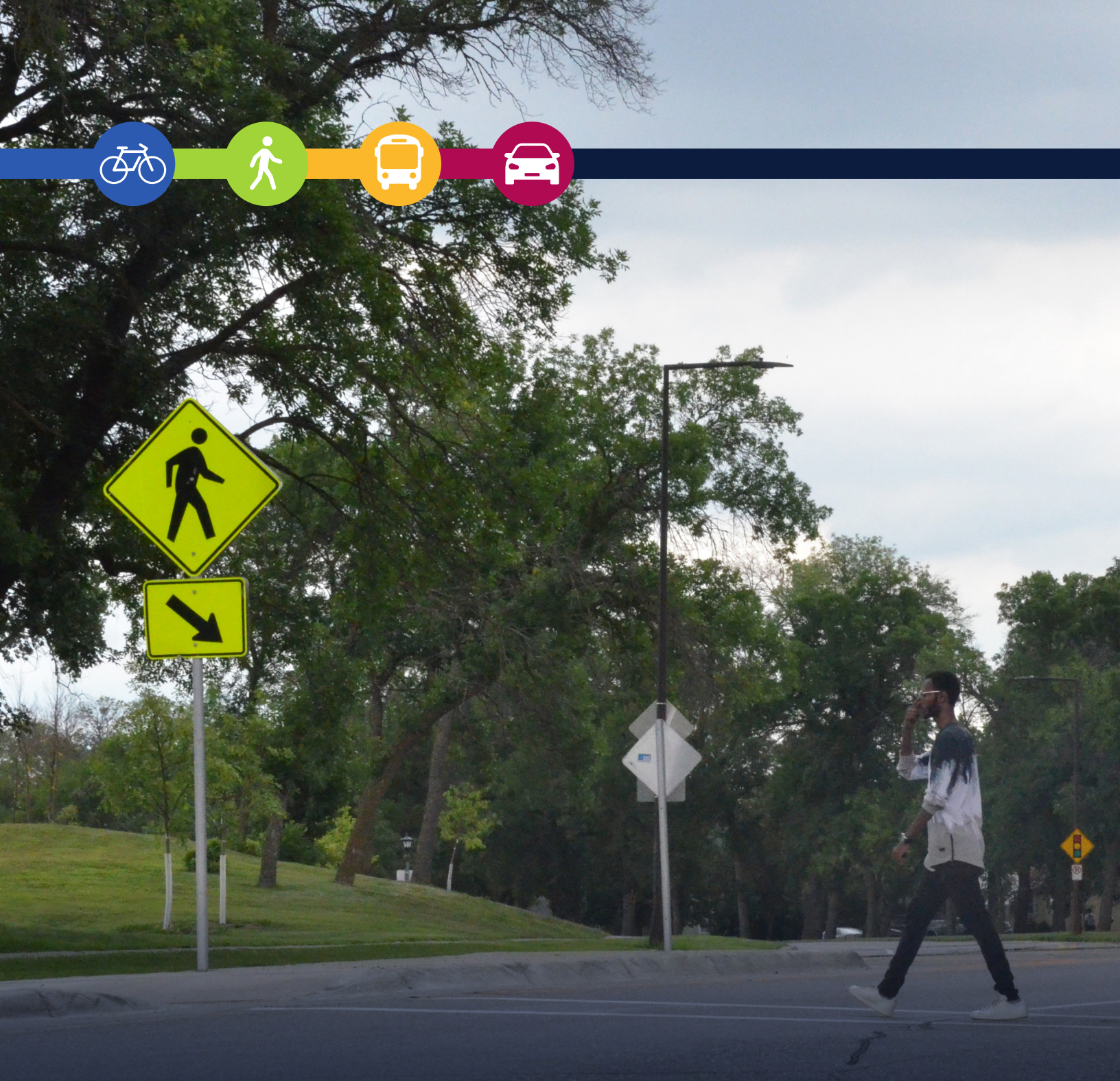


April 2024

Safe Streets for All

Transportation Safety Action Plan

City of Saint Paul

SAINT PAUL
MINNESOTA

Letter from Mayor Melvin Carter

Saint Paul is a capital city with vibrant neighborhoods, award-winning parks, and a diverse population with roots from around the world. Our history and cultural richness create a community where you can live, work, play, and raise a family. We take pride in our strengths and seek opportunities to improve as we endeavor to make a city that works for all of us.

As part of our Community-First Public Safety framework, we have completed the Safe Streets for All: Transportation Safety Action Plan – a comprehensive, data-driven effort to re-think how we understand public safety and work to create safer outcomes across our city. We know that traffic crashes resulting in death and serious injury are a major public safety issue that threaten the safety of Saint Paul streets.

Since 2018, we've had more than 16,000 crashes on surface streets—with 60 deaths and 264 serious injuries. We do not forget that these numbers represent real people; they are our friends, family members, neighbors, and co-workers. Their lives and those of their families are forever changed by these tragedies. Vulnerable users, such as people walking and bicycling, as well as people living in neighborhoods with lower average household incomes, are disproportionately impacted by crashes. Inequity comes in many forms, and these greater impacts to our lower income neighbors—who are more likely to walk and use public transportation —are unacceptable.

The City of Saint Paul is making a pledge to our residents to do better because even one more death on our streets is one more too many. Along with the Saint Paul City Council, I am committing the city to a goal of zero traffic deaths and serious injuries on surface streets by 2045, with an interim goal of a 50-percent reduction in fatal and serious injury crashes within 10 years. This is an ambitious goal, but I believe it is attainable when we focus our attention and resources to understanding the problem and work closely across city departments and with our transportation agency and public safety partners, including Ramsey County, Minnesota Department of Transportation, Metro Transit, Saint Paul Police, Saint Paul Fire, Saint Paul Office of Neighborhood Safety, and Saint Paul Public Schools.

Safe Streets for All is a launching point for safety-focused decision-making across our public infrastructure investments and working with partner agencies to make changes on streets in Saint Paul. We will continue working with communities to gain from their expertise about what transportation safety problems need to be addressed in their neighborhoods.

Our commitment will be broad and enduring. Together we can prevent fatal and serious injury crashes on Saint Paul streets and work to meet the vision of a Saint Paul that works for all of us.

-Mayor Melvin Carter

Contents

Letter from Mayor Melvin Carter i
Introduction 1
Our Goal 2
Safe System Approach 2
Focus on Vulnerable Road Users 3
How Does This Plan Relate to Other City Goals? 4
Crash Trends 6
Community Engagement 12
Plan, Policy, and Best Practice Review 14
Review of Existing Policy Documents 14
Peer City and Best Practice Review 15
Key Policy Opportunities 16
Project Identification and Prioritization 16
Project Prioritization Framework 16
Crash Mitigation Strategies 21
Target High-Risk Behaviors & Locations 21
Data-Driven and Proven Strategies 22
Implementation 24
Tracking and Measurement 24
Funding and Operations Needs 25
Timing 26
Equitable Implementation 26
Future Studies 27
Action Plan 28

Introduction

Between 2018 and 2022, there were 60 crash-related fatalities and 264 serious injury crashes on Saint Paul streets[1]. Each one of those people was a member of the Saint Paul community – someone's parent, child, sibling, and friend. All of these injuries and deaths were preventable.

This Transportation Safety Action Plan (Plan or TSAP) is a recognition that the high toll of traffic crashes in our community is unacceptable. This Plan was created in response to Saint Paul's commitment to eliminate all serious injury and fatal crashes on surface streets within the city. The Plan illustrates where and how Saint Paul can do better.

This Plan includes:

- An in-depth analysis of the factors that contribute to fatal and serious injury crashes throughout the Saint Paul;
- An understanding and acknowledgment of the communities most impacted by traffic crashes, and the needs of those communities;
- A description of projects that utilize data-driven strategies proven to reduce crash incidence and severity;
- Policy recommendations that change the way the city selects and design future projects;
- Recommendations for programs involving enforcement, education, and partnerships with other agencies;
- A focus on equity to ensure that projects are selected, funded, designed, and implemented in a way that aligns with the city's goals; and
- A roadmap for implementing the strategies in this Plan, including detailed guidance for the next five years and ten years.

Eliminating traffic deaths will not be easy, and it will take time. Many of Saint Paul's roads were designed to move large amounts of vehicles at high speeds, ignoring the impacts on bicyclists, pedestrians, and high crash risk to drivers. Saint Paul cannot redesign all its streets at once, nor can the city finance more than a handful of large-scale reconstruction projects in a decade. Additionally, many surface streets within Saint Paul are owned by Ramsey County and the Minnesota Department of Transportation (MnDOT), necessitating strong and enduring collaboration to make real progress on some of the city's most challenging roads. Through this Plan, Saint Paul is committed to leading these efforts.

[1] Minnesota Crash Mapping Analysis Tool (MnDOT). Additional details available in the Crash Analysis appendix.

Our Goal

In June of 2023, the Saint Paul City Council unanimously passed a resolution committing to the goal of eliminating traffic deaths and serious injuries on all surface streets in Saint Paul by 2045. To achieve this goal, the city has adopted the following benchmark goals:

- Reduce deaths from traffic crashes by 50% within 10 years
- Reduce serious injuries from traffic crashes by 50% within 10 years

Further, Saint Paul acknowledges that achieving these goals will require significant and ongoing coordination with partner agencies including MnDOT, Ramsey County, the Metropolitan Council, and Metro Transit. The city also understands that there is a significant staff and financial need required to meet the goal over a sustained period, and that prioritizing safety investments must be elevated in the planning of future projects and policies.

Why focus on surface streets?

Saint Paul's commitment is focused on traffic crashes that occur on all surface streets (non-freeway) roads within the city. This may seem counterintuitive since a large number of traffic crashes within the city occur on the freeways, including interstates. However, the city has limited control over the design and function of these roads. The city will continue to work with MnDOT and the federal government and advocate strongly for strategies that improve interstate safety but cannot commit to changes on roadways it does not control. For this reason, the goal to eliminate traffic deaths will be measured based on all other transportation facilities.

