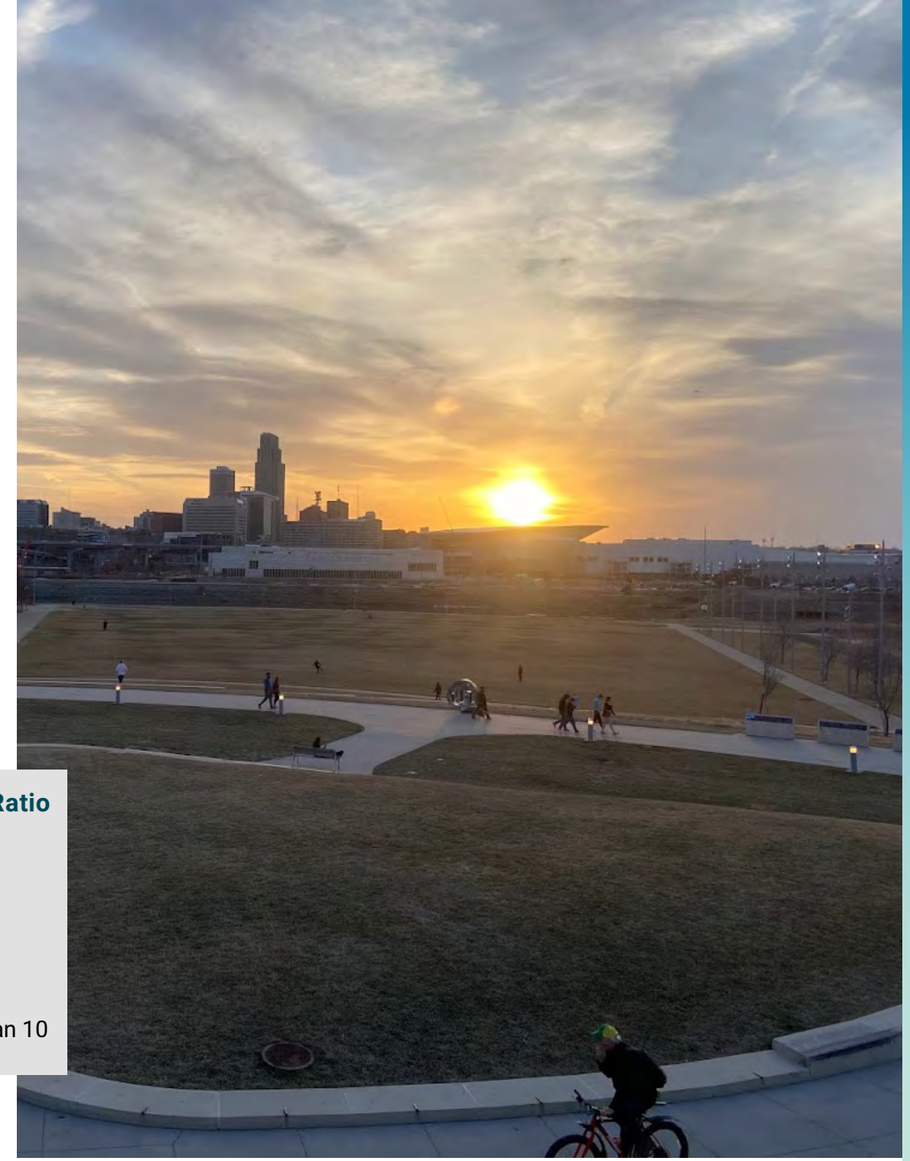
Crescent

McClelland

North

Benefit-to-Cost Ratio

- 1 or Less
- 1.1 to 2
- 2.1 to 5
- 5.1 to 10
- Greater than 10



Summary by Jurisdiction

Jurisdiction	Project Count	Lives Saved	Serious Injuries Avoided	Benefit-Cost Ratio
Council Bluffs	77	9.8	99.8	8.89
Carter Lake	3	-	5.0	17.55
Crescent	2	0.6	0.6	8.03
McClelland	1	-	-	1.50
Iowa Jurisdictions Total	**83**	**10**	**105**	**8.97**

20 See IDOT's Safety Analysis Guide - https://iowadot.gov/traffic/documents/2021-12-20-Draft-SAG-V5.pdf

COMMUNITY PRIORITY PROJECTS

The project prioritization process yielded over 1,000 intersection and segment projects that could be good candidates for federal or state safety funding. A smaller sub-set of 120 **Community Priority Projects** are highlighted on the map below and listed in more detail in **Appendix E.***

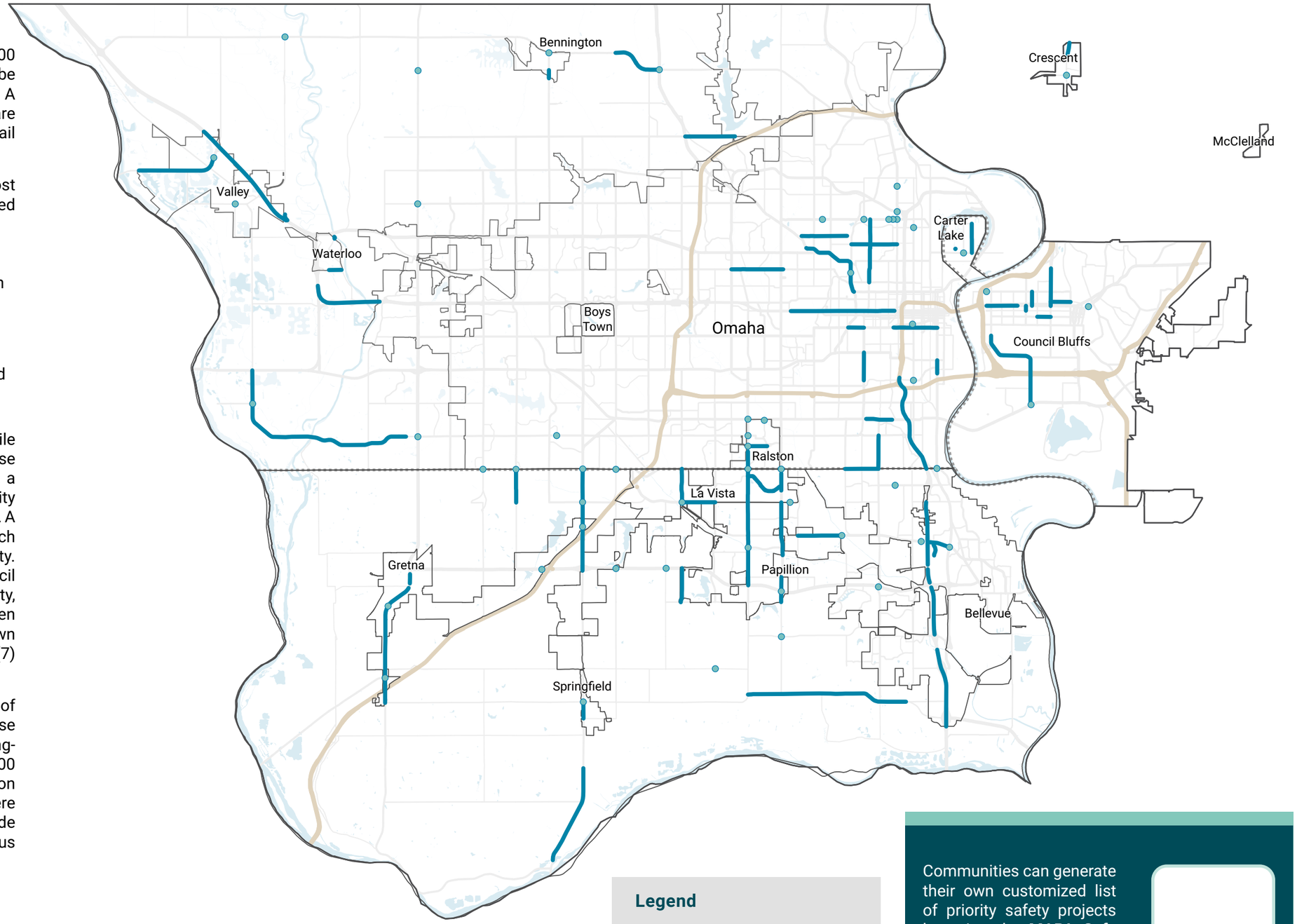
These Community Priority Projects represent the most impactful projects within each jurisdiction, as measured using the following criteria:

- USDOT-method Benefit-to-Cost Ratio
- State DOT method Benefit-to-Cost Ratio (based on which state the project is in)
- Total projected 20-year reduction in fatalities and serious injuries (KSIs)
- Total projected 20-year reduction in all injuries and fatalities.

