WITH WILLMAR

COMPREHENSIVE PLAN

JUNE 2025

WITH WILLMAR

COMPREHENSIVE PLAN

OUR VISION:

Willmar is a city of possibility and opportunity — diverse, thriving, and resilient — a desired place to Work, Innovate, Thrive, and call Home.

ACKNOWLEDGEMENTS

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WITH WILLMAR

We extend our gratitude to the entire community for their invaluable input and active participation in defining a vision With Willmar. Your insights, feedback, and collaborative spirit have been instrumental in shaping a Comprehensive Plan that truly reflects our collective aspirations and goals. Thank you for your dedication and commitment to making our community a place for everyone to ***work***, ***innovate***, ***thrive*** and call ***home***.

Dear Neighbors,

As Mayor, it is my honor to introduce the "WITH Willmar" Comprehensive Plan, a visionary guide for the future of our beloved city. This plan represents our collective efforts, shared aspirations, and unwavering commitment to creating a community where everyone can thrive.

Our comprehensive plan focuses on several key areas that are essential to our city's growth and prosperity:

- **Affordable Housing**: Ensuring that everyone in Willmar has access to safe, quality, and affordable housing.
- **Economic Development**: Fostering a vibrant economy by supporting local businesses, attracting new investments, and creating job opportunities.
- **Sustainability**: Promoting environmental stewardship and sustainable practices to preserve our natural resources for future generations.
- **Community Well-being**: Enhancing the livability for all residents by improving public services, recreational facilities, and community programs.
- **Infrastructure and Transportation**: Modernizing our infrastructure and transportation systems to support the needs of our growing population.

Together, we will work towards a future where Willmar is not only a great place to live and work but also a community that embraces innovation, inclusivity, and resilience. This comprehensive plan is more than just a document; it is a promise to each one of you—a promise to build a brighter, more prosperous future for our city.

I encourage you to stay engaged, provide your feedback, and join us on this exciting journey. Your continued support and participation are vital to the success of "WITH Willmar."

Thank you for your dedication and commitment to our community. Together, we can achieve great things.

Doug Reese, Mayor of Willmar

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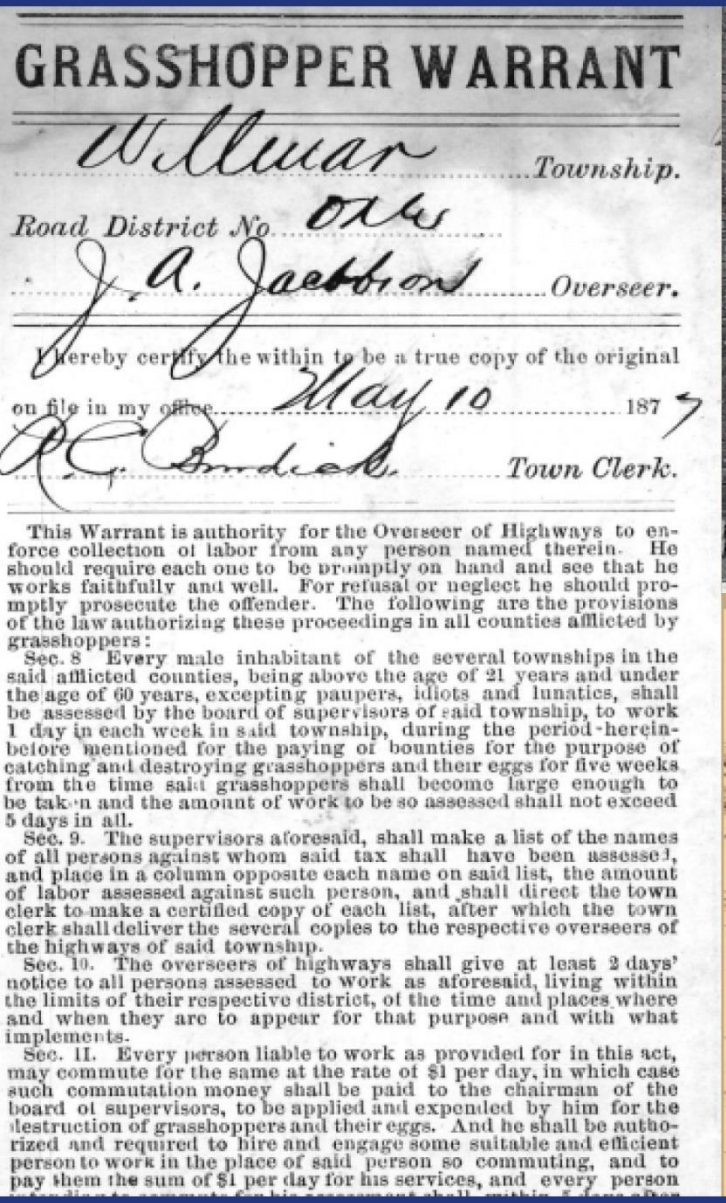
EXECUTIVE SUMMARY



GRASSHOPPER WARRANT

Willmar ..... Township.

Road District No. 0116

J. A. Jacobson ..... Overseer.

I hereby certify the within to be a true copy of the original on file in my office May 10 1873

R. G. Bredick ..... Town Clerk.

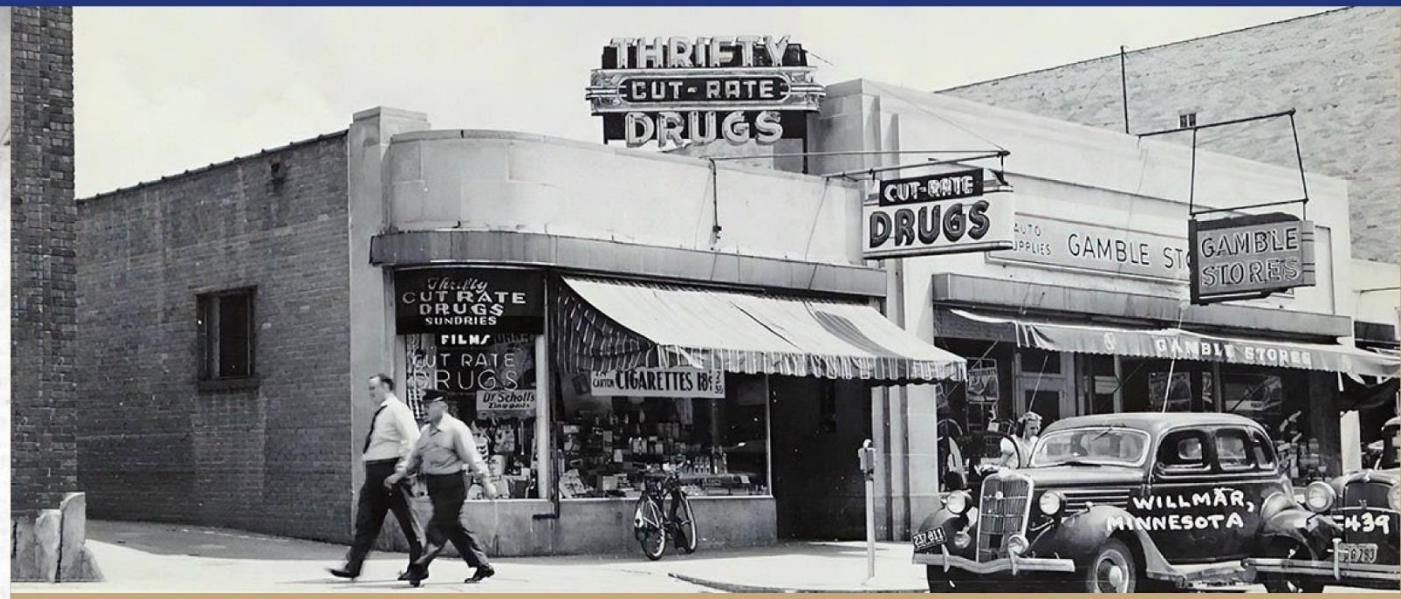
This Warrant is authority for the Overseer of Highways to enforce collection of labor from any person named therein. He should require each one to be promptly on hand and see that he works faithfully and well. For refusal or neglect he should promptly prosecute the offender. The following are the provisions of the law authorizing these proceedings in all counties afflicted by grasshoppers:

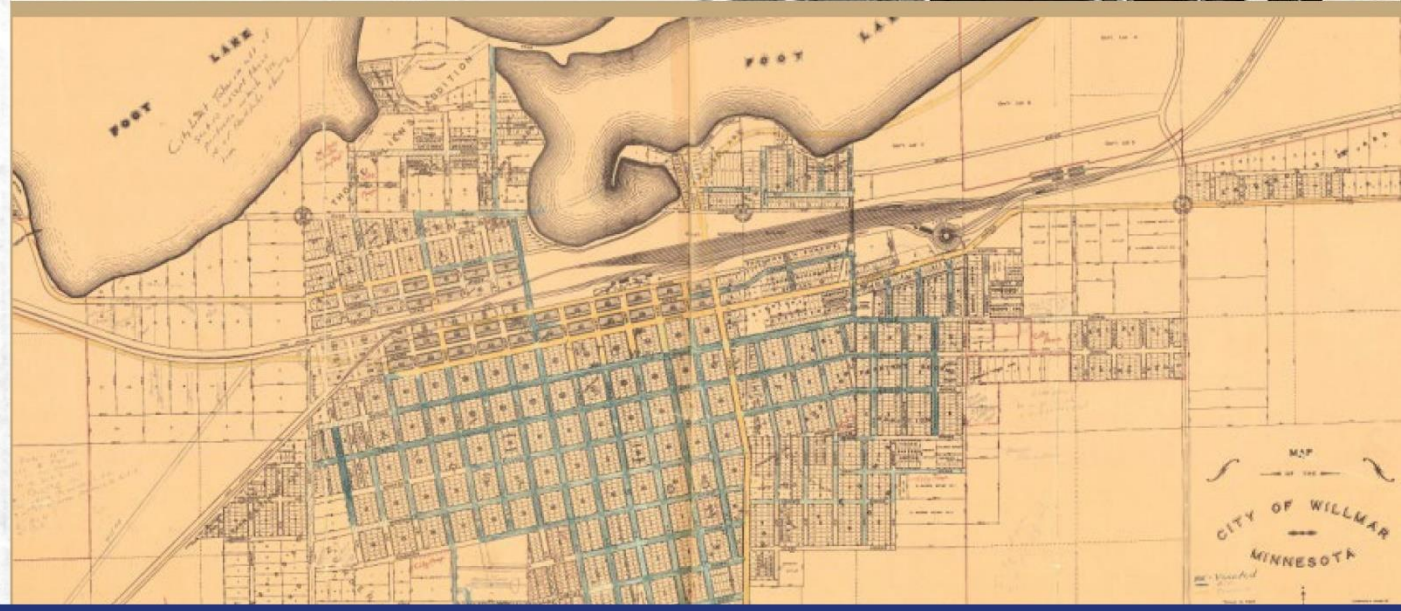
Sec. 8 Every male inhabitant of the several townships in the said afflicted counties, being above the age of 21 years and under the age of 60 years, excepting paupers, idiots and lunatics, shall be assessed by the board of supervisors of said township, to work 1 day in each week in said township, during the period hereinbefore mentioned for the paying of bounties for the purpose of catching and destroying grasshoppers and their eggs for five weeks from the time said grasshoppers shall become large enough to be taken and the amount of work to be so assessed shall not exceed 5 days in all.

