

# City of Red Wing Comprehensive Road Safety Action Plan



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DISCLAIMER: Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information and on existing conditions that are subject to change. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein.

# Acknowledgments

## Advisory Group

Travis Bray, Red Wing Police Captain  
Peter Hanlin, Red Wing Assistant Fire Chief/  
Emergency Management Director  
Chad Kono, Red Wing Advisory Planning  
Commission Member  
Jessica Seide, Community Health Specialist,  
Goodhue County  
Sarah Dawson, Public Health Educator,  
Goodhue County  
Cristina Mlejnek, Prairie Island Indian  
Community Engineer  
Bob Jaszczak, Red Wing School  
District Superintendent  
Alan Gaylor, Red Wing School District Building  
and Grounds Manager  
Katie Hardyman Morem, MN State College  
Southeast Director of Workforce Education  
Ross Lexvold, Xcel Energy Manager of Community  
Relations and Economic Development  
Megan Tsui, Downtown Main Street  
Executive Director  
Andrew Peterson, Red Wing Bicycle Co. Owner

## Consultant Team

Dean Chamberlain, Project Manager  
Mitch Coffman, Deputy Project Manager  
Jaz Warren, Project Planner  
Uy Nguyen, Planner  
Ash Gibson, Graphic Designer

## Project Management Team

Michelle Leise, Red Wing Community  
Engagement Facilitator  
Lynn Nardinger, Red Wing Deputy Director of  
Public Services  
Kyle Klatt, Red Wing Community  
Development Director  
Ryan Illa, Interim Engineering Director  
Ron Seymour, Red Wing Capital Improvement  
Plan Manager  
Jay Owens, City of Red Wing Engineer/  
Engineering Director  
Jake Rezak, Goodhue County Public  
Works Engineer  
David Tsang, Traffic Operations Engineer at  
Minnesota Department of Transportation









# 1 Executive Summary

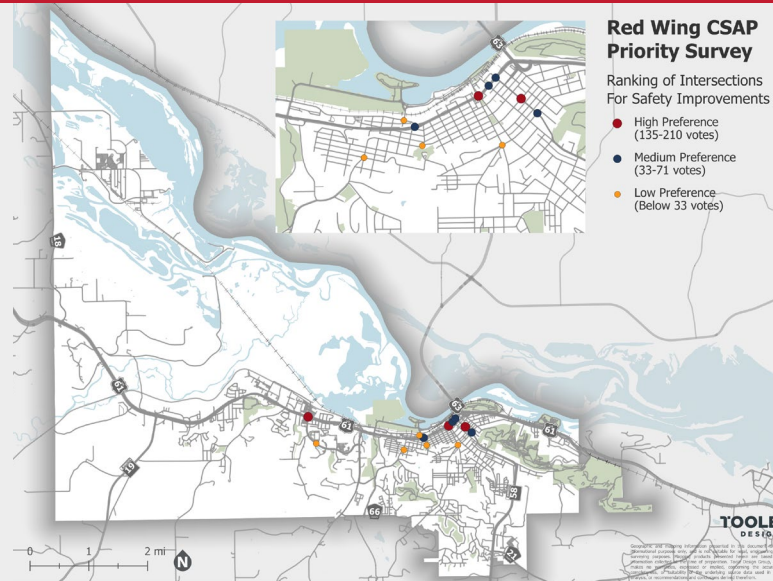
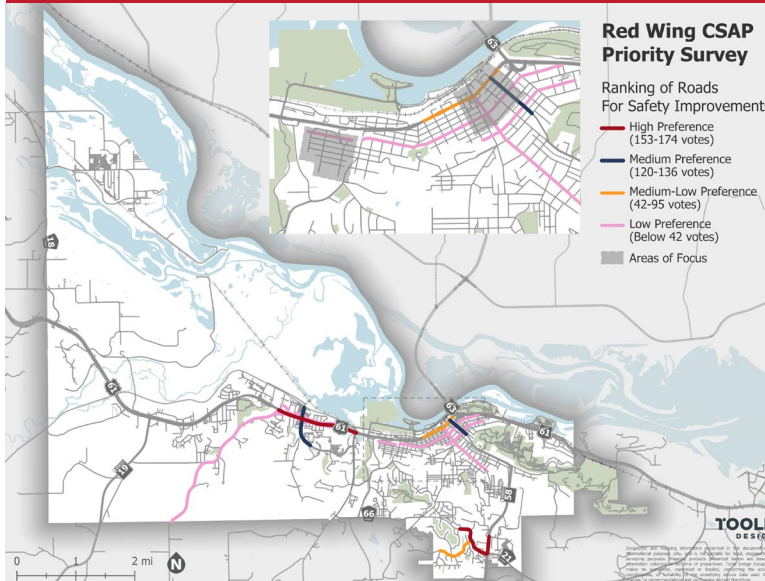
The City of Red Wing's vision is to eliminate fatal and serious injury crashes for all roadway users in Red Wing by 2040.

Between the years 2014 to 2023, there were a total of 3,091 crashes in the Red Wing area. Among these incidents, 248 led to fatalities or an injury of some kind. While most crashes were minor, 48 of them resulted in death or serious injury, an average of nearly five per year. These losses of life and life altering injuries are unacceptable.

Red Wing is joining an ever-growing number of cities throughout the country and world who are committed to eliminating transportation-related fatalities and serious injuries on their streets. The Comprehensive Road Safety Action Plan (CSAP) lays out the steps to reach the goal of zero traffic-related fatalities and serious injuries by 2040. This goal is consistent with Red Wing's Resolution 7959, which City Council members passed unanimously in February of 2024.

Using the Safe System Approach as a guide, this plan is a catalyst for systemic change that will allow all people in Red Wing the opportunity to use our roads safely into the future.

# COMMUNITY ENGAGEMENT



## PROCESS

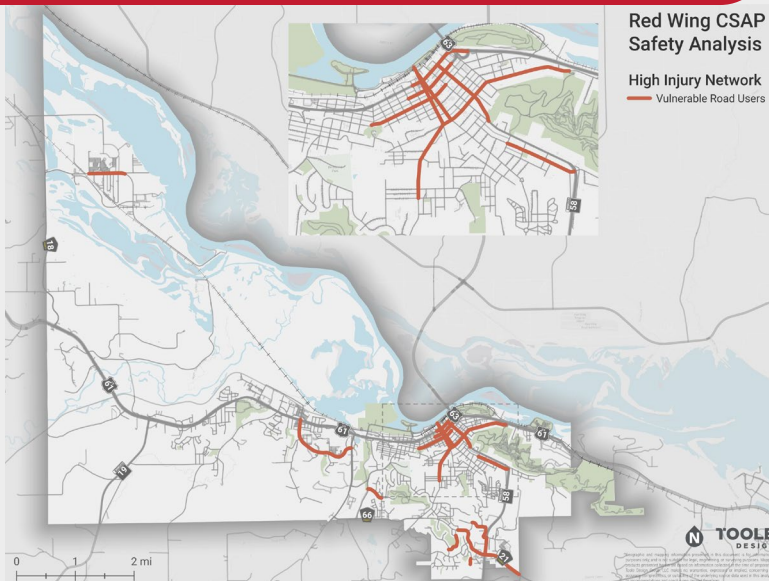
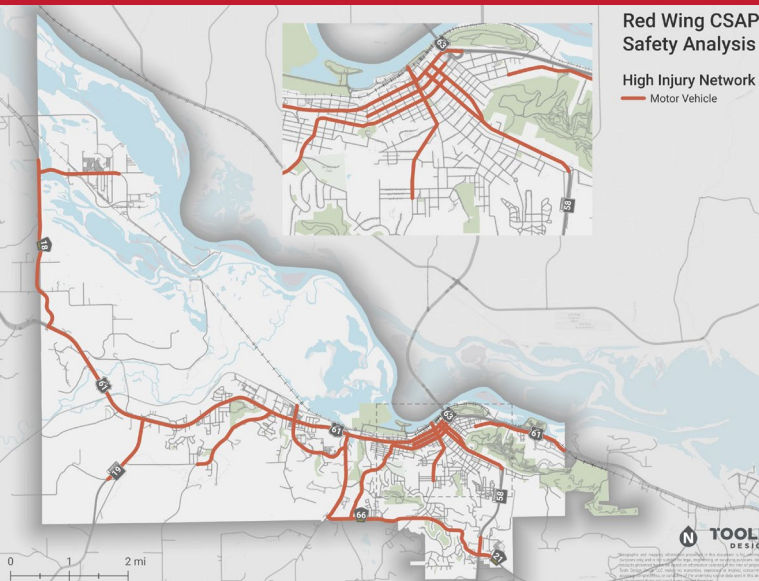
Community engagement provides local governments with key information and local expertise that may not be available within the existing data. It allows the project team to gather information and have community conversations at relevant points in the project. The Red Wing CSAP is a collaborative project, informed by the feedback of various members and organizations that represent the community. The CSAP was developed in coordination with Goodhue County and the state of Minnesota, along with transit partners, community members, organizations and businesses, educational institutions, and other local stakeholders. The project team facilitated a variety of engagement strategies to reach a cross section of the community and ensure equity in outreach. Engagement activities include:

- 920** Interactive survey responses
- 550** Online priority survey responses
- 104** Paper priority survey responses
- 7** Focus group meetings
- 4** County/State Partner interviews
- 2** Open houses
- 2** Community Events

## KEY TAKEAWAYS

- Residents consistently expressed that connected sidewalk networks, visibility of travelers, safe crossings, clear signage and markings, and safe driving behaviors are the most important for transportation investment and practices.
- Traffic laws need to be enforced to ensure a safe transportation system. In addition to one-on-one enforcement, additional methods can be used such as digital speed feedback signs to encourage better driving habits and community-based education initiatives.
- Residents would like to see transportation improvements most on high speed and high-volume roads, in the downtown area, near schools, at complicated intersections, and in the Old Fairgrounds Neighborhood.
- If residents have safer and more accessible transportation options, they will be more likely to walk and bicycle for transportation, engage in active, healthy lifestyles, and reduce vehicle miles traveled (which also reduces pollution and exposure to crash risk).

# CRASH DATA ANALYSIS



## PROCESS

The project team began analyzing the crash data from 2014 through 2023 by conducting a descriptive crash analysis. The Safe Street and Roads for All program generally focuses its analysis on fatal or serious injury crashes because those crashes lead to significant personal, familial, and societal health impacts.

The descriptive crash analysis is used to understand trends in occurrences of crashes, environmental factors (weather, pavement conditions, hour of the day), crash types, involvement of pedestrians and bicyclists, and other factors. The project team also collected data to identify which roadway characteristics describe the streets and highways with the most crashes and, therefore, appear in the High Injury Network (HIN) for Red Wing. The characteristics include the Average Daily Traffic (ADT), functional classification, roadway system, speed, number of lanes, and others.

The findings around crash trends and crash history from these analysis were used to inform this Action Plan's focus areas and strategies.

## KEY TAKEAWAYS

- Between the years of 2014 and 2023, there were 248 crashes that involved someone being killed or injured, with 48 of those crashes involving someone being killed or seriously injured, on Red Wing's streets.
- Crashes involving people walking, biking, or using a personal mobility device resulted more often in serious injuries.
- Fatal and injury crashes are increasing over time in Red Wing.
- In order to meet the City's goal of zero fatalities and serious injuries by 2040, fatal and serious injury crashes will need to reduce by about 0.5 crashes per year from 2025 to 2040 and fatal injury crashes will need to reduce by almost 2 crashes per year during the same time period.



# EQUITY ANALYSIS

## PROCESS

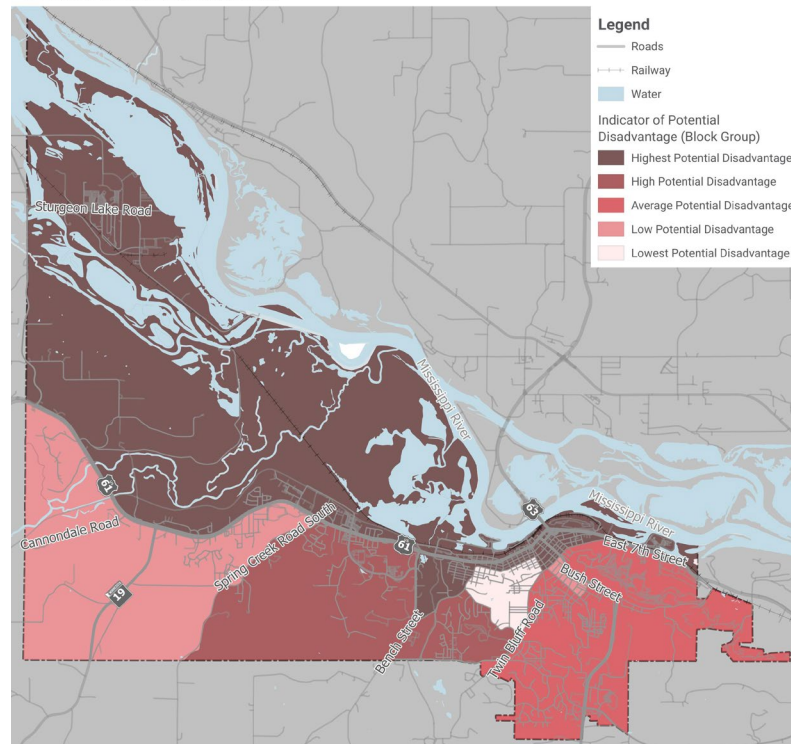
A true comprehensive transportation system addresses safety disparities and establishes equitable systems. Removing barriers for people, particularly for those who do not drive due to ability, income, age, or other factors, eliminates gaps and contributes to a safer, more comfortable transportation network for everyone. People should feel safe to travel using any mode to access employment, school, grocery shopping, and other activities. To achieve a safe and equitable transportation system, we must understand where there are disparities in the crash data, ensure that all members of the community have a voice in the process, and assess historical inequities to inform future planning efforts. The CSAP equity analysis accomplishes the following:

- Highlights equity-related trends in 10 years of crash data.
- Conducts an analysis of engagement participants to understand what engagement strategies are successful and where there are gaps in outreach.
- Establishes recommendations to make future engagement more equitable.
- Analyzes historic transportation and related policies to understand local systemic issues.
- Identifies areas of highest potential disadvantage in Red Wing using census data.

## KEY TAKEAWAYS

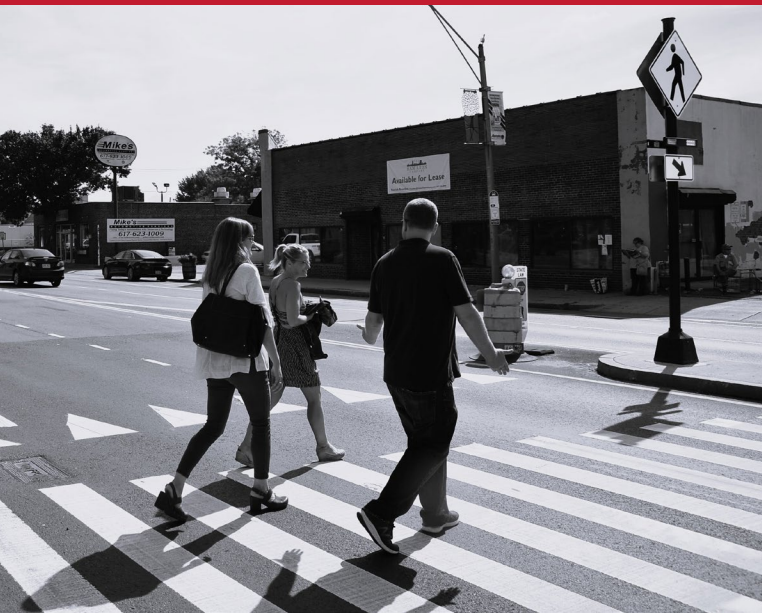
- Red Wing crash data indicates that fatal and serious injury crashes are most likely to occur in historically disadvantaged communities where residents tend to rely more on walking, bicycling, and using mobility devices for transportation.
- The plan's process incorporated a range of engagement strategies and outreach methods. The analysis identifies additional communities to reach, engagement approaches to use, and ways to further build community relationships.

Red Wing CSAP Equity Analysis  
Indicators of Potential Disadvantage: Overall



- This plan helps to identify inequities and outlines ways to address issues to prevent future harms.
- Through an equity mapping analysis, along Highway 61, around downtown, and in the east section of town have the highest potential for disadvantage. These highlighted locations should be considered focus areas and included in future discussions on traffic safety.

# SAFETY ACTIONS



A series of recommended actions and projects came from the crash analysis, equity analysis, High Injury Network (HIN) development, public input, and stakeholder guidance. The recommendation matrix in this plan outlines action items and strategies, a safety countermeasure toolkit, and a list of priority improvements. The action items are organized around the categories listed below. Each action within these categories includes a general timeline and considerations for implementation:

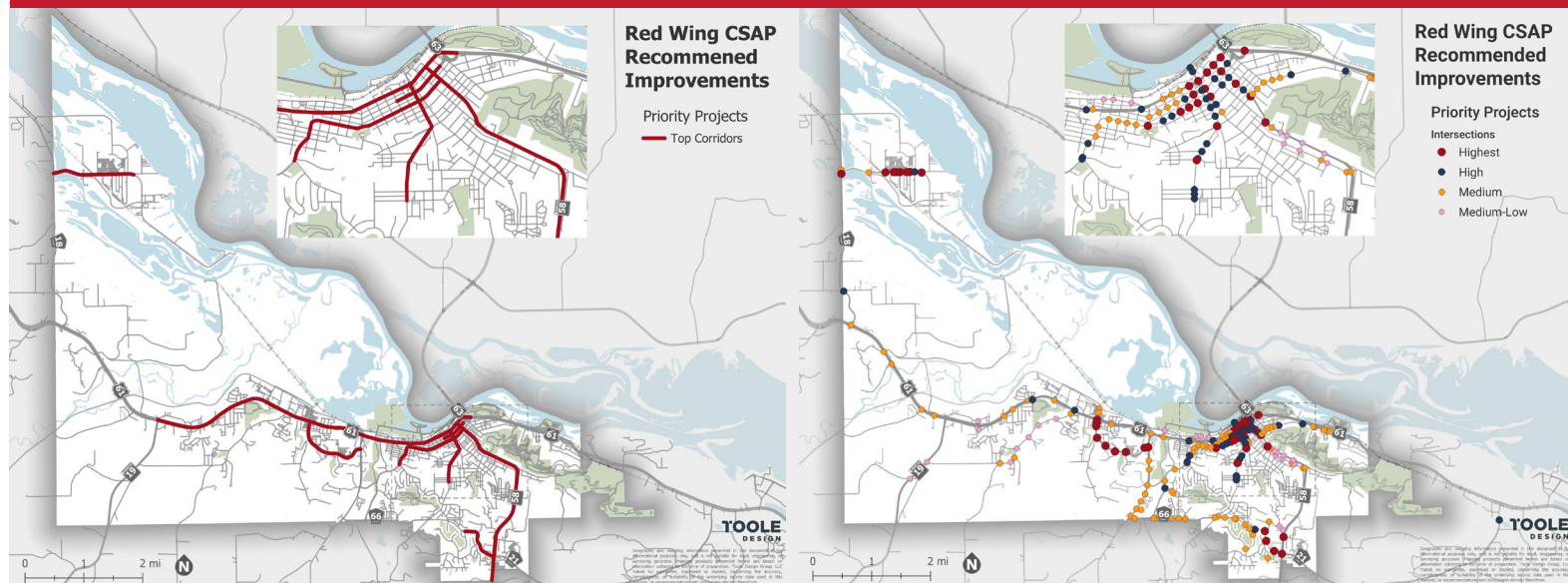
- **Policies, Processes, and Government Structure:** actions that will help create a culture that prioritizes safe transportation.
- **Community Engagement and Equity:** actions that will guide investments to reach a transportation safety system where everyone's voices are heard and needs are met.
- **Safety Studies and Infrastructure:** actions that will guide continued evaluation of the transportation system and quality street design.
- **Funding and Staffing:** actions that aim to assist the City in securing the appropriate funding and staffing needed to accomplish the goals of this plan.

To achieve zero roadway fatalities and serious injuries by 2040, the City of Red Wing will need to comprehensively address roadway safety issues in the region. The Federal Highway Administration's Proven Safety Countermeasures are national evidence-based ways to improve road design and/or operations. Selecting and designing safety countermeasures on every street project in the region should be decided through the lens of the Safe System Approach so that if a crash occurs, it will not result in a fatal or serious injury. Safety countermeasures should not be compromised or simplified during the design or construction phases because that would reduce the level of safety for all road users.