All Candidate Safety Projects were assigned a percentile rank based on their overall ranking within each of these four criteria. The percentile ranks were converted to a score of 0.0 to 1.0 for each criteria. Thus, a "Community Priority Score" of up to 4.0 was assigned to all projects. A set of the highest scoring projects was selected for each community, based on the relative size of the community. For example, Omaha's list includes 25 projects. Council Bluffs, Bellevue, Papillion, Unincorporated Sarpy County, and Unincorporated Douglas County each have ten (10) projects. All other jurisdictions (except Boys Town and McLelland) have between two (2) and seven (7) Community Priority Projects.

This process and scoring criteria results in a set of Community Priority Projects that provide a diverse range of project types, sizes, and costs, with planning-level project costs ranging from approximately $10,000 to over $7 million (with an average of $1.34 million per project). If every Community Priority Project were implemented, the 20-year benefits would include preventing an estimated 96 deaths and 495 serious injuries, and over 5,000 minor injuries.

* *Multi-jurisdicitional projects are not listed in Appendix E, but they are highlighted on the map of Community Priority Projects at right. These include seven intersection projects and one segment project along Harrison Street (which runs along the border of Douglas and Sarpy County) and two intersection projects on 84th Street along the border between Omaha and Ralston.*



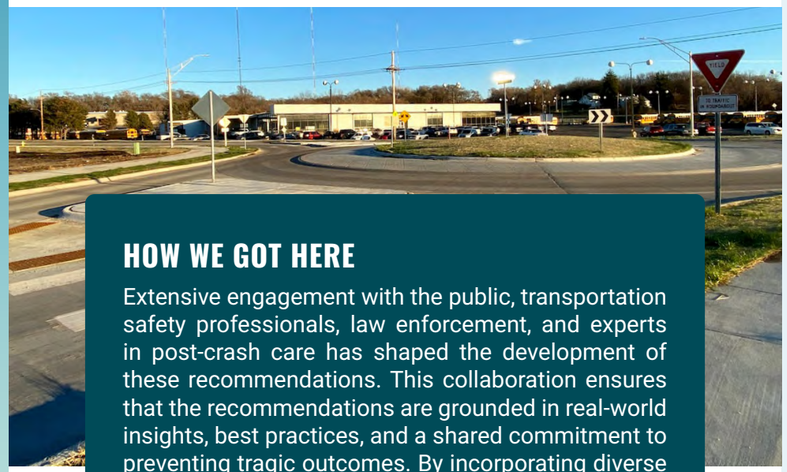
Communities can generate their own customized list of priority safety projects by using the **MAPA Safe Streets for All Project Prioritization Tool** available on MAPA's website.

Action Plan

06

RECOMMENDATIONS

The urgency of achieving the regional goal of eliminating traffic fatalities and serious injuries by 2040 cannot be overstated. **Every year, lives are lost or forever altered due to preventable traffic-related incidents, underscoring the need for immediate, concerted action.** In response, this CSAP presents a comprehensive set of recommendations designed to guide communities toward safer roads for all users.



HOW WE GOT HERE

Extensive engagement with the public, transportation safety professionals, law enforcement, and experts in post-crash care has shaped the development of these recommendations. This collaboration ensures that the recommendations are grounded in real-world insights, best practices, and a shared commitment to preventing tragic outcomes. By incorporating diverse perspectives, we can address all aspects of the Safe Systems Approach and address the key safety challenges that the region faces.

The goal of this action plan is not to prescribe a one-size-fits-all solution but to provide a robust menu of options that jurisdictions can tailor to their contexts. Whether through safety-focused street design and funding prioritization, legislation and enforcement strategies, education initiatives, or enhancements to emergency response systems, local governments and communities can choose the most effective mix of interventions that best address the traffic safety challenges they face. Together, these efforts will move us closer to the ambitious goal of a future with zero fatalities and serious injuries on our roadways by 2040.

ORGANIZATION OF RECOMMENDATIONS

The recommendations are divided into eight sections. The first six sections are based on the Safe System Approach and cover policy, education, planning, prioritization, design updates, enforcement, funding, and legislation. The last section, Safety Metrics, contains the measures of effectiveness that will assist MAPA in tracking tangible safety goals year over year. Below is an outline of the recommendation's layout:

1. **Leadership & Commitment**
   - **a.** Commitment
   - **b.** Planning Structure
   - **c.** Funding & Prioritization
2. **Post-crash Care**
3. **Safer Roads**
   - **a.** Supplemental Planning
   - **b.** Standards & Guidance Updates
   - **c.** Policy & Funding
4. **Safer Speeds**
   - **a.** Planning & Policy
   - **b.** Legislative
5. **Safer Users**
   - **a.** Legislative
   - **b.** Education & Enforcement
6. **Safer Vehicles**
7. **Data, Transparency, & Accountability**
8. **Safety Metrics**
   - **a.** Infrastructure
   - **b.** Planning
   - **c.** Legislative
   - **d.** Behavioral

STRUCTURE OF RECOMMENDATIONS

Name:

The title of each recommendation.

Recommendation:

1-2 sentences describing the action for the applicable community.

Description / Justification:

1-2 sentences providing further description and justification.

Cost:

The relative cost figure is associated with the descriptions displayed to the right.

Timeline:

Relative time frame associated with the descriptions below. All timeframes were kept under 5 years to account for (1) the urgency of eliminating traffic fatalities and (2) the plan is anticipated to be updated every 3-5 years and timelines updated.

Applicable Community:

Jurisdiction that the recommendation applies towards.

Focus Areas:

Through the crash data analysis and the CSAP engagement process, fourteen Focus Areas were identified that emerged as key issues or opportunities to address the region's safety challenges.

These focus areas were grouped into a set of five broader Focus Categories.

Cost	Description
-	Not applicable
$	Can be implemented with current staff, perhaps with training; limited costs for equipment or facilities.
$$	Requires some additional staff time, equipment, facilities, and/or publicity.
$$$	Requires extensive new facilities, staff, equipment, or publicity, or makes heavy demands on current resources.

Timeline	Description
Short-term	Complete in 6 months – 2 years
Long-term	Complete in 2 – 5 years
Ongoing	Start within 1 year with no end date
Upon Plan Adoption	Complete within 6 months

Focus Category	Focus Area
High-Risk Infrastructure	Arterial Roadways
	Signalized Intersections
	Rural Roads & Highways
	Lighting
Safety Zones	Maintenance & Work Zones
	School & Pedestrian Zones
Vulnerable Road Users	Pedestrians & Bicyclists
	Motorcyclists
	Young & Male Drivers
Contributing Crash Factors	Impairment & Inattention
	Occupant Protection
	Speed Management
Safe System	Safer Vehicles
	Post-crash Care

LEADERSHIP AND COMMITMENT

The following recommendations establish a regional commitment to a Vision Zero Resolution by 2040 and create a framework for ongoing planning, funding, and implementation of safe streets initiatives.