Sec. 9. The supervisors aforesaid, shall make a list of the names of all persons against whom said tax shall have been assessed, and place in a column opposite each name on said list, the amount of labor assessed against such person, and shall direct the town clerk to make a certified copy of each list, after which the town clerk shall deliver the several copies to the respective overseers of the highways of said township.

Sec. 10. The overseers of highways shall give at least 2 days' notice to all persons assessed to work as aforesaid, living within the limits of their respective district, of the time and places where and when they are to appear for that purpose and with what implements.

Sec. 11. Every person liable to work as provided for in this act, may commute for the same at the rate of $1 per day, in which case such commutation money shall be paid to the chairman of the board of supervisors, to be applied and expended by him for the destruction of grasshoppers and their eggs. And he shall be authorized and required to hire and engage some suitable and efficient person to work in the place of said person so commuting, and to pay them the sum of $1 per day for his services, and every person





WITH WILLMAR

COMPREHENSIVE PLAN

WHAT IS A COMPREHENSIVE PLAN?

A Comprehensive Plan (the Plan) is the guiding document for a community's growth for the next 20 years. The Plan explores existing needs to establish long-range goals that will inform decision making for years to come. The planning process utilizes public input and analysis of existing conditions to understand the current opportunities for the City of Willmar (the City). The Plan explores strategies and investments in city systems, plans for future growth and development, influences future land-use regulations, and establishes a plan for implementation. Topics addressed in the Comprehensive Plan include land-use, natural resources, economic opportunities, parks, mobility, arts, and culture.

STATE STATUTES AND PURPOSE

Comprehensive Plans are required by Minnesota State Law (Minnesota Statute §462.351) for any community wishing to adopt and implement official controls (e.g., zoning regulations, subdivision process). According to State Statutes, the Plan should include a combination of policy statements, goals, standards, and maps for guiding the physical, social, and economic development of the community.

At its core, the Plan shall address policies and recommendations on land-use within the community. These elements are then used to ensure future decisions align with the long-range vision for the community. Additional topics are included in a Plan as identified by the community to support decision-making, including economic development and transportation.

Beyond the requirements of State Statutes, the Plan's policy guidance supports future investment in the community that maintains and enhances access to a high livability for all. Long-range planning helps:

- Preserve key environmental and social features.
- Welcome the public into continued decision making.
- Respond to and forecast future change.
- Foster a healthy economic climate.
- Protect individual property owner rights and investment.
- Facilitate collaboration with local and regional agency partners.

WHO USES THE COMPREHENSIVE PLAN?

The Comprehensive Plan establishes a vision for physical, social, and economic development within the City of Willmar for the next 20 years. The Plan should be referred to regularly by city staff, boards and commissions, and by all members of the community, including residents, business owners, and regional stakeholders. Additionally, regional partners, prospective residents, and business owners can use it to understand the City's long-term plans.

Who?	Example of Interest Area
Residents	What is the planned use for the vacant lot next to my new home?
Business Owners	What economic development tools and resources are available to expand my business?
Government Partners	What is the city's approach to managing natural resources?
City Staff	What are the actions we need to take to achieve the community's goals and what are the priorities?
City Council	What is the long-term policy guidance and how does it inform my decision making?

HOW WAS THE PLAN CREATED?

The Comprehensive Plan was created over a 12-month planning process using input from many stakeholders. These included the Comprehensive Plan Focus Group, City of Willmar staff, local and regional stakeholders, and community members.

HOW TO USE THE PLAN

This Plan is organized by plan elements, focusing on the current conditions and future strategies for each topic. The individual chapters also review planning needs for each element and their alignment with the community's identified goals. The following chapters are included within this document:

CHAPTER	WHAT IS INCLUDED?
Chapter 1: Willmar Today	Analysis of the City of Willmar, including the history, demographics, data trends, and future projections of the community.
Chapter 2: Vision + Goals	Established by public input, the vision statement, key goals, and guiding principles that will inform decision-making.
Chapter 3: Land-Use + Development	Outlines a vision, policies, and regulations for how land within the City will be used and developed to promote sustainable growth.
Chapter 4: Arts + Culture	Highlights strategies and initiatives to support and enhance the arts and cultural activities throughout the City.
Chapter 5: Mobility	Analysis of the ability to move and access transportation throughout the City of Willmar.

CHAPTER	WHAT IS INCLUDED?
Chapter 6: Housing	Exploration of the availability, quality, and affordability of housing options for all residents, addressing current needs and planning for future growth.
Chapter 7: Economic Opportunities	Assessment of policies and programs for economic growth in order to attract businesses, create jobs, and boost the overall economy of Willmar.
Chapter 8: Natural Resources + Resiliency	Overview of existing natural resources and strategies to conserve and protect them into the future.
Chapter 9: Parks + Open Space	Summary of current parks and recreational facilities and opportunities to support future investments.
Chapter 10: Public Facilities	Summary of existing public facilities and opportunities to support future investments in indoor facilities. This chapter will be added at a later date.
Chapter 11: Implementation	A plan for action and implementation of the strategies identified throughout the plan.

WILLMAR
WITH WILLMAR
COMPREHENSIVE PLAN
OFFICE

“Together, we will work towards a future where Willmar is not only a great place to live and work but also a community that embraces innovation, inclusivity, and resilience. This comprehensive plan is more than just a document; it is a promise to each one of you—a promise to build a brighter, more prosperous future for our city.”

- *Mayor Douglas E. Reese*

CHAPTER ONE:

WILLMAR TODAY

INTRODUCTION

Throughout its history, Willmar has been a diverse and thriving economic, cultural, and social hub for central Minnesota. Since the 1930s, the City's population has steadily increased, resulting in a diverse workforce for regional employers in research and development, manufacturing, processing, and retail. By understanding current and future trends, city decision-makers are better equipped to address the evolving needs of residents and employers. This chapter highlights key features of Willmar's demographics, with other key existing conditions detailed within each plan element chapter.

CentraCare - Rice Memorial Hospital Willmar, Minnesota

HISTORY

In 1868, surveyors for the St. Paul & Pacific Railroad selected a route to the western plains which passed just south of Foot Lake. Due to settlers following the railroad route, the village of Willmar was established. By the end of 1870, Willmar was filled with residents speaking several different European languages and boasted a regional grain elevator, hotel, lumberyard, jewelry store, and more than 20 other businesses. This foundation would lead to Willmar growing into the regional hub it is today.

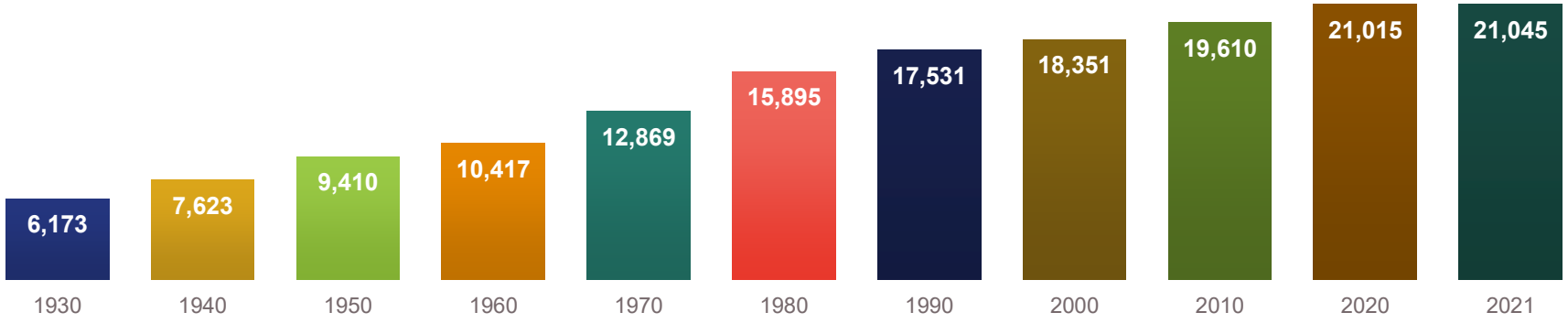
Willmar has a rich history of immigration beginning with the original European settlers coming from a wide range of countries and expanding to immigrants from Hispanic, East-African, and Asian origin.

According to US Census data, Willmar's population has continued to grow every decade since 1930. The highest growth occurred between 1930 and 1950, and again between 1960 and 1980, averaging 23.5% growth per decade. Conversely, the City's slowest decade occurred between 1990 and 2000, when it grew by 4.7%. Willmar maintained growth of 6.9% from 2000-2010, and 7.2% from 2010- 2020. While the growth has been slower over the past 30 years, it has continued during a period where many nearby cities have seen their growth stagnate and populations decline. The City of Willmar continues to grow today, with a population of approximately 21,335 as of 2023.