This plan has created a Safety Countermeasure Toolkit, composed of the proven safety countermeasures that are recommended for Red Wing roads.

- Road Diet/Roadway Reconfiguration
- Crosswalk Visibility Enhancement
- Medians and Pedestrian Refuge Islands in Urban Areas
- Floating Bus Stops
- Roundabouts
- Lighting

# PRIORITIZATION



The actions defined in the previous sections will help to institutionalize the practices, policies, and programs that will make Red Wing's streets safer for all residents. These actions will be complemented by on-the-ground safety improvement projects that will be designed using Safe Systems principles and the Safety Countermeasures Toolkit, and informed by the risk factors we identified as part of our crash analysis.

Prioritization of intersection improvements was determined by scoring various factors, with a maximum total score of 100 points. These factors include the High Injury Network, Risk Factors, Equity, and Public Input to create a prioritization methodology.

The analyses of this plan found the identified corridors and intersections as the highest priority for transportation safety investment:

## Corridors

- US 61: MN 19 to US 63
- Sturgeon Lake Road: County 18 to Wakonade Road\*
- Tyler Road: US 61 to Bench Street
- Pioneer Road: Brooks Avenue to MN 58
- MN 58: US 61 to Pioneer Road
- West Avenue: US 61 to W Maple Street
- Buchanan Street/4<sup>th</sup> Street: W 6<sup>th</sup> Street to MN 58
- Featherstone Road: W Maple Street to W 6<sup>th</sup> Street
- 3<sup>rd</sup> Street: Fulton Street to Potter Street

## Intersections

- US 61 (Main Street) and Broad Street/East Street/West Avenue
- West Avenue and W 7<sup>th</sup> Street/College Avenue/Central Avenue
- Tyler Road and Kosec Drive
- W 4<sup>th</sup> Street and Cedar Street
- US 61 (Main Street) and MN 58 (Plum Street)
- US 61 (Main Street) and Bush Street
- MN 58 (Plum Street) and W 7<sup>th</sup> Street
- MN 58 and Pioneer Road
- MN 58 and Guernsey Lane

\* Reconstruction project underway at the time of this plan development. This plan recommends to reevaluate this corridor in the future.



## EVALUATION

Evaluation and regular reporting are essential in knowing whether actions, tactics, and approaches are working. Local and regional partners will also need to help monitor success and barriers. If certain actions are not working, the City should assess and modify actions as needed, as long as the focus remains on eliminating fatal and serious injuries on all roadways in Red Wing. The plan includes performance measures that will be tracked, such as:

- Number of serious injury and fatal crashes, and the percent increase or decrease from previous years.
- Number of actions taken to decrease the likelihood of fatal and serious injury crashes.
- Locations and number of street segment and intersection improvements.
- Locations and number of improvements made for vulnerable road user transportation safety.
- Dollar amount invested in infrastructure improvements.
- Changes in land use policies or practices to increase safe connections.
- The Red Wing Report Card's "Getting Around" section will include some of the statistics collected, including where fatal and serious injury crashes are occurring. This will allow the public to easily access this data.

## IMPLEMENTATION

The recommendations outlined in this plan aim to accomplish the following:

- Emphasize countermeasures that reduce overrepresented crash types, such as crashes that involve vulnerable road users and head-on crashes.
- Focus on where crashes are concentrated, such as high-speed corridors, areas where many near misses occur, and areas of higher potential disadvantage.
- Address the most common risk factors, such as short stopping and low intersection sight distances, high speed limits and high traffic volumes, and inadequate lighting.
- Promote safety while traveling by improving driving behavior, visibility, sidewalks, and crossings.
- Improve safety at priority locations, such as near schools, along highways and high-speed corridors, in the downtown area, and at complex intersections.

## CONCLUSION

Traffic safety trends are the result of decades of decisions at the city, regional, and national level. Those decisions prioritized who could move through the city safely and who was most exposed to risk for traffic crashes. Making different decisions to build better, safer streets will take time, funding, and political support. An investment in safer streets will make the City of Red Wing safer, provide more opportunities for people, and achieve the desires of our residents.



# 2 Our Vision

Red Wing is a small city in Southeast Minnesota with about 16,800 residents. Located along the bluffs of the Mississippi River, which have long been sacred ground to the Bdewakantunwan Dakota people, Red Wing is known for its unique location and character. The city attracts residents and visitors for its culture, scenic views, and outdoor activities.

Red Wing has made many roadway improvements in recent years to further enhance the experience of the community, but more work is to be done. This project aims to help Red Wing create a safe multimodal transportation system, where people can feel comfortable and empowered to safely walk, bike, roll, drive, or take transit along all Red Wing streets.



# **Our vision is to eliminate fatal and serious injury crashes for all roadway users in Red Wing by 2040.**

In the ten years between 2014 to 2023, there were a total of 3,091 crashes in the Red Wing area. Among these incidents, 248 of them led to fatalities or a serious or minor injury. While most crashes were minor, 48 of them resulted in death or serious injury. These losses of life and life-altering injuries are unacceptable. For many people, being involved in a crash changes their life physically, mentally, and emotionally. The impacts of these tragedies extend beyond personal loss to the entire community, including significant taxpayer spending on emergency response and long-term healthcare costs.

The Comprehensive Road Safety Action Plan (CSAP) lays out the steps to reach the goal of zero traffic-related fatalities and serious injuries by 2040 as stated in Resolution 7959. This resolution was adopted unanimously by City Council members on February 12, 2024, in support of the Toward Zero Deaths Initiative. The Red Wing CSAP is an intentional recommitment to prioritize safety in every roadway-related decision and prevent deaths and serious injuries of all users on Red Wing's roadways.









# 3 Background and Purpose

Reducing and eventually eliminating fatalities and serious injuries from our roadways will not be easy and will take time and effort. Due to historical patterns, policies, and trends, much of the transportation system in the region and around the U.S. was built to move vehicles in large quantities and at high speeds, without adequate attention to the impacts on crash risk and the mobility of people using other modes of travel, particularly for people walking and biking.

Red Wing is joining an ever-growing number of cities throughout the county and world who are committed to eliminating transportation-related fatalities and serious injuries on their streets.

As such, this plan is presented as a catalyst for systemic change that will allow all people in Red Wing the opportunity to use our roads safely into the future. This momentum started with the Vision Zero movement and is grounded by the Safe Systems Approach.

# PLAN PURPOSE

This plan was created under the premise that many previous traffic-related deaths and serious injuries could have been prevented with a safe system approach. Today we have the ability and understanding to implement methods and interventions that stop the legacy of roadway tragedies. This plan offers recommendations to help Red Wing address issues in the transportation system to create a safer community for everybody. This CSAP is Red Wing's roadmap to achieving this ambitious vision and should be used by City staff, elected officials, transportation and community partners, community advocates and leaders, businesses, and all Red Wing residents committed to safer streets.

*This Plan includes four major sections:*



**Background and Purpose:** In creating the CSAP, the City of Red Wing is joining cities across the country and the world in working to eliminate serious injuries and fatalities from our roadways. This section introduces the concepts of Vision Zero and the Safe Systems approach, solidifies the relationship between safer streets and equity, and reviews past efforts in the region to improve roadway safety.



**Transportation Safety in Red Wing:** This section provides an overview of what has historically happened and what is currently happening on our roadways and addresses how existing policies, programs, and projects impact people. This section also includes quantitative and qualitative information about current conditions, including a crash data analysis and information gathered through extensive public engagement efforts.



**How Will We Meet Our Transportation Safety Goal:** This section lays out programs, policies, and projects that aim to eliminate serious injuries and fatalities on Red Wing roadways by 2040. This section acts as a toolkit for implementation, including an action plan and prioritization of projects to stay efficient, opportunistic, and effective throughout this process.



**How Will We Monitor Our Progress:** This section outlines how the City will measure the effectiveness of safety methods and identify areas for improvement using performance measures and annual reporting.

# PREVIOUS EFFORTS

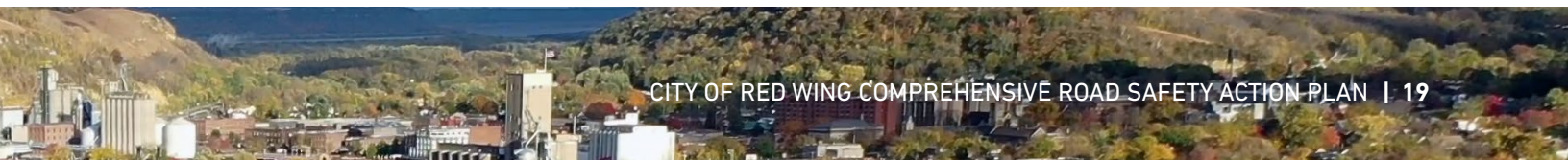
This plan is a major step in Red Wing's continuous commitment to safer streets for all its residents.

Table 1 highlights Red Wing's past efforts related to or overlapping with roadway safety topics. See *Appendix A: Plan and Policy Review* for the full summary of previous engagement efforts.

While previous documents showed the City's continuous efforts towards developing a safer, more accessible, and equitable transportation system, they also presented opportunities for further development. An assessment of gaps and opportunities within the reviewed documents points to the need for more comprehensive guidance and prioritization of street safety, further identification of progress that needs to be made, and continued inclusion of community feedback and engagement.

**TABLE 1** Previous Red Wing Efforts and Applicability to Roadway Safety

	Safety Vision or Goals	Safety Data Analysis	Equity / Public Input	Roadway Design / Safety Countermeasures	Projects / Priority Corridors	Funding / Implementation
Red Wing 2040 Community Plan	–	●	●	–	●	●
Pedestrian Plan & Policy Report	●	●	●	–	●	–
Red Wing Climate Action Work Plan 2020-2025	–	–	–	–	–	●
Complete Streets Resolution	●	–	–	–	–	–
Safe Routes to School Plans	●	●	●	–	–	–
Bicycle and Pedestrian Master Plan	●	●	●	–	●	–
Capital Improvement Program 2024-2028	●	●	●	●	●	●
Engineering Standard Details: Section 3-Concrete	–	–	–	●	–	–
2023 & 2024 Budgets	–	–	–	–	●	●
Zoning Code	–	–	–	●	–	–
Subdivision Regulations	–	–	–	●	–	–
Ordinances	–	–	–	–	–	●
Towards Zero Death Resolution	●	–	–	–	–	–





# HOW WAS THIS PLAN DEVELOPED?

The Red Wing CSAP was developed in coordination with city staff; county, state, and transit partners; community members; organizations and businesses; educational institutions; and other local stakeholders. The process began in January 2024 and was led by a project team consisting of staff from the Administration, Community Development, Engineering, and Public Works departments of Red Wing, as well as Goodhue County Public Works and MnDOT Traffic Operations.

## COMMUNITY INFORMED

This plan is a collaborative project, informed by the feedback of various members and organizations that represent the community. The project was informed by a Safety Committee, made up of select representation from governmental, advocacy, business, service, and educational institutions. Safety Committee members helped phases of the project by providing direction and input on analyses, engagement strategies, and recommendations.

The project also relied heavily on public engagement to inform the project team on the existing conditions of the transportation system, the lived experience of community members, and the project's priorities. The project team facilitated a wide variety of engagement strategies in an effort to reach a cross-section of the community and ensure equity in outreach.



## TIMELINE

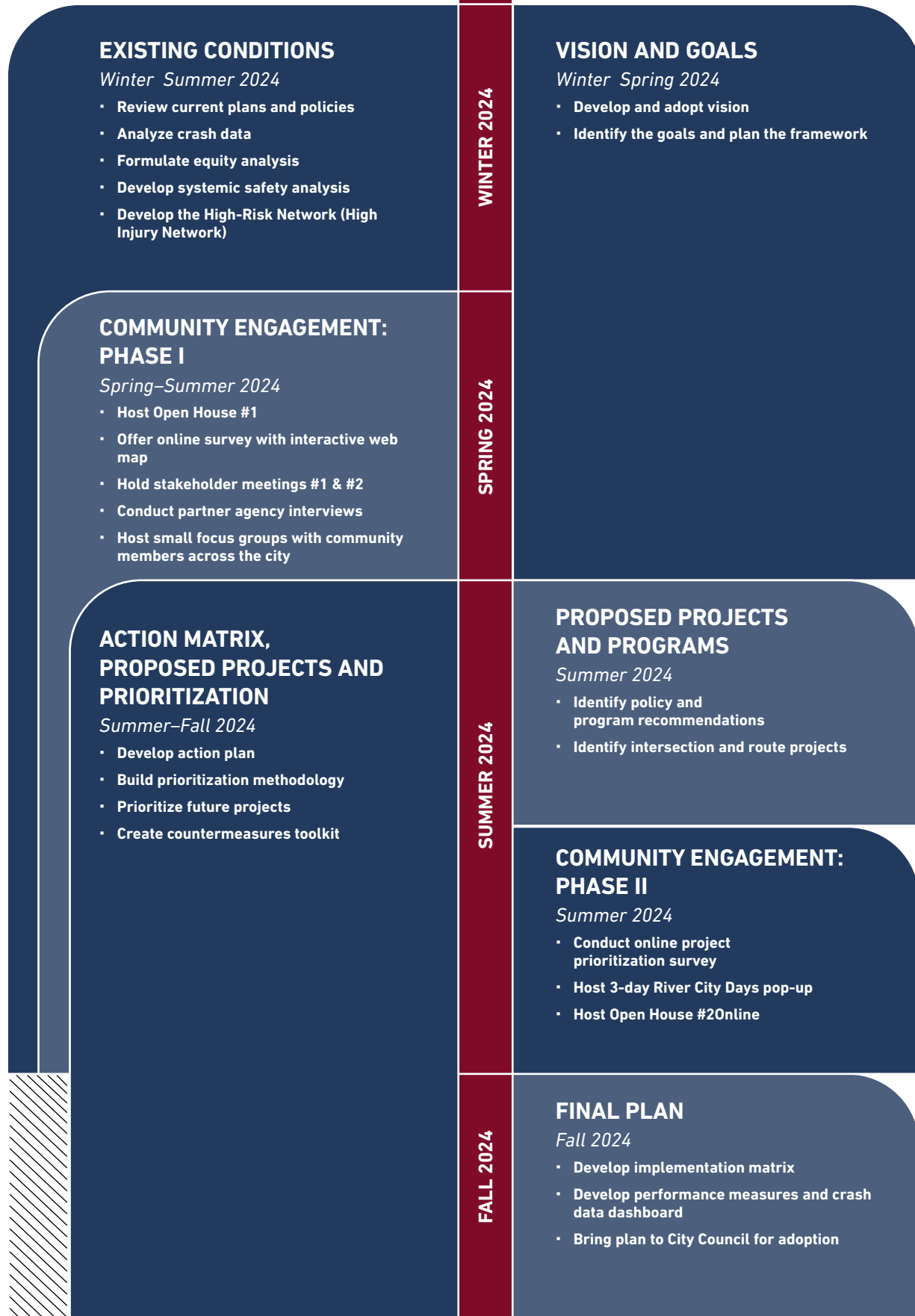


FIGURE 1 CSAP Project Timeline

# GETTING TO ZERO



**FIGURE 2** The Safe Systems Approach<sup>2</sup>

## VISION ZERO

Vision Zero is a value-based strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. First implemented in Sweden in the 1990s, the Vision Zero movement is one of the first large-scale efforts to look at traffic crashes as a systemic issue, versus blaming individual users. Vision Zero also pivoted from the acceptance of death and serious injuries as just the “cost” of having an efficient transportation system to stating that absolutely nobody should be killed or injured on our streets due to traffic-related causes.<sup>1</sup> These two concepts made Vision Zero a forward-thinking philosophy that set the groundwork for the Safe Systems Approach and the Safe Streets for All (SS4A) program. While the Red Wing CSAP is not officially a Vision Zero effort, much of this plan, its content, and its recommendations align with the concepts of Vision Zero. More information about Vision Zero can be found at <https://visionzeronetwork.org/>.

## THE SAFE SYSTEM APPROACH<sup>2</sup>

Like the Vision Zero philosophy, the Safe System Approach is a fundamental change from traditional approaches to roadway safety. This approach also recognizes that humans make mistakes, and streets should be designed to minimize the impacts of those mistakes. To achieve zero roadway deaths and serious injuries, all elements of the transportation system must be safe. That includes roads, intersections, people, speeds, vehicles, visibility, lighting, and post-crash care.<sup>3</sup>

Addressing all elements includes redundancy, so even if one element “fails,” multiple other elements will ensure the situation remains safe. For example, if an individual normally drives at an excessive speed, a better roadway design (e.g., narrow lanes, wide separation between vehicles and pedestrians) could slow down the driver and keep the roadway users safe.

Implementing the Safe System Approach in Red Wing will require interdepartmental, interagency, and community collaboration to address each element.

<sup>1</sup> What is Vision Zero. Vision Zero Network. Updated 2024.

<sup>2</sup> Zero Deaths and Safe System, The Safe System Approach. US Department of Transportation - Federal Highway Administration. Updated 2024.

<sup>3</sup> What is a Safe System Approach. US Department of Transportation. Updated 2022.



## SAFE SYSTEM FOUNDATION

The following six principles form the foundation of the Safe System Approach:

- **Death and Serious Injuries Are Unacceptable:** The Safe System Approach elevates efforts that will eliminate crashes that cause deaths or serious injuries.
- **Humans Make Mistakes:** The transportation system can and should be designed to accommodate inevitable human mistakes so they do not result in life-changing injuries or death.
- **Humans Are Vulnerable:** Human bodies have physical limits for tolerating a crash, and the transportation system must be human-centric and revolve around these vulnerabilities.
- **Safety Is Proactive:** Instead of waiting for a crash to happen, proactive tools such as the crash analysis in this Action Plan should be used to mitigate risks in the transportation system.
- **Responsibility Is Shared:** A crash should not need to happen to prove that an area is unsafe. We must collectively use historical knowledge, best-practice research, and our own expertise to create a safe transportation system together.
- **Redundancy Is Critical:** Reducing risks requires strengthening all parts of the transportation system so that if one part fails, the other parts still protect people.

The Safe System Approach is a paradigm shift that requires creating a positive street safety culture, increasing collaboration across the community, and ensuring safety improvements are being made where the need and impact are greatest.

## SAFE SYSTEM FRAMEWORK

The City of Red Wing will now use a Safe System Approach framework to make project, policy, and program decisions for its roadways. This will help reach the goal of zero roadway deaths and serious injuries by 2040. Below is guidance on how to apply the Safe System Approach framework in Red Wing, based on national guidance:

- **Separate Users in Space:** Provide enough physical space and a level of barrier protection between modes of travel to protect the most vulnerable road users who are at risk of crashing.
- **Separate Users in Time:** In locations where people must use the same space, such as an intersection, separate users in time to reduce potential conflicts. For instance, add a left-turn crossing light phase or a bike crossing light phase at an intersection.
- **Increase Visibility:** Ensure that people who use a street have every opportunity to see other people by creating an appropriate intersection design, crossing treatments, street lighting, vegetation maintenance, and other techniques.
- **Increase Attentiveness:** Heighten driver and pedestrian awareness by adding best-practice elements where appropriate. This should help address distracted driving and other driving behaviors. Examples include rectangular rapid flashing beacons (RRFB), speed feedback signs, advanced warning signs, and improved directional pavement markings for drivers and bicyclists.
- **Reduce Speeds:** Prevent speeding through roadway design and speed limits. Speed is a determining factor in whether a person survives a crash. As speeds rise, the chance of someone surviving decreases.
- **Reduce Impact Forces:** Decrease crash forces to increase the odds of someone surviving a crash. This includes techniques such as reducing curb radiuses at intersections.

## TRANSPORTATION SYSTEM EQUITY

Those who are often disproportionately impacted by crashes are children, older adults, individuals experiencing homelessness, people walking and biking, and individuals with a disability. Crashes that include these individuals are more likely to result in serious injury or death, and addressing these disparities is essential in achieving a cohesive transportation system. Making investments for these travelers can create systemwide benefits.

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**A true comprehensive transportation system addresses safety disparities and establishes equitable systems.**

Owning a vehicle and traveling by car can be burdensome for many people. Walking, bicycling, and using transit (such as riding the bus) all play a vital role in the transportation system because these modes ensure people have mobility, independence, and access to opportunities without relying on a personal vehicle for transportation.