COORDINATION / EDUCATION

Adopt a Vision Zero Resolution

Recommendation: Adopt a Vision Zero Resolution that specifies 2040 as the date to reach zero traffic fatalities and serious injuries with interim goals that align with defined safety metrics.

Justification: A regional commitment to an ambitious target date for eliminating traffic fatalities and serious injuries creates a sense of urgency and focuses resources on achieving measurable outcomes. A clear deadline raises public awareness and supports inter-jurisdictional coordination to improve the safety of the transportation system.

COST
–

TIMELINE
Upon Plan Adoption

APPLICABLE PARTIES
All

LC-01

COORDINATION / EDUCATION

Safety Pledge

Recommendation: Create an online safety pledge where community members can pledge to practice safe driving habits and support funding for regional safety initiatives, demonstrating your commitment to protecting all road users.

Justification: An individual safety pledge asks residents to take personal responsibility for their actions while fostering a culture of safety. Such pledges can generate public awareness and support for safety programs and policies at the regional level.

COST
–

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

LC-02

POLICY / PLANNING

Annual Safety Summit

Recommendation: Plan an Annual Safety Summit to emphasize and reward safety successes and focus training to build the safety culture.

Justification: An annual safety summit would unite member communities with safety advocates and champions from different focus groups to address pressing safety challenges and celebrate safety successes. MAPA's leadership in organizing the event would provide the opportunity to make a state of safety address and award model projects and practices with recognition that may breed further action. The recommended safety summit could engage various invested organizations such as LTAP, local universities, ASCE, ITE, etc.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

LC-04

POLICY / PLANNING

Establish an ongoing Safe Streets for All Committee

Recommendation: Re-establish the purpose, goals, and vision for the MAPA Safety Committee, including a schedule of meetings beyond plan adoption. Some responsibilities could include: (1) regularly assembling transportation and safety agencies to discuss safety priorities and progress, (2) hosting a regional safety summit, (3) standardizing safety performance measures across agencies, (4) sharing best practices and successes across the MPO, or (5) reviewing fatal crashes within the region.

Justification: An expanded or re-vamped Safety Committee would help provide direction for key safety initiatives and foster ideas that reflect the community's needs and desires.

COST
–

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

LC-05

COORDINATION / EDUCATION

Public-Private Partnerships

Recommendation: Pursue public-private partnerships with advocacy groups, community organizations, non-profits, neighborhood organizations, and foundations to address local safety concerns.

Justification: Collaborations between public entities and private organizations can harness various resources and expertise to create community-focused solutions. Since public safety is a concern for many community foundations, pursuing grants from these organizations can support safety initiatives. Additionally, private entities often have greater capacity to advocate for legislative priorities, enhancing the effectiveness of public safety efforts.

COST
–

TIMELINE
Short-term

APPLICABLE PARTIES
All

LC-03

POLICY / PLANNING

MAPA Staff Capacity Building

Recommendation: Designate a MAPA transportation safety coordinator or director. The coordinator or director should implement actions within MAPA's control and are consistent with the CSAP. The appointment of a safety coordinator should follow the development of a financial plan to identify the funding for this role and whether it would be a newly opened position or a re-organization of existing staff responsibilities.

Justification: A dedicated MAPA safety coordinator would manage implementation and updates to the Safety Action Plan. While MAPA has identified a need to expand efforts in this area, the availability of resources, staff, and time is currently limited.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

LC-06

FUNDING & PRIORITIZATION

Safety Specific Funding

Recommendation: Increase the share of projects in Capital Improvement Program (CIP) updates (including One- and Six-Year Street Improvement Plans) and Transportation Improvement Program (TIP) budgets, whose primary focus is safety, by at least 0.75% of the total budget each year.

Justification: By targeting funding for transportation projects that provide the greatest safety benefits, communities can maximize their reductions in fatal and serious injury crashes.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
Jurisdictions >10,000 People

LC-07

FUNDING & PRIORITIZATION

MTP Project Identification and Prioritization

Recommendation: Modify the long-range Metropolitan Transportation Plan (MTP) project identification and prioritization to heavily emphasize CSAP projects.

Justification: The MTP brings a comprehensive view to transportation needs – identifying many corridors that are planned for future projects; projects that could advance a Safe System Approach. Inclusion of a project in the MTP is necessary for it to be eligible for federal funding, which will often be needed to implement CSAP projects.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

LC-08

FUNDING & PRIORITIZATION

TIP Project Identification

Recommendation: Modify the Transportation Improvement Program (TIP) process to allocate federal funding to Safe System projects and activities.

Justification: The project identification and prioritization work previously noted, along with potential TIP updates identified, would increase focus on eliminating fatalities and serious injuries, promoting safe roads and users, developing systemic solutions, and exploring emerging safety trends. Including safety project identification efforts in TIP creation will help prioritize CSAP projects for funding.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

LC-09

FUNDING & PRIORITIZATION

Local CIP Project Identification and Prioritization

Recommendation: As part of the annual capital improvement program and One- and Six-Year Street Improvement Plan updates, develop and apply safety-focused criteria for transportation project identification and prioritization. The criteria should include fatal and serious injury crash reductions.

Justification: A jurisdiction's CIP outlines its planned infrastructure improvements over the next six-year period. The CIP process provides an opportunity to prioritize projects that align with a community's safety goals

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

LC-10

POST-CRASH CARE

A Safe System has multiple layers of protection for road users, and the post-crash care provided by first responders and trauma response teams is the critical last line of defense against a crash outcome becoming more serious or resulting in a fatality. The following recommendations highlight opportunities for increased collaboration and communication, as well as infrastructure and wayfinding that can enhance emergency response efficiency and safety.

COORDINATION / EDUCATION

Trauma and EMS Collaboration and Coordination

Recommendation: Foster coordination between EMS, fire departments, police, and hospitals to collaborate on safety solutions and the state of the practice. This can be done through existing groups such as traffic incident management or statewide trauma board, or via a region-wide safety summit.

Justification: Regular communication among Post-crash Care professionals ensures a unified and efficient response to traffic incidents, enhancing overall safety and care. Collaborating on best practices helps provide continuous improvement in emergency response protocols.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Post-crash Care

PCC-01

STANDARDS & GUIDANCE UPDATE

Emergency Pull-Off Areas

Recommendation: Create designated areas for vehicles involved in crashes along high-speed roads. Use a data-driven approach and engage with EMS providers to identify the locations with the highest impact.

Justification: Emergency pull-off areas provide safe spaces for vehicles involved in crashes, reducing the risk of secondary collisions and ensuring safer conditions for responders and motorists. Building on Nebraska DOT's initial efforts along I-80, expanding these areas through data-driven analysis and collaboration with EMS providers will maximize their impact on high-speed road safety.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >10,000 People
States of Nebraska and Iowa

FOCUS AREA(S)
Post-crash Care

PCC-02

STANDARDS & GUIDANCE UPDATE

Enhanced Wayfinding

Recommendation: Coordinate with EMS providers, especially in outlying rural communities, to establish clear signage and mile markers to assist responders and motorists in identifying crash locations. Additionally, wayfinding directing volunteer EMS and the general public to level 1 and 2 trauma centers should be evaluated.