Willmar, Minnesota Great Northern Depot Early 1900's

Albert H. and Jennie C. Sperry House 228 Porto Rico Street Willmar, Minnesota

Figure 1-1. Willmar Population by Decade



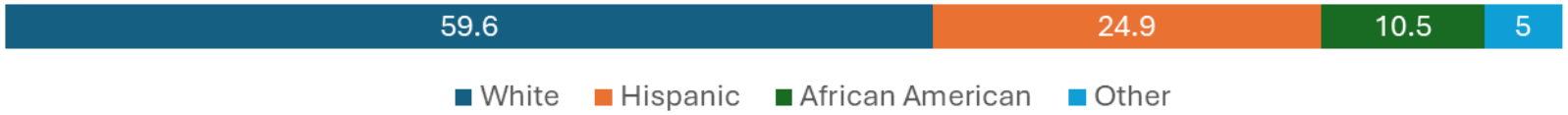
Source: US Census, 1930-2020; American Community Survey Estimate, 2021

DEMOGRAPHICS

DIVERSITY

Willmar has seen a steady trend over the past decade towards racial and ethnic diversity. The White population remains the majority at 59.6%, while the Hispanic population has grown to 24.9%, and the African American population has increased to 10.5%. Along with smaller, but significant Asian and Native American populations, Willmar has become the epitome of a multicultural community.

Figure 1-2. Willmar Population by Ethnicity



Source: US Census, American Community Survey

At a time when many cities, nearby and nationwide, are struggling with population and workforce decline, Willmar's diversity growth has given the City a competitive advantage over other cities. Willmar's diversity is pivotal to the continued maintenance and growth of its employment base and small business entrepreneurship.

The City of Willmar is committed to being a welcoming and growing community where everyone feels respected and has equal access to resources and opportunities. In 2018, the Willmar City Council passed a "welcoming City" resolution stating all residents are welcome in Willmar no matter their race, religion, sexual orientation, and country of origin. Willmar's city leadership and staff want to turn the vision of "welcoming" into a reality and have put an emphasis on trying to understand both what works and what barriers still exist.

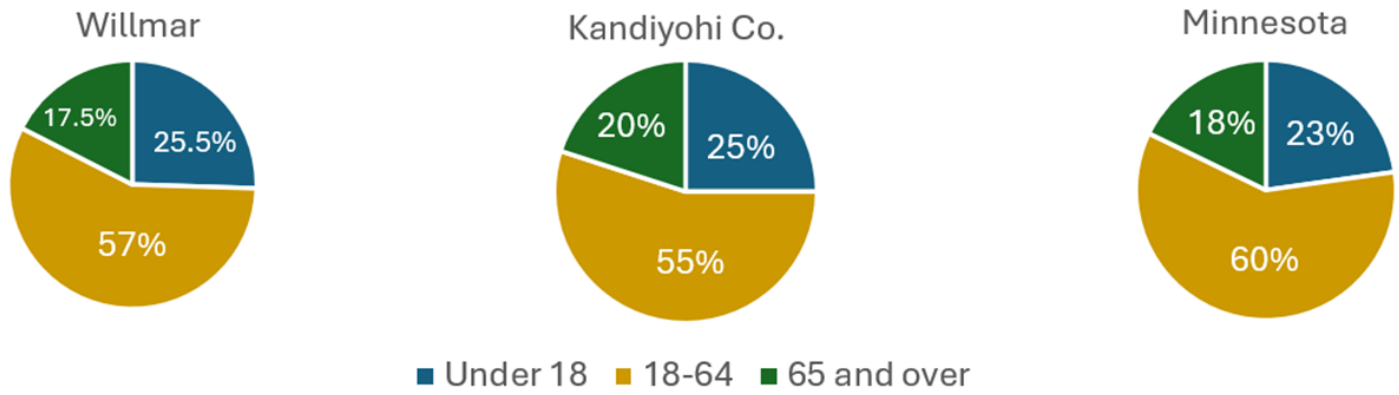
The Comprehensive Plan examines growth opportunities that support the entire community, including affordable and suitable housing, living wages and career growth, childcare affordability, health and wellbeing, lifelong learning, and welcoming and belonging. Willmar's community strength is determined more by actions than words. The community's actions will make Willmar a stronger and more welcoming community.

Attendees at Willmar Fest

AGE

A decade ago, Willmar's age breakdown reflected an aging population that would eventually see a decline in population. However, widely thanks to the above-discussed influx of diverse immigration, Willmar's 19 and under population has grown almost 33% since 2010, according to US Census data. The median age of Willmar is 35.6, compared to 39.8 for Kandiyohi County and 39.1 for the State of Minnesota, according to US Census data for 2023.

Figure 1-3. Population Age Distribution (2023)



Source: US Census, American Community Survey, 2023

This local trend is pointing to more community growth than expected. Willmar has a larger population segment of children compared to other cities in the region. The population trend for the surrounding region shows very slow or stagnant growth in their child populations.

Nationally, the country is seeing a hefty portion of the populace reach retirement as the Baby Boomer generation ages. Willmar is no exception, with 17% of the population being 65 or older, according to US Census data. Willmar has seen significant investment in housing and services for its aging population. Assisted and independent living facilities, along with other forms of senior housing, have become major trends in development as our population ages.

According to US Census data, Willmar's working age residents (20yr – 64yr) have seen a slight decline since 2010 but have held steady at around 54%. Other cities in the region share similar population breakdowns with their working age residents being the bulk of their populations along with declining birth rates and increasing retirees. Willmar stands out as a thriving, growing community, driven by the continued influx of immigrants who contribute to its economic vitality, cultural diversity, and dynamic expansion.

As Willmar's aging population grows, the city must implement new planning strategies to address its housing, transportation, health, and overall well-being needs. Expanding housing options for seniors will help ease the strain on the residential market, ensuring they have access to comfortable and suitable living spaces. Simultaneously, public transportation improvements can enhance mobility for residents of all ages.

At the same time, working-age residents and their families will require strategic planning to help them access available homes and innovative housing solutions. Investing in a diverse range of housing options will not only support current residents but also strengthen Willmar's workforce core, fostering long-term community growth and stability.

HOUSEHOLD SIZE

Household size is the average of how many people reside in each household in Willmar. Like most of the country, Willmar's household size had been on a steady decline over the last few decades but has seen a recent increase since the 2020 census. This may correlate to the increase in diverse immigration and their younger residents as well. Nationally, decreasing household sizes have been common over the past few decades. This reflects an ageing population and changes in marital status.

Table 1-1. Population and Households

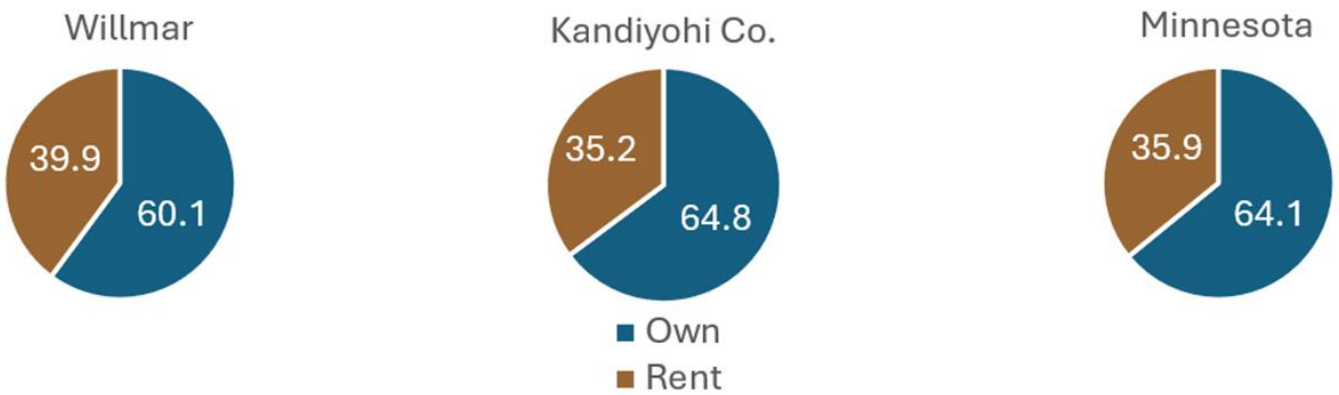
Year	1970	1980	1990	2000	2010	2020	2023
Population	12,869	15,895	17,531	18,351	19,610	20,993	21,335
Households	4,103	5,775	6,717	7,302	7,536	7,957	8,271
Household Size	3.1	2.75	2.6	2.5	2.3	2.5	2.4

Source: US Census, American Community Survey

More housing stock and a greater variety of housing types are needed to accommodate the growing population and changing household demographics, including smaller units geared toward one- and two-person families, as well as units geared toward multigenerational families.

HOUSEHOLD DISTRIBUTION

Figure 1-4. Home Ownership vs. Residents Who Rent (By Percentage)



Source: US Census, American Community Survey

In 2023, Willmar contained about 8,271 housing units, approximately 60% of which were single-family homes. Most houses are owner-occupied (60.1%), while about 40% of residents are renters. Willmar has also seen the percentage of multi-family housing (apartments) grow with several large multi-family apartment complexes completed in recent years. However, since most of the multi-family units are concentrated in a relatively small number of larger buildings, a substantial majority of residential land in the city remains as single-family.

Willmar's housing stock spans around a century of construction. Nearly 60% of the buildings in Willmar were built before 1979. New residential construction remained relatively steady until the 2008 recession, when it experienced a sharp decline. From 2000 to 2009, Willmar saw an average of 87 homes constructed a year. In 2020, the number of homes constructed decreased to 33 a year. This decline has continued, and the City has seen less housing built each year since 2020, in part due to the lasting economic effects of the COVID-19 pandemic.

Housing affordability and availability remains a consistent challenge, especially for first-time homebuyers and seniors. Planning strategies for different types of housing, including medium density and mixed-use housing, may need to be utilized to combat these problems.

While Willmar's current zoning ordinance accommodates a range of housing types, there is a need to reinforce this Plan by developing a new zoning ordinance and map. This will address the current needs of a growing community and reduce barriers to housing construction.

MEDIAN INCOME

According to estimates from the US Census Bureau for the years 2019-2023, Willmar's median household income was $63,368. This lags behind the 2019-2023 Minnesota average of $87,556 and the 2023 national average of $80,610. Willmar's poverty rate has also risen to 15.2%, which is higher than the Minnesota average of 9.3% and the national average of 12.5%. While a lower income is expected due to Willmar's rural location and lower cost of living, the City continues to strive for upward momentum.