Safe System Approach

This Plan utilizes the "Safe System Approach" to traffic safety, a multi-faceted method of improving the transportation safety. The Safe System Approach, which has been officially endorsed by the United States Department of Transportation and MnDOT's Toward Zero Deaths initiative, includes a major focus on speed management, improving safety for all roadway users, and designing roadways to prioritize safety. This plan will focus on these elements, which the City of Saint Paul can influence through roadway design, engineering, and education strategies. Saint Paul's first responders are responsible for post-crash care, and the city's police and fire departments have been key members of the technical advisory committee for this Plan.

Saint Paul has little influence locally over safer vehicle regulation, though the city remains committed to working with our partners at the state and federal levels to improve vehicle safety both inside and outside of motorized vehicles.

Figure 1: Five elements of Safe System Approach. Source: USDOT

Focus on Vulnerable Road Users

This Plan places an emphasis on improving safety for *vulnerable road users*. A vulnerable road user (VRU) is anyone who is not protected by being inside a vehicle – including pedestrians, cyclists, people using wheelchairs or scooters, and people walking to and from transit. Unlike drivers, vulnerable road users also represent users from all ages and walks of life, from infants in strollers to the elderly.

VRUs are especially exposed to roadway crashes. Historically, roadway design has prioritized the needs of drivers to reach their destination quickly over the safety needs of other road users. VRUs crossing busy roads are at particular risk. and those hit at higher speeds are more likely to be killed than those hit by low-speed drivers. Data from this Plan show that, while only 1.2 percent of all crashes involving vehicles resulted in a person being killed or a serious injury, 16.8 percent of all crashes involving pedestrians and 5.5 percent of crashes involving bicyclists resulted in a fatality or serious injury. In fact, between 2018 and 2022, pedestrians involved in crashes in Saint Paul walked away without injury only 12 percent of the time, compared to over 82 percent of drivers. For this reason, the Plan focuses on methods to prevent all crashes involving VRUs, rather than just fatalities.

This Plan illustrates the acute dangers faced by vulnerable road users, and it represents not only an opportunity to understand their safety challenges, but also to intentionally move project selection criteria, design, and city policy in the direction of promoting lower traffic speeds and designs that promote and improve VRU safety and visibility on Saint Paul streets.

Figure 2: Pedestrians, including a person using a wheelchair, crossing a street in Downtown Saint Paul.

How Does This Plan Relate to Other City Goals?

Transportation safety is critical to addressing equity, quality of life, economic vibrancy, and sustainability throughout the community. The Safety Action Plan is supportive of many of the city's longstanding goals developed and adopted through other planning projects and is a critical piece of the city's Community First Public Safety Initiative. In particular, the Plan is supportive of several of the core values adopted through the Saint Paul for All 2040 Comprehensive Plan:

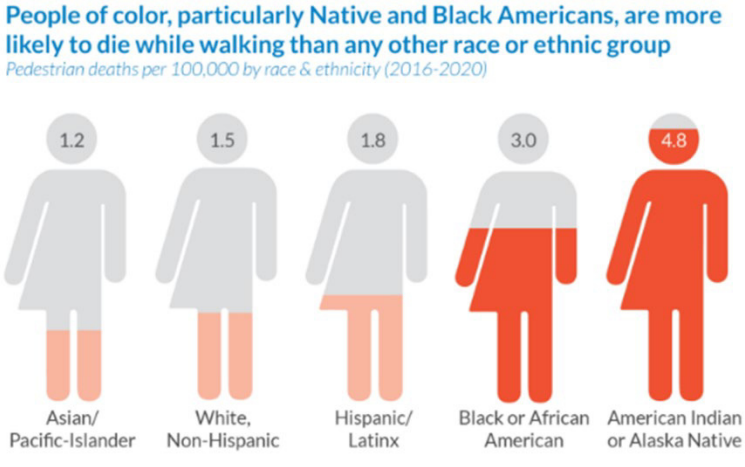
Equity and Opportunity	Welcoming and Safe	People-Centered
☑	☑	☑

The Transportation Safety Action Plan also supports various city plans and initiatives. This Plan will advance the safety-driven goals and projects identified in the following plans:

- **Saint Paul Pedestrian Plan (2019):** "Make Walking Safe for Everyone."
- **Saint Paul Speed Limit Evaluation (2020):**
  - "Support the City's traffic safety goal of zero traffic deaths and severe injuries."
  - "To improve safety and comfort for people of all abilities walking, bicycling and taking transit."
- **Saint Paul Street Design Manual (2016):** "Ensure Safety for All Users."
- **Saint Paul Climate Action and Resilience Plan (2019):**
  - "Increase safe and reliable access to city destinations without the use of a private automobile."
  - "Mitigate the historical effects of discriminatory transportation decision-making and bring transportation equity to marginalized communities."
- **Community First Public Safety:** "Designing Public Spaces for Safety."

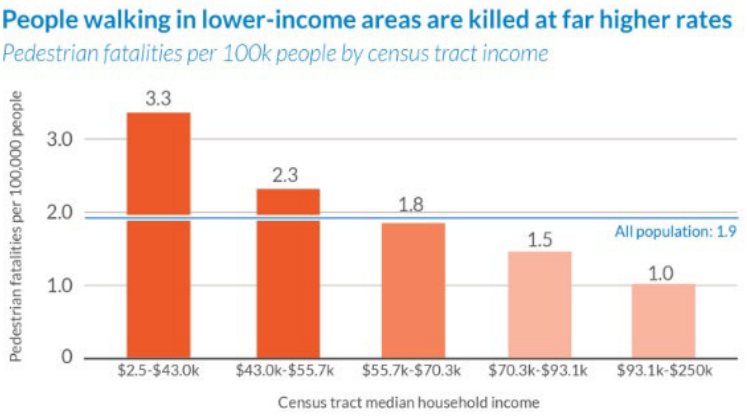
Prioritizing Equity

In Saint Paul and across the nation, traffic safety is an equity issue. While traffic safety affects all people, certain communities are disproportionately impacted by transportation-related injuries and fatalities. People who are Black and Indigenous are more likely to die while walking compared to people of other races and ethnicities, and people walking in low-income communities are more likely to be killed than people walking in wealthier areas.



Dangerous by Design 2022 by Smart Growth America

These disparities are a result of a variety of historic and ongoing inequities, including disinvestment in walking and biking infrastructure in certain communities or transportation policies and practices that prioritize the needs of drivers over those of pedestrians and bicyclists. Addressing transportation safety as an equity issue involves ensuring that all communities have access to safe and reliable transportation options, and that transportation policies and practices prioritize the safety of all road users, regardless of their mode of transportation, race/ethnicity, or socioeconomic status.



Dangerous by Design 2022 by Smart Growth America

The Transportation Safety Action Plan prioritizes equity in addressing traffic safety challenges by ensuring that the communities most burdened by traffic-related deaths and injuries are prioritized in the safety solutions. There are five ways equity is integrated throughout the Plan, including:

1. Identify and apply existing City of Saint Paul equity frameworks, goals, and metrics to the planning process
2. Use crash data and demographic mapping to understand crash trends and identify communities that are overburdened by traffic safety concerns
3. Focus public and stakeholder engagement efforts in these communities, and use feedback to develop community-driven solutions
4. Use feedback from engagement and data from the equity analysis to inform criteria used in the project prioritization
5. Recommend and integrate strategies to advance equity and safety in the implementation plan

This Plan supports other City of Saint Paul equity goals, including:

- **2040 Comprehensive Plan (2019)**:
  - "Prioritize safety and equity benefits in transportation project selection."
  - "Prioritize equitable public investments relative to areas of concentrated poverty."
  - "Improve the stability and health of communities of concentrated disadvantage by implementing place-based investments, such as public infrastructure, improvements and maintenance."
- **Racial Equity Metrics (2021):** "We work toward the vision of being a city where race does not predetermine opportunities in education, employment, housing, health, and safety."

- **Saint Paul's Racial Equity Toolkit (2023)**:
  - "Racial equity in services, policies: No person or group will be disadvantaged in city services or through our policies because of their race."
  - "Racial equity in community engagement: We listen to and value all voices in our community."

Crash Trends

The citywide Crash Analysis is central to the Transportation Safety Action Plan. It includes an evaluation of national and statewide crash trends, five-year crash trends in Saint Paul, an equity analysis of crashes in Saint Paul, a High Injury Network for all modes, and a High Crash Network for vulnerable roadway users.

This analysis is based on all crashes within the City of Saint Paul from January 1, 2018, through December 31, 2022. During this period, there were 23,145 crashes in Saint Paul, 31 percent of which were on limited access highways. Since limited access highways are not a focus of this plan and the city has no control over their design or management, these roadways were filtered out of the dataset for the analysis. Limited access highway crashes include all crashes that occurred on Interstate 35E, Interstate 94, U.S. Highway 52, Trunk Highway 280, and all ramps.[2] The remaining 16,070 crashes that occurred on surface streets within the City of Saint Paul (including county- and state-owned roadways) are the focus of this analysis.

The crash analysis identifies significant trends over the five-year analysis period. The takeaways identified below are detailed in the full Crash Analysis document, available in the appendix.

Figure 3: Pedestrian crossing an unmarked crosswalk in the Summit-University neighborhood.

[2] Crashes that occurred at the intersections of Saint Paul streets and freeway on- and off-ramps are included in the analysis.