Justification: Enhanced wayfinding improves emergency response efficiency by helping first responders and motorists quickly identify crash locations, especially in rural or remote areas with sparse landmarks. Clear signage and guidance for accessing the appropriate level of trauma centers ensure timely and accurate navigation.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Post-crash Care
Rural Roads & Highways

PCC-03

DATA MANAGEMENT

EMS and Hospital Data

Recommendation: Coordinate with state departments and regional trauma centers to gather, compile, analyze, and share anonymized EMS and hospital data related to motor vehicle crashes to policymakers, safety professionals, and jurisdiction leaders.

Justification: Studies have shown that longer EMS response times are associated with higher rates of motor vehicle crash mortality, highlighting the importance of timely medical intervention. With access to comprehensive data from both EMS and hospital sources, policymakers and safety professionals can identify critical factors influencing crash outcomes and develop targeted interventions to reduce fatalities.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Post-crash Care

PCC-04

DATA MANAGEMENT

Digital Alerting Technology

Recommendation: Equip DOT, police, fire, and EMS roadside vehicles with digital alerting technology to provide early warnings to approaching drivers, reducing crash risks. Coordinate agency efforts to ensure effective implementation and integration.

Justification: Digital alerting technology differs from all past methods utilized to notify a driver of an approaching hazard by bringing the alert to within the vehicle to gain the drivers attention. Digital alerting has been found to be an effective countermeasure at reducing motorist speed and hard braking events near roadside incidents.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Post-crash Care
Maintenance & Work Zones

PCC-05

SAFER ROADS

The physical characteristics and design of roadways can influence the likelihood and severity of crashes. Many communities across the region and nationally have implemented plans, policies, standards, and specific projects that have resulted in safer streets. The following Safer Roads recommendations present a range of options, drawing from local and national examples, which are grouped into the following sub-types: supplemental planning; standards and guidance updates; and policy and funding.

POLICY / PLANNING

Safety Lighting Action Plan

Recommendation: Develop and implement a Safety Lighting Action Plan to enhance roadway illumination, aiming to reduce nighttime traffic fatalities and serious injuries.

Justification: Adequate lighting is a proven countermeasure for improving traffic safety. Enhanced illumination at intersections, pedestrian crossings, and high-risk areas increases visibility for all road users, thereby reducing the likelihood of crashes during low-light conditions. FHWA provides guidance and resources for creating plans and overall best practices.

COST
$$ $$ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Lighting
Pedestrians & Bicyclists

SR-01

POLICY / PLANNING

Quick-Build Funding Program

Recommendation: Develop a funding program for quick-build or demonstration safety improvements. Include monitoring and data gathering to assess the effectiveness of these projects, allowing for improvements, replication, or making them more permanent.

Justification: Quick-build projects are easily adjustable safety improvements typically utilizing paint, posts, signage, and other widely available, low-cost materials. Examples of quick-build projects include installing intersection turn modifications (e.g., tightening turn radii), traffic calming/lane reconfigurations through paint and posts, and midblock crossing improvements with high-visibility crosswalk markings.

COST
$$ $$ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Speed Management
Pedestrians & Bicyclists

SR-02

POLICY / PLANNING

Quick-Build Regional Toolkit

Recommendation: Create a regional toolkit for the identification, prioritization, design, and implementation of quick-build projects.

Justification: A regional quick-build assistance program could be developed to assist smaller communities that lack in-house resources for planning and designing quick-build and demonstration projects.

COST
$$ $$ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Speed Management
Pedestrians & Bicyclists

SR-03

POLICY / PLANNING

Safe Routes to School

Recommendation: Every school should be covered by a Safe Routes to School (SRTS) plan that ensures safe pick-up and drop-off and encourages independent walking and bicycling to school. Priority should be given to elementary schools and those in denser built environments with designated walking-only distances. SRTS plans should be updated at least every 10 years.

Justification: The Safe Routes to School (SRTS) program is a national initiative that enhances the safety of students walking and biking to school by assessing and improving school area infrastructure, with federal funding available for plan development. Implementing SRTS programs has led to a 10%–20% reduction in severe pedestrian and cyclist crashes near schools and has increased active transportation among students, thereby decreasing vehicle traffic during school hours.

COST
$$ $$ $$

TIMELINE
Long-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
School & Pedestrian Zones
Pedestrians & Bicyclists

SR-04

POLICY / PLANNING

Sidewalk and Trail Inventory and Prioritization

Recommendation: Inventory and develop a prioritization framework for missing sidewalks/trails or sidewalks/trails in poor condition throughout the Metro Area. Additionally, information such as sidewalk width, trees, and pedestrian lighting should be collected

Justification: Conducting a comprehensive inventory and prioritizing gaps in the sidewalk network are crucial steps to enhance pedestrian safety and improve transportation system utility. While some jurisdictions have made significant progress with a GIS inventory of sidewalk gaps, new methods utilizing LiDAR data and deep learning algorithms have been successfully implemented in other jurisdictions to efficiently update and maintain sidewalk inventories.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

FOCUS AREA(S)
Pedestrians & Bicyclists
Lighting

SR-05

POLICY / PLANNING

Sidewalk and Trail Snow Removal Plan

Recommendation: Develop and implement targeted snow removal strategies that prioritize critical pedestrian and cyclist pathways, such as bus routes, Safe Routes to School, bike facilities, trails, and areas identified as high-risk for pedestrian injuries.

Justification: Focusing snow removal on essential routes ensures safe access for vulnerable road users, promoting overall community safety during winter months. Establishing volunteer-based programs can support snow removal efforts for residents unable to clear their sidewalks, including seniors and individuals with disabilities.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

FOCUS AREA(S)
School & Pedestrian Zones
Pedestrians & Bicyclists

SR-06

POLICY / PLANNING

Intersection Control Evaluation Policy

Recommendation: Adopt an Intersection Control Evaluation (ICE) policy and update at least every 10 years. Jurisdictions should adopt an ICE process to evaluate the safety, traffic and transit operations, pedestrian and bicycle access, cost, right-of-way impact, and other factors. A benefit-to-cost ratio will be utilized to select the most appropriate control type. The ICE process and evaluation effort can be waived for improvements that choose roundabouts from the project's outset.

Justification: Implementing an ICE process enables jurisdictions to make data-driven decisions, consider all viable intersection alternatives, and select cost-effective solutions, ultimately enhancing overall road safety. ICE reports should be conducted for all intersections in capital improvement projects and for collector and arterial street intersections that are constructed or reconstructed as part of private development projects.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >10,000 People
Douglas County Developing Areas

FOCUS AREA(S)
Signalized Intersections
Arterial Roadways

SR-07

POLICY / PLANNING

Access Management / Traffic Impact Study Policy

Recommendation: Adopt an Access Management / Traffic Impact Study Policy and update it at least every 10 years. the policy should (1) incorporate safety as a core evaluation criterion, (2) a crash analysis should be performed in alignment with Safe System principles, (3) all improvements constructed in the public right of way by private entities should demonstrate a safety benefit through the use of the Highway Safety Manual methodology, and (4) jurisdictions should remove the minimum operational level of service standards.

Justification: Implementing this policy through public-private partnerships will leverage private-sector funding to enhance transportation safety measures. Integrating safety countermeasures at the project's inception ensures that developments are designed with a proactive approach to crash prevention. Establishing regional standards holds all developers accountable, promoting consistency and uniformity in identifying and analyzing traffic impacts generated by local development and land use changes. WE-STEP's subregional standard is a good example to follow.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

FOCUS AREA(S)
Arterial Roadways
Signalized Intersections

SR-08

POLICY / PLANNING

Complete Streets Policy

Recommendation: Adopt a Complete Streets Policy and update at least every 10 years.