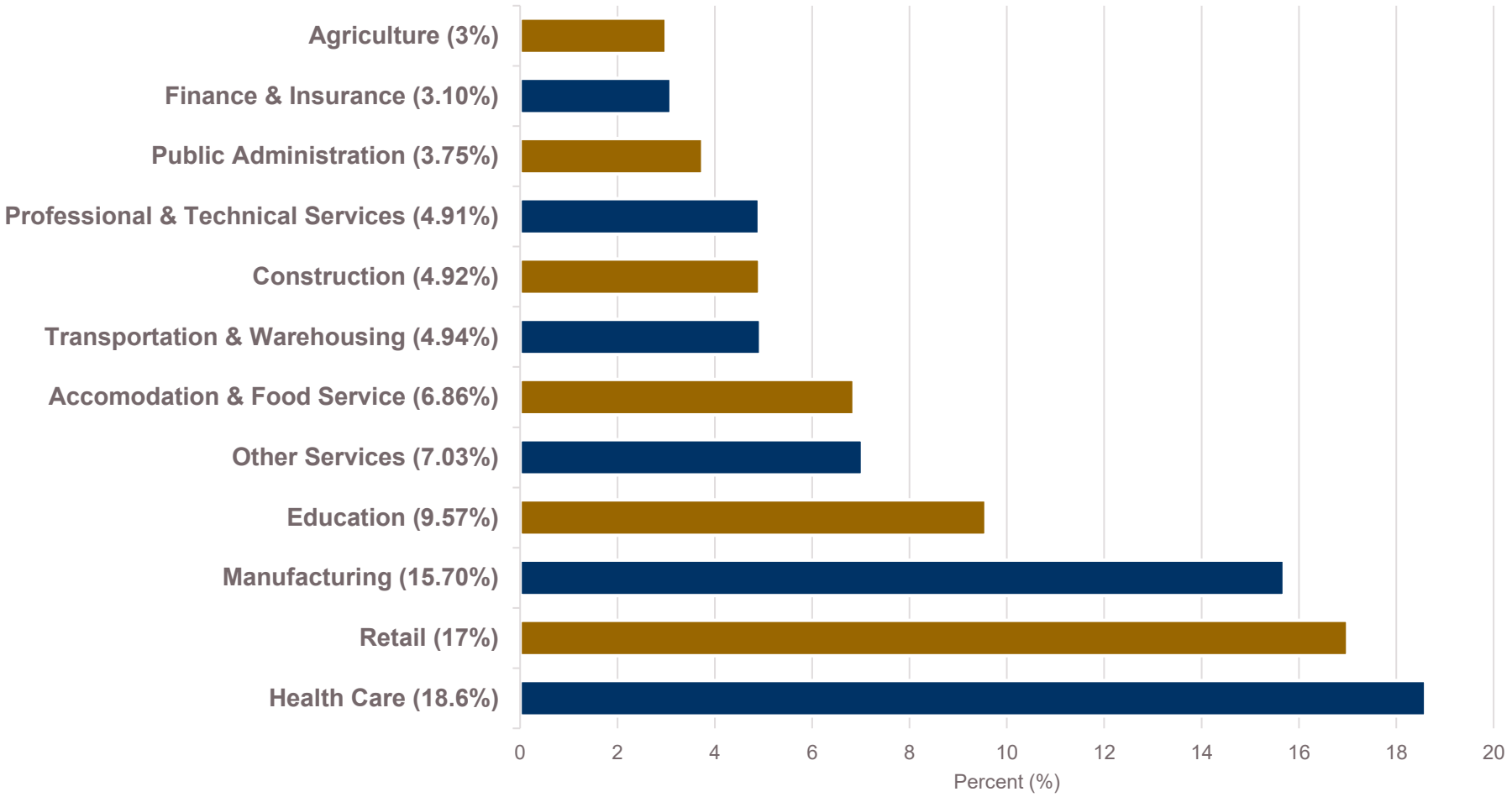
EDUCATION

Willmar's educational attainment is on par with the region when it comes to obtaining a bachelor's degree or higher but is behind the national average. The percentage of Willmar adults over the age of 25 with bachelor's degrees is 24.5%, compared to the national average of 34.2%. Conversely, Willmar's high school graduation numbers are the lowest in the region, which may be correlated to additional challenges faced by non-English speakers and the difficulty of assimilating to a new area.

EMPLOYMENT

Employment by industry in Willmar is summarized by **Table 1-5**. The industries with the largest employment in Willmar are health care, retail, manufacturing, and education. The fastest growing business sectors include health care and social assistance, and technology companies. Industries with recent declines in employment include professional and technical services.

Figure 1-5. Employment by Industry



Source: Census Bureau, American Community Survey Estimate, 2022

CHAPTER TWO:

VISION + GOALS

INTRODUCTION

The WITH Willmar Comprehensive Plan serves as the community's guiding document for future decision making specific to development, investment, and policy direction. The guidance included within this Plan is rooted in a vision statement, key goals, and principles established by input from the public and the key themes identified in this chapter.

ESTABLISHING A VISION WITH WILLMAR

The vision statement is an overarching set of principles that the Comprehensive Plan seeks to encourage through future planning practices, policymaking, and implementation. The vision statement was developed in collaboration with the community through public engagement efforts. Each of the four WITH statements reflects a closely held community value that was reflected throughout the planning process.

2021 Block Party

VISION STATEMENT

Willmar is a city of possibility and opportunity — diverse, thriving, and resilient — a desired place to *Work*, *Innovate*, *Thrive*, and call *Home*.

WORK WITH WILLMAR

Willmar is a strong ever-evolving regional hub for Southwest Minnesota. The city provides resources to supply a diverse workforce with new opportunities.

INNOVATE WITH WILLMAR

Our success builds on local and regional collaborations. Strong relationships with stakeholders elevate the culture of opportunity.

THRIVE WITH WILLMAR

Residents and visitors benefit from a clean, healthy, and energy-efficient Willmar. Collaborations improve air quality, preserve lands, and protect natural resources. Our parks and greenways provide safe environments for residents to enjoy.

HOME WITH WILLMAR

Willmar is home. Our neighborhoods are diverse, accessible, and safe with housing and service offerings for individuals and families. A network of sidewalks, trails, and transit enhances mobility among the city's vibrant neighborhoods and businesses.

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KEY GOALS

The key goals reflect more detailed themes that the Comprehensive Plan seeks to address. Achieving these goals will make Willmar a thriving community for future generations.

KEY GOALS	
Safety:	Prioritize community safety, ensuring a secure environment for residents, businesses, and visitors.
Economy:	Foster a diverse and resilient economy, providing quality jobs, supporting local businesses, and encouraging innovation.
Infrastructure:	Invest in modern and sustainable infrastructure, including roads, transportation, and public spaces, to enhance accessibility and livability.
Community:	Preserve Willmar's unique identity while embracing opportunities for growth and development, creating a vibrant and welcoming atmosphere.
Housing:	Provide a variety of housing options to meet the needs of all residents, pursuing affordability, accessibility, ownership, and quality living spaces.
Recreation:	Offer diverse recreational opportunities, including parks, trails, and cultural activities, promoting health, well-being, and community engagement.
Engagement:	Foster a collaborative and transparent environment, encouraging active participation from residents, businesses, and community partners in shaping Willmar's future.

WITH WILLMAR PRINCIPLES

Each chapter is guided by the following four principles. These principles reflect the vision and key goals of the Plan and tie each chapter back to the WITH Willmar overall vision.

PRINCIPLES	
Sustainability:	Embrace sustainable practices to protect our natural resources and ensure a healthy environment for future generations.
Inclusivity:	Value diversity and promote inclusivity, ensuring all residents feel welcome, respected, and have the opportunity to thrive.
Innovation:	Encourage innovation and creativity to drive progress and adapt to the changing needs of the community.
Resilience:	Build a resilient community that is prepared to face challenges and embrace opportunities for growth and improvement.

Willmar is a city of possibility and opportunity — diverse, thriving, and resilient — a desired place to *Work*, *Innovate*, *Thrive*, and call *Home*.

CHAPTER THREE:

LAND USE + DEVELOPMENT

INTRODUCTION

One of the most powerful tools a city has is the creation and maintenance of land-use guidance, which all stakeholders must follow when developing a parcel. This guidance comes in three forms: existing land-use, future land-use, and zoning.

EXISTING LAND-USE

Existing land-use maps show how land is currently developed within the City. They serve as the foundation for future planning, helping cities identify prevalent uses and make informed decisions about prioritizing land-use categories moving forward.

FUTURE LAND-USE

Future land-use maps outline an ideal vision for the City's development priorities over the next 20 years. They guide the use of all developable parcels within the City, whether residential, industrial, commercial, or mixed-use. As part of future land-use planning, municipalities can establish urban growth boundaries to direct development and prevent sprawl. Future land-use maps provide a basis for the zoning map, which ultimately regulates development. in this way, each zoning map amendment (i.e., zone change) should be considered within the context of the Plan.

ZONING

Within the Comprehensive Plan, the Land-Use and Development chapter provides a framework for directing the location and timing of development and serves as a guide for updating zoning and development policies. Following adoption of this Plan, the City may pursue zoning ordinance amendments to align the code with the vision of the Plan. The zoning ordinance determines how each parcel within the City's jurisdiction can be used and developed. The current zoning map for the City of Willmar is included in this chapter.

EXISTING CONDITIONS

EXISTING LAND-USE

The exploration of existing land-use aims to understand the current development fabric and identify opportunities for growth and reinvestment throughout the community. The land-use categories outlined in this chapter's future land-use section were used to define current land-uses (see **Table 3-1**). Existing land-uses were identified using the previous Comprehensive Plan as a baseline, then incorporating zoning and land-use changes made since the previous Plan was adopted in 2009.