Removing barriers for people, particularly for those who do not drive due to ability, income, age, or a combination of these factors, eliminates gaps and makes a safer, more comfortable network for everyone. People should feel safe and empowered to travel using any mode to access employment, school, grocery shopping, and other activities to fully participate in society. To create a safe and equitable transportation system, we must (a) understand where there are disparities in the crash data; (b) ensure that all members of the community have a voice in the process; and (c) assess historical inequities to inform future planning efforts.

## KEY TAKEAWAYS

## TRANSPORTATION SYSTEM EQUITY

By analyzing crash data, engagement methods and results, and the historical context in Red Wing, the team has formed an understanding of where there are gaps in the transportation safety system and how this project can work to mitigate inequities.

**Key takeaways from this transportation equity review are listed below.**

- Red Wing crash data indicates that fatal and serious injury crashes are most likely to occur in historically disadvantaged communities where residents tend to rely more on walking, bicycling, and using mobility devices for transportation.
- The plan’s process incorporated a range of engagement strategies and outreach methods. The analysis identifies additional communities to reach, engagement approaches to use, and ways to further build community relationships.
- Transportation systems are complex and comprehensive, often overlapping with other systems such as housing, land use, law enforcement, and climate efforts, and local governments have a responsibility to implement planning practices and policies that respond to the needs of all people.



## EQUITY AND CRASH DATA

An analysis of Red Wing's last 10 years of crash data (2014 through 2023) found the following notable trends that solidify road safety as an equity issue. (More details on these findings can be found in *Appendix B: Equity Analysis*).

- Injury and fatal crashes are overrepresented for all vulnerable road users (people walking, biking, or using personal mobility devices). Demographically disadvantaged communities, particularly those with lower incomes, rely more on safe non-motorized transportation to access community destinations.
- A majority of fatal and serious injury crashes in Red Wing occurred on roadways within or bordering census blocks with the highest weighted degrees of disadvantage.

Because of these realities, every safety recommendation should be analyzed to understand the how to implement safety projects and processes to avoid negative unintended consequences and inequities.

## EQUITY AND ENGAGEMENT

Engagement invites people to reflect on their experiences and consider how they would improve moving about their community. Being intentional about reaching out to many groups of people, using hands-on activities, and creating comfortable environments will ensure that all community members have the opportunity to influence future transportation in Red Wing. Red Wing's Comprehensive Road Safety Action Plan engagement process used multiple ways to reach people, including focus groups, community events, online and paper surveys, conversations, and communication through a wide variety of methods and venues. It's recommended that Red Wing continue its community engagement to ensure many voices are heard in planning, implementing, and evaluating transportation projects.

This project intentionally incorporates a variety of engagement strategies to reach as wide of a cross section of the community as achievable. This includes traditional engagement strategies such as open houses and surveys. Focus groups were also part of this engagement process, because they can be more easily coordinated around those who may have non-typical schedules and create an environment for deeper discussions where attendees can feel freer to give their feedback. Further, this project promoted engagement opportunities in multiple ways to make sure community members were aware of the options.

This section summarizes the engagement participants' demographics to understand where the gaps are in who we're hearing from. This section also provides insight into how the targeted engagement is addressing these gaps and how we can improve equity in future engagement. See the [Community Feedback](#) section for a summary of the engagement strategies and feedback we heard.

## PARTICIPANT ANALYSIS

The project team gathered input from hundreds of residents for this plan. That includes approximately 250 interactive online survey and web map participants, nearly 350 safety survey participants, 145 residents in focus feedback gatherings, about 34 open house attendees, and others. When feasible, the project team collected demographic information from engagement participants in an effort to evaluate whether respondents are representative of the community and help improve future outreach efforts. A summary of participant demographics is listed below. See *Appendix E: Community Engagement Summary* for the full Engagement Equity Assessment.

- **Race & Ethnicity:** Survey respondents and open house attendees were primarily white with representation from other groups. Focus feedback participants were much more racially diverse, as Black, Native American, and Spanish-speaking residents were targeted for small group and one-on-one conversations.
- **Age:** Most survey and open house participants were 25-44 and 45-64 years old, with a substantial number over 65. Younger participants were much more heavily represented in the focused feedback gatherings.
- **Gender:** A majority of participants identified as female, with a smaller proportion of male participants, and a small number of gender-nonconforming participants. Focused conversations included a mix of all genders.
- **Homeownership:** Survey and open house participants overwhelmingly identified as homeowners, with some renters and individuals in other living situations. Focused feedback attendees were primarily young people and/or people living in multi-family facilities.
- **Disability:** Community members with disabilities participated in both the survey and the open houses, but this demographic information was not collected for the online safety surveys. Multiple focused conversations concentrated on residents with disabilities, including those who are elderly and those who were physically and/or sight-impaired.
- **Equity Focus Areas:** The home locations of participants who answered the interactive online survey and web map were overlaid onto the Equity Focus Areas Map to see if people who live in the highest- and high-potential disadvantaged areas were reached. Most online survey participants live in average areas of potential disadvantage, with many others who live outside of Red Wing. 9% and 13% of respondents live in the highest- and high-potential disadvantage areas respectively. 12% and 10% live in the lowest- and low-potential disadvantage areas respectively. See the Equity Focus Area section for a description of the process and results of equity mapping.



Engagement Demographics

Figure 3 reflects demographics of the participants from the Phase I Online Survey and Web Map, the Open Houses, and partially from the Focused Feedback Gatherings. It is important to note that while a concerted effort was taken by the project team to track participant information, this data does not fully reflect demographic information from all engagement participants throughout this project. Collecting demographic information was not feasible at all engagement events, such as River City Days, and limited demographic information was collected at the Focused Feedback Gatherings. Additionally, some participants opt to not share demographic information when the option is provided for various reasons.

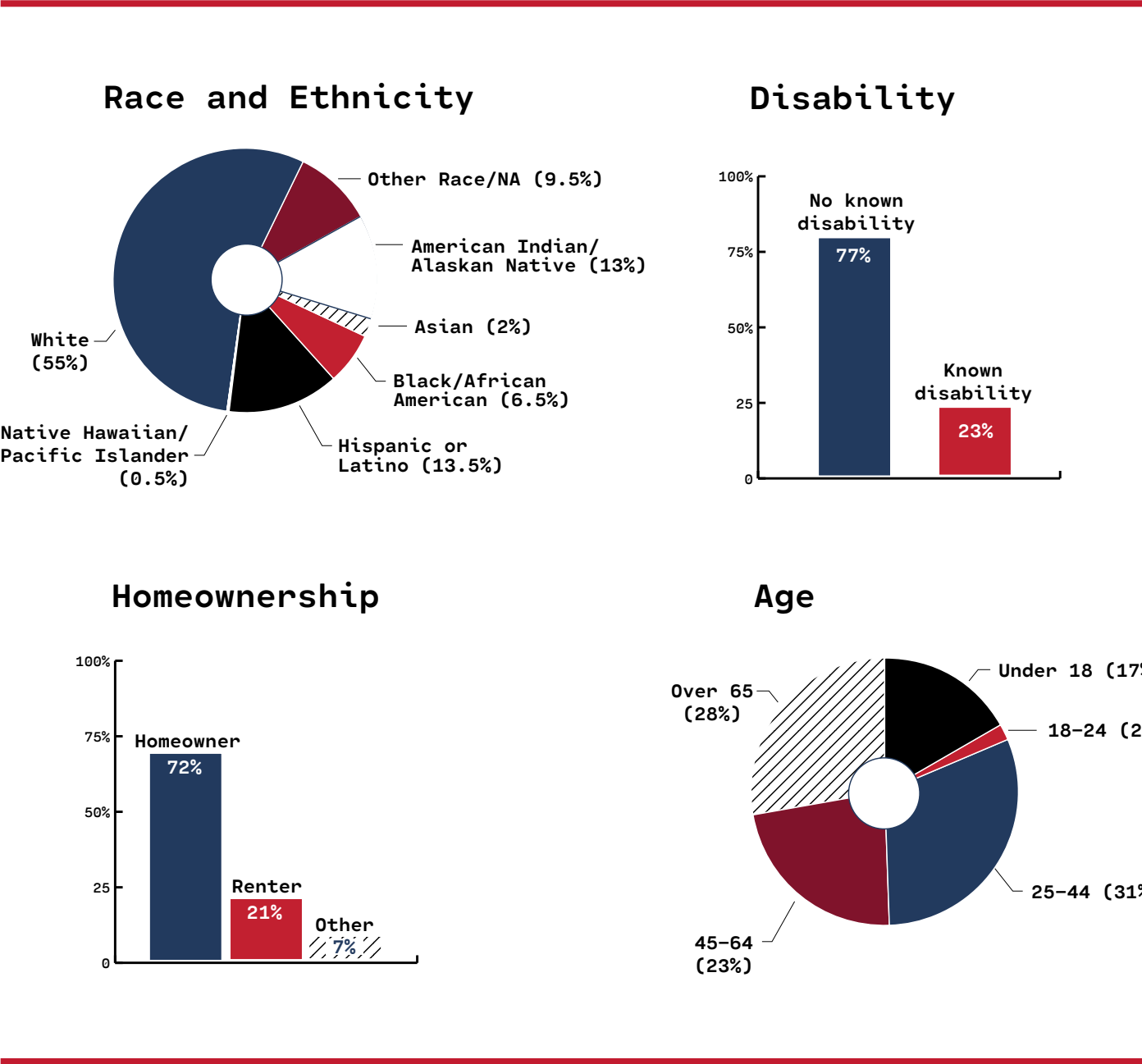


FIGURE 3 Participant Analysis for Open Houses, Phase I Online Survey/Web Map, and Focused Feedback Gatherings



## EQUITABLE ENGAGEMENT RESULTS

Table 2 outlines recommendations to further build relationships with the community and expand outreach. It is important to note that the demographics of engagement participants in this project are generally comparable to Red Wing's median demographics, and occasionally historically marginalized groups are represented higher than the census average. That is often difficult to do, and the City of Red Wing works hard to make that happen. Still, there is always room for improvement.

**TABLE 2** Transportation Engagement Recommendations

Demographic Grouping	Analysis	Recommendation for Future Engagement
Race/Ethnicity	The first open house and online survey with web map participants were largely white. Targeted focus group and one-on-one conversations successfully engaged diverse residents.	<ul style="list-style-type: none"> <li>Continue to promote engagement opportunities at destinations visited by racially diverse populations.</li> <li>Promote surveys and events in racially diverse locations with non-English translations as applicable.</li> <li>Continue to expand one-on-one and small group discussions.</li> </ul>
Age	Youth and children are underrepresented in the first open house and online survey, while older adults are overrepresented at the open house. Youth and older adults were targeted and well represented in focus groups.	<ul style="list-style-type: none"> <li>Continue to find ways to make open houses more interactive to engage youth and participants with children.</li> <li>Consider providing childcare at open houses.</li> <li>Coordinate with schools and youth programs to conduct outreach with youth.</li> </ul>
Income	Income groups below \$30,000 were not as highly represented public engagement events as those with incomes over \$30,000. Low-income residents were well represented in focus group conversations.	<ul style="list-style-type: none"> <li>Continue to promote engagement opportunities at apartments and other rental housing, as well as other locations such as laundromats and transit stations.</li> <li>Continue to expand accessibility to surveys by offering printed and in-person options.</li> </ul>
Housing	Renters were underrepresented in the first open house and survey but well represented in focus groups.	<ul style="list-style-type: none"> <li>Continue to promote engagement opportunities at apartments and other rental housing. Continue to promote at other locations such as laundromats and transit stations.</li> </ul>
Disability	People with disabilities were represented in the open house, survey, and focused feedback gatherings.	<ul style="list-style-type: none"> <li>Continue outreach to sight, hearing, and mobility-impaired residents.</li> <li>Target feedback from community members with non-visible disabilities.</li> </ul>
Overall	Feedback was received from a range of community members, and the survey reached people in equity focus areas. While less represented in engagement strategies that were open to the public, historically marginalized groups were very well represented in focused feedback gatherings when compared to the demographic population of Red Wing.	<ul style="list-style-type: none"> <li>Host more pop-ups at community events and at daily destinations.</li> <li>Expand on focused feedback gatherings, including follow-up conversations.</li> <li>Continue to work with trusted sources in various communities to expand outreach.</li> <li>Consider an ambassador program to expand the network and streamline outreach.</li> </ul>

## EQUITY AND HISTORICAL ANALYSIS

Transportation is a key element of people's daily lives. Nearly everyone regularly uses the transportation system to access jobs, education, food, services, and activities. Transportation systems are complex and comprehensive, often overlapping with other systems such as housing, land use, law enforcement, and climate efforts, and local governments have a responsibility to implement planning practices and policies that respond to the needs of all people. By understanding where institutional issues exist, the City of Red Wing can strategically invest, plan, and implement projects, programs, and policies to create a more inclusive transportation system.

### INFRASTRUCTURE

Red Wing has worked for years and leveraged state and federal dollars to provide more multimodal transportation options to residents. This is good progress. Without this focus, it's easy to spend too much time and energy on automobile-oriented investments based on how quickly vehicles can travel from point A to point B, and this type of system leaves many residents without transportation options. Below is a brief summary of how infrastructure has sometimes led to disparities in transportation access.

#### Highways, Bridges and Dams

- **Highways:** Highways have often displaced neighborhoods nationwide, and Red Wing is no exception. When Highway 61 was built in town, it split neighborhoods, forced some residents out of their homes, and changed how people got to and from work. The most impacted areas were the east segment of town (east of Bluff Street) and the West End neighborhood. When decision-makers become aware of how roadway planning and design have caused harm, we can correct mistakes and avoid future harm.
- **Bridges:** Bridges provide connections to businesses and services, and residents without access to bridges can often be cut off from essential routes and resources.<sup>4</sup> For decades in the Prairie Island Indian Community, there was only one way in and out of the reservation, and that route had a railroad running through it, forcing traffic to stop multiple times a day. In 2024, an overpass is being built over the railroad so the roads can be clear. This project finally removes this location from the top of the list of most dangerous rail crossings in the state and will likely save lives.

- **Dams:** Dams have a uniquely problematic and less discussed role in transportation, particularly in Indigenous communities. Relationships to water and healthy aquatic systems are vital to Indigenous cultures, and restricting and reconfiguring waterways were one of many approaches used to intentionally and unintentionally limit resources, degrade ecosystems, and disrupt the livelihood of our Indigenous neighbors. The construction of dams and the subsequent submerging of surrounding areas led to mass displacement of tribal communities.<sup>5</sup>

#### Transit

Fast, convenient, and easy public transportation increases access to healthcare, healthy food<sup>6</sup>, jobs, and education. Conversely, when people depend on inadequate or irregular public transportation, they are more likely to forego traveling to important destinations such as health services.<sup>7</sup> The Hiawathaland Transit Bus provides the main form of transit in Red Wing, and it is managed by Three Rivers Transportation. Based on numbers from the 2023 Red Wing Report Card, with data from 2018-2022, 3% of local households have no vehicle. That number may be relatively small, but to those residents, the bus service is crucial. It transports people to their doctor, grocery store, childcare provider, and other important locations. Red Wing and Hiawathaland continue to collaborate because consistent bus service in Red Wing is crucial in providing accessible transportation options for everyone.

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<sup>4</sup> Srivastava, Deepali. (2020). Want to Bridge the Inequality Divide: Build Bridges Where Low-Income People Live, Study Says. Next City.

<sup>5</sup> Rendell, Heather & Curley, Andrew. (2023). Dams and Tribal Land Loss in the United States. IOP Science.

<sup>6</sup> Litman, Todd. (2022). Evaluating Public Transit Benefits and Costs. Victoria Transport Policy Institute.

<sup>7</sup> Farhang, Lili and R. Bhatia. (2005). Transportation for Health. Race Poverty, & the Environment.

## Active Transportation

Active transportation investments provide safer experiences for those who walk, bike, or take the bus. This is especially important for those who use these modes for transportation, not for recreation only. Over the last few years, Red Wing has invested significantly in improving pedestrian infrastructure, though more can be done. Over the last 15 years, Red Wing has worked to connect areas whenever it is financially feasible, and the City has been successful in leveraging grants for this purpose. Paved trails are well-traveled, but bike lanes along busy roads to critical destinations are infrequent, and some streets that connect to key retail areas do not have sidewalks. Expanding the network and improving access will greatly improve the way people get to places for daily needs, services, employment, and activities.

## Traffic Crashes and Fatalities

Crashes in Red Wing that involve pedestrians happen more often in the downtown area, which is an area where a greater percentage of people walk and where a greater percentage of those walkers are young, elderly or experience mobility issues. Including downtown as a focus area for improvements will benefit everyone in Red Wing, including those who are most vulnerable.

## Housing and Land use

The neighborhood where a person lives often determines the availability of safe, accessible, and reliable transportation options, and without transportation, a person's ability to reach their daily destinations is limited, including to critical places like grocery stores and childcare. Red Wing is working to increase housing through four of its Strategic Plan goals: (a) Understand the Issues and Amount of Need for Housing; (b) Remove barriers to new housing; (c) Create more opportunities for new housing across all affordability levels with public/private/community partners; and (d) Improve and maintain existing housing.

In Red Wing, 57% of tenants and 22% of homeowners are cost-burdened (being cost-burdened means a household is paying 30% or more on housing costs). While costs continue to rise, housing options are limited for residents at every stage of life. During these times, Red Wing must remain committed to keeping and increasing transportation accessibility whenever and wherever new housing is created.

## Hazardous Land Use

In the Red Wing area, residents of the Prairie Island Indian Community feel the effects of land use every day. In 1973, the Prairie Island Nuclear Generating Plant was built, and twin nuclear reactors began operating within 700 yards of the Bdewakantunwan Dakota community. Those reactors are still in operation today, directly on the PIIC reservation and upriver from the city of Red Wing.

## LAW ENFORCEMENT

Enforcement is a key component of achieving transportation safety and compliance, so enforcing legal policies and practices is important for road safety and other transportation initiatives. Enforcement can take many forms, and in addition to one-on-one enforcement, other approaches are available, such as increasing the use of digital speed display signs to reinforce speed limits and encourage good driving behavior.

## CLIMATE RESILIENCE

Climate and transportation are tied in many ways. As extreme weather events increase, the need for infrastructure replacement, repairs, and maintenance increases. In Red Wing, floods have become more problematic. Record-breaking flood levels on the Mississippi River have forced repeated closures on some of Red Wing's roadways, trails, and parks and increased the time and money needed for maintenance.

Excess heat can also be an issue, and some neighborhoods may be less likely to have tree canopy coverage. Installing more green infrastructure, bus shelters, and street trees will make transportation safer and more pleasant for everyone. The Red Wing community appears to support activities like this. In the 2023 Red Wing Community Survey, 87% of residents said local government should continue incorporating climate change and its effects into planning, projects, and policies, and 96% said they think it is important for local government to become more sustainable overall.







# 4 Transportation Safety in Red Wing

This Action Plan utilizes a data-informed approach to understanding the systemic factors behind traffic deaths and serious injuries in Red Wing.

Although there are limitations, analyzing crash data is a good way to understand where people are severely injured or killed while traveling on Red Wing's streets. Crash data is generated from individual crash reports which includes information about location, contributing factors, and demographic information such as age and gender of people involved.

# CRASH DATA ANALYSIS

The project team began analyzing the crash data from 2014 through 2023 by conducting a descriptive crash analysis. This is a statistical analysis of key factors that identify the circumstances of crashes. The leading causes of these historical crashes inform this CSAP focus areas and strategies.

It's important to define the terms used in the crash analysis. Crash data within Minnesota and elsewhere in the United States typically uses the "KABCO scale" (also known as KABCN scale) to define the levels of severity of traffic crashes. The Minnesota Law Enforcement Accident Report Instruction Manual has definitions of each level of the KABCO scale listed on the following page.



## KEY TAKEAWAYS

## CRASH DATA ANALYSIS

A thorough analysis of the crash data provides insight into where various types of crashes are occurring and what roadway users are involved. Understanding where higher rates of fatal and serious injury crashes and where vulnerable roadway user are overrepresented in crash data can help inform us on what types of interventions should be placed on Red Wing roads to make traveling safer for all modes of transportation.

**Key takeaways from crash data analysis are listed below.**

- Between the years of 2014 and 2023, there were 248 crashes that involved someone being killed or injured, with 48 of those crashes involving someone being killed or seriously injured, on Red Wing's streets.
- Crashes involving people walking, biking, or using a personal mobility device resulted more often in serious injuries.
- Fatal and injury crashes are increasing over time in Red Wing.