Justification: Complete Streets (CS) is an approach to planning, designing, and building streets that enables safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. A CS Policy outlines an agency's formal commitment to ensuring the implementation of safe, accessible streets for all users, and includes specific steps for implementation. A CS Policy is often accompanied by a design guide and/or updates to a city's existing street design criteria to ensure implementation in all public and private street projects.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

FOCUS AREA(S)
Arterial Roadways
Speed Management

SR-09

POLICY / PLANNING

Sidewalk Maintenance Policy

Recommendation: Evaluate and enact policies that accelerate maintenance and development of sidewalk networks, such as a point-of-sale sidewalk repair program that requires property owners to repair sub-standard sidewalks at the time their property is sold.

Justification: Sidewalk maintenance policies such as point-of-sale repair programs can vastly accelerate buildout of a quality sidewalk network and minimize the financial burden of repairs by building them into the cost of selling a property.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >10,000 People

FOCUS AREA(S)
Pedestrians & Bicyclists
School & Pedestrian Zones

SR-10

POLICY / PLANNING

Road Safety Audits

Recommendation: Develop regional guidance for incorporating road safety audits and safety analysis into corridor studies, traffic impact analysis, and transportation planning efforts.

Justification: Road Safety Audits follow a formal process utilizing a multidisciplinary group that reviews street safety aspects and makes recommendations. Use of RSAs has shown up to 60% decrease in crashes where recommendations were implemented.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Arterial Roadways
Speed Management

SR-11

POLICY / PLANNING

Local Rural Road Suface Shoulders

Recommendation: Apply for Federal Highway Safety Improvement Program (HSIP) funding for Local Rural Road Surface Shoulders to add surface shoulders on eligible roadways within Douglas and Sarpy Counties.

Justification: NDOT has a systemic safety program to add surface shoulders on rural local roads to help reduce roadway departure crashes. HSIP funding is available to widen rural roads to 28-feet total width with shoulder in each direction. No safety analysis is required, and new surface shoulders can be constructed using a mainline mill/fill project for pavement continuity.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
Counties in Nebraska

FOCUS AREA(S)
Rural Roads & Highways
Imparirment & Inattention

SR-12

STANDARDS & GUIDANCE UPDATE

Regional Trail Crossing Standards

Recommendation: Develop regional standards for at-grade crossings of trails and shared-use pathways. The standards should be based on national guidance such as FHWA's "Safe Transportation for Every Pedestrian (STEP): Improving Visibility at Trail Crossings" guide.

Justification: As trails increasingly incorporate at-grade street crossings, it's essential to implement safety measures that enhance visibility, reduce vehicle speeds, and improve traffic control. Developing a regional guide in collaboration with all relevant agencies can standardize the application of these proven safety countermeasures across the entire trail network.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
Counties in Nebraska

FOCUS AREA(S)
Pedestrian & Bicyclists
Arterial Roadways

SR-13

STANDARDS & GUIDANCE UPDATE

Regional Roundabout Guidance

Recommendation: Develop standard guidance for prioritizing roundabouts, based on regional and national best practices, that describe (1) traffic volume thresholds, (2) design considerations, and (3) maintenance of traffic for roundabouts.

Justification: Roundabouts reduce fatal crashes by more than 90% and all other crashes by more than 60%. They are the best tool we have to prevent roadway deaths. Regional guidance that helps jurisdictions easily identify locations for roundabouts, prioritize their implementation, and create standard designs will be key to reaching zero. MassDOT has developed nation-leading guidance that can used as a model and followed.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Signalized Intersections
Maintenance & Work Zones

SR-14

STANDARDS & GUIDANCE UPDATE

Street Design Criteria Updates

Recommendation: Update local street design standards documents to incorporate Safe Systems and Complete Streets design principles, including reviewing design parameters for opportunities to: reduce minimum roadway and lane widths where appropriate, reduce the recommended Design Speeds and Posted Speeds, increase the level of separation of bike facilities along higher street classifications, and set sidewalk design standards.

Justification: Most local jurisdictions have published street design standards that guide the design, review, and construction of all improvements in the public right-of-way. Safety-focused revisions to the design standards are essential to implementing a safe systems approach to the design of newly constructed streets and improvements along existing streets.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Speed Management
Arterial Roadways

SR-15

STANDARDS & GUIDANCE UPDATE

State DOT Design Relaxation

Recommendation: Coordinate with the State Department of Transportation on relaxing design standards for local jurisdictions to implement safety countermeasures recommended in the Vision Zero Toolbox.

Justification: Collaborating with state DOTs to relax design standards that often prioritize high-speed, rural, or regional mobility enables local engineers to apply best practices in urban contexts to prioritize safety to the unique challenges of urban environments.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Speed Management
Arterial Roadways

SR-16

STANDARDS & GUIDANCE UPDATE

Standard Details for Safety Countermeasures

Recommendation: Create standard design details and construction specifications for specific safety countermeasures (e.g., mini-roundabouts, curb extensions/bulb-outs, rectangular rapid flashing beacons, raised crossings, street tree planters, and protected bike lanes), including both their permanent and quick-build paint/post applications.

Justification: All new and upgraded existing signals should be required to install retroreflective backplates, intelligent transportation systems (ITS) sensors, pedestrian countdown timers, and high-visibility crosswalk striping and stop bars.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Speed Management
Pedestrians & Bicyclists

SR-17

STANDARDS & GUIDANCE UPDATE

Work Zone Training and Standardization

Recommendation: Develop or coordinate a standard work zone policy that matches national best practices, aligns with Public Right-of-Way Accessibility Guidelines (PROWAG) standards, and provides consistency across the MAPA region. These standards should be applied to and followed by public agencies and private contractors.

Justification: This policy is critical for keeping workers safe as they perform the essential task of maintaining our roads, ensuring they can do their jobs without unnecessary risks. Establishing consistent safety expectations across the region reduces confusion and enhances compliance, creating safer environments for both workers and the traveling public. Additionally, this standardized approach facilitates better coordination between public works and other internal departments or contractors, such as utilities and landscaping.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Maintenance & Work Zones

SR-18

STANDARDS & GUIDANCE UPDATE

Systemic Signal Improvement Standards

Recommendation: All signals at High-Priority Intersection locations should consider installing retroreflective backplates, ITS sensors, pedestrian countdown timers, high-visibility crosswalk striping / stop bars, and leading pedestrian intervals.

Justification: Systemic signing and visibility improvements at signalized intersections have been shown to reduce fatal and injury crashes by 15% to 25%.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Signalized Intersections
Pedestrians & Bicyclists

SR-19

SAFER SPEEDS

Speed is a key factor in traffic fatalities and serious injuries, and it is often the deciding factor that separates these from minor injury or property damage crashes.

POLICY / PLANNING

Dynamic Speed Display / Feedback Signs

Recommendation: Expand deployment of speed feedback signs (temporary/mobile or permanent) in locations determined through a data-driven process, targeting locations with high rates of speed-related crashes, a high rate of prevailing speeds, a high number of pedestrian and bicycle users, and based on public input.

Justification: Speed feedback signs dynamically show the driver's speed alongside the posted speed limits and have been shown to slow overall speeds where deployed. They also can help to educate drivers on the importance of safe speeds.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Speed Management
School & Pedestrian Zones

SS-01

POLICY / PLANNING

20 mph Residential Speed Limit

Recommendation: Develop a draft policy and strategy roadmap for local agencies to adopt a 20-miles-per-hour speed limit ("20 is Plenty") on residential streets, prioritizing school and pedestrian zones.

Justification: A growing body of research shows that lowering speed limits from 25 mph to 20 mph can significantly reduce speeding and crashes, even without increased enforcement or street design changes.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Speed Management
School & Pedestrian Zones

SS-02

POLICY / PLANNING

Iowa Automated Enforcement Implementation

Recommendation: Communities should prioritize automated enforcement camera installation at a limited set of locations or along a corridor with the highest concentration of red-light running or speeding-related fatal and serious injury crashes, where the potential for design or traffic-control-related solutions is limited.