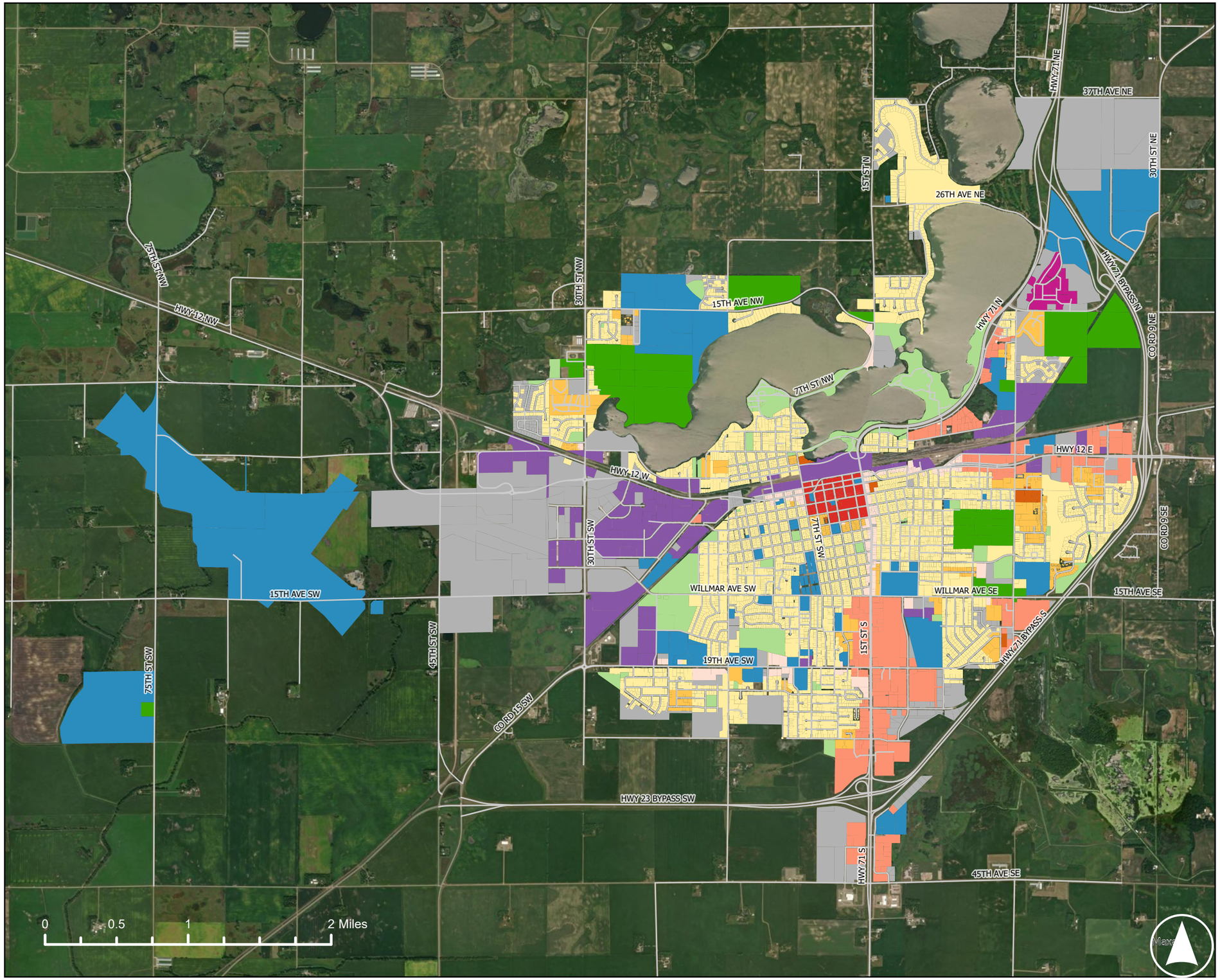
Table 3-1. Existing Land-Uses

Land-Use Category	Acres	Percent
Agricultural	577.8	7.8%
Low Density Residential	1824	24.7%
Medium Density Residential	268.9	3.6%
High Density Residential	17.6	0.2%
Downtown	51.8	0.7%
Neighborhood Commercial	112.9	1.5%
Regional Commercial	555.7	7.5%
Technology District	47.7	0.6%
Industrial	572.2	7.8%
Parks and Open Space	380.8	5.2%
Institutional	1477.8	20.0%
Vacant	1494.8	20.2%

Existing Land Use

Existing Land Use

- Agricultural
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Downtown
- Neighborhood Commerical
- Regional Commerical
- Parks and Open Space
- Industrial
- Institutional
- Technology District
- Vacant



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CITY OF WILLMAR ZONING DISTRICTS

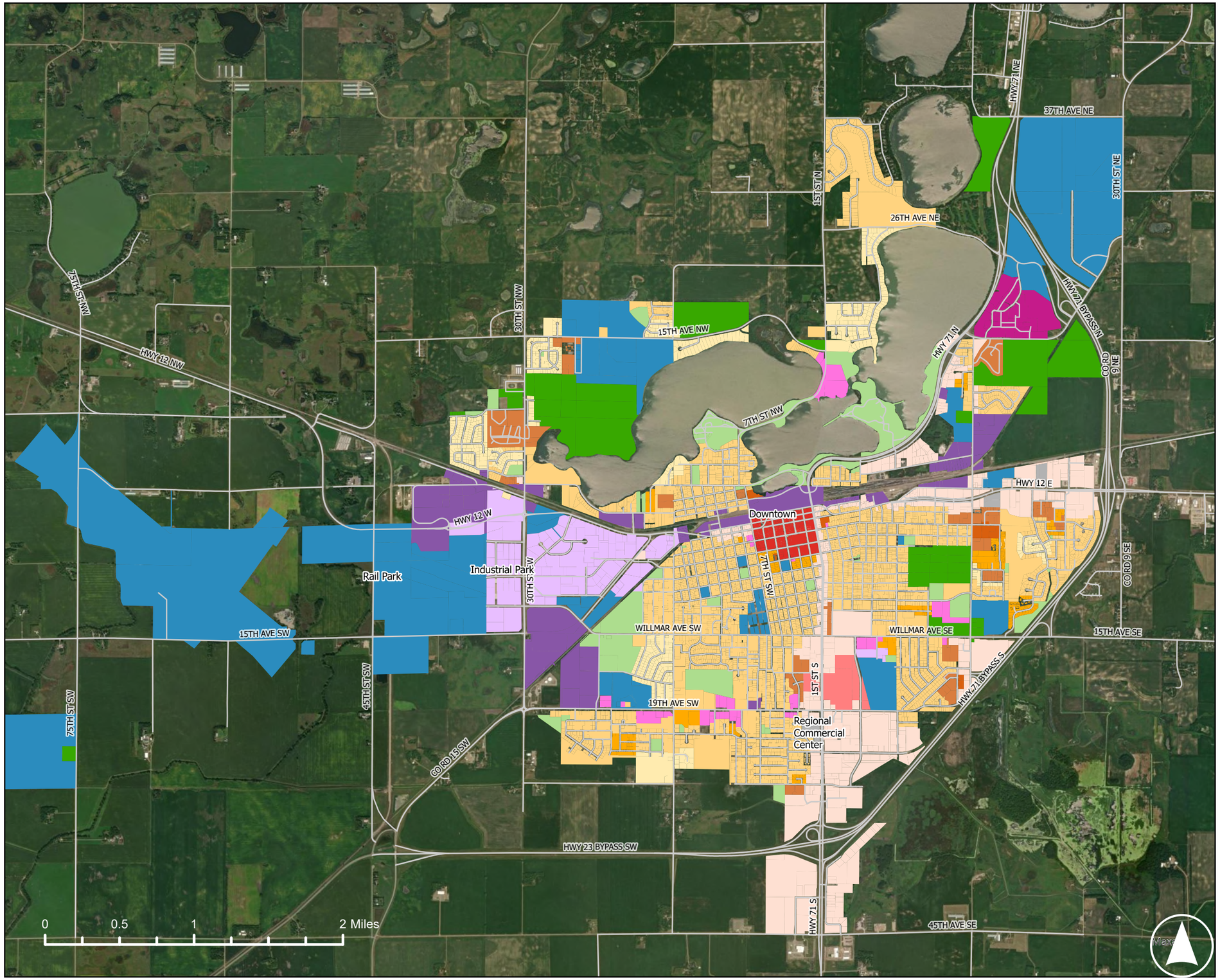
The City of Willmar Zoning Ordinance encompasses 15 zoning districts that regulate development throughout the community. The largest zoning district by land area is the G – Government/Institution District, covering 30 percent of the City's total land area. This district includes the Willmar Airport, one of the city's largest properties, contributing significantly to this high percentage. The second largest zoning district is the R-2 – One- & Two-Family Residential District, representing 22 percent of the City's total land area. (see **Table 3-2**).

Table 3-2. Existing Zoning Districts

Zoning District	Acres	Percent
R-1 One Family Residential	345.4	4.7%
R-2 - One & Two Family Residential	1,637.0	22.1%
R-3 - Low Density Multiple Family	99.6	1.3%
R-4 - Medium Density Multiple Family	184.4	2.5%
R-5 - High Density Multiple Family	17.6	0.2%
LB - Limited Business	90.2	1.2%
GB - General Business	784.6	10.6%
SC - Shopping Center	56.9	0.8%
CBD - Central Business District	51.8	0.7%
T - Technology District	99.3	1.3%
I-1 - Limited Industry	371.5	5.0%
I-2 - General Industry	448.2	6.1%
P - Park District	380.8	5.1%
G - Government/Institution District	2,243.5	30.3%
A - Agricultural	595.9	8.0%

Existing Zoning

- A - Agricultural
- CBD - Central Business District
- G - Government/Institution District
- GB - General Business
- I-1 - Limited Industry
- I-2 - General Industry
- LB - Limited Business
- P - Park District
- R-1 One Family Residential
- R-2 - One & Two Family Residential
- R-3 - Low Density Multiple Family
- R-4 - Medium Density Multiple Family
- R-5 - High Density Multiple Family
- SC - Shopping Center
- T - Technology District
- N/A
- Roads



WITH WILLMAR
COMPREHENSIVE PLAN

PLANNING NEEDS

Land use and development planning are crucial responsibilities of city government. To encourage growth, the City of Willmar must address several needs. There are opportunities for future growth and development within the City to support infill development and align with the vision for "WITH Willmar."

NEEDS

Utility Expansion

As the City of Willmar annexes parcels and new development is constructed outside of existing city limits, utilities will need to be expanded to accommodate the growth. These include water, sewer, electricity, natural gas, landline, and emergency services, such as: Fire, Emergency Medical Services, and Law Enforcement. Expansion and maintenance of public and private utilities is a significant cost that needs to be accounted for in development planning. The City can encourage development in priority growth areas by investing in municipal infrastructure and services but needs to avoid overextending utilities prematurely.