<b>K</b>	<b>KILLED</b> A crash involving one or more fatal injuries.
<b>A</b>	<b>INCAPACITATING INJURY</b> Any injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred. Inclusions: severe lacerations, broken or distorted limbs, skull or chest injuries, abdominal injuries, unconsciousness at or when taken from the accident scene, unable to leave the accident scene without assistance. <i>Exclusions:</i> momentary unconsciousness.
<b>B</b>	<b>NON-INCAPACITATING INJURY</b> Any injury, other than a fatal injury or an incapacitating injury, which is evident to the observers at the scene of the accident in which the injury occurred. Inclusions: lump on head, abrasions, bruises, minor lacerations. <i>Exclusions:</i> limping (injury cannot be seen).
<b>C</b>	<b>POSSIBLE INJURY</b> A possible injury is any injury reported or claimed which is not a fatal injury, incapacitating injury, or non-incapacitating evident injury. Inclusions: momentary unconsciousness, claim of injuries not evident, limping, complaint of pain, nausea, and hysteria.
<b>N/O</b>	<b>NO APPARENT INJURY</b>

For the purposes of this analysis, the following definitions apply:

- **Fatal crash:** Any crash assigned a “K” value in the KABCO scale.
- **Serious injury crash:** Any crash assigned an “A” value in the KABCO scale.
- **Injury crash:** Any crash assigned an “A” or “B” value in the KABCO scale.
- **Fatal or serious injury crashes (also referred to as FSI, KSI, or KA crashes):** Any crashes assigned a “K” or “A” value in the KABCO scale.
- **Fatal or injury crashes (also referred to as FI, KI, or KAB crashes):** Any crash assigned a “K”, “A”, or “B” value in the KABCO scale.

Traditional crash analysis focuses on reducing crashes of all severity levels. The SS4A program generally focuses its analysis on fatal or serious injury crashes because those crashes lead to significant personal, familial, and societal health impacts. For smaller cities, the analysis can be extended to include fatal, serious injury, and injury crashes to provide a larger sample size for analysis. The analysis within this report has chosen to include analysis of fatal, serious injury, and injury crashes unless data is noted or described as fatal or serious injury instead.

The analysis period for this CSAP spans from years 2014 to 2023, which is the last year with complete crash data. Other traditional safety analyses may only consider the last 3 or 5 years of crash data, but the project team chose to include a greater number of years of data to reduce the effect of low vehicle volumes on certain roadways and to counteract the non-linear distribution of crash occurrences from year to year.

Crash data used for this analysis was obtained from Minnesota Crash Mapping Analysis Tool (MnCMAT2), which includes information reported via crash reports submitted by law enforcement agencies, such as Minnesota State Patrol, Goodhue County Sheriff's Department, City of Red Wing Police Department, and Prairie Island Indian Community Public Safety. Reportable crashes are defined as crashes with damages (property and/or injury) exceeding \$1,000.

Crash data was analyzed for roadways with all jurisdictions within the City of Red Wing's borders, including on roadways maintained by the Minnesota Department of Transportation (MnDOT) and Goodhue County. Although the City of Red Wing has less control over improvements to these roadways, fatal and serious injury crashes on these roadways impact the community

just as much as those on local roadways. MnDOT and Goodhue County have a long history of working collaboratively with the City of Red Wing to identify safety and mobility issues along the transportation system within the City and identify applicable solutions and funding to improve the transportation system. Recent examples include partnership in reconstructing US 61 from Old West Main Street to Potter Street in 2016-2017, repaving and adding pedestrian crossing safety improvements to TH 58 from Main Street to South Park Street in 2021, and reconstructing and reconfiguring the transportation system surrounding the US 61/County 53 (Spring Creek Road) intersection in 2018.

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## Crash Data Limitation

Although crash reports are the best way to obtain information about a large quantity of crashes, they have limitations. Crash data is known to have problems with underreporting which can happen for a variety of reasons.<sup>14</sup>

Sometimes a police department does not have enough officers to respond to high crash volumes during rain, snow, or other inclement weather events, so a crash report would only be filed if one of the involved parties had the resources and ability to self-report the crash.

Some residents in a crash may underestimate the severity of the incident and not report it, especially if adrenaline masks the injury or the severity of an injury immediately afterward. There is a variety of reasons why some residents may not report a crash, and it is useful to keep these limitations in mind.

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<sup>14</sup> Stutts, J. C., & Hunter, W. W. (1998). Police Reporting of Pedestrians and Bicyclists Treated in Hospital Emergency Rooms Transportation





## CRASH HISTORY AND TRENDS

After being collected from the MnCMAT2 system, crash data for Red Wing's transportation system was analyzed to identify locations and roadway characteristics that led to high incidences of higher-severity crashes. The analysis is documented through the Descriptive Crash Analysis, High Injury Networks, and Risk Factors in this report.

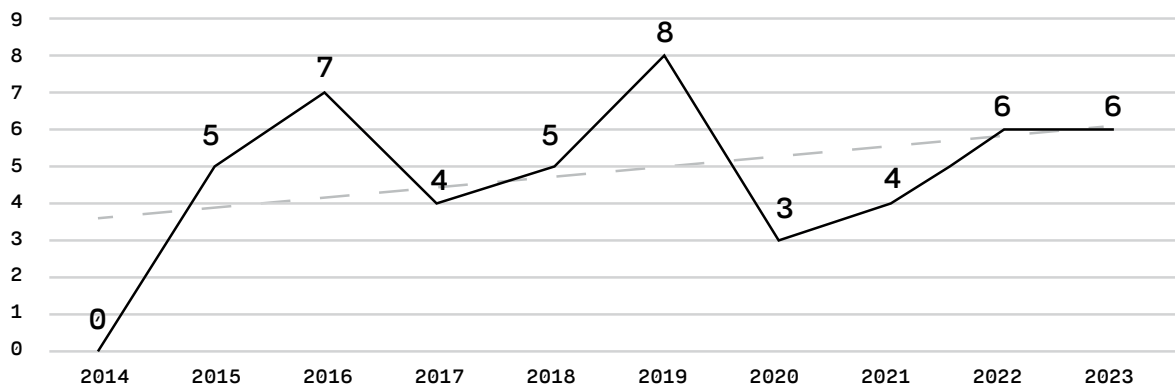
### DESCRIPTIVE SAFETY ANALYSIS

The crash data was analyzed to show trends in occurrences of crashes, environmental factors (weather, pavement conditions, hour of the day), crash types, involvement of vulnerable road users, and other factors. The full summary of the crash data evaluated for the Red Wing CSAP is available in *Appendix C: Descriptive Safety Analysis Report*. The following portions of this section summarize the information from the report.

#### Crashes by Year

Fatal and serious injury (FSI) and fatal and injury crashes (FI) have generally been trending downward in Red Wing since 2019 (see Figures 4 and 5), while vulnerable road user crashes have been trending slightly upward over the same time period (see Figure 6).

### Fatal and Serious Injury Crashes By Year



**FIGURE 4** Fatal and Serious Injury Crashes by Year, 2014-2023

## Fatal and Injury Crashes By Year

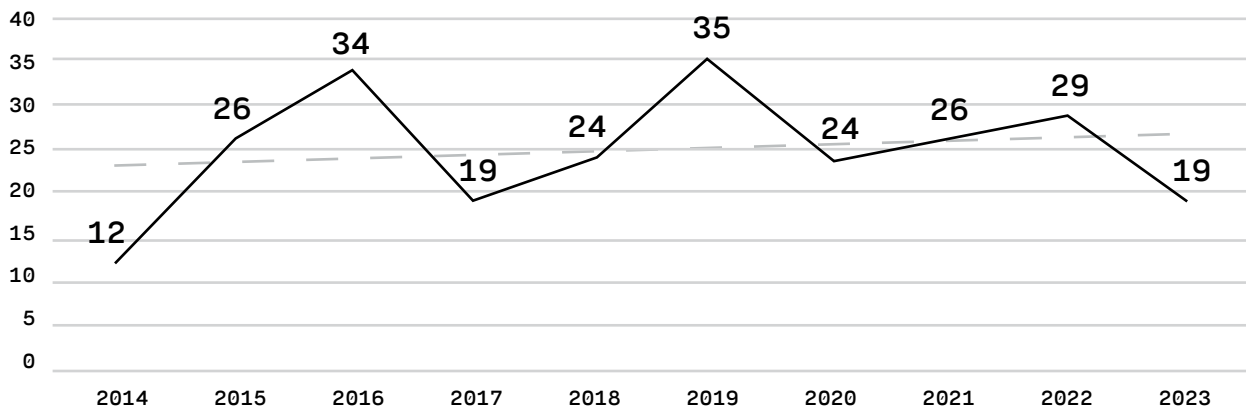


FIGURE 5 Fatal and Injury Crashes by Year, 2014-2023

## Vulnerable Road Users Crashes By Year

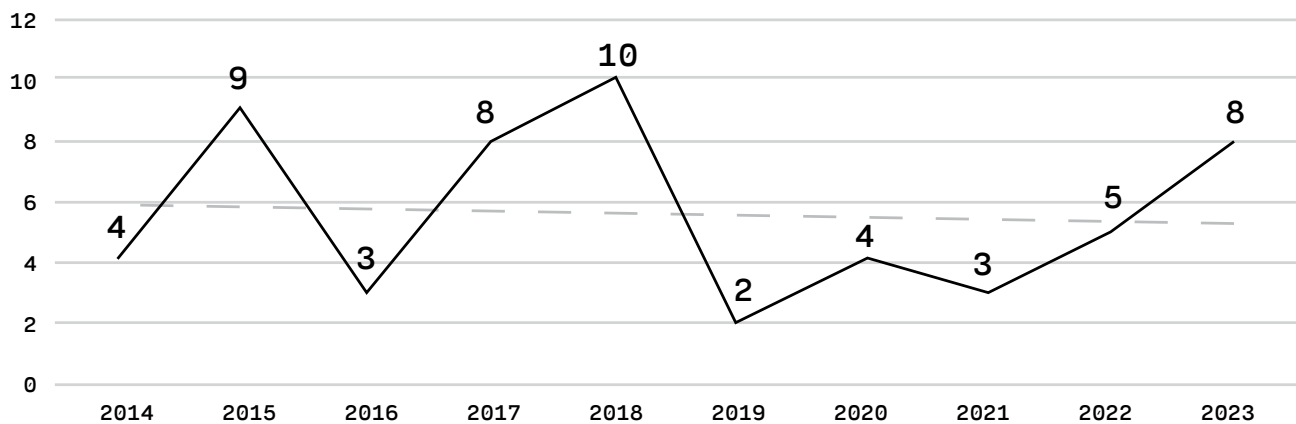


FIGURE 6 Vulnerable Road User Crashes by Year, 2014-2023

**In order to meet the City's goal of zero fatalities and serious injuries by 2040, fatal and serious injury crashes will need to reduce by about 0.5 crashes per year from 2025 to 2040 and fatal injury crashes will need to reduce by almost 2 crashes per year during the same time period.**

# Crashes by Mode

Table 3 shows crashes by mode of travel and severity level within the City of Red Wing. Crashes involving vulnerable road users, like pedestrians and bicyclists, tend to lead to higher likelihood of fatal, serious injury, or minor injury compared to crashes involving only vehicles. This can be generally explained by basic physics where vehicles have greater mass and velocity whereas those biking and walking have less mass and velocity. When a crash occurs with an imbalance of kinetic energy between the two affected parties, this tends to lead to more severe injury outcomes to vulnerable users.

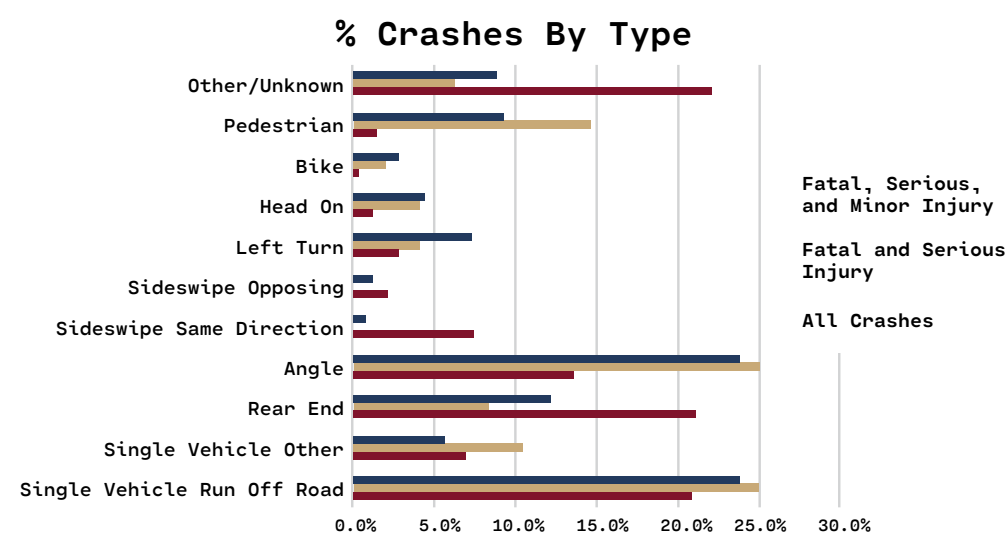
**TABLE 3** Fatal and Injury Crashes by Mode and Severity, 2014-2023

Severity	Total Number					Percent of Total				
	All Crashes	Vehicle-Only	Bike	Pedestrian	All Vulnerable Road Uses	All Crashes	Vehicle-Only	Bike	Pedestrian	All Vulnerable Road Uses
Fatal	8	7	0	1	1	0.3%	0.2%	0.0%	2.2%	1.8%
Serious Injury	40	33	1	6	7	1.3%	1.1%	9.1%	13.3%	12.5%
Minor Injury	200	178	6	16	22	6.5%	5.9%	54.5%	35.6%	39.3%
Possible Injury	304	283	3	18	21	9.8%	9.3%	27.3%	40.0%	37.5%
Property Damage Only	2539	2534	1	4	5	82.1%	83.5%	9.1%	8.9%	8.9%
Total	3091	3035	11	45	56	-	-	-	-	-

# Crashes by Type

The most prevalent types of crashes for fatal and serious injury crashes within the City of Red Wing are angle crashes (also known as “t-bone” crashes), single-vehicle run-off-the-road crashes, and pedestrian-related crashes. The most prevalent types of crashes for fatal injury crashes within the City of Red Wing are angle crashes, single-vehicle run-off-the-road crashes, and rear-end crashes.

The percentage of pedestrian-related crashes, bike-related crashes, and head-on crashes were significantly overrepresented in fatal and serious injury and fatal and injury crashes when compared to all crashes (including non-injury crashes). Angle crashes, left-turn crashes, and single-vehicle run-off-the-road crashes were also somewhat overrepresented in fatal and serious injury and fatal and injury crashes compared to all crashes. Rear-end, sideswipe (opposing and same direction), and other/unknown type crashes were underrepresented compared to all crashes. See Figure 7 for additional information on crash types by percentage.



**FIGURE 7** Percentage of Fatal and Injury, Fatal and Serious Injury, and All Crashes by Collision Type, 2014-2023



## Other Crash Trends

Other environmental and timing factors were analyzed for trends in fatal and serious injury and fatal and injury crashes compared to all crashes. A summary of trends from these factors is outlined below:

- A greater amount of fatal and serious injury and fatal and injury crashes occur in warmer months compared to colder months. (Crash numbers include the total and percent of crashes by month.)
- A greater amount of fatal and serious injury, fatal and injury, and vulnerable road user crashes occur in afternoon and evening hours compared to overnight and morning hours. (Crash numbers include the total and percent of crashes by time of day.)
- Most fatal and serious injury, fatal and injury, and vulnerable road user crashes occur during clear and cloudy conditions compared to rainy and snowy weather. (Crash numbers include the total and as a percent of crashes by weather condition.)
- Most fatal and serious injury, fatal and injury, and vulnerable road user crashes occur during daylight conditions compared to dark conditions (lighted or no street lights). (Crash numbers include the total and as a percent of crashes by lighting condition.)
- Most fatal and serious injury, fatal and injury, and vulnerable road user crashes occur during dry and wet conditions compared to snowy and icy pavement conditions. (Crash numbers include the total and as a percent of crashes by pavement surface condition.)

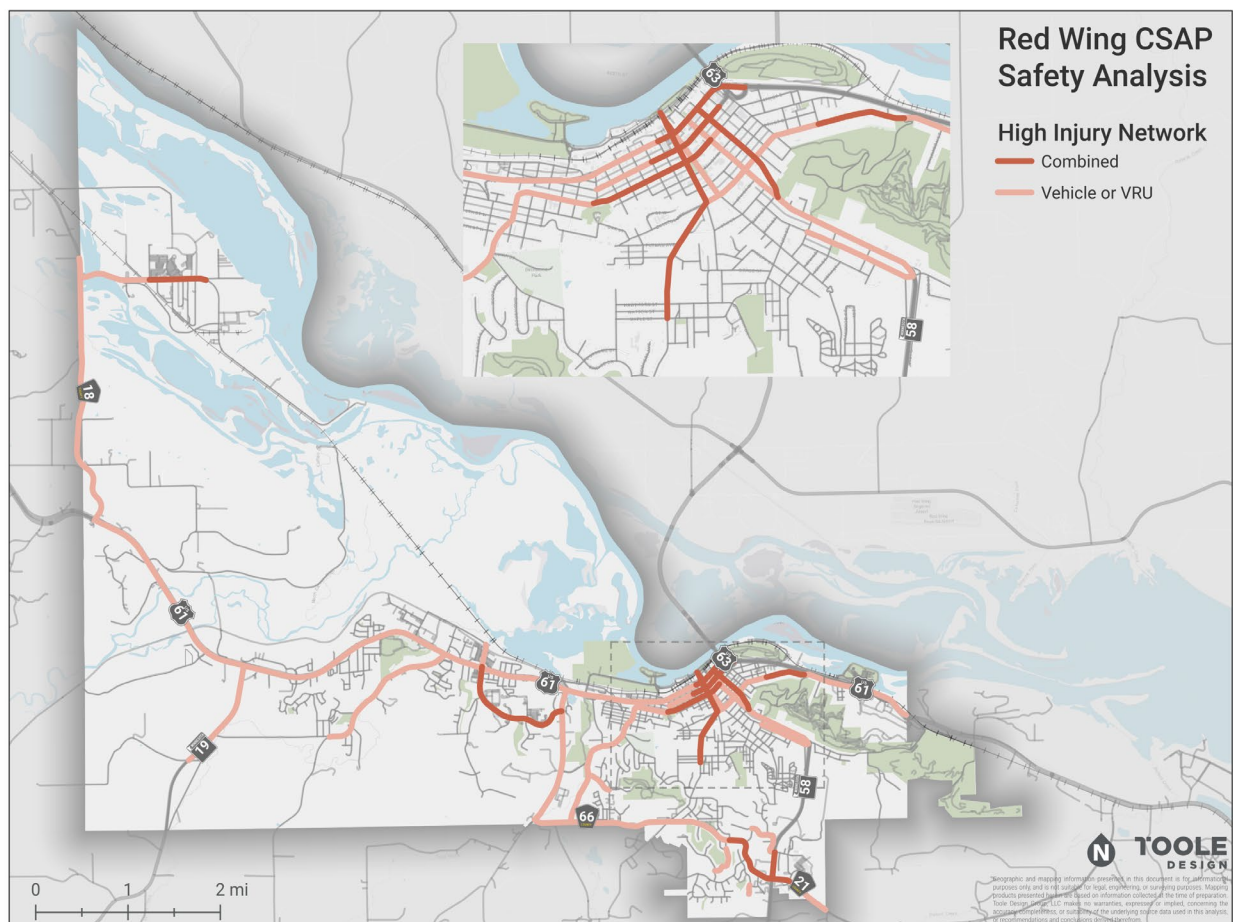




## HIGH INJURY NETWORK

Crashes happen on a variety of roads throughout the Red Wing area, and we collect this data to identify characteristics of the local roadway network that most commonly appears in the High Injury Network (HIN) for Red Wing (see Map 1). The characteristics include the Average Daily Traffic (ADT), functional classification, roadway system, speed, number of lanes, and others. More information on how the High Injury Network was created and how trends were identified can be found in *Appendix D: Risk Factor Analysis Report*.