Justification: AE cameras are one of the most effective ways to reduce red-light running and excessive speeding, thus reducing serious injuries and fatalities. It is used worldwide and in the United States.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
Jurisdictions in Iowa

FOCUS AREA(S)
Signalized Intersections
Speed Management

SS-03

POLICY / PLANNING

Trafic Calming Policy

Recommendation: Implement and update a comprehensive Traffic Calming Policy every 10 years that effectively reduces vehicle speeds and promotes a safe environment for pedestrians and cyclists. The policy should emphasize a systematic approach to identify eligible locations and prioritize interventions based on factors like traffic volume and speed.

Justification: Implementing traffic calming measures reduces vehicle speeds, decreases motor-vehicle collisions, and improves safety for all road users. These policies should incorporate a variety of physical measures, such as speed bumps, traffic circles, and raised crosswalks (referencing the countermeasure toolbox), thereby promoting safer environments for pedestrians and cyclists.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Speed Management
Pedestrians & Bicyclists

SS-04

POLICY / PLANNING

Speed Management Plan

Recommendation: Develop a speed management plan (SMP) and update it at least every 10 years. Key elements of the speed management plan should include (1) jurisdiction-wide data collection and analysis, (2) review of statutory speed limits, (3) traffic calming strategies, (4) enforcement strategies, and (5) public education and awareness.

Justification: A SMP systematically reviews posted statutory speed limits and actual prevailing driver speeds across an entire community. SMPs also include a review of policies used in setting speed limits and making recommendations to reduce speed limits in specific locations, identifying speed management areas, and designating areas for traffic calming implementation. FHWA provides guidance on creating plans and other resources.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
Jurisdictions >1,000 People

FOCUS AREA(S)
Speed Management
Arterial Roadways

SS-05

LEGISLATIVE

Nebraska Speed Safety Camera Legislation

Recommendation: Support state legislation allowing local jurisdictions to utilize automated enforcement to address speeding in their communities. Legislation can be drafted, if necessary, to limit implementation to school, pedestrian, and work zones.

Justification: Using Speed Safety Cameras is one of the most effective ways to reduce excessive speeding, thus reducing serious injuries and fatalities. Nebraska law prohibits automated speed and red-light running enforcement. Twenty-two (22) states currently use Speed Safety Cameras: Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Louisiana, Maryland, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Virginia, Washington.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
State of Nebraska

FOCUS AREA(S)
Signalized Interactions
Speed Management

SS-06

LEGISLATIVE

Nebraska Red Light Running Camera Legislation

Recommendation: Support state legislation that allows local jurisdictions to utilize cameras to automate enforcement of red light running.

Justification: Red-light running crashes are usually severe, and cameras are shown to reduce injury crashes and fatalities by 35%-50%. Nebraska law prohibits red-light running enforcement. Twenty-three (23) states currently use Red-Light Running Cameras: Alabama, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Illinois, Iowa, Louisiana, Maryland, Missouri, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Virginia, and Washington.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
State of Nebraska

FOCUS AREA(S)
Signalized Intersections
Speed Management

SS-07

LEGISLATIVE

Iowa Automated Enforcement Legislation

Recommendation: Support state legislation that revises Iowa's legislation regarding Safety Speed Cameras and Red-Light Running Cameras. The revisions should allow communities of less than 20,000 people to issue citations using automated enforcement (AE) and set more transparent and reasonable criteria for IDOT review and approval of AE locations, allowing for its use wherever it is determined to be an appropriate means of addressing speeding and fatal and injury crashes.

Justification: AE cameras are one of the most effective ways to reduce red-light running and excessive speeding, thus reducing serious injuries and fatalities. A new 2024 law severely limits AE in Iowa by requiring that it be "necessary" and the "least restrictive" means for addressing critical safety issues at a location. It also restricts communities with a population of less than 20,000 from using AE cameras from issuing citations (only warnings).

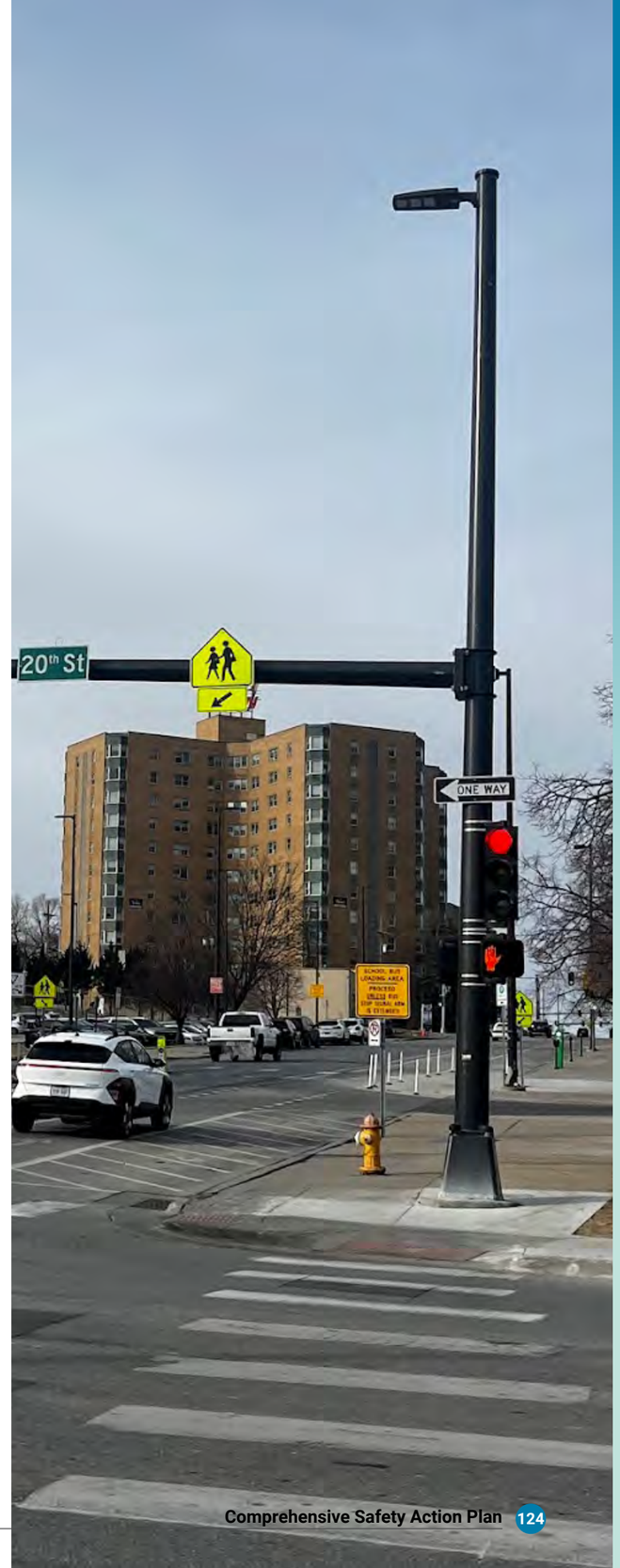
COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
State of Iowa

FOCUS AREA(S)
Signalized Intersections
Speed Management

SS-08



SAFER USERS

The following recommendations aim to promote safe and responsible behaviors among road users and foster conditions that prioritize their safe arrival at their destinations.

LEGISLATIVE

Statewide Distracted Driving Legislation

Recommendation: Support state legislation that would ban and allow primary enforcement against hand-held cell phone use and text messaging for all drivers, electronic entertainment devices with video screens within the driver's view, and school bus drivers from text messaging or using electronic devices except in an emergency.