Spatial Patterns of Fatal and Serious Crashes

Figure 2 shows the spatial patterns of fatal and serious injury crashes throughout the city. **These crashes follow the same general pattern of all crashes, with more fatal and serious crashes on the eastern and northern sides of the city, concentrations along major streets, and throughout downtown. There are high concentrations of fatal and serious injury crashes along University Avenue, Rice Street, Maryland Avenue, East and West 7th Street, and White Bear Avenue.**

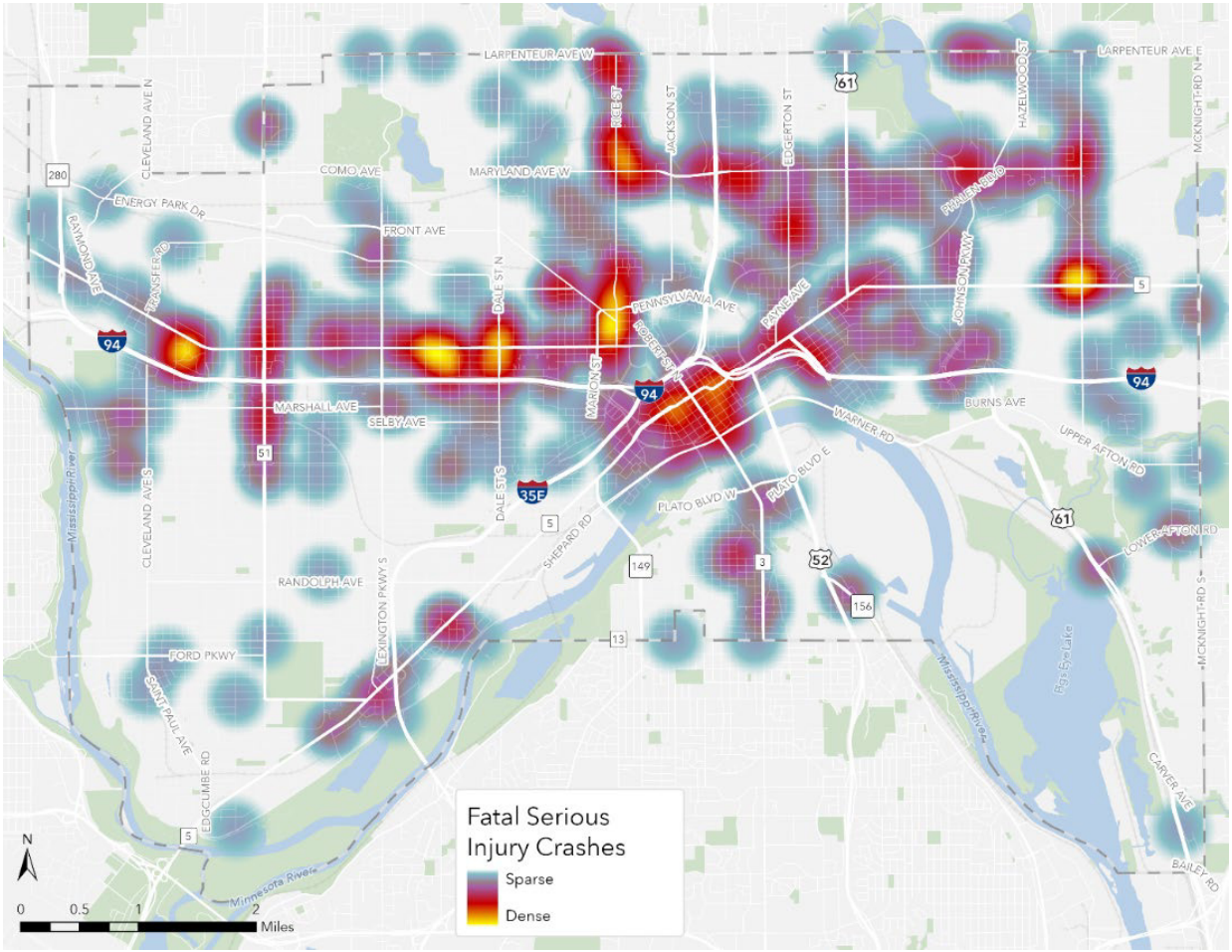


Figure 4: Fatal and Serious Injury crashes in Saint Paul, 2018-2022.

Vulnerable Road Users

Vulnerable Road Users, including pedestrians and bicyclists, are at a higher risk of being involved in more serious crashes, especially when comparing the severity of crashes involving each mode with the percentage of total trips involving that mode. **This indicates all vulnerable road users, and particularly pedestrians, are at higher risk of injury or death while using the city's transportation system, and future investments should prioritize improving safety for these users.**

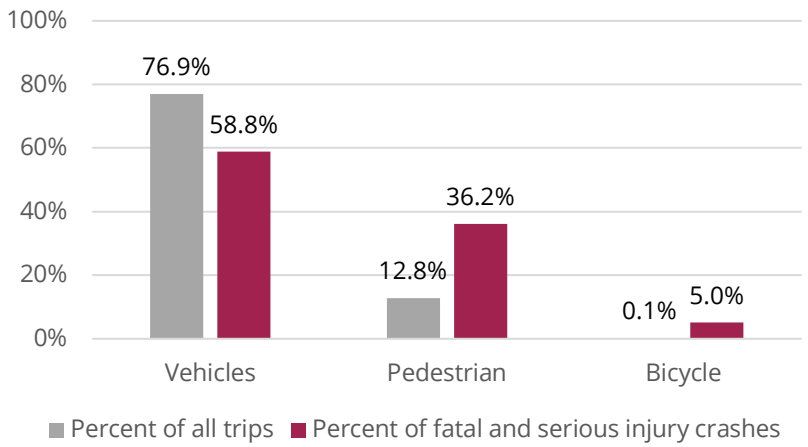


Figure 5: Crash Severity Compared to Travel Patters, Source: MnCMAT2 and Met Council 2019 Household Travel Survey

Crashes by Roadway Ownership and Functional Class

Crashes on Ramsey County and MnDOT-owned streets are overrepresented compared to the total lane miles in each system. While only 19 percent of the city's lane miles are on the county or state system, 47 percent of all fatal and serious injury crashes occurred on those streets. **Targeting safety interventions along these roads, in partnership with Ramsey County and MnDOT, should be a priority strategy for decreasing fatal and serious injury crashes.**

Minor Arterial is a classification for roads that supplement the main highway system – they connect throughout Saint Paul and into neighboring cities. These are the roads that residents and frequent visitors to the city would recognize as "busy streets." While Minor Arterials only account for 21 percent of all lane miles in Saint Paul, 39 percent of all crashes occurred on Minor Arterials between 2018 and 2022 and 47 percent of all fatal and serious injury crashes took place on Minor Arterials during this period (Figure 4). **Targeting safety**

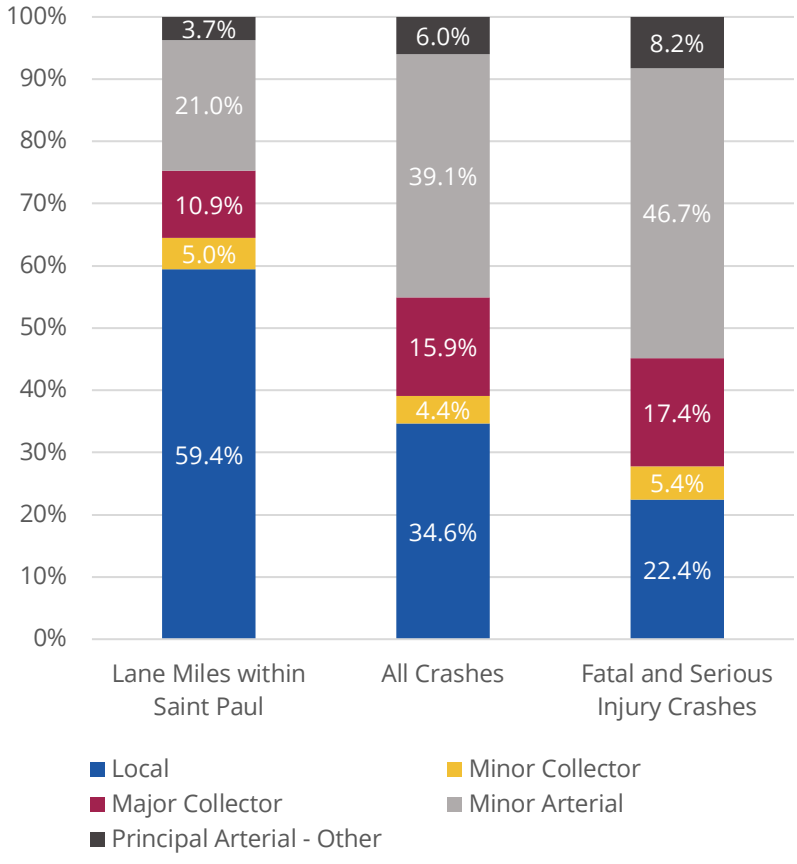


Figure 6: Crashes by Functional Classification, 2018-2022. Source: MnCMAT2 and City of Saint Paul

interventions along Minor Arterials should be a priority strategy for decreasing fatal and serious injury crashes.

Intersection Crash Trends

About 56 percent of all crashes and 67 percent of fatal and serious injury crashes occur at an intersection. Approximately half of all crashes that occurred at an intersection were at intersections with a traffic control signal (51.5 percent), with a slightly higher proportion of fatal and serious injury crashes occurring at these intersections (55.5 percent). **Targeting intersection safety improvements at signalized intersections is likely to have a high impact on crash reduction.**

Crossing Roads Dangerous for Vulnerable Road Users

A high proportion of both pedestrians and cyclists are hit when they are crossing traffic (especially at intersections with a marked crosswalk). Turning vehicle movements are much more likely to result in a pedestrian or bicycle crashes, compared with all crashes. **These trends indicate that intersection projects that improve safety for cyclists and pedestrians, especially those that reduce conflicts and speed of turning vehicles will improve safety for vulnerable road users.**

Behavioral Factors

The proportion of all crashes caused by speeding, running off the road, and reckless driving increased significantly over the past five years. Particularly, the proportion of all crashes caused by speeding increased 184 percent over the 5-year period. Crashes involving speeding, reckless or careless driving, and failure to yield are also more likely to cause serious injuries or death than other crash types. **This plan should identify design-based methods to reduce driver speeds, as well as possible behavioral strategies to reduce reckless or careless driving through partnerships with other agencies.**

Equity Analysis

Traffic safety is an equity issue. Nationally, People of Color and low-income communities bear a disproportionate burden of traffic-related injuries and fatalities. When crash data was overlaid on the project Equity Priority Areas in Saint Paul,[3] as shown in Figure 5, **the Equity Priority Areas bear a disproportionate burden of traffic-related serious injuries and fatalities.** Additionally, crashes that occurred in Equity Priority Areas were more likely to be serious or fatal compared to the other parts of the city. **This analysis indicates that the population within these areas are disproportionately affected by traffic crashes, and the Plan should prioritize improvements in these areas to mitigate these disparities.**

[3] "Equity Priority Areas" are census tracts in which over 50 percent of residents identified as BIPOC and/or Hispanic, based on 2019 Census data, and are a disadvantaged census tract, as defined by USDOT's Equitable Transportation Community Explorer tool (as of June 2023).