- **Functional Classification:** For crashes involving only vehicles (Vehicle HIN), roads classified as Arterials (Principle or Minor) and Major Collectors make up a larger portion of the HIN when compared to their proportion of the total road network. For crashes involving vehicles and Vulnerable Road Users (VRU) such as pedestrians and bicyclists, roads classified as Minor Arterials and Major Collectors are highly overrepresented in the HIN.
- **Roadway System:** When looking at the HIN Mileage by roadway system classifications, MnDOT roadways, County State Aid Highways, County Roads, and Municipal State Aid Streets (MSAS) are vastly overrepresented in the Vehicle HIN. MnDOT roadways and MSAS are also overrepresented in the VRU HIN.
- **Speed Limit:** Breaking down the HIN by roadways speed limit shows that roadways with a speed limit of 35mph or above are highly overrepresented in the Vehicle HIN. For the VRU HIN, roadways with a speed limit of 35mph are vastly overrepresented in high-injury crashes involving vulnerable road users.
- **Average Daily Traffic:** When looking at the HIN mileage by roadway ADT, roadways with an average daily traffic count of 1,001 or higher are overrepresented in the Vehicle HIN, while roadways with an ADT count between 1,001 and 15,000 make up a larger portion of the VRU HIN compared to their proportion of the total road network in Red Wing.



**MAP 1** High Injury Network

# COMMUNITY FEEDBACK

Resident and stakeholder feedback provides project teams with important insight into existing conditions that are not available through data. Hearing people's thoughts, ideas, and lived experiences can fill gaps in available data and can also help understand what may be causing some of the issues that the data is indicating. Engagement also improves transparency of the decision-making process with the public and provides an opportunity to strengthen relationships with the community. This section summarizes the engagement strategies and community input received for this project. For a full summary of the engagement and to review all feedback received by the public, see *Appendix E: Community Engagement Summary*.



## KEY TAKEAWAYS

## COMMUNITY ENGAGEMENT

Through a range of engagement activities, events, and conversations with various community groups, partners, organizations, representatives, and residents, the project team received critical insight to inform this plan and future transportation improvement efforts.

**Key takeaways from the engagement process of the project and previous transportation outreach efforts are listed below.**

- Residents have consistently expressed that connected sidewalk networks, visibility of travelers, safe crossings, clear signage and markings, and safe driving behaviors are the most important for transportation investment and practices.
- Residents would like to see transportation improvements most on high speed and high-volume roads, in the downtown area, near schools, at complicated intersections, and near the old fairgrounds.
- If residents have safer and more accessible transportation options, they will be more likely to walk and bicycle for transportation, engage in active, healthy lifestyles, and reduce vehicle miles traveled (which also reduces pollution).

## PREVIOUS ENGAGEMENT

### SAFER STREETS SURVEY 2022

In this survey, respondents were asked to identify corridors that they would like to see a pedestrian trail on. Highway 58 from South Park Street to Pioneer Road and North Service Drive from Target to McDonald's were the two most chosen options. Through additional comments, respondents also cited the following issues as notable concerns:

- **Infrastructure for People Walking:** Residents expressed interest in adding sidewalks or pedestrian bridges/trails, especially in high-traffic locations such as Highway 58/Pioneer Road and Hallquist Ave. Repairing stairs (especially on 4th St) and proper lighting at intersections and in tunnels are also concerns for residents.
- **Driver Behavior:** Speeding and failure to slow down/yield at intersections are prominent issues; residents are voicing a need for better rules enforcement to combat them.
- **Intersections:** West Avenue/College/Central/7th Street and Highway 58/Pioneer Rd were repeatedly cited as intersections that need safety improvements.

### RIVER CITY DAYS 2023

Throughout River City Days 2023, the City engaged with residents and tourists alike to better understand their perception of the City, and how the City can evolve to best accommodate them.

With comments regarding roadway safety, residents voiced that they would like to see safety improvements and the implementation of safety features on intersections downtown, especially for people with disabilities. Residents also cited driver behaviors as an issue, with speeding and general distracted driving being sources of concern. At large, Red Wing residents also expect better communications from the City that addresses why things are happening and when they might be delayed on city roads.

## ENGAGEMENT STRATEGIES

Public engagement for the Red Wing CSAP was divided into two phases. Phase 1 focused on understanding people's concerns related to the transportation system, determining where there are gaps and issues, and collecting information about the lived experience of community members. Phase 2 focused on gathering community feedback about which streets and intersections people want the City to prioritize to receive safety improvements, and which programs and policies they want the City to begin or improve. Goals for all the public engagement included:

- Inform safety goals for Red Wing's roadway system
- Identify general transportation safety concerns
- Identify unsafe locations throughout the city
- Identify inequities in the transportation system
- Identify opportunities to improve roadway safety
- Assist in developing and affirming the High Injury Network and Equity Analysis
- Help develop strategies and projects that will improve road safety

The project team used different engagement techniques, both virtual and in-person, to reach a wide variety of Red Wing residents. Engagement strategies used for this project are summarized below. For a full description, see *Appendix E*.

### SAFETY COMMITTEE MEETINGS

The Safety Committee served as an advisory group for the project, consisting of representatives from the City of Red Wing, Goodhue County, the Prairie Island Indian Community, Red Wing Public Schools and MN State College Southeast, community partners (Xcel Energy and Downtown Main Street), and local businesses (Red Wing Bicycle Co). The Committee met throughout the course of the project, providing feedback and input on the process from beginning to end with a shared goal of making the City's streets safer for everybody.



## VIRTUAL ENGAGEMENT

Virtual engagement allowed the project team to spread information quickly and efficiently throughout the community and allowed those who could not or do not want to attend in-person events to engage on their own time.

### Virtual engagement consisted of:

- **Project Website:** A central spot for information, opportunities, and updates. It went live on March 20, 2024, and will remain available throughout the project. It included a Home page with a brief overview of the project, an About page for background information about the project and about the SS4A program, and an Engage page that listed past and upcoming engagement opportunities. There was also a page that linked to Engagement Phase II surveys for the duration that the surveys were open to the public.
- **Interactive Online Survey and Web Map:** The first online survey allowed participants to provide their feedback about the safety of the existing network, identify their transportation safety priorities, pinpoint locations and/or corridors where they experience safety concerns, and leave comments on key issues and opportunities. This survey and web map was open to the public from April 16, 2024 to June 28, 2024.
- **Partner Agency Interviews:** The project team conducted a series of interviews with staff from Goodhue County and Minnesota Department of Transportation (MnDOT) District 6 over Spring and Fall of 2024.
- **Safety Surveys:** This safety survey allowed participants to provide their feedback about the streets, intersections, and policies and programs that they most want to see improvements on and leave comments on key issues and opportunities, which was used to inform the prioritization methodology for the project. The safety survey was conducted online from August 2nd to September 13th, 2024, but an in-person format was available at the open house and River City Days. The project team created a page on the project website to link people to the online surveys, which were also shared on the City's social media.

The screenshot displays a web interface titled "Your Choices: Intersections". At the top, there is a progress bar showing "0 Selected" and "2 Available". Below this, a grid of eight intersection photos is presented, each with a "Select" button. The intersections shown are:

- Main & Plum: By ADM
- Main, Broad, East & West: By the Y
- Highway 61 & Tyler Rd. with Service Roads
- Plum & 7th: By Kwik Trip & Liquor Store
- Your Suggestion (with a lightbulb icon)
- Main & Bush St: By the St. James
- Plum & 5th St: By Laundromat & Salvation Army
- Highway 61 / Main St. & Old West Main

A "Submit" button is located at the bottom right of the grid.



## IN-PERSON ENGAGEMENT

While the online map generated a wide range of feedback, the in-person engagement opportunities are still essential as they provide space for more in-depth conversations and nuanced responses. The project team supported the City on the following events that sought to get feedback from a broader range of Red Wing residents with activities that would prompt detailed discussions.

### In-person engagement strategies included:

- **Open Houses:** Intended to be welcoming and located in places where Red Wing residents might already be or are accessible to the public, the open houses were held at the library. The first open house was held on April 24, 2024 from 5:30 to 7:30 p.m. and the second was held on September 12, 2024 from 6:00 to 7:30 pm. At both events participants were invited to visit interactive stations to provide feedback about Red Wing's transportation safety system and view presentation boards for background information and project objectives. The project team then gave a presentation about the project with open discussion time afterwards.
- **River City Days 2024:** The City had a table at the annual River City Days festival in Downtown Red Wing from August 2 through August 4, 2024. People were able to take the safety survey by interacting with activity boards and providing additional comments, concerns, and thoughts about the project to City staff who were tending the table.
- **City Council Presentation:** The project manager provided a 10-minute presentation to the Red Wing City Council on September 9, 2024 to present the findings of the project, including the safety analyses, equity analysis, and public engagement findings, and informed the Council on the process for the remainder of the project.
- **Focused Feedback Gatherings:** Throughout the spring and summer of 2024, the City of Red Wing's Community Engagement Facilitator (CEF) held a series of focused feedback gatherings collect input from a diverse and representative cross-section of the community, concentrating on populations that have historically been underrepresented on government surveys and online questionnaires.

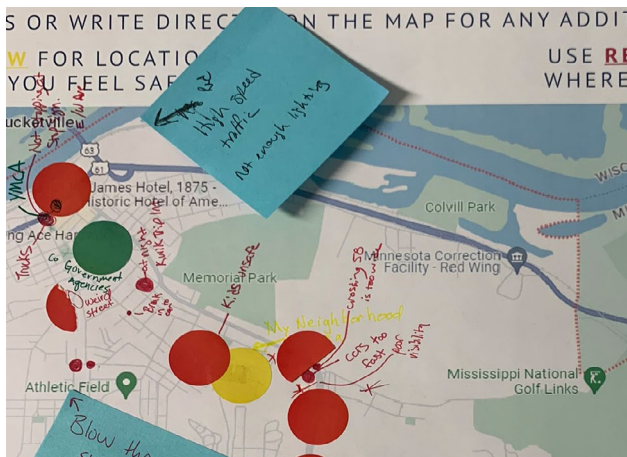
The intent was to garner feedback from groups that are historically left out of the planning process and provide a setting where participants would feel comfortable sharing their thoughts. This approach included focus group and individual conversations. Participants for the focus groups and individual conversations are summarized below:

#### Focus Groups:

- Maple Hills Common Bond Housing residents
- Students of the NASA (Native American Student Association)
- Students of the BSU (Black Student Union)
- Residents who are sight-, hearing-, or mobility-impaired
- Jordan Towers residents (aged 65+)
- Downtown Plaza residents (aged 65+)
- Rise-Up Red Wing Youth Council

#### Individual Conversations

- Attendees at Prairie Island Indian Community Safety Day
- Leadership staff at Transportation Organizations (First Student Bus Company and Red Wing Grain)
- Hispanic residents (conversations were held in Spanish by Hispanic Outreach staff using surveys translated in Spanish)
- A sight and/or mobility impaired resident (in addition to the focus group participants listed previously)



# ENGAGEMENT RESULTS

The project team collected all feedback that was heard from the public through surveys, interviews, focus groups, activities, conversations, and open houses. This included quantitative and qualitative data that was incorporated into the plan. This feedback was used to identify where gaps in data analysis are occurring and to inform project and program selection, project prioritization, and recommendations. The feedback received for each phase of engagement is summarized below. For a full report of the engagement results for both phases, see *Appendix E*.

## PHASE I: JANUARY THROUGH JULY 2024

Phase I engagement activities were facilitated from January through July 2024. This phase was focused on understanding where safety issues are located and what factors contribute to them. Informed by the surveys, conversations with the community, and safety committee member feedback, the project team was able to discern common themes. Table 4 summarizes a few thematic engagement questions.

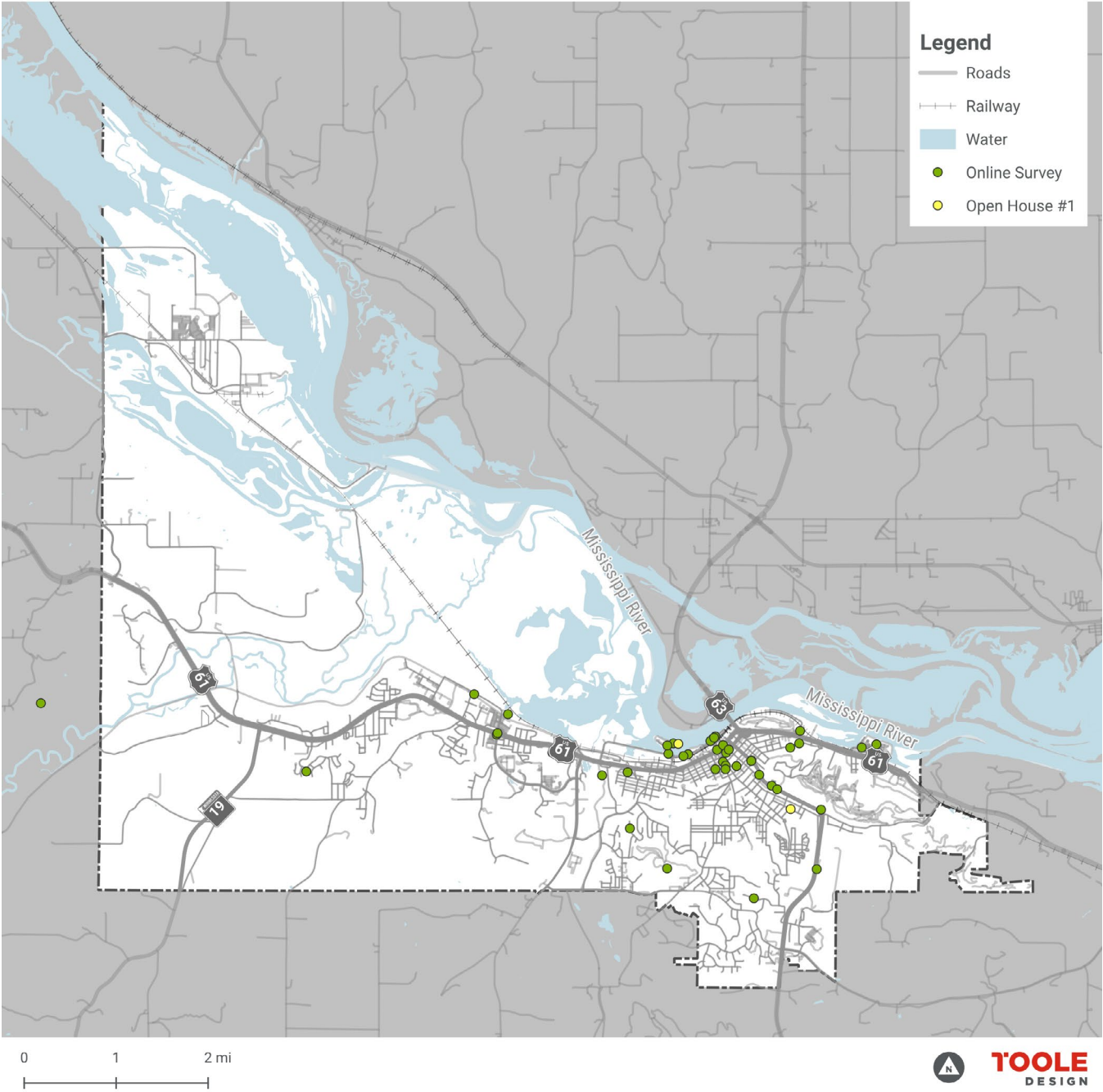
The subsequent maps reflect safe and unsafe locations indicated by participants across events in Phase I of engagement. Common unsafe locations for people include Highway 61, Highway 58, Main Street, Plum Street, Bush Street, Hallquist Avenue, and Tyler Road. Safe routes were more concentrated in residential neighborhoods. See Maps 2 and 3 for safe and unsafe locations identified by residents.

TABLE 4 Common Themes for Engagement Phase I

Focus	Common Themes
Plan Framework	<ul style="list-style-type: none"><li>Plan framework should focus on street design, accessibility, incorporating data, and changing behavior.</li><li>Equity should be an integral component to all phases of the project.</li><li>Transportation safety should be a priority for transportation planning projects.</li></ul>
Top Destinations	<ul style="list-style-type: none"><li>Work and grocery stores are the most visited locations.</li><li>Secondary locations are shopping areas, such as Target, schools, parks, and recreational areas.</li></ul>
Feeling of Safety	<ul style="list-style-type: none"><li>The issue that most impacts feelings of safety is poor driving behavior. That behavior includes distracted driving, high driving speeds, drivers not being aware of pedestrians and bicyclists, running red lights, and drivers not yielding to pedestrians and bicyclists.</li><li>Lighting and visibility also impact the feeling of safety.</li><li>People would walk and bike more if they felt safer</li><li>Along specific routes, long crosswalk distances and high speeds are issues.</li><li>People feel safe when there are sidewalks, good lighting and visibility, and separation between vehicles and other transportation modes.</li></ul>
Safety Priorities	<ul style="list-style-type: none"><li>Addressing driver behavior foremost.</li><li>Increasing visibility and lighting, improving crossings, maintaining sidewalks and vegetation, and enforcing traffic laws are important to the community.</li><li>The community would like to see a shift towards walking and bicycling and better access to trails.</li></ul>
Unsafe Locations	<ul style="list-style-type: none"><li>Most unsafe routes: Highway 61, Highway 58, Main St., Plum St., Bush St., Hallquist Ave., and Tyler Rd.</li><li>Most unsafe intersections: The Main St./Broad St./East Ave./West Ave., Main St. and Bush St., Main St. and Plum St., Highway 61/Main St. and Old West Main St., Highway 58 and Pioneer Rd., Plum St. and 5<sup>th</sup> St., Highway 61 and Tyler Rd., Tyler Rd. and Kosec Dr.</li></ul>

Red Wing CSAP Webmap Survey

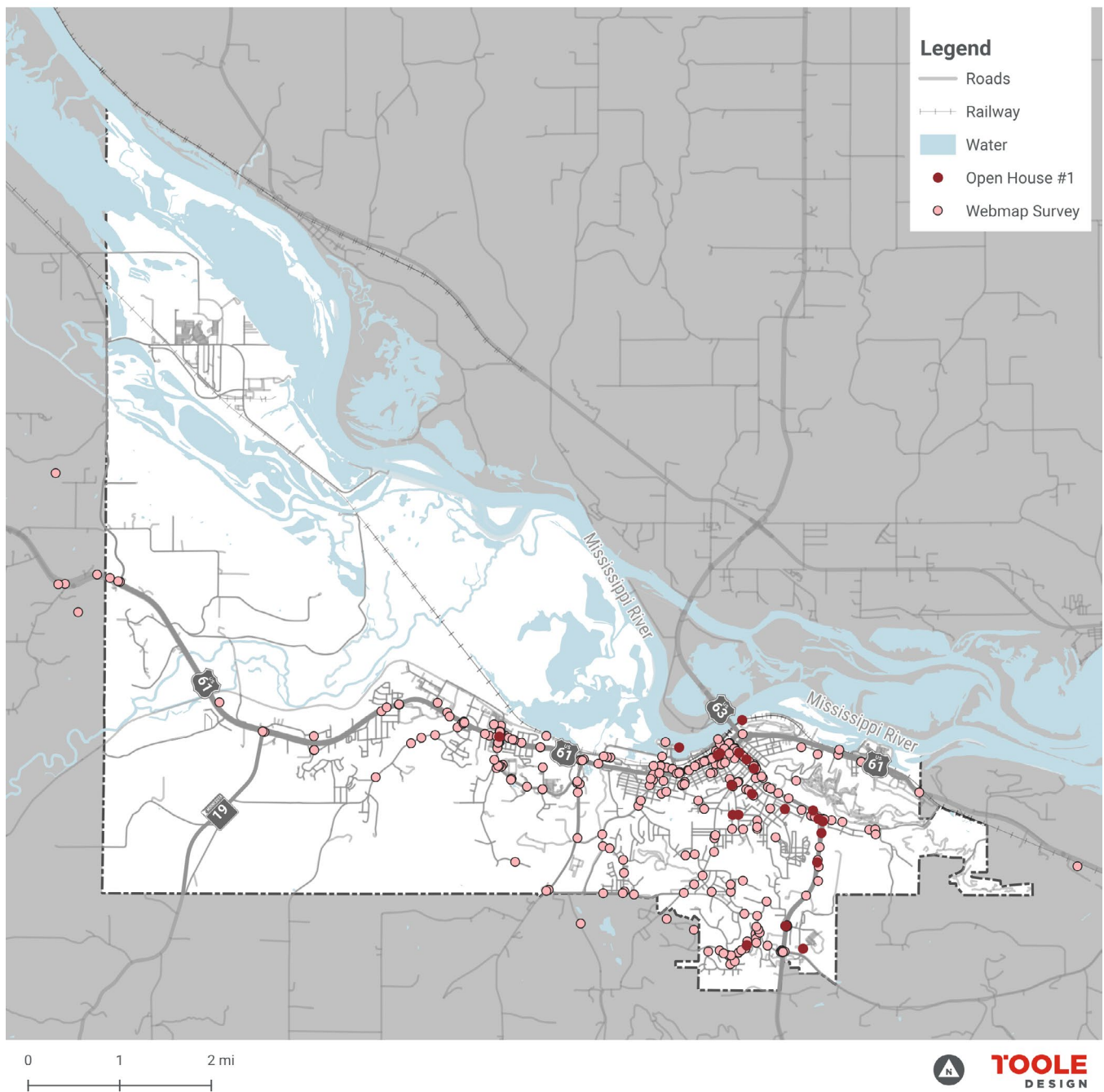
Safe Locations across all engagement events



MAP 2 Safe Locations Identified by Residents Who Participated in First Online Survey/Web Map and Open House in Phase I

## Red Wing CSAP Webmap Survey

Unsafe Locations across all engagement events



**MAP 3** Unsafe Locations Identified by Residents Who Participated in the First Online Survey/Web Map and Open House in Phase I



## PHASE II: AUGUST THROUGH SEPTEMBER 2024

From the engagement feedback from Phase I and safety and equity analyses, the project team developed preliminary project and program and policy recommendations. Phase II engagement centered around prioritization of recommended projects and actions. Common themes from the comments provided online, through the survey, and at the in-person events were also reviewed and are summarized in this section.