Willmar Fire Department

Accessibility of Urban Expansion

As communities expand, it is important to consider how growth impacts accessibility. Fringe area developments are often inaccessible to those who cannot or choose not to drive. However, they also offer the opportunity to create more accessible areas with mixed land-uses, pedestrian infrastructure, ADA-accessible facilities, and public – private investment.

STRATEGIES

Future Land-Use

The future land-use map serves as a guide for the type and intensity of citywide development. While it doesn't provide the detailed specifics found in the zoning code, it offers overarching guidance to shape development and land-use patterns, ensuring consistency with the Comprehensive Plan during the City's regulatory and enforcement process.

As a developed community in a rural setting, Willmar's future land-use map may see significant changes from year to year. The City's boundaries are expected to expand over the next decade, allowing for growth beyond its current borders.

One notable development is the westward expansion of Willmar Industrial Park, which is anticipated to progress over the next decade with the completion of Willmar Rail Park. Currently situated on the western edge of city limits, the Rail Park is expected to drive substantial growth, potentially leading to an expansion of the city limits to the Willmar Municipal Airport.

Commercial Development Needs

There are two major forms of commercial development within the community today – regional commercial and neighborhood commercial. Regional commercial uses include those that serve the Willmar community and regional visitors. Neighborhood commercial uses include those that serve the local community and are generally smaller in scale. Both forms of commercial development have opportunities to thrive in the community; however, each type has varied needs that should be considered with future development opportunities.

Table 3-3. Commercial Development Needs

Regional Commercial	Development Considerations	Neighborhood Commercial
Frontage along busy or higher volume roadways to provide visibility of use	Frontage	Varied frontage can range from busy to neighborhood streets
Generally, larger lot sizes are needed to support larger building footprints and parking areas	Lot Size	Lot sizes can vary depending on the use as building footprints may be smaller with reduced parking needs
Larger parking lots are typically needed with regional commercial uses to support patrons from a wider service area	Parking Needs	Parking needs may be reduced with neighborhood uses, especially with proximity to street parking or multimodal infrastructure
Uses tend to desire direct access points to support the development, particularly along higher volume roadways. Some uses request multiple access points.	Access	Access points are generally fewer and can come from any street type
Regional uses are well served in commercial areas with surrounding similar uses.	Adjacent Uses	Neighborhood commercial uses can be supported by a variety of surrounding uses, including similar commercial and residential neighborhoods.

Downtown Willmar

Downtown Willmar has experienced ongoing investment and change, transforming it into a destination that supports residential, commercial, and institutional uses. Continued focus on investments and improvements in Downtown Willmar will increase opportunities for the community and visitors to grow and thrive. The City aims to further enhance the vibrancy of downtown, encouraging it to become a gathering place for everyone.

WITH WILLMAR GUIDING PRINCIPLES

Each of the four guiding principles can be integrated into land-use regulations within the City of Willmar. By considering these elements in future decisions, the City will be better positioned to achieve its overall vision.

GUIDING PRINCIPLE	HOW LAND-USE CAN SUPPORT
Sustainability	Land-use can promote sustainable developments, reduce activities that generate excessive pollution, and shape development patterns that minimize reliance on automobiles.
Inclusivity	The Future Land-Use Plan can promote mixed land-uses that encourage multimodal transportation, supporting a diverse array of businesses and ensuring inclusive access to businesses, housing, and jobs.
Innovation	Land-use can shape policies that foster innovative districts dedicated to innovation, like the established Technology District.
Resilience	The Future Land-Use Plan can promote a diverse range of uses throughout the City, enhancing the resiliency and adaptability of Willmar's economy.

FUTURE LAND-USE

The Future Land-Use Map outlines the desired use and intensity of development throughout the City. At its core, this map shows how existing neighborhoods and future growth areas will be maintained or developed over the course of the Plan, regardless of existing zoning. Each parcel is assigned a category based on development patterns and the preferred intensity. All parcels within the current city limits and logical growth areas are assigned a future land-use category. Parcels located outside the existing city limits but within an Urban Growth Area are also assigned a future land-use category. The Future Land-Use Map indicates the preferred future land-use for each property, taking into consideration the existing neighborhood context, roadway system, availability of infrastructure and utilities to serve development, and the overall needs of each neighborhood and the broader community.

For parcels within the city limits, the identified uses will guide City policy for any future rezoning requests. For parcels outside the existing city limits, the property should be zoned and developed according to the use identified on the Future Land-Use Map upon annexation. The Future Land-Use Map is intended to be a living document and can be amended as needed to support zoning changes consistent with the overall vision of this Plan. The Plan includes 13 land-use categories that provide a connection to the zoning ordinance.

The Future Land-Use Categories are as follows (**Table 3-4.** Future Land-Use Categories):

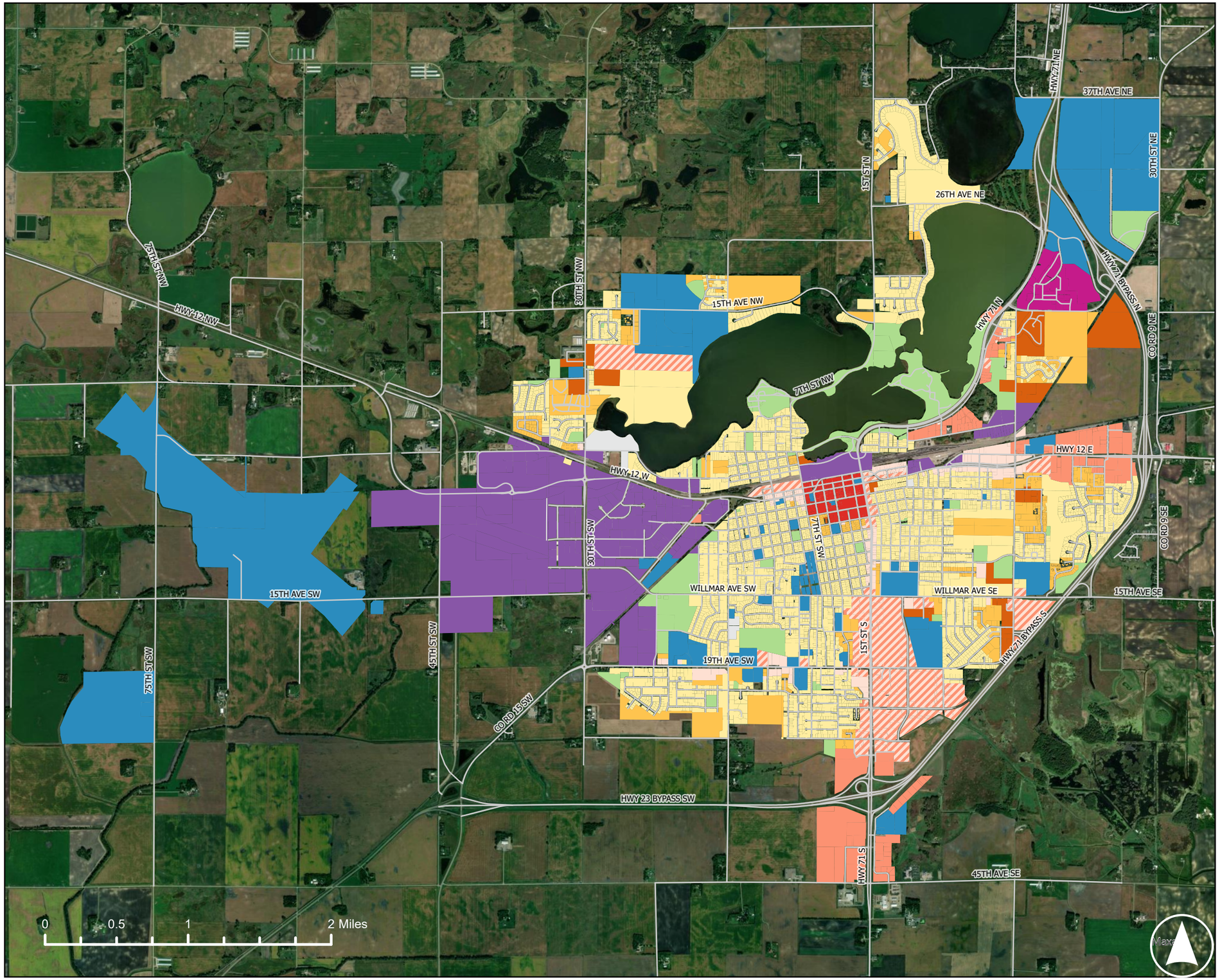
Table 3-4. Future Land-Use Categories

Category	Description	Typical Uses/Building Form	Density
Agricultural	Large tracts of land devoted to crop production or the rearing of animals to provide food and products. May include agricultural homesteads.	Homestead, barns, and agricultural structures	0 to 0.5 units per acre
Low Density Residential	Areas of housing consisting of detached single-family homes with larger lot sizes. May include twin-homes in R-2 districts.	One-dwelling residential, Duplex, Accessory Dwelling Unit (ADU)	0.5 to 5 units per acre
Medium Density Residential	Areas of a mix of housing styles, including small-lot detached single-family homes, attached twin-homes, rowhomes, and townhomes	One-dwelling residential, Townhomes, Row Housing, Fourplex, Small Apartments, Mobile Homes	6 to 12 units per acre
High Density Residential	Areas of housing consisting of apartment buildings and condominium complexes.	Apartments, Condos	12 or more units per acre
Downtown	Dense, generally mixed-use developments with street-facing commercial uses on lower levels and high-density residential above.	Office, Retail Sales and Service uses, High Density Residential, Public Institutions	12 or more units per acre
Mixed Use	Areas that support a combination of commercial and residential uses. Uses may include vertical mixed use with commercial on the ground floor and apartments or condos above or horizontal mixed uses with separate commercial and residential buildings.	Office, Retail Sales and Service Uses, High Density Residential, Public Institutions	12 or more units per acre
Neighborhood Commercial	Areas of small commercial developments that cater to the surrounding neighborhood.	Small-format grocery stores, coffee shops, restaurants, taprooms, laundry facilities, gas stations/ convenience stores, and small medical clinics, etc.	N/A

Category	Description	Typical Uses/Building Form	Density
Regional Commercial	Areas of large commercial developments that draw people in from outside the city.	Big-box retail, shopping malls, restaurants, office complexes, car dealerships, medical clinics, lodging, etc.	N/A
Industrial	Areas utilized for the production and storage of goods, the logistical management of goods, or other similar intensive facilities.	Manufacturing, warehouses, offices, research, repair and service, lumber yards, truck terminals, processing, etc.	N/A
Institutional	Areas consisting of community-oriented services. Uses may include but are not limited to government facilities and places of worship.	Schools, Places of Worship, Cultural Center, Government Facilities	N/A
Technology District	Areas that incentivize the creation and innovation of technological products.	Research activities, manufacturing, warehouses, office	N/A
Parks and Open Space	Areas of publicly owned land that includes recreational amenities and/or necessary environmental infrastructure.	Recreational parks, golf courses, open spaces	N/A
Vacant (existing only)	Parcels of land subdivided for development with no current structure or use.	N/A	N/A

Future Land Use Map

- Low Density Residential
- Medium Density Residential
- High Density Residential
- Downtown
- Neighborhood Commerical
- Regional Commerical
- Parks and Open Space
- Industrial
- Institutional
- Technology District
- Mixed Use
- Cemetery



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The future land-use map depicts changes in land-uses within city limits and identifies new land-uses outside of city limits. **Table 3-5** outlines the acreage allocated for each future land-use category and the percentage change from the existing land-use map.