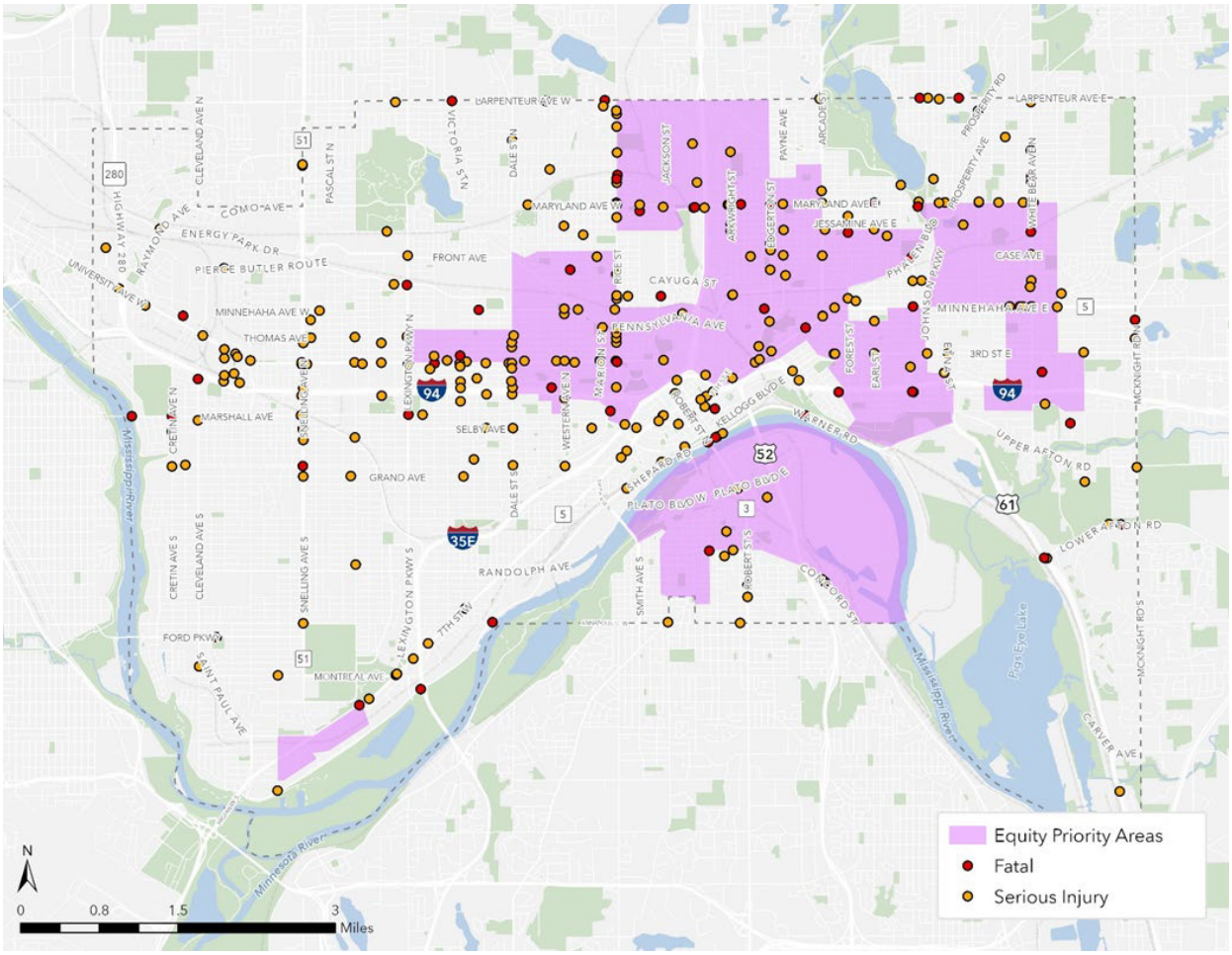


Figure 7: Fatal and Serious Injury Crashes with Equity Priority Areas

High Injury Network and High Crash Network

The High Injury Network (HIN), a series of streets where more severe crashes occur, captures about 62 percent of all fatal and injury crashes in Saint Paul between 2018 and 2022, and represents about 11 percent of the city's roadway miles. The High Vulnerable Road Users Crash Network (HCN) is a series of road segments with the highest number of bicycle and pedestrian crashes per mile, or segments with a high number of total bicycle and pedestrian crashes. **Concentrating investments along the identified streets that have both high fatality/injury rates and high rates of vulnerable road user crashes have the potential to significantly improve traffic safety.**

There is significant overlap between the HIN and HCN. **The figure on the following page highlights the HIN and the HCN within the City, including the many roadways where the two networks overlap (indicating roadways that are especially dangerous for all modes).** This includes segments of University Avenue, Rice Street, Maryland Avenue, East and West 7th Street, White Bear Avenue, and several streets in Downtown Saint Paul.

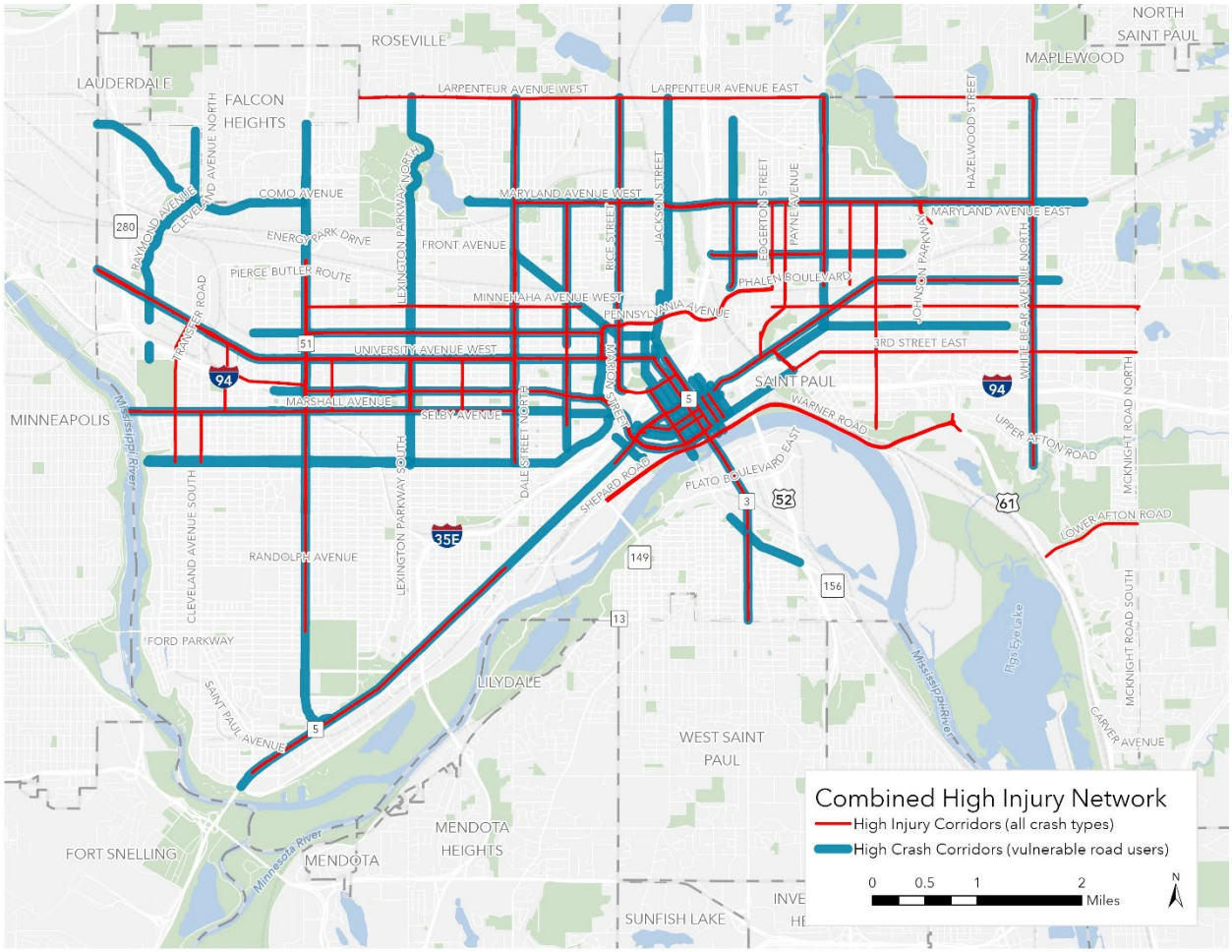


Figure 8: Combined High Injury Network and High Crash Network

Community Engagement

From February to April 2023, the city conducted community engagement to better understand transportation safety challenges that people using Saint Paul streets experience. Engagement efforts prioritized historically disadvantaged, low-income, and BIPOC communities highly impacted by vehicle, pedestrian, and bike crashes, and that have been under-engaged in recent years. These areas are referred to as "Tier 1" or "priority areas" for engagement.

Previous Engagement Summary

The city compiled a previous engagement summary to understand transportation safety themes from previous engagement efforts led by the city and key partners, including MnDOT, Ramsey County, and Metro Transit. Key themes from this review include:

- Safer and improved crossings, especially for pedestrians and bicyclists
- Traffic calming to address high-speed traffic areas
- Improved sidewalks and better sidewalk connections
- Drivers speeding, running stop signs, and not yielding to pedestrians
- More and improved pedestrian lighting
- More left turn lanes on certain corridors such as Rice Street

Engagement Strategies

Engagement for this Plan included an online survey and comment map, two pop-up events, and direct outreach to organizations in the priority areas. The city used social media, email, a project webpage, emails to the Saint Paul District Councils and a presentation at their transportation committee meeting to promote the survey and comment map.

The online survey and comment map were open from March 1 to April 14, 2023. The survey received 1,238 responses which were separated into two groups for analysis: citywide data and Tier 1/priority areas. The comment map received 893 responses, 501 of which were from the Tier 1 zip codes. The focus of analysis on both the survey and map were the priority areas.