### Recommended Projects

The highest priority roads, intersections, and policies and programs of residents for safety investment are listed below and presented in Maps 4 and 5. This information was summarized from the from the road and intersection safety surveys, social media comments on the City's post, and related conversations with community members. See Figures 8-10 for total safety survey counts from residents.

#### Roads

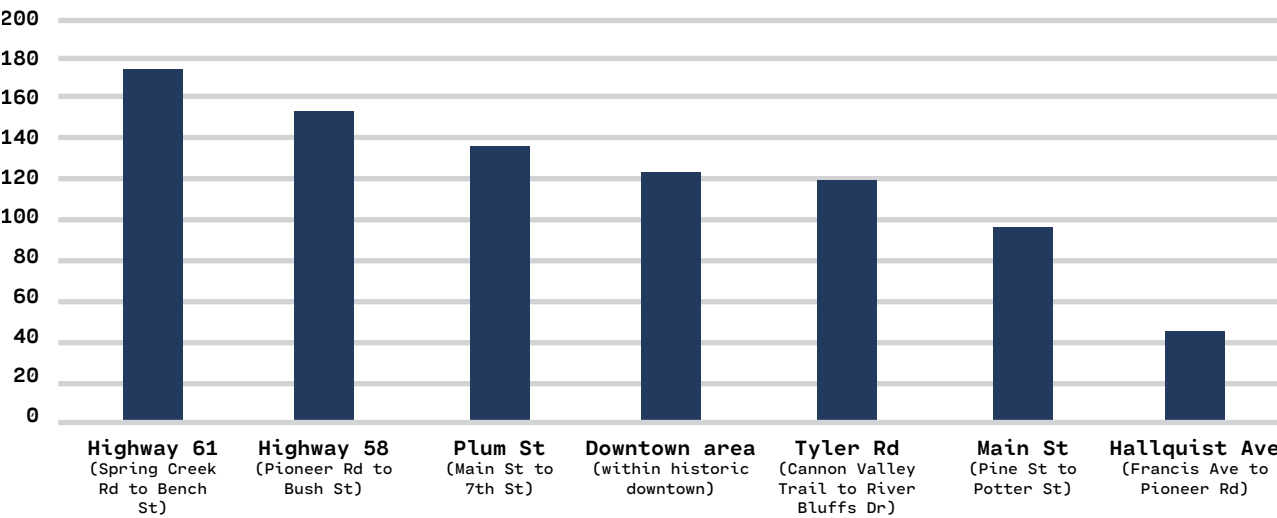
- Highway 61 (Spring Creek Road to Bench Street) and Highway 58 (Pioneer Road to Bush Street) received the most total votes.
- Tyler Road (Cannon Valley Trail to River Bluffs Drive), Plum Street (Main Street to 7<sup>th</sup> Street), and the Historic Downtown also received a high number of votes.
- Other roads that residents felt should be prioritized include, Spring Creek Road, North Service Drive/ South Service Drive, around the Old Fairgrounds, East Avenue, W 4<sup>th</sup> Street, and W 6<sup>th</sup> Street.

#### Intersections

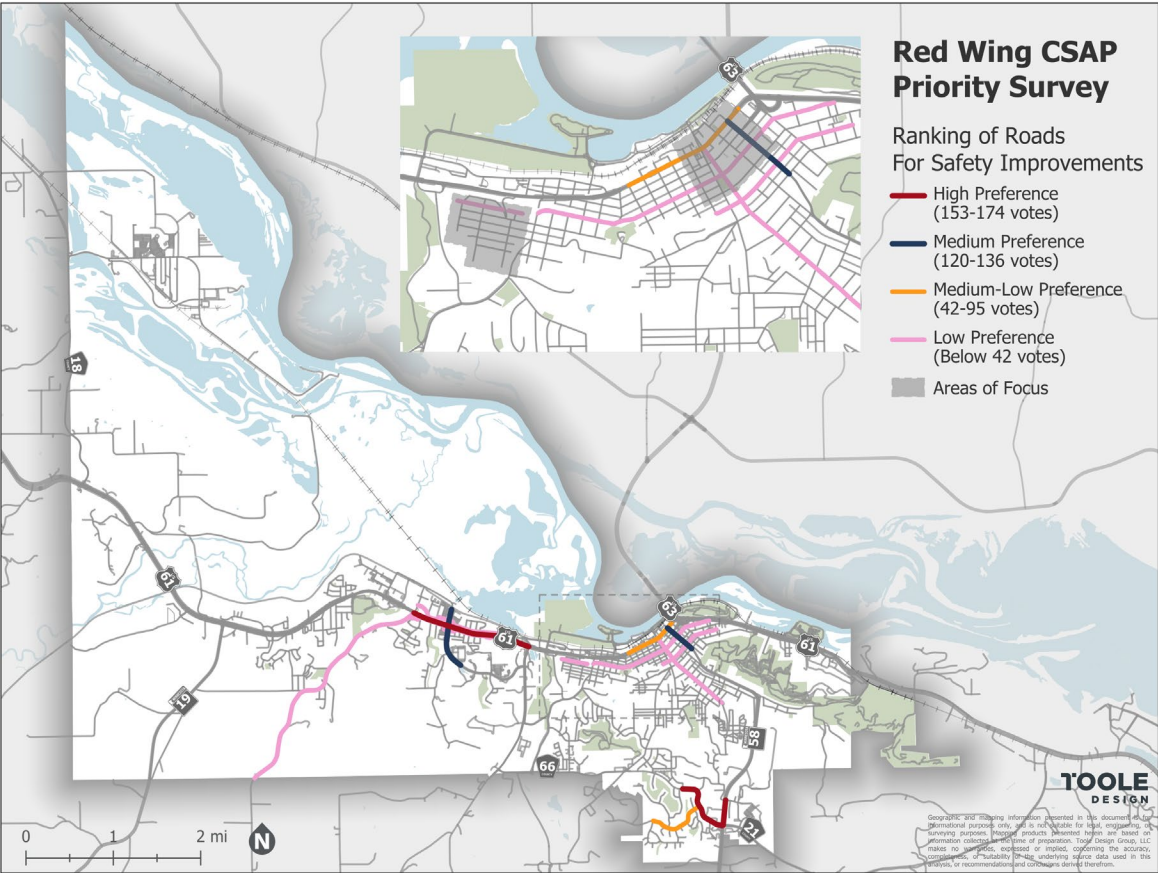
- The Highway 61 and Tyler Road (plus North and South Service Drives) intersection(s) received the most total votes.
- The Main Street/Broad Street/East Avenue/West Avenue and Plum Street and 5<sup>th</sup> Street intersections also received a high number of votes.
- Other intersections that residents felt should be prioritized include, College Avenue/Central Avenue/ West Avenue/ 7<sup>th</sup> Street, Tyler Road and Menards/ Walmart driveways, W 4<sup>th</sup> Street and Cedar Avenue, W 6<sup>th</sup> Street and Buchanan, and Jackson Street and Old West Main Street.



# Resident Ranking of Roads for Safety Improvements



**FIGURE 8** Total Counts for Intersection Safety Survey



**MAP 4** Ranking of Roads for Safety Improvements by Residents

# Resident Ranking of Intersections for Safety Improvements

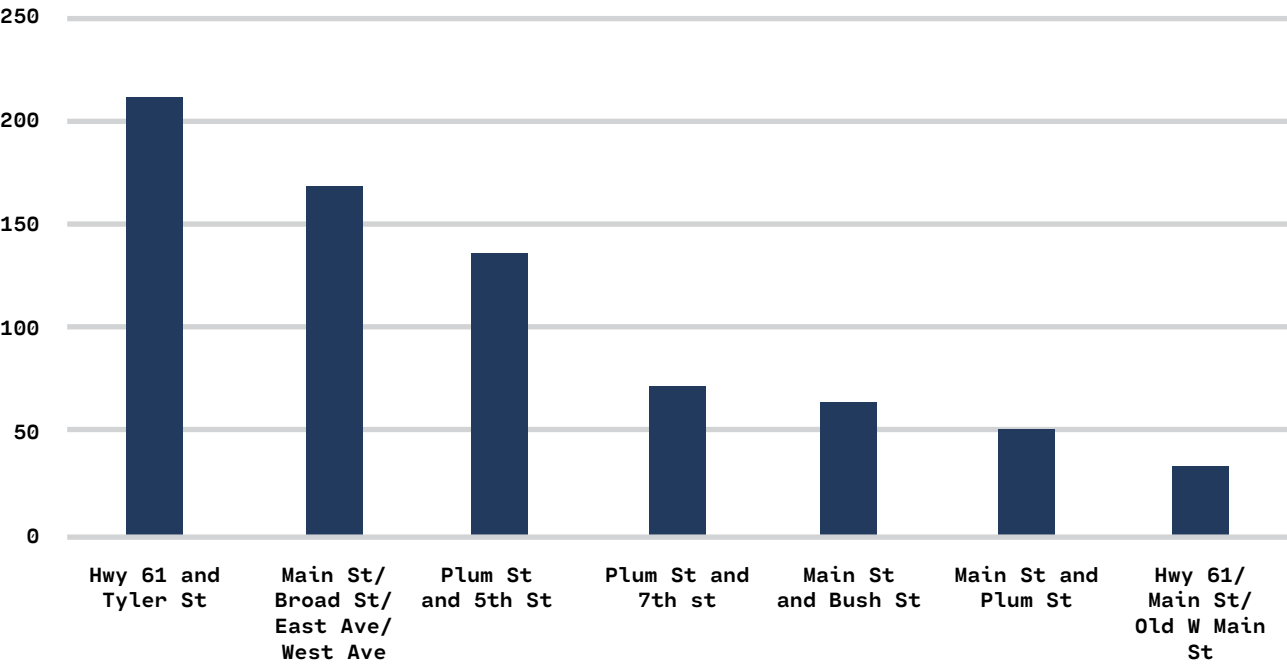
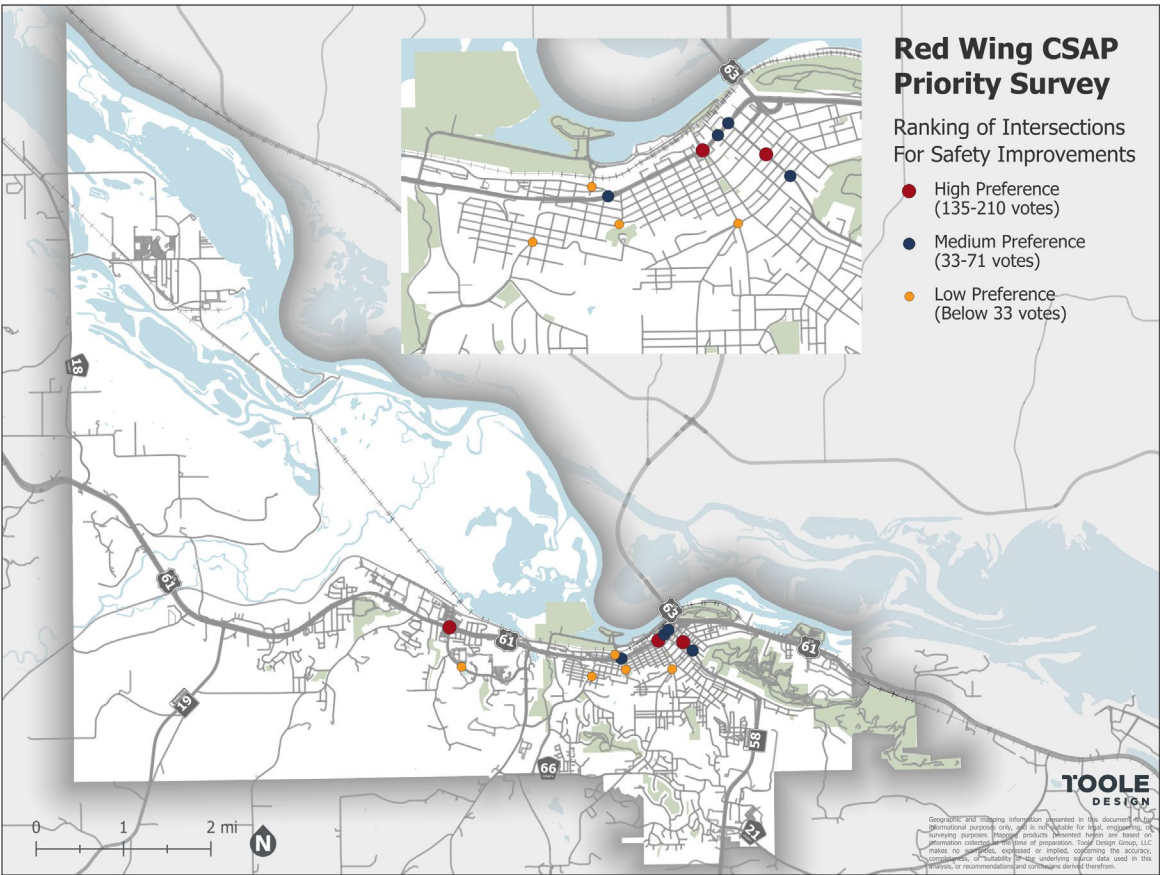


FIGURE 9 Total Counts for Road Safety Survey



MAP 5 Ranking of Intersections for Safety Improvements by Residents



# Resident Ranking of Safety Programs and Policies

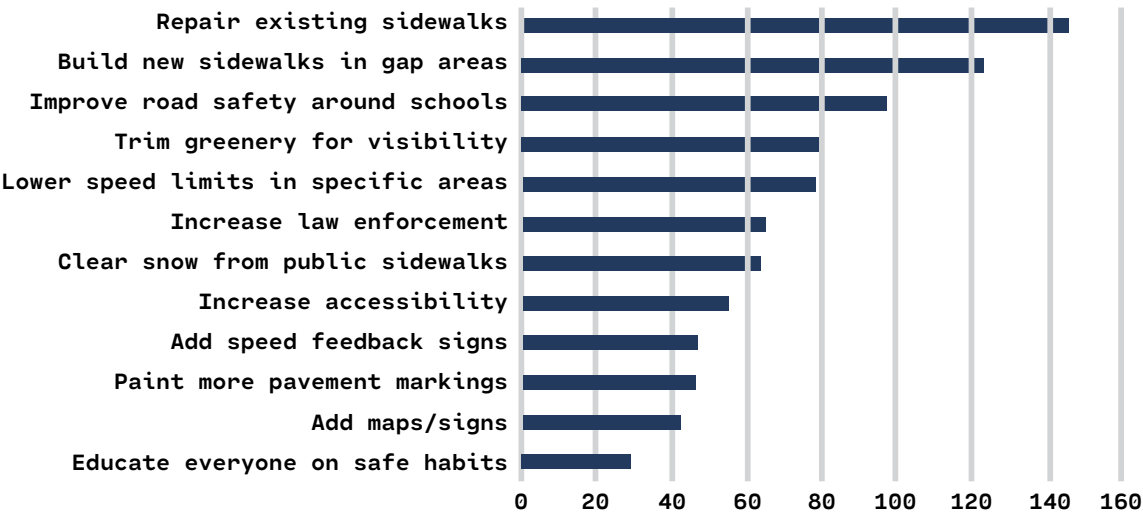


FIGURE 10 Total Counts for Program and Policy Survey





# Recommended Policies/Programs

Key takeaways from the policy and program survey and related conversations with community members:



Repairing sidewalks and building new sidewalks in gap areas received the most total votes.



Improve road safety around schools, followed by trim greenery and lower speed limits also received a high number of votes.



Improving directional pavement markings was important to Spanish-speaking residents.

Common themes from the votes and comments that were left by residents was to:



Reduce driving speeds and traffic noise



Make signage, pavement markings, and traffic laws clearer for drivers



Make bicycle and vehicle lane markings clearer for travelers



Enforce good driving behavior



Improve visibility of bicyclists and pedestrians



Improve accessibility



Make crossing safer for pedestrians

# SYSTEMIC SAFETY RISK FACTORS

Crashes do not often occur in linear or predictable timelines, particularly on streets with lower traffic volumes. Because of this, even when considering 10 years of crash data there may be some or many locations on Red Wing's transportation network that may not be safe but do not have recent crash history. To identify those locations, the High Injury Networks were analyzed to find common features and contexts that may be present in other areas of the transportation network and may contribute to a less safe transportation system than may seem to be the case by looking only at historical crash data. A full analysis of the risk factors is provided in *Appendix D: Risk Factor Analysis*.

## VULNERABLE ROAD USER CRASHES

For crashes involving vehicles and vulnerable road users, the following risk factors are prevalent:

- **Short Stopping Sight Distance**
  - Downgrades exceeding 3%
  - Horizontal curvature
- **Low Intersection Sight Distance**
  - Intersection skew
  - Obstacles in line of sight
  - Additional travel lanes
- **Speed limits that may be too fast**
- **High Average Daily Traffic (ADT) volumes**
- **Driveway and intersection quantity and spacing**
- **Intersection offset present**
- **Poor Lighting**
- **Areas with increased pedestrian and bicycle activity**
  - Within public school non-busing area
  - Within 1/4 mile of a commercial area
  - Within 1/4 mile of a park

## VEHICLE CRASHES

For crashes involving only vehicles, the following risk factors are prevalent:

- **Stopping Sight Distance**
  - Downgrades exceeding 3%
  - Horizontal curvature
- **Intersection Sight Distance**
  - Intersection skew
  - Obstacles in line of sight
  - Additional travel lanes
- **Speed limits**
- **Average Daily Traffic (ADT) volumes**
- **Driveway and intersection quantity and spacing**
- **Intersection offset**
- **Lighting**



# EQUITY FOCUS AREAS

Transportation is a key element of people’s daily lives that allows them to access their day-to-day needs and activities and provides a way for the community to gather and interact socially. Nearly everyone regularly uses the transportation system to access jobs, education, food, services, activities, etc. Where people are located impacts the access they have to their daily destinations, what options they have to get around, and how much time and effort they need to spend to get from A to B.

As part of the equity analysis of this plan, the team conducted a mapping exercise to understand where areas of disadvantage might exist. The results were used in coordination with the safety analyses to determine how projects will be prioritized and how to monitor, reduce, and, ideally, eliminate disparities. This section summarizes the mapping process, identifies the focus areas, and explains how the analysis was used for the foundation to incorporate equity as an overlay to the recommendations of the Action Plan. For the full analysis, see *Appendix B*.

## KEY TAKEAWAYS

## EQUITY MAPPING

In tandem with the historical analysis, the project team conducted a mapping analysis to understand where equity focus areas are currently in Red Wing, considering a series of demographic and social factors. Understanding where levels of potential disadvantage exist in the community informs where priorities may be placed.