Justification: IIHS-cited research showed that Oregon saw an 8% reduction in all crashes after enacting statewide distracted driving legislation, compared with other states that already had similar legislation during the same time period.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
States of Nebraska and Iowa

FOCUS AREA(S)
Impairment & Inattention

SU-01

LEGISLATIVE

Statewide Mandatory Safety Belt Use Legislation

Recommendation: Support state legislation that would adopt and enforce primary safety belt use laws that apply to all occupants in all seating positions.

Justification: Nebraska currently has a secondary enforcement seat belt law, meaning that a driver can only be cited for not wearing a seat belt if pulled over for another violation. Nebraska's seat belt usage rate of 77% is the third lowest in the country. In contrast, Iowa has primary enforcement seat belt law, and its seat belt usage rate is almost 96%, one of the country's highest rates. The national average is 92%. Primary seat belt laws increase seat belt usage and decrease the severity of traffic crashes. Proper seatbelt restraint reduces the risk of injury by 50% and death by up to 65%.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
State of Nebraska

FOCUS AREA(S)
Occupant Protection

SU-02

LEGISLATIVE

Statewide Primary Enforcement Motorcycle Helmet Legislation

Recommendation: Support state legislation that requires the use of DOT-certified helmets by motorcycle riders of all ages. This law should be a primary offense.

Justification: Motorcycle helmet usage is the best way to decrease fatal motorcycle crashes. Unhelmeted riders are 14 times more likely to be killed or seriously injured in a crash in the MAPA region. Nebraska and Iowa do not require motorcyclists over the age of 18 to wear helmets.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
States of Nebraska and Iowa

FOCUS AREA(S)
Signalized Intersections
Speed Management

SU-03

LEGISLATIVE

Statewide Motorcycle Training Legislation

Recommendation: Support state legislation that requires motorcycle operator training for minors, novices, and re-entry riders by qualified instructors.

Justification: Motorcyclists are 220 times over-represented in fatal and serious injury crashes compared to other modes of travel in the MAPA region. Comprehensive training equips riders with critical skills and knowledge, promoting safer riding behaviors and better hazard perception. After Missouri repealed its helmet law in 2020, there was a 47% increase in motorcycle fatalities between 2020-2023.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
States of Nebraska and Iowa

FOCUS AREA(S)
Signalized Intersections
Speed Management

SU-04

LEGISLATIVE

Statewide .05% BAC Limit Legislation

Recommendation: Support laws setting the Blood Alcohol Content (BAC) level for driving under the influence (DUI) at .05% for drivers not already covered by stricter standards.

Justification: FHWA, NHTSA, NTSB, and other leading safety organizations recommend .05% BAC as the BAC limit for DUI enforcement. After Utah lowered its limit from 0.08% to 0.05%, the fatal crash rate dropped by 19.8% in 2019, the first year under the lower legal limit.

COST
-

TIMELINE
Long-term

APPLICABLE PARTIES
States of Nebraska and Iowa

FOCUS AREA(S)
Signalized Intersections
Speed Management

SU-05

COORDINATION / EDUCATION

Enhanced Impairment Enforcement

Recommendation: Coordinate a multi-agency driver impairment law enforcement campaign using alternate tactics such as high-visibility saturation patrols and publicized sobriety checkpoints. Impairment enforcement locations should be determined through a data-driven process, considering locations with high rates of impairment-related crashes, a high number of pedestrian and bicycle users, the land use context, and public input.

Justification: Enforcement effectively removes impaired drivers from the roads when paired with effective criminal justice and rehabilitation programs. The high-priority network tool can help enforcement officers target specific locations.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
State of Nebraska

FOCUS AREA(S)
Impairment & Inattention

SU-06

COORDINATION / EDUCATION

Positive Community Norms Marketing Campaign

Recommendation: Implement a Positive Community Norms (PCN) marketing campaign targeting young male drivers to promote safe driving behaviors, such as adhering to speed limits, consistent seat belt use, and avoiding driving under the influence. Engage influential community members from this demographic to serve as safety champions, reinforcing positive behaviors and correcting misperceptions about peer conduct.

Justification: The Montana Institute's PCN framework emphasizes that while most individuals engage in healthy behaviors, misperceptions about peer actions can lead to increased risk-taking. By highlighting the prevalence of safe driving practices and leveraging respected figures within the young male community, such campaigns can correct false norms, reduce risky behaviors, and enhance overall traffic safety.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Occupant Protection

SU-07

COORDINATION / EDUCATION

Transit Access for Vulnerable Populations

Recommendation: Coordinate with Metro Transit and organizations serving vulnerable populations in the MAPA region to provide increased transit access, understand the existing system, and strategize for further improvements.

Justification: Only 10% of the homeless population in the Omaha-Council Bluffs metro area has access to a vehicle. Vulnerable population service providers are unable to meet their communities' transportation needs, so they heavily rely on walking. MAPA's Coordinated Transit Committee can play a key role in implementing this recommendation.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Young & Male Drivers
Impairment & Inattention

SU-08

SAFER VEHICLES

These recommendations focus on updating agencies' vehicle fleets to incorporate features that help to avoid or reduce the severity of crashes, as well as training programs for drivers and supporting the use of public transit.

COORDINATION / EDUCATION

Support Transit Use Expansion

Recommendation: Local jurisdictions should support transit ridership by ensuring that all street improvement projects located along or intersecting with a bus route incorporate transit stop improvements as well as first-and-last mile connection improvements (integration with sidewalks, bike lanes, and pedestrian crossings). Projects should also consider ways to enhance transit operations and travel times through strategies such as transit signal priority (TSP) or dedicated bus lanes.

Justification: Public transit is the safest form of transportation, and increasing transit use correlates with reductions in fatal and serious injury crashes. To fully support the goals of the CSAP, it is essential to make strategic investments in first-mile/last-mile pedestrian infrastructure connections to transit stops and to improve bus service quality and operations. By creating these integrated transportation networks, more individuals will choose public transportation as a safe and convenient mode of travel.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
Jurisdictions with Transit Service

FOCUS AREA(S)
Pedestrians & Bicyclists
Arterial Roadways

SV-01

COORDINATION / EDUCATION

Vehicle Fleet Safety Training

Recommendation: Develop and enforce comprehensive safety policies for all municipal vehicle operators. These policies should include regular training on safe driving practices, routine vehicle maintenance checks, and monitoring systems to track driver behavior.

Justification: Training programs for fleet vehicle drivers can lead to significant cost savings by decreasing accident-related expenses, enhancing operational efficiency, and promoting a safety culture within the fleet.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Safer Vehicles
Occupant Protection

SV-02

POLICY / PLANNING

Update Vehicle Procurement Standards

Recommendation: Establish procurement policies that prioritize vehicles equipped with advanced safety features, such as automatic emergency braking, lane departure warnings, and improved visibility for drivers.

Justification: Up-to-date vehicle safety standards ensure that new fleet vehicles adhere to the highest safety standards and protect drivers who are choosing to serve the public.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Safer Vehicles
Occupant Protection

SV-03

POLICY / PLANNING

Intelligent Speed Assistance in Fleet Vehicles

Recommendation: Implement Intelligent Speed Assistance (ISA) technology in fleet vehicles to enhance compliance with speed limits and reduce the incidence of speeding-related crashes. This proactive measure promotes safer driving behaviors, saves lives, and reduces jurisdiction liability.

Justification: ISA is vehicle technology that helps drivers adhere to posted speed limits by using GPS data to provide alerts or actively control the vehicle's speed to prevent speeding. As of 2024, the NTSB recommends requiring ISA technology in all new cars. NYC's ISA pilot program showed that fleet operators complied with speed limits 99% of the time and reduced instances of hard braking by 36%.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Safer Vehicles
Speed Management

SV-04

POLICY / PLANNING

Automatic Crash Management

Recommendation: Require or incentivize the use of in-vehicle telematics systems or personal device applications to alert emergency services automatically after a crash. Coordination should be done with both public agencies and private employers.