Additionally, the city hosted two pop-up engagement events in Tier 1 areas. The first was at Eastern Heights Elementary School (near the intersection of White Bear Ave and Minnehaha Ave), the second was at HmongTown Marketplace (near the intersection of Rice St, Pennsylvania Ave, and Como Ave).

Beyond these strategies, the city also conducted direct outreach to 121 businesses, apartment buildings, community centers, nonprofits, and other organizations near the Tier 1 areas and heard feedback from at least 20 of those organizations.

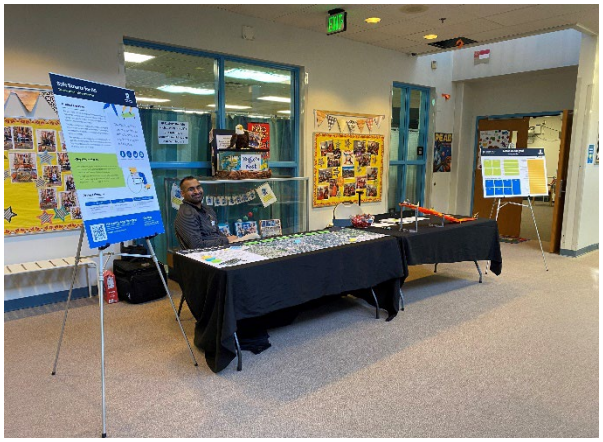


Figure 9: The engagement team at Eastern Heights Elementary

Technical Advisory Committee

In addition to public-facing engagement, the development process for the TSAP included engagement with a Technical Advisory Committee (TAC), which included a variety of stakeholders and decision-makers who are involved in implementing transportation projects in Saint Paul. The TAC met monthly throughout the plan development process and provided feedback on plan materials, insight into policy and project priorities, and helped define the overall project direction. The TAC will continue to meet regularly into the project implementation phase to finalize project prioritization and policy recommendations, as well as to facilitate communications with partner agencies.

Agencies and organizations represented on the TAC include:

- Saint Paul Transportation Planning
- Saint Paul Traffic Engineering
- Saint Paul Street Engineering and Construction
- Saint Paul Public Works Operations and Maintenance
- Saint Paul Public Works Communications
- Saint Paul Planning and Economic Development
- Saint Paul Parks Department
- Saint Paul Public Schools
- Saint Paul Police Department
- Saint Paul Fire Department
- Saint Paul Office of Neighborhood Safety
- Ramsey County
- Minnesota Department of Transportation
- Metropolitan Council
- Metro Transit
- University of Minnesota Human First Lab

What We Heard

Based on these strategies, the city learned about key transportation safety concerns and ideas for improvement. The takeaways identified below are expanded upon in more detail in the Engagement Summary, available in the appendix.

Driver behavior stood out as a primary safety concern for people using all forms of transportation. Speeding and reckless driving concerns were mentioned in nearly every engagement interaction. Engagement participants also noted drivers failing to yield and drivers running red lights and stop signs as a safety concern.

Safer pedestrian crossings were mentioned repeatedly both citywide and in the priority areas. This ties in with driver behavior, as the project team often heard reports of drivers not stopping at designated crosswalks.

Bicycle infrastructure came up repeatedly, primarily through the survey and comment map. Engagement participants would like to see more bike lanes, protected bike lanes, and better maintenance of existing bike infrastructure.

While there were dozens of problem locations shared by respondents across the city, **Snelling Avenue, University Avenue, White Bear Avenue, Rice Street, and Pennsylvania Avenue came up repeatedly throughout engagement as dangerous roads in Tier 1 areas**. Engagement participants noted concerns such as speeding, busy roads, cars not yielding to pedestrians, lack of safe bicycle and pedestrian infrastructure, wheelchair and mobility device user difficulties, and difficulty crossing. Poor road conditions, especially potholes, also came up frequently in engagement. This was likely top of mind for people as the engagement period took place in late winter.

Plan, Policy, and Best Practice Review

In addition to physical projects that address safety and improve on-the-ground infrastructure, policies are important for improving safety because they shift the way that the city does business and prioritize projects. Improving road safety while maintaining the status quo is difficult. Changing road safety policies that address topics such as speed, street design, project selection and evaluation is important to get closer to reaching zero road deaths and serious injuries.

A thorough plan and policy review was conducted of existing Saint Paul documents to identify policies and strategies that have previously been identified as needs or opportunities to improve traffic safety in the city and assess the existing policies that impact traffic safety. This was coupled with a review of Vision Zero and safety action plans and practices from peer jurisdictions through plan reviews and stakeholder interviews. Interviews were conducted with leadership within those jurisdictions to learn from their successes and challenges in implementing Vision Zero. In addition to the peer jurisdiction review, a high-level review of international approaches to Vision Zero and safety was also completed. Findings from these reviews were used as a lens to assess Saint Paul's existing policies and identify opportunities that will help the city design, build, and maintain safe streets for everyone on a routine basis.

Review of Existing Policy Documents

Various Saint Paul plans were reviewed for policy content including, including the Saint Paul Policy and Procedure Manual (2019), the Complete Streets Action Plan (2016), Saint Paul Street Design Manual (2016), the City of Saint Paul Roadway Safety Plan (2016), the Saint Paul Bicycle Plan (2017), the Saint Paul Pedestrian Plan (2019), the Saint Paul for All: 2040 Comprehensive Plan (2020), the Ramsey County Comprehensive Plan (2019), the Minnesota Strategic Highway Safety Plan (2020), and the Minnesota Highway Safety Plan (2022).

Several plans, including the 2040 Comprehensive Plan, the Complete Streets Action Plan, and the Saint Paul Climate Action & Resilience Plan include broad strategies related to safety, generally recommending the implementation of existing bicycle and pedestrian plans, as well as the adoption and implementation of Vision Zero, which the city has initiated through the development of this plan and its June 2023 Vision Zero commitment from City Council. Several safety-related themes were prominent throughout many of the planning documents, including:

- **Street design:** Plans such as the 2040 Comprehensive Plan, the Complete Streets Action Plan, the Saint Paul Climate Action & Resilience Plan, and the Saint Paul Bicycle Plan highlight strategies related to bikeway design, pedestrian crossings, and sidewalks to create better multimodal networks.

- **Funding and implementation:** Several plans called out the need for increased and consistent funding for safety improvements and expansions of the bicycle and pedestrian networks. Some plans included strategies on how funding could be allocated to improve safety, as well as potential resources for additional funding to reduce crashes. Recommendations were also found throughout the documents to streamline implementation and incorporate private development as opportunities to implement projects.
- **Project prioritization:** Several plans provide guidance about elevating safety in the project prioritization process, noting that limited resources are always a factor and prioritization is necessary.
- **Agency coordination and project development:** Through several prior plans, Saint Paul has emphasized the importance of coordination across a range of partners, linking Public Works Department with staff in the Police Department, Public Schools, and other local agencies, as well as corresponding county, regional, and state agencies in advancing its safety goals. Strategies on how coordination could be increased and improved through the project development process were included.
- **Engagement and education:** Some past plans included specific recommendations on ways to engage the public on traffic safety issues, in addition to a theme of needing to raise awareness among the public about traffic safety initiatives and issues.
- **Evaluation:** Strategies focused on collecting and evaluating data to ensure that safety efforts are having the desired impact on the local community.
- **Vehicle Speed:** While many recommendations across the above categories influence speed, it is worth noting speed as a separate category. Speeds both influences the likelihood of crashes, as well as crash severity. Recent plans, such as the 2040 Comprehensive Plan and Saint Paul Pedestrian Plan identify strategies for reducing speeds in Saint Paul. The city recently implemented a citywide speed limit reduction on city-owned streets, establishing a speed limit of 20 mph (20 mph for local residential streets and 25 mph for larger, arterial and collector roads), as one measure to deal with excessive speeding.
- **Enforcement:** Enforcement was noted in several plans as a way to raise awareness of critical traffic safety issues, such as specific behaviors like red light running.

Peer City and Best Practice Review

Staff from peer jurisdictions that have developed and started to implement Vision Zero and safety action plans were interviewed to learn from their successes and challenges. Peer jurisdictions included Ann Arbor, MI; Denver, CO; Jersey City, NJ; and Madison, WI. A high-level review of international practices supplemented the peer jurisdiction review. Key takeaways from the peer city and best practice review highlighted the importance of:

- Project prioritization that puts safety at the forefront above other metrics and incorporates equity into the process. (Ann Arbor, Denver, International)
- Project development processes that incorporate safety in all projects early in the process and systematize interventions. (Ann Arbor, Denver, Jersey City, International)
- Aligning funding streams with the city's goals on safety and equity. (Denver, Madison)
- Streamlining construction contracts to facilitate implementation. (Jersey City)

- Design and operations policies that standardize the design and implementation criteria of safety countermeasures, with safety prioritized over other metrics, such as traffic delay. (Ann Arbor, Denver)
- Importance of high-quality data, including crash data and project metrics, in identifying the right solutions. (Denver)
- Consistent and continual public engagement to keep Vision Zero and specific messages on traffic safety in the spotlight. (Ann Arbor, Jersey City, Madison)
- Strong leadership from the highest level of government on Vision Zero and safety issues. (Jersey City, International)
- Emphasis on speed management and a safe systems approach. (International)

The lessons learned from peer cities, as well as national best practice guidance, can be used to inform how Saint Paul moves forward in implementing this plan.

Key Policy Opportunities

Based on this review, Saint Paul has several key opportunities to institutionalize practices and policies that will lead to better safety outcomes within the transportation system, including:

1. Review existing design policies, assessing whether safety is prioritized within the guidance. Saint Paul's Street Design Manual as well as federal best practices should be used to inform policy adjustments.
2. Review existing practices that are not documented in a policy to determine whether the existing practices align with safety priorities; document the appropriate practice, either in its existing form or incorporating changes where necessary.
3. Revise the Capital Improvement Program process to incorporate safety as a prominent criterion in project selection.
4. Review the project development process and evaluate if the relevant city departments and agencies have input at the appropriate point of the process.
5. Develop standards and/or guidelines for traffic safety measures to be incorporated into project development processes.
6. Evaluate existing funding streams and levels in comparison to desired capital improvement targets.