**The key findings of the mapping process are outlined below:**

- Factoring race and ethnicity, age, vehicle ownership, income, level of education, employment, physical and mental ability, and English proficiency identified levels of potential disadvantage in Red Wing.
- The results of the mapping analysis are restricted by census data and census block boundaries. In a community the size of Red Wing, census blocks can take up a large area of the City, which can represent contrasting demographics within the same area, potentially skewing data analysis results (see Map 6). This should be factored when considering and incorporating the results of the analysis in planning and implementation efforts.
- Highest potential disadvantage areas (see Map 7) encompass the Prairie Island Indian Community, downtown (where residents are more likely to walk or bike and rely on non-motorized transportation) and in areas most impacted by historic infrastructure planning, such as the West End neighborhood and east of Bluff Street.

## MAPPING APPROACH

Using U.S. Census and American Community Survey (ACS) data, we can create demographic maps to help identify local demographic patterns and use these maps in planning to ensure that resources are provided equitably across the city. In this plan, we will compare locations across Red Wing that have larger populations of residents who are likely to face transportation disadvantages with safety risks throughout the region. This allows us to examine outcomes that certain populations may experience. The maps can also reveal disparities in safety and other areas so the City can monitor its investments and make sure they're being distributed equitably. City staff will want to revisit and revise these demographic maps over time to ensure accuracy for future planning.



### Census Data Limitation

Although census data is the most reliable method for understanding demographics and population characteristics of a geographic area, there are limitations to the details that can be provided by this information. Map 6 displays the census blocks in Red Wing. Because of the geographical distribution of the population, some of the census blocks take up a significantly larger area of the city compared to others. This means that some blocks may encompass neighborhoods that reflect very different population characteristics, skewing the data and making the application of the results challenging.

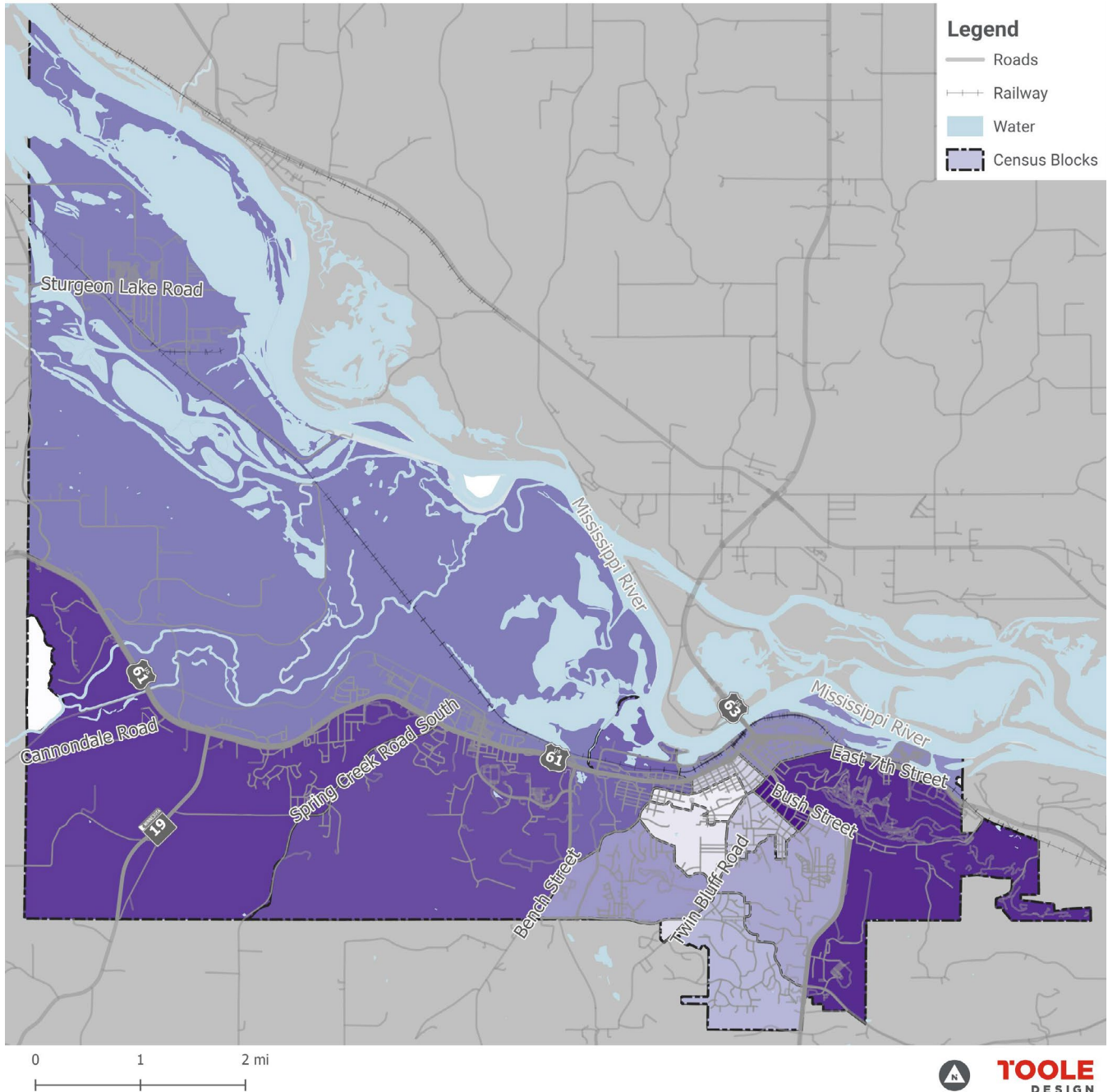
The project team understands these limitations as they relate to the Red Wing population and has taken them into consideration in developing the project selection and prioritization methodology for this project. The limitations to data sources highlight the importance of using various data to inform the safety analysis and of relying on feedback from the community to fill gaps in data.



\*Note: Map colors are intended to differentiate census block groups only and do not represent analysis data.

## Red Wing CSAP Equity Analysis

Census Blocks in Red Wing



**MAP 6** Red Wing Census Block Groups

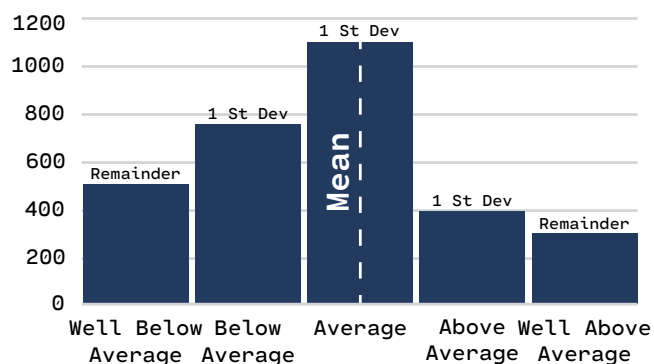
## KEY POPULATIONS

This equity analysis has identified 10 key populations as Environmental Justice (EJ) populations that face transportation and socioeconomic disparities. These populations were identified using the Indicators of Potential Disadvantage (IPD) method developed by the Delaware Valley Regional Planning Commission. To examine inequity for Red Wing's safety action plan, we used the IPD methodology with minor adjustments to account for four additional key populations—people without a high school diploma, people who are unemployed, youth under 18 years old, and cost-burdened households.

Key populations for Red Wing's Comprehensive Road Safety Action Plan equity analysis are:

- Households in poverty
- Cost-burdened households
- Unemployed population
- Limited English Proficiency (LEP)
- Older adults 65+ years of age
- Youth under 18 years of age
- Carless households
- People of Color, including Hispanic or Latinx people
- Households with disabilities
- People without a high school diploma

## Example Standard Deviations Percent of Population



**FIGURE 11** Example of an IPD Classification Breakdown (Red Wing Comprehensive Road Safety Action Plan-Equity Analysis)

## INDICATORS OF POTENTIAL DISADVANTAGE

The IPD methodology uses regional American Community Survey data at the census block group level to delineate areas where key populations are more prevalent (see Map 1 for the census block groups). Each block group's population percentage is calculated from the standard deviations relative to each indicator's regional average. The calculations range from "well below average" to "well above average." An example of this is shown in Figure 11.

The Red Wing CSAP made three minor adjustments to the IPD methodology:

1. Four additional key populations were incorporated into the analysis methodology: people without a high school diploma, unemployed people, youth under 18 years of age, and cost-burdened households.
2. The 2022 American Community Survey (ACS) 5-year estimate data was used to determine averages for each IPD. This is the most recent data available at the time this plan was written.
3. To determine the overall IPD score, total scores for all indicators were weighted, and standard deviation was applied for the 10 key population scores.
4. To reduce confusion for readers, IPD classifications were changed to the following:

Well Above Average = Highest Potential Disadvantage

Above Average = High Potential Disadvantage

Average = Average Potential Disadvantage

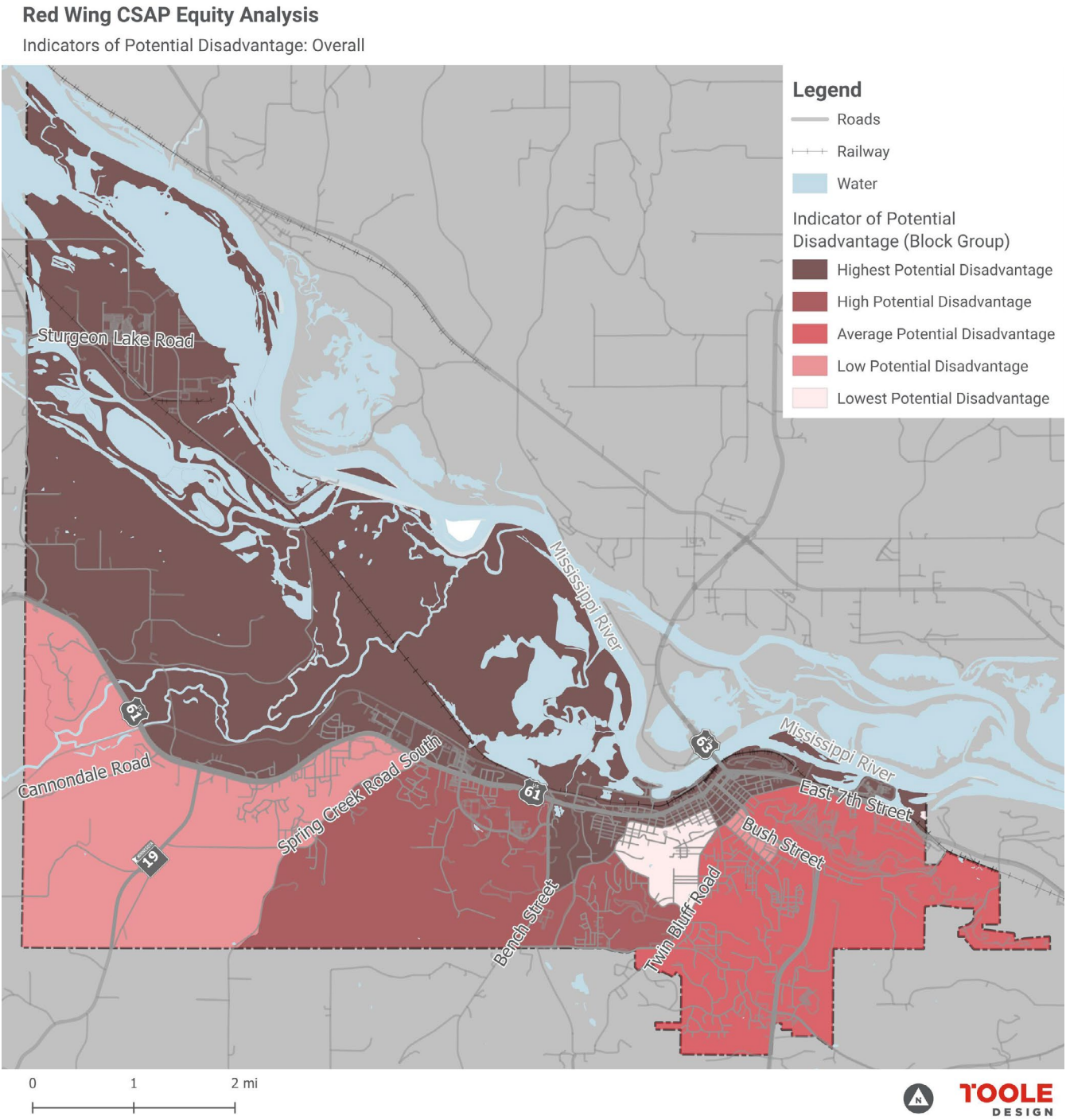
Below Average = Low Potential Disadvantage

Well Below Average = Lowest Potential Disadvantage

For the purposes of the Red Wing Road Safety Action Plan, the overall IPD score was used to identify Equity Focus Areas to guide plan engagement, recommendations, and implementation.

# EQUITY FOCUS AREAS

To determine the priority Equity Focus Areas for the Red Wing Comprehensive Road Safety Action Plan, 10 IPD scores were weighted and census block groups were categorized into the same structure as the previous maps. Households located in the areas labeled “Highest Potential Disadvantage” or “High Potential Disadvantage” are concentrations of IPD and should, therefore, be included during community engagement, analysis, recommendations development, and implementation. To see the mapping results for all key populations, see *Appendix B*.



**MAP 7** Red Wing CSAP Indicators of Potential Disadvantage – Equity Focus Areas

**SAFETY ANALYSIS INTEGRATION**

Table 5 outlines how each of these strategies will be used throughout the plan’s community engagement, analysis, recommendation development, and implementation phases.

**TABLE 5** Advancing Equity in the Red Wing Comprehensive Road Safety Action Plan

Equity Strategy	Engagement	Analysis	Recommendations and Implementation
Continued Assessment	Use mapping results to ensure that focus areas are being reached through engagement efforts.	Use the equity analysis as an overlay to the safety analysis.	Findings will inform recommendations for how the City can assess how areas of the community are being impacted.
Data Types	Integrate engagement feedback into the equity analysis for a comprehensive understanding of transportation safety issues.	Use quantitative data like mapping to help understand transportation gaps. Rely on qualitative data to understand gaps that the safety analysis data cannot explain.	Qualitative and quantitative data will be used to develop recommendations and prioritization.
Expanding Analysis	Use the equity analysis as a tool to develop targeted engagement and modify engagement strategies as needed.	The equity analysis should inform how the greater safety analysis is being used throughout the project.	Provide recommendations on how to strengthen data collection and engagement efforts.



# KEY TAKEAWAYS OF TRANSPORTATION SAFETY

Through analyzing crash data, risk factors, equity considerations, and public input, we can form a comprehensive understanding of Red Wing's existing transportation safety network. This highlights the importance of taking a varied approach to analyzing the network because while each approach may have limitations, other approaches can help to fill the gaps.

The key takeaways from the transportation system analyses and engagement are outlined below.

- **Crash Trends:** Fatal and serious injury crashes are overrepresented and trending upward in Red Wing. Pedestrian and bicycle-related crashes and head-on crashes are overrepresented compared to all crashes. More fatal, serious injury, and vulnerable user crashes occur in warm months and during daylight hours.
- **Crash Locations:** Crashes are happening more frequently on county and state roads, where vehicle speeds are over 35mph. Public input confirms hot spot locations and some locations of near misses that do not show up in crash data. Many of the roadways with fatal and injury crashes are in areas of the community with higher degrees of disadvantage.
- **Risk Factors:** Sight distances, Average Daily Traffic volumes, speed limits, and lighting are common risk factors that make severe crashes more likely for all road users. In locations with more pedestrians and bicyclists (near schools, commercial areas, and parks), risk factors such as incomplete sidewalks and missing crossings were common and could increase the chance of severe crashes for vulnerable road users.
- **Feeling of Safety:** Poor driving behavior was consistently expressed as the most significant factor that affects people's feeling of safety while traveling. Respondents said they noted high levels of distracted driving, people driving at high speeds, drivers not yielding to pedestrians, and drivers not watching for pedestrians at all. Poor visibility, often due to overgrown greenery, was also mentioned many times. Red Wing respondents said their top priorities to enhance safety would be to expand the sidewalk network, fix broken sidewalks, enforce traffic laws, add better lighting, and create safe places to cross the street.
- **Priority Locations:** The safety analysis and community feedback identified high-priority streets and intersections, particularly those around schools, on segments along highways, in the downtown area, along wide roadways, and at complex intersections.







# **5 How Will We Meet Our Transportation Safety Goal?**

These recommendations come from the crash analysis, equity analysis, High Injury Network, public input, evidence-based guidelines, and stakeholder guidance. The recommendations, which are listed in a matrix below, outline action items and associated strategies. Also included are a safety countermeasure toolkit and a prioritization of recommended improvements.



# ACTION PLAN

## ACTION PLAN FRAMEWORK

The action items are organized around the categories listed below for a comprehensive approach to integrate transportation safety (Tables 6–9). Each action within these categories includes general timeline considerations for implementation. The project team has identified strategies for each of the actions that will help guide implementation, which can be found in *Appendix F: Action Matrix*. These actions and strategies should be reviewed and revised regularly to ensure that the Red Wing’s goal to eliminate fatal and serious injury roadway crashes by 2040 will be achieved.



### **POLICIES, PROCESSES, AND GOVERNMENT STRUCTURE**

A commitment to zero roadway deaths and serious injuries is a commitment to changing standard transportation practices. Reaching zero traffic fatalities and serious injuries will be a joint effort, requiring commitment and cooperation across departments, agencies, and partners. These actions will help create a culture that prioritizes safe transportation.

### **COMMUNITY ENGAGEMENT AND EQUITY**

Research and data show that serious injury and fatal crashes do not occur evenly across demographic lines and feedback from all communities helps tell the full story of the transportation system. This plan will guide investments to reach an equitable transportation safety system by ensuring that everyone’s voices are heard and that needs are met.

### **SAFETY STUDIES AND INFRASTRUCTURE**

Safe roadways are at the heart of street safety. Achieving zero deaths on Red Wing roads will only be possible through continued evaluation and quality street design. These actions include continuing to collect data, review current practices, and improve infrastructure to make streets safer for all users.

### **FUNDING AND STAFFING**

Communities must have sufficient and consistent resources to rely on to successfully implement transportation safety projects, policies, and programs. This plan will guide investments to create a transportation safety system that ensures everyone’s voices are heard and needs are met.