Table 3-5. Future Land-Use Acreage

Land-Use Category	Acres	Percent
Agricultural	0.0	0.0%
Low Density Residential	1926.3	27.6%
Medium Density Residential	581.9	8.3%
High Density Residential	206.1	3.0%
Downtown	49.2	0.7%
Neighborhood Commercial	127.1	1.8%
Regional Commercial	368.9	5.3%
Technology District	99.3	1.4%
Industrial	1240.2	17.8%
Parks and Open Space	475.5	6.8%
Institutional	1864.6	26.7%
Cemetery	41.4	0.6%

GROWTH AND REDEVELOPMENT AREAS

The Plan focuses on directing growth to key areas for new development or redevelopment, categorized as follows:

Infill and Redevelopment Areas

The City should explore existing developed areas where opportunities may exist to increase densities, or change uses to reflect desired development patterns. Each location offers redevelopment opportunities that align with the Future Land-Use Map.

New Development Areas

In areas within the city limits that have not been previously developed, opportunities exist for development consistent with the City's desired development patterns. Most of these areas are near the City's edge, identified as agricultural or vacant, and are guided for new uses in the future.

Urban Growth Boundary

Areas outside the city limits within the Urban Growth Boundary (UGB) are available for future development opportunities. Most of these areas are not currently served by city infrastructure and would require annexation to support development. While specific future land-uses have not been identified for this area, general guidance for future development is discussed in the Strategies section.

STRATEGIES

This section outlines various strategies that can be used to help achieve the goals and vision of the Plan. In addition, emerging and anticipated trends will be discussed here.

URBAN GROWTH BOUNDARY

In partnership with Kandiyohi County, the City of Willmar has established an Urban Growth Boundary (UGB) to organize urban growth. Some parts of the city limits extend to the UGB, while other areas are a mile or more away. Based on the UGB boundaries defined at the time of this plan, key future growth areas are located to the City's northwest, southwest, and southeast. The Urban Growth Boundary is on page **3-18**.

While the need for expansion into the UGB is not anticipated in the near term, property owners may pursue annexation into the City Limits to support development. Numerous vacant or underutilized sites suitable for redevelopment should be considered before annexing new areas. This approach supports the use of existing infrastructure and provides development options within the existing community fabric.

The Future Land-Use Map does not extend into the UGB to prioritize development within city limits. However, the City may support annexation of areas within the UGB for development, provided the following considerations are met positively.

1	**Financial Feasibility:** Assess the cost of extending services such as water, sewer, roads, and emergency services to the annexed area. This includes evaluating the City's budget and potential revenue from the annexed area.
2	**Economic Development:** Consider how annexation can promote economic growth, attract businesses, and create job opportunities. This includes assessing the potential for commercial and industrial development.
3	**Environmental Impact:** Evaluate the potential environmental impact of annexation, including effects on natural resources, wildlife habitats, and green spaces.

Urban Growth Boundary Land-Use Guidance

The UGB encompasses over 30 square miles around the perimeter of Willmar. Full development of this area is not anticipated within the planning horizon of this Plan. Based on the Future Land-Use Map outlined in this chapter, the City has explored potential growth areas within the UGB (see Table 3-4). The UGB is divided into two development phases: Phase 1 and Phase 2.

- Phase 1 UGB areas may be considered for future development if they meet the City's needs and align with the specified land-uses.
- Phase 2 areas are unlikely to be needed for development within the planning horizon of this plan (2050).

The following guidance provides an overview of the uses that support each UGA area and informs decision-making regarding future development outside the existing city limits.

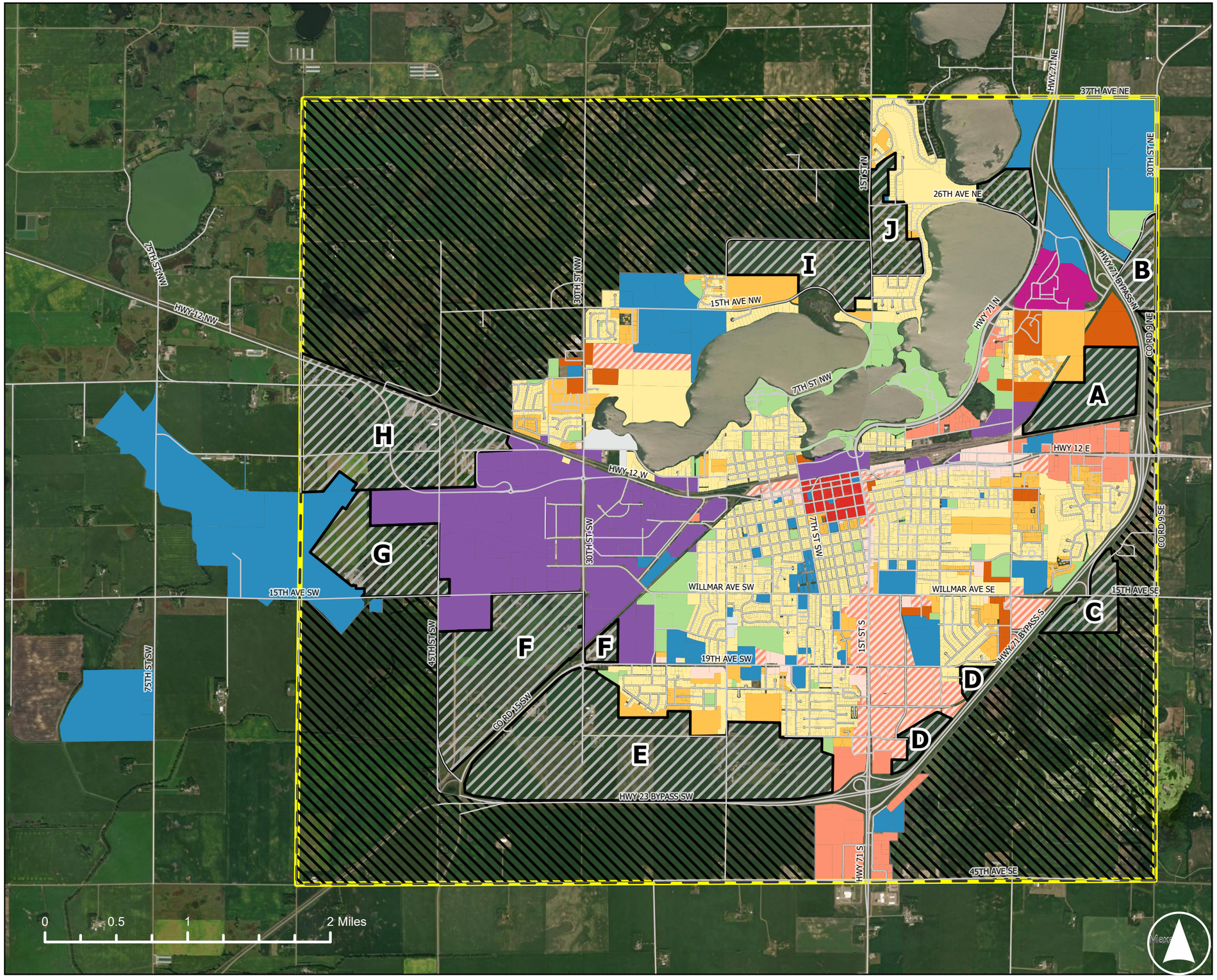
Table 3-6. Urban Growth Area Land-Use Guidance

UGB Area	Description	Future Land-Use Guidance	Considerations
Area A	Agricultural land to the west of US 71 north of the railroad tracks.	• Industrial • Low, Medium & High Density Residential	The proximity to the railroad tracks and industrial uses to the west would support future industrial development near the railroad. The northern portion of the site could support residential extending the guidance of the future land-use plan.
Area B	Remaining UGB in the southeast corner of the US 71 and Civic Center Dr interchange	• Regional Commercial • Institutional	Future regional commercial uses could serve the existing institutional campus and uses to the north. The visibility along US 71 could also support commercial development. The area may also support future expansion of the institutional campus.
Area C	The only identified growth area to the south of US 71 at the CR 23/Willmar Avenue Interchange	• Regional Commercial • Residential Uses	The interchange creates opportunities for this area to be designated as a future growth area. Regional commercial or higher density residential uses should be supported to serve as the initial development opportunity in this area.
Area D	The two pockets to the west of US 71 that are not currently within city limits	• Regional Commercial • Mixed Use	This is a logical area for the continued expansion of development that is like the surrounding context.
Area E	The undeveloped area between the southern	• Low, Medium & High Density Residential	This area is ideal for future development with proximity to adjacent development and transportation connections. With

	edge of city limits to the Highway 23 Bypass	• Neighborhood and Regional Commercial • Parks and Open Space	the Highway 23 Bypass serving as the southern boundary of this area, higher densities appropriately limit future needs to extend development over the bypass. Additionally, the proximity to the two interchanges creates opportunities for regional commercial development. Areas of neighborhood commercial should also be explored due to the overall size of the development area.
Area F	South of the Industrial and Rail Park	• Industrial • Regional Commercial • Residential	The proximity of the area to the industrial park and rail park creates an opportunity for further industrial expansion but also creates opportunities for residential and commercial development that could support existing industrial development (e.g., housing for employees).
Area G	Between city limits and the airport	• Industrial • Open Space	The area between the rail park and airport provides an opportunity for future industrial expansion, while considering airport and runway buffers and needs.
Area H	North of the existing rail park, south of Highway 12	• Industrial • Regional Commercial • Residential	Similar to Area F, the proximity to adjacent industrial uses and Highway 12 creates opportunities for industrial and regional commercial development. Residential development that supports employee housing could be considered, but the distance to other services and needs within the community should be considered.
Area I	North of Foot Lake, west of 1st Street	• Low, Medium & High Density Residential • Neighborhood Commercial	A variety of residential uses within this development area should be considered to align with surrounding uses. Opportunities for neighborhood commercial development should also be explored to provide neighborhoods with access to goods and services.
Area J	West of Willmar Lake	• Low, Medium & High Density Residential • Neighborhood Commercial	Similar to Area I, a variety of residential uses within this development area should be considered to align with surrounding uses. Opportunities for neighborhood commercial development should also be explored to provide neighborhoods with access to goods and services.