As Saint Paul implements its Safety Action Plan, the city has the opportunity to build upon safety strategies listed in the existing plans outlined in this review, as well as precedents from other cities and national and international guidance to create a safer, more comfortable, and more multimodal city.

Project Identification and Prioritization

Project Prioritization Framework

The Project Prioritization Framework establishes a methodology for how transportation safety projects (identified through the TSAP and other processes) are prioritized for future implementation. Separately from this process, the City's Public Works Department is undergoing an exercise to modernize its capital planning process by developing a data-driven prioritization process. These two processes are separate but should be revised and informed by each other.

This prioritization framework is data-driven, reflecting the federal priority placed on data-driven planning. Having a data-driven prioritization framework will support efforts to secure federal funding for roadway safety projects, including funding through the Safe Streets and Roads for All discretionary funding program. This process heavily weights roadway safety factors, placing more emphasis on dangerous or potentially dangerous project locations. The framework also uses other community data to reflect the understanding that safety investments also have impacts on other city priorities, such as quality of life, sustainability, and equity. Incorporating all of these factors into the process will help the City determine which investments have the best return on investment and to make the best use of limited resources, whether that funding is from federal, state, or local sources.

Initial Prioritized Projects

The safety projects initially prioritized in this exercise include 66 intersection projects and 16 segment projects identified previously by City staff. These proposed projects were used as an initial list, but this framework is intended to be used for prioritizing additional safety projects as they are identified through various processes.

Prioritization Factors

Crash History and Risk

The following criteria measure the crash history and risk at a proposed project location. These criteria measure previous crash history near a proposed project, as well as factors like speed and traffic volume that are more likely to make it a high-crash location.

- **High Injury Network.** Projects located along the High Injury Network (identified in the Transportation Safety Action Plan) scored higher in prioritization.
- **High Crash Network for Vulnerable Road Users.** Projects located along the High Crash Network for Vulnerable Road Users (identified in the Transportation Safety Action Plan) scored higher in prioritization.
- **Excessive Speed.** Projects in locations with high 85th percentile observed vehicle speeds (compared to the posted speed limit) scored higher in prioritization. Data for this is currently unavailable but should be collected by the City in order to prioritize projects.
- **Traffic Volume.** Projects in higher vehicle volume locations scored higher in prioritization.

Specific scores assigned for each criterion can be found in Table 1. Specific weights should be continuously evaluated and may be changed in the future.

Access to Opportunity

The following criteria measure the activity around a proposed project location, aiming to capture factors like equity, proximity to key destinations, future land use, pedestrian volumes, and needs of transit and trail users.

- **Equity Priority Area.** Projects located in the Equity Priority Area (established in the Transportation Safety Action Plan) scored higher in prioritization. The City should consider increasing the weight of the equity criteria in this process, and/or refining the equity criteria to include the latest 2024 USDOT Equitable Transportation Communities (ETCs) data or a non-binary criteria to measure vulnerable populations.

- **Proximity to Activity Generators.** Projects located closer to key destinations like schools, parks, libraries, and community centers scored higher in prioritization.
- **Neighborhood Nodes.** Projects within Neighborhood Nodes (as defined the St. Paul 2040 Comprehensive Plan) scored higher in prioritization. This aims to prioritize projects in dense and/or mixed-use areas that would serve a greater volume of users, including pedestrians.
- **Proximity to Transit.** Projects closer to transit, especially current/future transitways (light rail and bus rapid transit) or high-frequency bus lines, scored higher in prioritization.
- **Trail Crossings.** Projects that would involve improving or adding a trail crossing scored higher in prioritization.

Of note, several of these factors are correlated, including proximity to activity generators, neighborhood nodes, and proximity to transit. The City should evaluate refining these criteria to minimize overlap, or otherwise ensuring that these criteria do not overly limit the impact of other criteria (e.g., equity).

Specific scores assigned for each criterion can be found in Table 1. Specific weights should be continuously evaluated and may be changed in the future.

Project Benefit

The project benefit criteria aims to capture the potential safety benefit of a project based on the proposed countermeasure.

- **Project Benefit.** Projects with higher-impact countermeasures proposed scored higher in prioritization. This initial list of projects was prioritized based on the countermeasures proposed by the City in each project location. Appropriate countermeasures should continue to be refined. The impact of proposed countermeasures is based on industry best practices, such as those established by FHWA, NHTSA, and in the Crash Modification Factors Clearinghouse.

Proposed countermeasures included in a project could be changed, resulting in higher or lower prioritization of the project. Appropriate countermeasures should be proposed in alignment with the TSAP strategies. Specific scores assigned for each criterion can be found in Table 1.

Potential Future Updates

This methodology should be considered dynamic and adaptable. Future updates to the process may consider:

- Refining points and weighting to eliminate excessively correlated criteria
- Further aligning the process with other prioritization processes (i.e., CIP prioritization)
- Refinement of metrics capturing social equity and other community attributes, including using the standard USDOT Equitable Transportation Communities index rather than the binary criteria of the Equity Priority Areas
- Further analyzing safety challenges in each project area to determine appropriate treatments and refining project benefit scoring
- Determining the appropriate role of community support and engagement in how projects are prioritized

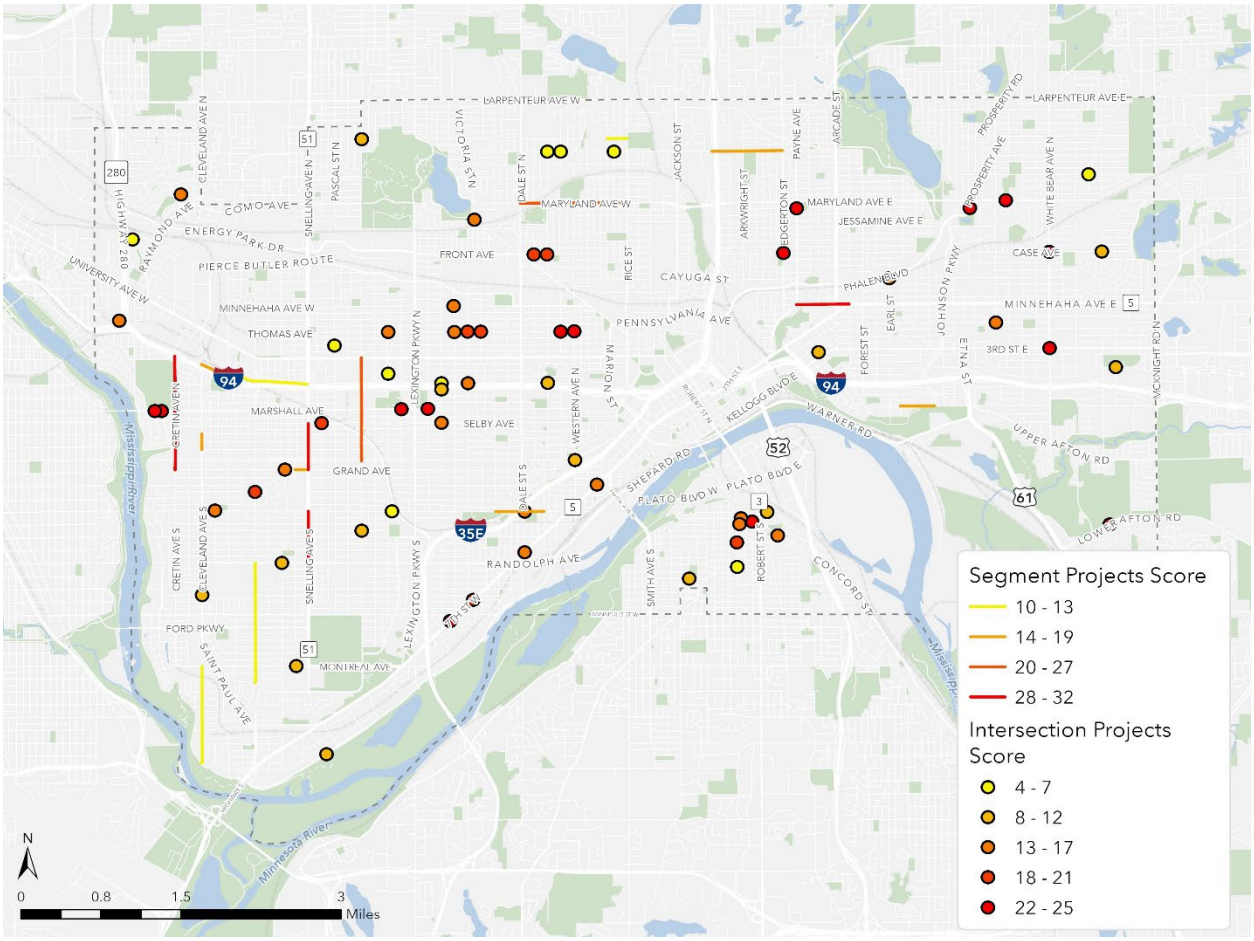
Table 3: Scoring Criteria

Criteria	Scoring Details	Max Pts.
Crash History and Risk		**18**
High Injury Network	4 points: Project along HIN or at least one leg is along HIN 0 points: Project not along HIN	4
High Crash Network for Vulnerable Road Users	4 points: Project along HCN for VRUs, or at least one leg is along HCN 0 points: Project not along HCN for VRUs	4
Excessive Speed[4]	5 points: 85th percentile speed > 5 mph above posted speed limit 3 points: 85th percentile speed > 3 mph above posted speed limit 0 points: 85th percentile speed <= 3 mph above posted speed limit	5
Traffic Volume	*Segment Projects* 5 points: > 15,000 vehicles per day 4 points: 8,000-15,000 vehicles per day 3 points: 3,000-7,999 vehicles per day 1 point: 1,500-2,999 0 points: < 3,000 vehicles per day	5
	Intersection Projects 5 points: > 22,500 vehicles per day 4 points: 15,000-22,500 vehicles per day 3 points: 7,500-14,999 vehicles per day 1 point: 3,000-7,499 vehicles per day 0 points: < 3,000 vehicles per day	
Access to Opportunity		**14**
Equity Priority Area	3 points: Project in Equity Priority Area 0 points: Project not in Equity Priority Area	3
Proximity to Activity Generators	3 points: Within 500 ft of a public school, park, library, or community center 0 points: Not within 500 ft of public school, park, library, or community center	3
Neighborhood Nodes	3 points: Within 1/4 mile of neighborhood node 0 points: Not within 1/4 mile of neighborhood node	3
Proximity to Transit	3 points: Directly along a transit route or within 1/4 mile of transitway or high-frequency route 1 points: Within 1/8 mile of any transit route 0 points: Not along transit route	3
Trail Crossing	2 points: Project adds or improves a trail crossing 0 points: Project does not add or improve a trail crossing	2
Project Benefit		**10**
Project Benefit[5]	10 points: Higher project safety benefit 5 points: Medium project safety benefit 0 points: Lower project safety benefit	10

[4] Speed is not yet included due to data constraints. All projects received a placeholder score of 3.
[5] Higher benefit: includes road diet
Medium benefit: includes raised median, median islands, raised crosswalk, intersection daylighting, dedicated left turn lanes
Lower benefit: includes curb extensions, neighborhood traffic circles, dynamic speed signs, or any projects where proven safety countermeasure is not listed

Initial Prioritized Projects

The following map shows the results of the initial prioritization of projects. Higher scoring projects are shown in red, and lower scoring projects are shown in yellow.