## RECOMMENDED STRATEGIES AND ACTIONS

**TABLE 6** Policy, Program, and Government Structure Actions

ID	Action	Timeline
1	Update the Pedestrian Plan and Policy Report	Short-Term
2	Update the Bicycle and Pedestrian Master Plan	Short-Term
3	Update the Climate Action Work Plan	Short-Term
4	Update and expand the Safe Routes to School Plans	Short-Term
5	Incorporate CSAP priorities into Red Wing's Capital Improvement Plan	Short-Term
6	Update engineering design standards to increase safety countermeasures	Short-Term
7	Update Zoning Code and Subdivision Regulations to include safety-focused design and development standards	Short-Term
8	Continue to participate in the Goodhue County TZD Committee and establish a City Safety Response Team	Short-Term
9	Modify the Engineer's Report template to include safety analysis and countermeasure implementation	Short-Term
10	Develop goals to shift more residents' preferred mode of transportation away from personal vehicles and toward walking, bicycling, and taking public transit	Short-Term
11	Update and expand the ADA Transition Plan	Short-Term
12	Consider creating a citizen and/or staff body and a Safety Committee	Short-Term
13	Proactively zone and plan for redevelopment opportunities that will increase transportation safety	Medium-Term
14	Consider a snow-clearing policy for pedestrian and bicycle facilities	Medium-Term

**TABLE 7** Community Engagement and Equity Actions

ID	Action	Timeline
1	Create a Public Engagement Plan and process for safety projects	Short-Term
2	Evaluate existing speed enforcement practices	Short-Term
3	Update the City's education related to snow clearing of sidewalks	Short-Term
4	Continue to update and keep publicly accessible the Red Wing Report Card on safety improvements	Short-Term
5	Analyze City communications to ensure that safety for all road users is emphasized in all applicable communications	Short-Term

**TABLE 8** Funding and Staffing Actions

ID	Action	Timeline
1	Apply for appropriate grant funding programs to implement safety improvements	Ongoing
2	Provide dedicated match funding for all grant funding received	Ongoing
3	Increase City engineering and public works staffing levels to support the implementation of safety improvements	Short-Term
4	Identify applicable grant funding programs to implement safety countermeasures	Short-Term
5	Establish permanent, dedicated local funding to implement safety improvements	Short-Term
6	Increase dedicated local funding for sidewalk construction and maintenance	Short-Term

**TABLE 9** Safety Studies and Infrastructure Actions

ID	Action	Timeline
1	Coordinate safety improvements with other partner jurisdictions	Ongoing
2	Develop a process to evaluate the effectiveness of safety improvements once they are implemented	Ongoing
3	Plan and advocate for safety improvements related to efforts undertaken by other jurisdictions (MnDOT, Goodhue County, Prairie Island Indian Community)	Ongoing
4	Develop a Road Safety Audit process and complete an audit for at least one corridor per year	Ongoing/ Short-Term
5	Develop an implementation plan for adding separated bicycle facilities, filling in sidewalk gaps, building ADA accessibility improvements, and completing sidewalk repair and maintenance	Short-Term
6	Reduce citywide speed limits and design speeds to 20 or 25 mph (as applicable)	Short-Term
7	Conduct safety training and Complete Streets training for City staff, consultants, and contractors working on Red Wing's transportation safety system	Short-Term
8	Adjust speed transition zones and gateway treatments on highways entering Red Wing	Short-Term
9	Develop a systemwide approach to reducing vehicle operating speeds	Short-Term
10	Enhance pavement striping and directional and crosswalk markings along High Injury Network roadways and roadways with high risk factors for vulnerable roadway users	Short-Term
11	Evaluate existing lighting and develop a plan for lighting improvements	Medium-Term
12	Evaluate sight distance obstructions and develop an implementation plan for mitigation	Medium-Term
13	Enhance transit stop accessibility and shelters to make transit a more safe and accessible options for all users	Medium-Term
14	Update the High Injury Network and adjust safety goals every five years	Medium-Term
15	Implement annually at least one standalone safety implementation project or one in conjunction with maintenance project	Ongoing/ Long-Term
16	Implement at least one transportation safety street reconstruction project per year	Ongoing/ Long-Term

# SAFETY COUNTERMEASURE TOOLKIT

To achieve zero roadway fatalities and serious injuries by 2040, the City of Red Wing will need to comprehensively address roadway safety issues in the region, starting with the priority intersections and corridors shown in Maps 8 and 9. FHWA's [Proven Safety Countermeasures](#) are specific street design changes or operational changes that have been proven nationally to improve safety. Selecting and designing safety countermeasures on every street project in the region should be decided through the lens of the Safe System Approach so that if a crash occurs, it will not result in a fatal or serious injury. Safety countermeasures should not be compromised or simplified during the design or construction phases because they would reduce safety for all road users.

Safety countermeasures are listed below along with hyperlinks to provide a more detailed description and effectiveness of the full safety countermeasure. A set of cut sheets describing each Safety Countermeasure are included in *Appendix G: Safety Countermeasure Toolkit*.

## Pedestrian/Bicyclist



### Road Diet/Roadway Reconfiguration

- 4-to-3 Conversion
- Chicanes
- Curb Extensions



### Crosswalk Visibility Enhancement

- High Visibility Crosswalk
- Raised Crosswalks
- Raised Intersections



### Signals

- Leading Pedestrian Interval (LPI)
- Right Turn Restrictions



### Rectangular Rapid Flashing Beacons (RRFB)



### Walkways

- Sidepaths and Trails
- Sidewalks
- Tree Buffer

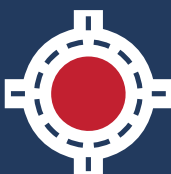


### Medians and Pedestrian Refuge Islands in Urban Areas

- Pedestrian Refuge Islands
- Floating Bus Stops

## Intersections

## Lighting



### Roundabouts



# PRIORITIZATION OF IMPROVEMENTS

Actions identified in the previous sections will help institutionalize the practices, policies, and programs that will make Red Wing's streets safer for all residents. These actions will be complemented by on-the-ground safety improvement projects designed using Safe Systems principles and the Safety Countermeasures Toolkit, and informed by the risk factors we identified as part of our crash analysis. Over time, the City plans to address all risk factor issues with improved design and practices.

Physical locations for projects were scored and ranked to prioritize where to focus early efforts for roadway improvements. The scoring factors described below determined the priority of intersection and road improvements. The maximum total score is 100 points. Map 8 conveys the prioritization results of intersections and the prioritization results of the corridors can be seen in Map 9.

**The maximum total score possible is 100 points.**

- **Risk Factors: 40 points possible.**

Risk Factors included the following:

- Horizontal curvature of one or more approaches to the intersection
- Horizontal curvature within the intersection
- Vertical curvature of one or more approaches to the intersection
- Significant grade within the intersection
- Intersection skew
- Obstacles in the line of sight (according to Google Streetview imagery)
- Driveway/intersection spacing <100 feet average on blocks leading into intersection
- Driveway/intersection spacing <100 feet from intersection on one or more approaches
- Speed limits > 30 mph on one or more approaches
- Vehicle Average Daily Traffic volume
- Number of travel + TWLTL lanes >2 on one or more approaches
- Lighting (no lighting or one light only)
- Within public school non-busing area
- Within ¼ of a public school
- Within ¼ mile of a commercial area
- Within ¼ of a park
- Adjacent sidewalk/crosswalks missing on one or more legs
- Crossing distance >33 feet on one or more legs

- **High Injury Network: 35 points possible**

- Intersection located on Vehicle-Only High Injury Network: **15 points**
- Intersection located on vulnerable road user High Injury Network: **20 points**
- Intersection located on both High Injury Networks: **35 points**

- **Public Input: 15 points possible**

- Amount of comments on Unsafe Areas mapping exercise
- Amount of comments on Crashes or Near misses mapping exercise
- Intersection mentioned in trade offs survey

- **Equity: 10 points possible**

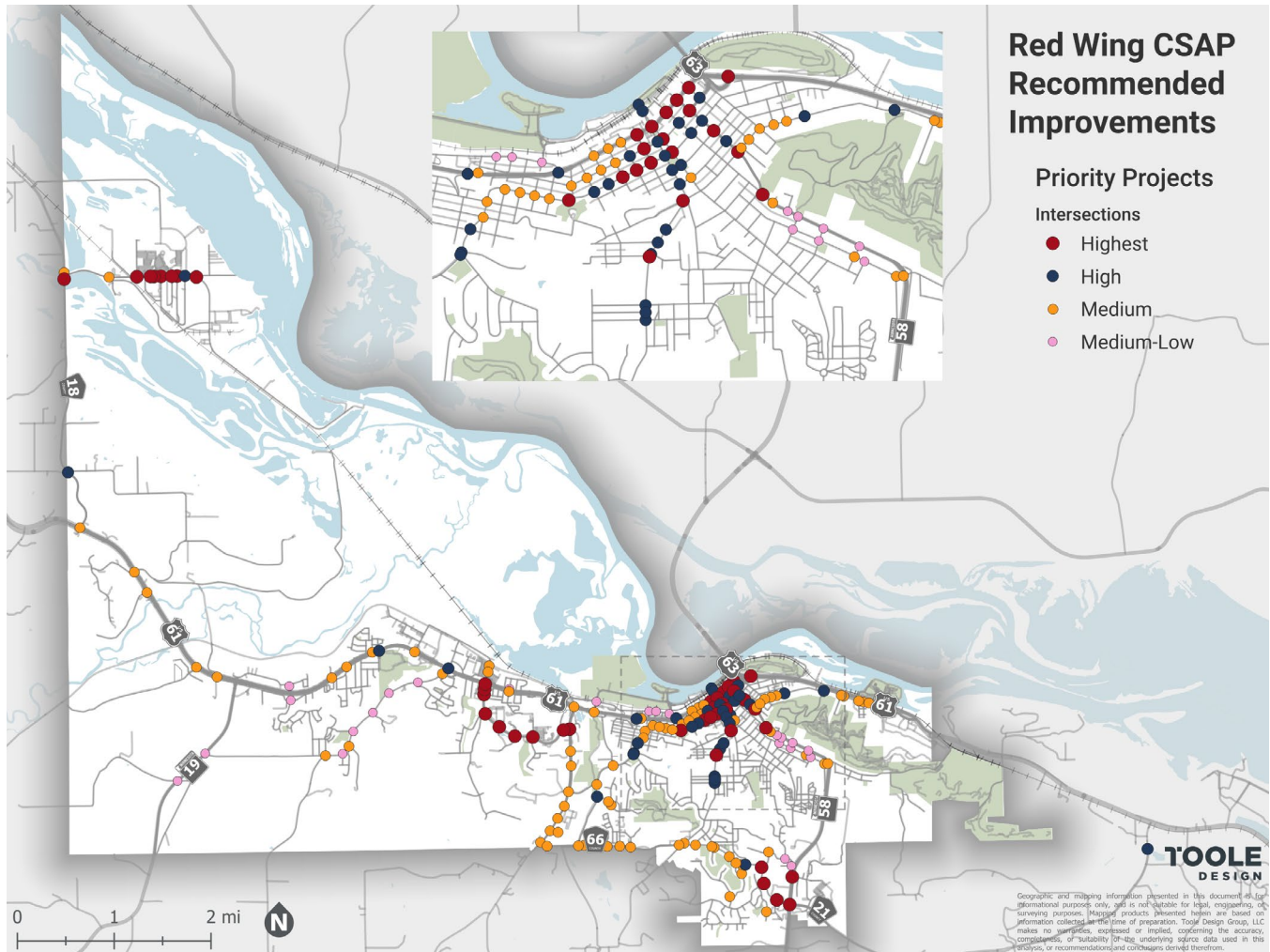
- Located within or bordering Highest Potential Disadvantage area: **10 points**
- Located within or bordering High Potential Disadvantage area: **7.5 points**
- Located within or bordering Medium Potential Disadvantage area: **5 points**
- Located within or bordering Low Potential Disadvantage area: **2.5 points**
- Located within or bordering Lowest Potential Disadvantage area: **0 points**



Using the scoring system described on the previous page, the intersections identified in Table 10 were selected as the highest priority intersections. Intersections scored by prioritization score followed these scoring thresholds:

- **Highest:** 60 and over
- **High:** 45-59
- **Medium:** 35-44
- **Medium-Low:** 34 and under

Intersections not shown on the map were not scored because they were not located on a High Injury Network and did not receive any public feedback during the engagement exercises. These intersections still may contain risk factors identified in this report and should still be analyzed for improvements with upcoming City projects as they arise. These should be studied further through a Road Safety Audit or a corridor study.



**MAP 8** Map of Priority Intersection Improvements

## Scoring Methodology Limitation

It should be noted that prioritization scoring is not an exact science and there are no right and wrong ways to score intersections or corridors for improvements. Because of this, intersections with lower or missing scores should still be analyzed for improvements as projects arise. It is suggested that the City follow the scoring to allocate limited resources to target safety improvements. However, intersection improvements may be taken out of order as needs change or opportunities for funding arise.

**TABLE 10** Highest Priority Intersections for Safety Countermeasures

Street 1	Street 2	Prioritization Score (Out of 100)
US 61 (Main Street)	Broad Street/East Avenue/West Avenue	81
West Avenue	W 7th Street/College Avenue/Central Avenue	77
Tyler Road	Kosec Drive	69
W 4 <sup>th</sup> Street	Cedar Street	69
US 61 (Main Street)	MN 58 (Plum Street)	68
US 61 (Main Street)	Bush Street	68
MN 58 (Plum Street)	W 7 <sup>th</sup> Street	67
Tyler Road	Menards/Walmart Driveways	66
MN 58	Pioneer Road	66
Tyler Road	Hewitt Blvd	65
US 61 (Main Street)	Dakota Street	65
MN 58	Guernsey Lane	65
US 61	Tyler Road	64
Tyler Road	CSAH 1 (Bench Street)	64
Tyler Road	Riedell Court	64
W 3 <sup>rd</sup> Street	East Avenue	64
MN 58 (Plum Street)	W 5 <sup>th</sup> Street	63
MN 58 (Plum Street)	Bush Street/10 <sup>th</sup> Street	63
Sturgeon Lake Road	Chakya Street	63*
US 61 (Main Street)	Potter Street	62
Tyler Road	South Service Drive	62
West Avenue	Sturtevant Street	62
Pioneer Road	Hallquist Avenue	62
Pioneer Road	Hennings Avenue	62
Sturgeon Lake Road	Wiobata Street	62*
Sturgeon Lake Road	Buffalo Slough Trail	62*
W 4 <sup>th</sup> Street	East Avenue	62
MN 58 (Plum Street)	W 3 <sup>rd</sup> Street	62*
Tyler Road	Lawrence Street	61
Sturgeon Lake Road	Wakonade Drive	61
Sturgeon Lake Road	Other Day Road	61*
Sturgeon Lake Road	Treasure Island East Entrance	61*
W 4 <sup>th</sup> Street	Fulton Street	60
Tyler Road	Technology Drive	60
Pioneer Road	Malmquist Avenue	60
Sturgeon Lake Road	Island Blvd	60*
Sturgeon Lake Road	Treasure Island Main Entrance	60*
US 61	US 63	60
W 4 <sup>th</sup> Street	Franklin Street	60
W 4 <sup>th</sup> Street	Dakota Street	60
W 3 <sup>rd</sup> Street	Dakota Street	60

\* Denotes intersections that have undergone significant geometric or traffic control changes within last five years. These intersections may not require significant changes, depending on the effectiveness of recent changes on crash patterns. The City should monitor these intersections and revisit prioritization over the next five years.

Intersections and corridors that received higher prioritization scores and should be prioritized for safety investment include the following:

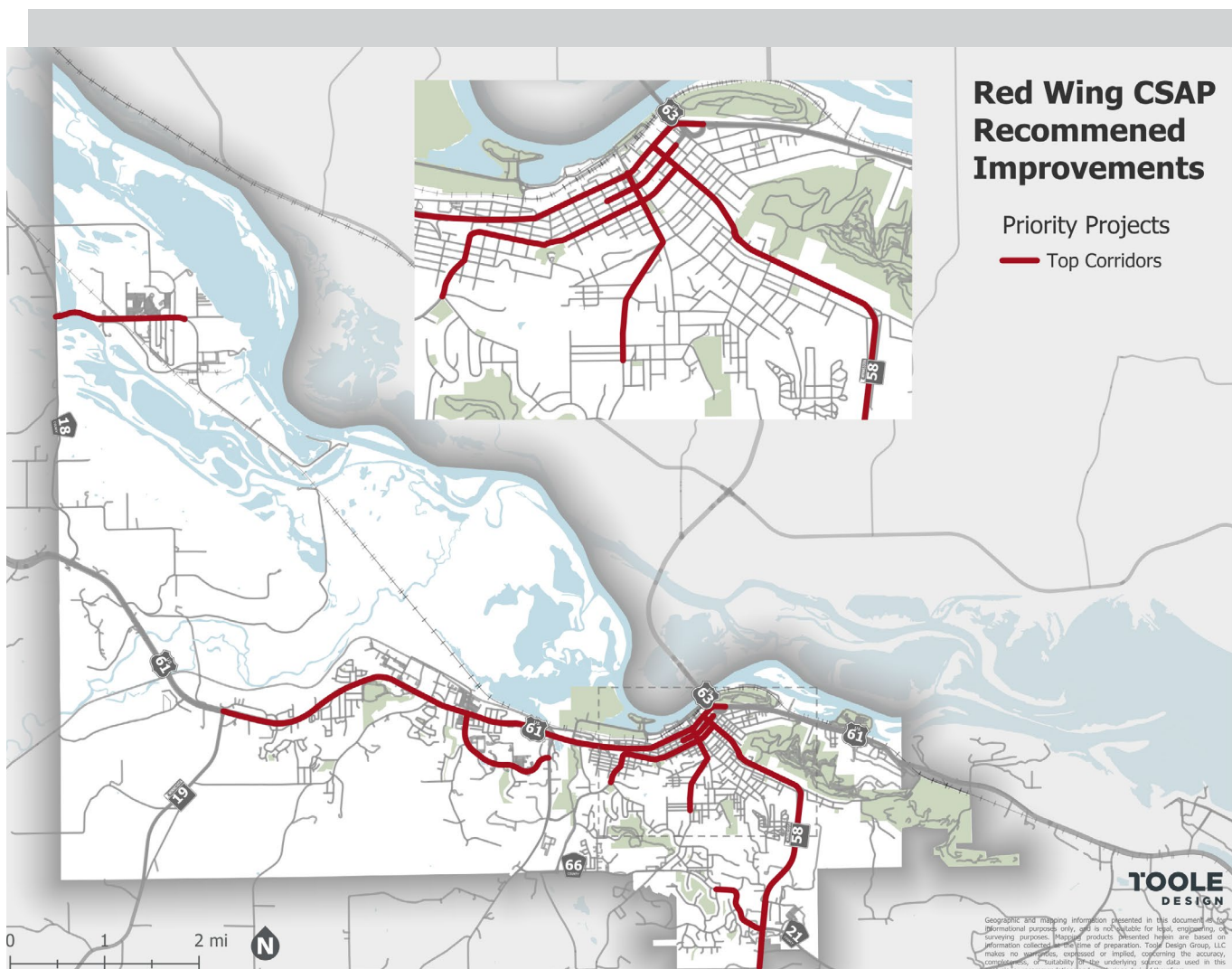
#### Corridors

- US 61: MN 19 to US 63
- Sturgeon Lake Road: County 18 to Wakonade Road\*
- Tyler Road: US 61 to Bench Street
- Pioneer Road: Brooks Avenue to MN 58
- MN 58: US 61 to Pioneer Road
- West Avenue: US 61 to W Maple Street
- Buchanan Street/4<sup>th</sup> Street: W 6<sup>th</sup> Street to MN 58
- Featherstone Road: W Maple Street to W 6<sup>th</sup> Street
- 3<sup>rd</sup> Street: Fulton Street to Potter Street

#### Intersections

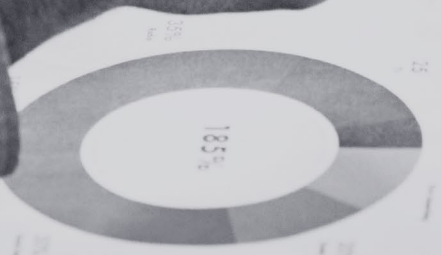
- US 61 (Main Street) and Broad Street/East Street/West Avenue
- West Avenue and W 7<sup>th</sup> Street/College Avenue/Central Avenue
- Tyler Road and Kosec Drive
- W 4<sup>th</sup> Street and Cedar Street
- US 61 (Main Street) and MN 58 (Plum Street)
- US 61 (Main Street) and Bush Street
- MN 58 (Plum Street) and W 7<sup>th</sup> Street
- MN 58 and Pioneer Road
- MN 58 and Guernsey Lane

\* Reconstruction project underway at the time of this plan development. This plan recommends to reevaluate this corridor in the future.



**MAP 9** Map of Priority Corridor Improvements







# **6 How Will We Monitor Progress?**

This plan includes actions, strategies, and projects that will help move toward a goal of eliminating fatal and serious injuries on Red Wing's roadways. That's why we recommend this plan be used consistently in planning and decision-making. It is also important to track what is or isn't working, and whether actions are resulting in safer streets so the plan can be modified to ensure success.

# PERFORMANCE MEASURES

Evaluation and regular reporting are essential in understanding whether actions, tactics, and approaches are working. Local and regional partners will also need to help monitor success and barriers. If certain actions are not working, the City should assess and modify actions as needed, as long as the focus remains on eliminating fatal and serious injuries on all roadways in Red Wing.

Performance measures that will be tracked include the following:

- Number of serious injury and fatal crashes, and the percent increase or decrease from previous years.
- Number of actions taken to decrease the likelihood of fatal and serious injury crashes.
- Locations and number of street segment and intersection improvements.
- Locations and number of improvements made for vulnerable road user transportation safety.
- Dollar amount invested in infrastructure improvements
- Changes in land use policies or practices to increase safe connections.
- The Red Wing Report Card's "Getting Around" section will include some of the statistics collected, including where fatal and serious injury crashes are occurring. This will allow the public to easily access this data.

# MOVING FORWARD

The creation of this plan was an extensive effort involving City staff, the Safety Action Committee, community stakeholders, representatives, and partners, and Red Wing residents. The success of this plan will rely on all these groups and individuals to work together to meet our shared goal of eliminating fatalities on Red Wing's streets by 2040.

**Roadway safety  
in Red Wing  
is our shared  
responsibility.  
Together, we will  
create a safe  
and comfortable  
transportation  
system.**