Justification: NHTSA-cited research shows that Automatic Crash Notification (ACN) can potentially reduce roadway fatalities by 1.5% to 2.0%. ACN systems can significantly reduce emergency response times by immediately alerting services after a crash, providing precise location data, and potentially transmitting information about the severity of the incident. ACN is especially effective in rural areas.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
All

FOCUS AREA(S)
Post-crash Care
Maintenance & Work Zones

SV-05

DATA, TRANSPARENCY, AND ACCOUNTABILITY

The data, transparency, and accountability recommendations aim to establish a framework for tracking progress, fostering public trust, and ensuring data-driven decision-making in achieving the goals of this action plan.

DATA MANAGEMENT

Crash Data Collection Training

Recommendation: Develop a training program for law enforcement officers to ensure accurate and consistent reporting of crash details. Coordination should include education on how engineers and planners use crash reports and reconcile what level of effort is needed.

Justification: Ensuring accurate and consistent reporting of crash details is crucial, as inaccuracies can significantly impede traffic safety analysis, slow the development of effective countermeasures, make it harder to get funding for safety measures, and result in ineffective policy decisions.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Pedestrians & Bicyclists
Arterial Roadways

DT-01

DATA MANAGEMENT

LRS and MIRE Improvements

Recommendation: Support the continued development of the roadway network to incorporate a Linear Referencing System (LRS) and Minimum Inventory of Roadway Elements (MIRE).

Justification: These systems would enhance data quality, improve analysis capabilities, and support future-proof data management. The Highway Performance Monitoring System (HPMS) contains minimal characteristics and should be the primary dataset in the future for ease of conflation.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

FOCUS AREA(S)
Safer Vehicles
Occupant Protection

DT-02

DATA MANAGEMENT

Work Zone Data Collection

Recommendation: Coordinate with state and local jurisdictions to establish a framework for collecting consistent and accurate data on work zone locations, setup type, contractor presence, mobile or permanent, time period, etc.

Justification: Approximately 3% of the fatal and serious injury crashes in the region from 2018-2022 were noted as work zone-related. Construction workers and road maintenance personnel are highly vulnerable in work zones, where traffic often moves nearby.

COST
$ $ $

TIMELINE
Long-term

APPLICABLE PARTIES
MAPA

DT-03

COORDINATION / EDUCATION

Progress to Zero Report

Recommendation: Develop an annual Progress to Zero report that reports on progress toward the CSAP goals and metrics. The report should be based on regular updates to the High Priority Network (HPN) Tool and safety metrics. The findings from the annual reports can be utilized to update the action plan every 3-5 years, ensuring that the action plan is adjusted to keep on track to Zero by 2040. The report should be posted online and be available to the public.

Justification: Evidence-based safety analysis is an ongoing activity in communities proactively working toward zero fatalities and serious injuries. MAPA can support progress monitoring and streamlined safety analysis by regularly updating its HPN tool and coordinating improvements to its input data sources. This will allow the HPN to be the primary source of reporting progress to zero fatalities and serious injuries.

COST
$ $ $

TIMELINE
Ongoing

APPLICABLE PARTIES
MAPA

DT-04

COORDINATION / EDUCATION

Standardized Data Schema

Recommendation: Coordinate the format with NDOT for future NDOT Crash Data submissions to be standardized to avoid recurring schema changes, such as from pre-2021 to post-2021 NDOT crash data.

Justification: Modifying the HPN analysis code for NDOT data schema changes is inefficient and prone to errors. These changes can impact application functionality, cause bugs, and affect user experience. A standardized data schema is needed to ensure consistent data, streamline analysis, and maintain code integrity.

COST
$ $ $

TIMELINE
Short-term

APPLICABLE PARTIES
MAPA

DT-05

SAFETY METRICS

The list below is a selection of metrics based on the recommendations and the goals for many, which are tied to the high-priority network or prioritized projects. Safety metrics were created to track the MAPA region's and communities' progress in implementing recommendations. Crash fatalities and serious injuries are lagging indicators, whereas these measures can be monitored in real-time and provide tangible targets to meet. All goals and rates are for the MAPA Region as a whole but are intended to be measured at the jurisdiction level.

LEGISLATIVE

METRIC	GOAL	RATE	EXPECTED KSIS REDUCED (/ YEAR)
Primary Seatbelt Law	Pass a primary seatbelt law in Nebraska by 2030.	-	53.1
BAC Limit of 0.05% Law	Pass a 0.05% BAC limit law in Nebraska and Iowa by 2030.	-	61.9
Red-light Running & Speed Safety Cameras Laws	Pass red-light and speed safety cameras laws in Nebraska by 2030.	-	66.4
Primary Handheld Device Law	Pass a primary handheld device law in Nebraska and Iowa by 2030.	-	4.4
Motorcycle Helmet Law	Pass motorcycle helmet laws in Nebraska and Iowa by 2030.	-	*

PLANNING

METRIC	GOAL	RATE	EXPECTED KSIS REDUCED (/ YEAR)
Complete Streets Design Standards	All jurisdictions with or covered by a Complete Streets Design Standard less than 10 years old.	2 Jurisdictions per Year	*
Active Mobility Plans	All jurisdictions with or covered by an Active Mobility Plan less than 10 years old.	2 Jurisdictions per Year	*
Traffic Calming Policy	All jurisdictions with or covered by a Traffic Calming Policy less than 10 years old.	2 Jurisdictions per Year	*
Safe Routes to School	All jurisdictions with or covered by a Safe Routes to School less than 10 years old.	2 Jurisdictions per Year	*
Traffic Impact Study Guidance	All jurisdictions with or covered by a Traffic Impact Study Guidance less than 10 years old.	2 Jurisdictions per Year	*

INFRASTRUCTURE

METRIC	GOAL	RATE	EXPECTED KSIS REDUCED (/ YEAR)
4-lane Undivided	Eliminate 4- and 5-lane undivided roadways by 2040, prioritizing High Priority Network locations.	2.3 Miles per Year	17.7
Signal Conversions	Convert 25% of signals on the High Priority Network to a roundabout or reduced conflict intersection by 2040.	8 Signals per Year	18.0
Signal Modificaitons	Upgrade 35% of signals on the High Priority Network by 2040.	12 Signals per Year	5.8
Rural Shoulders	Install shoulders on 100% of identified candidate locations >1,000 ADT by 2040, prioritizing High Priority Network locations.	5.4 Miles per Year	2.4
Curve Delineation	Modify 100% of curve delineation locations on identified Prioritized Project locations by 2040.	2 Locations per Year	1.2
Traffic Calming	Install 1,000 neighborhood traffic calming countermeasures by 2040, utilizing the VZ Toolbox.	67 Locations per Year	*
Active Mobility Facilities	Install 75 miles of active mobility facilities by 2040, prioritizing locations on the High Priority Network and installation of separated facilities.	5 Miles per Year	*

BEHAVIORAL

METRIC	GOAL	RATE	EXPECTED KSIS REDUCED (/ YEAR)
Traffic Safety Enforcement	Increase funding for local traffic enforcement by 30% by 2040.	-	*
Driver's Safety Education	Establish a youth driver education program by 2030, prioritizing engagements in Transportation Disadvantaged Communities.	-	*
Traffic Safety Marketing	Establish and allocate $200k to traffic safety marketing per year by 2030.	-	*

** Unable to estimate expected annual KSI reduction based on available data.*