Data Sources

- **High Injury Network:** Developed during the Transportation Safety Action Plan.
- **High Crash Network for Vulnerable Road Users:** Developed during TSAP Phase 1.
- **Excessive Speed:** Data source not yet available, to be collected by the City at a later date as available.
- **Traffic Volume:** Maximum traffic volume along a segment or total entering volume for intersection projects. Based on the most recent available MnDOT data. If no MnDOT data was available, City of St. Paul traffic counts were used if available. If no traffic volume data was available, the following assumptions were used:
    - Local (low activity zone)[6]: 500 vehicles per day
    - Local (high activity zone): 1,000 vehicles per day
    - Minor collector: 3,000 vehicles per day

[6] Low vs. high activity zone local streets were defined based on the process used in the Critical Crash Rates portion of this analysis. GIS data has been provided to the City with this designation.

  - Major collector: 5,000 vehicles per day
  - Minor arterial: 10,000 vehicles per day
  - Principal arterial: 15,000 vehicles per day
- **Equity Priority Area:** Developed during TSAP Phase 1. Defined as census tracts in which over 50% of residents identified as BIPOC and/or Hispanic, based on 2019 census data, and are a disadvantaged census tract as defined by USDOT's Equitable Transportation Communities tool (as of June 2023).
- **Proximity to Activity Generators:** Used linear distance to a point or park boundary. Data was sourced via the Minnesota Department of Education, Metro Collaborative Parks (MN Geospatial Commons), and St. Paul GIS.
- **Neighborhood Nodes:** Sourced from the St. Paul 2040 Comprehensive Plan. Neighborhood nodes are defined as ¼ mile radius areas.
- **Proximity to Transit:** Data sourced from MN Geospatial Commons via the Metropolitan Council.
- **Trail Crossing:** Based on whether a project description mentions adding a trail crossing.
- **Project Benefit:** Based on countermeasures mentioned in the project description.

Crash Mitigation Strategies

The City of Saint Paul has identified proven strategies to create safer streets and to promote safe driving, walking, and bicycling outcomes and behaviors. The crash mitigation strategies identified by the city are informed by the high-risk behaviors and locations identified in the Crash Analysis and Evaluation. Data-driven and proven strategies that address these high-risk behaviors and locations were then identified, and a set of prioritization criteria for the strategies was developed. As the city implements this Plan, these criteria can be used to organize a toolbox of strategies that identify when and where each strategy should be implemented. The findings from each step of this process are summarized in the following sections.

Target High-Risk Behaviors & Locations

High-Risk Behaviors

The Crash Analysis and Evaluation identified speeding and reckless / careless driving as among the top high-risk behaviors. Targeted safety improvements focused on speed management and reducing reckless / careless driving are likely to have a high impact on crash reduction.

Speeding

Speeding was cited as a primary cause of 2 percent of all crashes and 6 percent of all fatal and serious injury crashes between 2018 and 2022. However, it is important to note that speeding is likely a contributing factor in many more crashes in Saint Paul, as over 50 percent of all crashes do not have a contributing factor listed in the MnCMAT2 database.

Reckless / Careless Driving

Reckless / careless driving is a high-risk behavior identified through the crash analysis. Reckless / careless driving was cited as the primary cause of 12 percent of all crashes and 17 percent of fatal and serious injury crashes.

High-Risk Locations

The Crash Analysis and Evaluation identified minor arterials and collectors, signalized intersections, and intersection crossings for pedestrians and bicyclists as among the top high-risk locations. Targeted safety improvements to reduce conflicts at these locations are likely to have a high impact on crash reduction.

Minor Arterials and Collectors

Minor Arterial roadways are generally higher volume roadways with a greater mix of land uses. While Minor Arterials only account for 21 percent of all lane miles in Saint Paul, 39 percent of all crashes and 47 percent of all fatal and serious injury crashed occurred along them. Nationally, 60 percent of pedestrian fatalities took place on arterial roadways.

Signalized Intersections

The crash analysis identified that signalized intersections should be a priority target of future safety improvements. Over half of all fatal and serious injury crashes occurred at signalized intersections. This is consistent with the fact that traffic signals are typically located on roads with higher traffic volumes.

Intersection Crossings for Pedestrians and Bicyclists

Vulnerable Road Users, including pedestrians and bicyclists, are at a higher risk of being involved in more serious crashes, especially when comparing the severity of crashes involving each mode with the percentage of total trips involving that mode. A high proportion of both pedestrians and cyclists are hit when crossing traffic (especially at intersections with a marked crosswalk).

Data-Driven and Proven Strategies

The city identified data-driven and proven strategies to address these two high-risk behaviors and three high-risk locations identified through the crash analysis. These strategies are guided by federal, state, city, and industry best practices to eliminate fatalities and serious injuries.

Saint Paul already integrates FHWA Proven Safety Countermeasures into its capital projects. The city's guidelines for uncontrolled crossings are based on the FHWA STEP Guide for Improving Pedestrian Safety at Uncontrolled Intersections. Additionally, the city's 2018 Street Design Manual defines design guidance for many of the proven strategies identified in the state and federal proven countermeasure sources.

Proven Countermeasure Sources

- Federal Highway Administration (FHWA) Proven Safety Countermeasures
- FHWA STEP Guide for Improving Pedestrian Safety at Uncontrolled Intersections
- Crash Modification Factor Clearinghouse
- MnDOT Best Practices for Bicycle/Pedestrian Safety
- National Highway Traffic Safety Administration

Strategy Overview

Table 2 lists the data-driven and proven strategies to address the target high-risk behaviors and locations. Strategies are organized into categories that primarily reflect the location where the strategy should be targeted for implementation (e.g., roadway vs. intersection strategies). Each strategy addresses at least one of the target high-risk behaviors and locations. These strategies are highly context-sensitive and factors such as physical constraints, operating conditions, and implementation and maintenance costs impact

where each strategy could or should be implemented. As an action item of this plan, the city should review, update, or develop policies to guide the implementation of these strategies that will provide the best overall safety impact in an equitable and sustainable fashion given the wide range of variables that must be considered for each type of treatment.

Many of these strategies are already widely used in Saint Paul and are described in existing city plans, like the Saint Paul Pedestrian Plan and the Saint Paul Street Design Manual.

Table 1: Data-Driven and Proven Strategies to Address High-Risk Behaviors and Locations

	Speed Management	Reduce Reckless / careless driving	Minor Arterials	Signalized intersections	Pedestrian / bike safety crossing intersections
Roadway					
Road diets / lane width reduction	X	X	X	X	X
Raised medians	X	X	X		X
Speed humps, tables, and cushions	X	X	X		
Protected bike lanes - Raised	X	X	X		
Access management			X		
Protected bike lanes	X	X	X		
Speed feedback signs	X	X	X		
School speed zone	X		X		X
Standard and buffered bike lanes	X				
Landscaping / plantings	X				
Intersection (General)					
Roundabout				X	X
Protected intersections				X	X
Daylighting intersections				X	X
Dedicated left turn lanes			X	X	
Slip lane redesign / removal				X	X
Corner radius reduction	X	X	X	X	X
Hardened centerline and slow turn wedges				X	X
High visibility crosswalks				X	X
Bike boxes				X	X
Bike crossings				X	X
Roadway lighting			X	X	X

	Speed Management	Reduce Reckless / careless driving	Minor Arterials	Signalized intersections	Pedestrian / bike safety crossing intersections
Pedestrian lighting			X	X	X
Curb extension	X	X	X	X	X
Median island			X	X	X
Signalized Intersection					
Leading pedestrian interval (LPI) and Leading Bicycle Interval (LBI)			X	X	X
Permissive / Protected signal phasing			X	X	X
No turn on red			X	X	X
Uncontrolled Crossing					
Rectangular Rapid Flash Beacons			X		X
Raised crosswalks and raised intersections			X	X	X
In-street stop for pedestrian sign			X		X
Advanced stop bar			X	X	X
Unsignalized Intersection					
Neighborhood traffic circle	X	X			
Enforcement					
Speed safety cameras	X	X	X		
Red light cameras		X		X	
High-visibility enforcement		X			
Parking enforcement				X	X

Implementation

Tracking and Measurement

Regular data collection, evaluation, and reporting are essential for accountability as the city implements the Transportation Safety Action Plan. The city will issue annual updates on the progress toward the overall goal of eliminating all traffic deaths and serious injuries and track key metrics and safety improvements since the initial implementation of this plan, as included in the City Council's

June 2023 resolution. The Public Works Department will be primarily responsible for tracking progress on the Transportation Safety Action Plan.

Tracking will include a brief annual report evaluating the number of fatalities, injuries and crashes, as well as an update on capital improvements, policies, and projects that are contributing to improving traffic safety overall. Additional metrics may be identified as the Plan moves through implementation, subject to identifying a reliable data source, measurement process, and staff resources.

Figure 10: Projected trend of fatal and serious injury crashes from 2023 to 2045, as committed in Saint Paul's June 2023 Vision Zero Resolution.

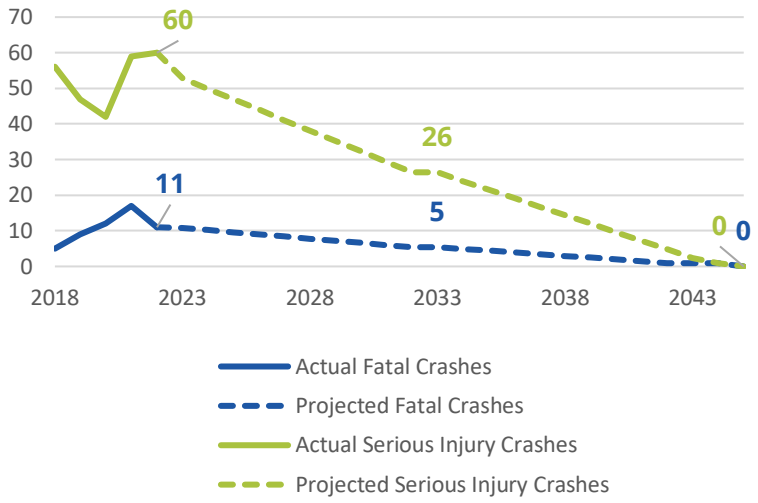


Table 2: Annual performance metrics

Metric
Change in total number of traffic fatalities, serious injuries, and minor injuries
Change in crashes involving pedestrians and bicyclists
Number of capital improvements on the HIN and HCN
Annual mileage of new pedestrian and bicycle infrastructure
Non-capital improvements (policies, projects, or processes) completed annually that contribute to improving traffic safety

Funding and Operations Needs

Two major funding needs are required to implement the projects, policies and strategies identified in this plan: capital funding, and ongoing operations and maintenance resources. Capital funding, as with all transportation projects in the city, will be identified through a combination of federal, state and local or regional sources.

Operations and maintenance resources (including staffing) are a major ongoing challenge for the City and will be an impediment to achieving the overall safety goal. The city's operations funding and staffing levels are currently inadequate to maintain the existing transportation network in an acceptable state of good repair and recommended additional projects and transportation facilities will only increase the gap. The City is aware of these current funding and resource challenges and is actively working to identify ways to overcome them. As part of the implementation of this plan, the City should develop and support an overall funding strategy that delivers ways to sustainably increase operations and maintenance funding and dedicate the resources required to make meaningful progress.

Timing

As there is no dedicated funding stream for the projects identified in this plan, it is difficult to attach a timeline to their implementation. However, the prioritized list of projects should be reviewed regularly to identify upcoming opportunities for implementation. For example, pavement rehabilitation projects should be reviewed to determine whether they overlap priority safety need areas, and if so, the city should continue its existing practice of identifying work to augment the project scope to include additional safety improvements. The city should also regularly review the list of priority projects against discretionary grant opportunities on a rolling basis to seek additional funding to advance the implementation timeline.

As noted in the policy recommendations, revamping the CIP prioritization process to include safety as a major criterion will have the benefit of advancing priority safety projects that can be implemented within the city's existing budget.

It is not expected that all projects and locations identified within this document will be implemented within the 2045 horizon of the goal, but the city should continue to identify opportunities to incrementally advance priority projects.

Equitable Implementation

Equity must be integrated into the Plan's implementation to ensure that the safety needs and concerns of all community members are centered in decision-making, particularly roadway users and communities that data shows are most vulnerable to transportation safety issues. Some areas to be particularly attentive to integrate equity in the plan's implementation:

- **Project prioritization:** Include equity in the project prioritization framework by using the equity priority areas as a criterion to rank or score the projects. The crash data equity analysis found that Saint Paul neighborhoods that are low income and predominantly Black, Indigenous, and People of Color (BIPOC) residents are disproportionately impacted by serious injury and fatal car crashes. Using the equity priority areas in the project prioritization will help target safety resources and interventions in neighborhoods most likely to be affected by transportation safety issues.
- **Data collection and monitoring**: Integrate equity into crash data collection and monitoring procedures to identify disparities in the distribution of crashes and their impacts on different communities over time.
- **Community engagement**: Identify opportunities for communities to inform decision-making as transportation safety actions are implemented. The process-oriented actions may have more opportunities for community engagement to influence decisions than the more technical design-oriented actions.
- **Community partnerships**: As the opportunity arises, foster relationships and partnerships with community organizations that serve people in equity priority areas. Community organizations often have deep-rooted connections and trust within the communities they serve. By collaborating with these organizations, Saint Paul can learn from their knowledge, expertise, and understanding of local needs and dynamics. These organizations may also be able to reach people and communities that are distrustful of government and have been historically excluded from government decision-making. Building positive and trusting

relationships with community organizations will help enhance the reach and effectiveness of the Plan.

- **Documentation:** Continue to document how equity is integrated into Saint Paul's transportation safety actions and projects. Documenting the equity considerations, strategies, and actions taken during the project supports transparency and accountability by providing a record of the steps taken, creating a reference point for future projects, and providing an opportunity for evaluation and learning. Documenting strategies now will help future project teams assess the effectiveness of equity measures and learn from best practices and lessons learned to improve future transportation projects and refine strategies for achieving equitable outcomes. Saint Paul's Racial Equity Toolkit provides a framework to document how equity is integrated into a policy, process, or project.

Future Studies

To provide additional guidance on specific priority areas identified in this plan, Saint Paul should conduct the following further studies to build upon this plan:

- **Downtown Crash Study**: Downtown Saint Paul is a crash hot spot for all modes, likely due to high traffic volumes as well as high pedestrian and cyclist traffic. A future analysis of downtown crash trends would be necessary to identify a specific set of improvements aimed at improving safety in the downtown area.
- **Comprehensive Review of Minor Arterials and Collector Roadways**: These roadways account for approximately 70 percent of all fatal and serious injury crashes in the city. However, this analysis did not review these roadways individually to identify the specific factors leading to high crash rates. A comprehensive review of these roadways, including city, county- and state-owned streets, would be necessary to identify the factors leading to the high injury rates, as well as identify potential future improvements.
- **Comprehensive Review of High Crash Intersections**: Similarly, while this analysis identified the top high crash intersections within in Saint Paul, it did not review the intersections in detail to identify the specific risk factors or mitigating improvements. A future review of high-crash intersections would more specifically provide improvement recommendations at those locations.
- **Future Crash Equity Analysis:** This Plan's analysis included a racial equity focused crash analysis. The city should share the findings of this analysis with community members, leaders, and partners to discuss and interpret it. These conversations could provide valuable context and future directions for equity work (for example, engaging community members and others to understand whether the Equity Priority Areas are the appropriate geographic units). Areas for future crash equity analysis could include the following:
    - Undertaking additional demographic analysis using crash data from the Saint Paul Police Department or more recent FARS data as it becomes available.
    - Undertaking additional geographic analysis with statistical analysis to control for population density and other factors, and to understand the degree to which fatal and serious injury crashes are concentrated in Equity Priority Areas.
    - Examining traffic safety benefits as well as burdens. Transportation equity considers the fair distribution of both burdens and benefits. This analysis examined transportation safety burdens in terms of serious injuries and deaths; future analyses

could explore the distribution of benefits and the role of the City of Saint Paul and other public agencies in them. For example, the city could do a look-back to see where transportation safety improvements have been made, and how many were within the Equity Priority Areas. This could inform future project criteria and prioritization.

Action Plan

Saint Paul will take the following actions to implement the recommendations made in this Transportation Safety Action Plan. These policy and process improvements will facilitate implementation of the Plan and advance the city's goal to eliminate all road deaths and serious injuries on surface streets within the city by 2045, with a fifty percent reduction within ten years.

These actions are organized into basic categories and prioritized based on timing. Short-term actions should be undertaken within the next year and all actions included in this table should be implemented within 10 years to achieve the city's ambitious goal. The Saint Paul Public Works Department is the lead agency and department for most of these actions, but it will need to work closely with other city departments, as well as Ramsey County and MnDOT.

Table 3: Action Plan

Action	Timing
Research and apply for capital funding to implement infrastructure improvements in areas identified as priorities in this plan	**Short-Term**
Evaluate and update prioritized traffic and street design policies and practices based on the opportunities identified in this Plan	**Short-Term**
Continue community engagement to ensure local priorities are adequately addressed in plan implementation	**Short-Term, Ongoing**
Coordinate with the ongoing Public Works process to evaluate the City's CIP prioritization process to ensure safety needs are adequately addressed in that project selection framework	**Short-Term**
Review project delivery processes and evaluate if the relevant departments and agencies have input at the appropriate point of the process	**Short-Term**
Complete a Comprehensive Review of High Crash Intersections to provide improvement recommendations at the identified locations.	**Short-Term**
Expand the current annual monitoring process to more comprehensively track progress against the fatality and serious injury reduction/elimination goal, including a set of extended metrics that track progress on traffic safety equity, establishing a procedure for how often crash data is evaluated, and identifying the appropriate resources.	**Medium-Term**

Action	Timing
Complete a dedicated Downtown Crash Study to identify a specific set of improvements aimed at improving safety in the downtown area.	Medium-Term
Complete a Comprehensive Review of Minor Arterials and Collector Roadways to identify the factors leading to the high injury rates, as well as identify potential future improvements.	Medium-Term
Develop an overall funding and operations strategy that identifies the resources necessary to construct, maintain, and operate the projects and strategies included in this plan.	Medium-Term
Identify an interagency safety working group, including members from the City, Ramsey County, and MnDOT to continually evaluate opportunities for safety improvements.	Medium-Term
Develop a prioritized strategy toolbox to provide context-sensitive guidance on the implementation of safety strategies identified in this plan	Medium Term
Review procedures for how transportation safety projects are currently evaluated after implementation and how that information is used; develop a policy to guide what metrics projects should be evaluated by, based on the type and scale of the project.	Long-Term
Using the prioritization criteria outlined in this plan, continue to develop and maintain the top corridors, intersections, and locations to direct safety funding toward as funding opportunities arise.	Ongoing
Continue coordinating with Ramsey County and MnDOT to identify and make safety improvements on county- and state-owned streets in Saint Paul.	Ongoing
Conduct ongoing crash equity analysis and engagement to share the findings of this analysis with community members, leaders, and partners and identify direction for future equity work related to traffic safety	Ongoing