Urban Growth Boundary

- Urban Growth Boundary
- Urban Growth Boundary Development Areas
- Urban Growth Boundary Reserve
- Low Density Residential
- Medium Density Residential
- High Density Residential
- Downtown
- Neighborhood Commerical
- Regional Commerical
- Parks and Open Space
- Industrial
- Institutional
- Technology District
- Mixed Use
- Cemetery



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FUTURE DEVELOPMENT CONSIDERATIONS

While the Future Land-Use Map and future land-use categories serve as the legal guide for land-use and zoning decisions, there are several other factors that should be considered in the decision-making process. Those considerations, which are consistent with the WITH Willmar Vision and Goals from **Chapter 2**, will help to ensure that Willmar grows to support the desired community vision.

Housing and Residential Development

The maintenance and development of a healthy, diverse, and affordable housing stock is important for the long-term sustainability of the community. The City of Willmar strives to support the development of a variety of housing types that are accessible to all current and future residents. Accommodating growth requires a corresponding increase of housing units, including ensuring that housing type meets the needs and wants of the community. Increasing the amount of housing in a city comes from one of two sources: 1) New development in areas that previously were undeveloped; and 2) redevelopment that increases the residential density of the area.

The future land-use plan provides options to meet the City's developmental needs. First, some areas within the city are identified for increased development densities that exceed the existing densities. If those areas are redeveloped, residential density should be increased. From the City's perspective, redeveloping at higher densities increases the tax base while reducing the per-unit cost of municipal infrastructure and services. From the private perspective, increasing density is necessary to justify investment in a redevelopment project. Second, undeveloped areas within the city are identified for residential development, which will help increase density and activate underutilized parcels.

Commercial Development

Land and buildings that support commercial development and reinvestment are highly desirable. To support future growth and investment of commercial properties, the City must maintain the desirable characteristics of various types of development. For example, commercial development needs vary by the type of use, some requiring access from a high-volume road, and others requiring little to no parking.

Mixed-Use Development

Future land-uses support growth specifically within Downtown Willmar. Mixed-use development includes development with two primary uses, many times including commercial and residential uses. As is common in many cities, due to its similarity to traditional downtown development, Downtown Willmar was identified for a vertical mix of commercial and residential uses. Other mixed-use development may be considered in the community, with changes to the zoning ordinance and implementation guidance. For example, neighborhood-mixed use could be allowed within Neighborhood Commercial areas to allow both residential and commercial use in areas along key transportation corridors and transitioning out of downtown.

Vertical vs. Horizontal Mixed Use

There are two common types of mixed-use development, vertical and horizontal. While the core concept for each is to allow varying types of uses, the built form that each takes is different.

Vertical mixed-use development typically has differing uses located within the same building. The most common type includes commercial on the first floor and residential above.

Horizontal mixed-use development typically allows differing uses located in different structures or on neighboring lots.

Mixed-use does not always require residential development to be included. Commercial/industrial mixed use can be explored to serve as a transition from low intensity neighborhoods into the industrial portions of Willmar. Updates to the City's zoning code will likely be needed to facilitate these types of mixed-use development.

Sense of Place

As previously mentioned, development and land-use patterns and the built environment play a significant role in a community's identity and sense of place. Through development activities, the community can establish policies and regulations to continue to engage in the sense of place and identity. The opportunities identified within the **Arts and Culture Chapter** (**Chapter 4**) are initial opportunities that would assist in this effort.

Flexible Policies and Standards

The Future Land-Use Map and its categories establish a structured approach to land-use and development planning while maintaining flexibility to adapt to evolving needs. This framework supports growth and land-use changes that enhance living, working, and recreational opportunities within the city. By implementing adaptive land-use policies, the plan ensures that the community can respond effectively to changing circumstances and emerging opportunities.

Utilities and Infrastructure

As Willmar grows, special attention should be paid to ensure that the high-quality system of infrastructure and utilities is maintained. As new areas are developed, utilities will need to be extended to serve these new areas. Development should be designed such as utility and

infrastructure extension is fiscally responsible for the city. Similarly, as areas within the city redevelop at higher densities, care should be taken to ensure the existing utility system can adequately serve the redevelopment, without reducing the level of service provided to other areas.

Downtown "DTW"

Downtown Willmar continues to be a priority and focus area for the community, including changing land-uses as well as businesses and residential redevelopment. Previous efforts such as the Downtown Streetscape Plan have established policies and guidance to inform investment within the downtown; however, additional planning for the downtown will support additional new investment. Establishing a Downtown Plan guides development to meet the vision and goals of the city and the Comprehensive Plan. A downtown plan considers addressing the following topics:

- Mixed-use downtown core zoning and land-use
- Multimodal infrastructure gaps, barriers, and improvements
- Access and crash analysis
- 'Sense of place' architectural themes and downtown design
- The establishment of specific downtown 'districts and associated strategies
- Wayfinding signage and public art
- Block-by-block analysis of investment and redevelopment opportunities

Downtown Willmar Banners

The Downtown Plan also addresses specific implementation actions that can be achieved to improve the downtown neighborhood and increase the sense of community within the city. Willmar can adopt similar principles and strategies to help increase the utilization of downtown, bringing more people to the core area.

A Future Land Use map is one of the most valuable tools a city can utilize. By updating Willmar's Future Land Use, the city can shape where development occurs and establish zoning and development policies accordingly.

CHAPTER FOUR:

ARTS + CULTURE

INTRODUCTION

When envisioning Willmar's future, one can't help but think of the City's landmark art installations and its celebration of diverse cultures. Willmar is filled with possibilities for art that tell a story of evolution and progress. Through intentional planning, the City desires to enhance its aesthetics, highlight community gatherings, amplify perspectives, and strengthen its identity. As a regional hub, Willmar's arts and culture activities attract residents and visitors that support the economy.

Rockin' Robbins Summer Concert Series

COMPREHENSIVE PLANNING

During the engagement phase of the WITH Willmar Comprehensive planning process, participants emphasized the need for a more comprehensive approach to public spaces and how arts and culture can foster a sense of belonging and enrich the individual experience throughout the City.

By integrating arts and culture into its Comprehensive Plan, Willmar seeks to further explore the intersection of creativity and economy. The goal is to infuse innovation and creativity throughout the City and its various sectors, producing a climate that benefits the regional economy and enhances the overall livability for its residents. The Comprehensive Plan's arts and culture goals are designed to build on this foundation, ensuring that Willmar continues to promote creativity and progress.

Downtown Willmar Minnesota Selvig Park

Flags of Honor Memorial

CURRENT EFFORTS

Through public-private partnerships and area organizations, Willmar has made significant strides in infusing arts and culture into the community. The existing initiatives provide diverse benefits, such as:

- Building community identity and pride.
- Activating spaces where people are connected.
- Increasing the sense of welcome and promoting cultural diversity.
- Attracting businesses and increasing economic investment.

Willmar proudly serves as a regional hub for creative and innovative concepts. Its dynamic expression of arts, music, and social practices attracts businesses, stakeholders, entrepreneurs, and visitors from near and far. This cultural scene has created an environment where ideas thrive and creativity flourishes, making Willmar a sought-after destination for artistic and economic growth.

These goals and priorities are not just the vision of a few but are rooted in extensive data collected through the WITH Willmar community engagement. By actively involving residents in the planning process, Willmar ensures that its cultural and economic strategies are reflective of the community's needs and aspirations. This collaborative approach paves the way for a more inclusive and innovative future.

Community events: fireworks ceremony

PLANNING NEEDS

The WITH Willmar Arts and Culture goals provide a framework to build upon an inclusive, vibrant, and thriving community through the following key areas:

ACCESSIBILITY

Goal: Ensure that everyone has access to arts and cultural learning at all stages of life, contributing to a welcoming community with a strong appreciation for the arts.

Priorities:

- Emphasize traditions to bolster a more welcoming community for all.
- Offer diverse arts and culture learning opportunities to highlight Willmar's global society, ensuring that people of all ages and backgrounds can engage with and benefit from these experiences.

ADVOCACY

Goal: Increase arts and culture participation among creatives by strengthening the message and advocacy efforts that highlight the value of arts and culture.

Priorities:

- Identify and partner with the creative silos within our community and connect them to resources and support, for a more collaborative and interconnected creative environment.
- Strengthen creative resources to increase participation in arts and culture, ensuring that artists and cultural organizations have the support they need to thrive.

COMMUNITY

Goal: Reimagine public spaces throughout the city that encourage innovation, enhance livability, elevate aesthetics demonstrating design standards and accessibility.

Priorities:

- Identify, develop, and promote Creative Overlay Districts that are hubs of artistic and cultural activity, drawing residents and visitors alike.

- Design the use of public facilities to provide affordable spaces for creative work, ensuring that artists and cultural organizations have the physical resources they need to succeed.

INVESTMENT

Goal: Secure and develop funding for arts and culture to ensure the sustainability and growth of programs, ultimately benefiting the entire community.

Priorities:

- Establish clear goals and objectives for the fund. Identify the types of projects and initiatives to be supported, such as public art installations, cultural events, educational programs, and more. Implement measurable outcomes to track the impact of the fund.
- Stimulate the local economy by attracting tourists, businesses, and residents. Cultural events and institutions create jobs, generate revenue, and stimulate economic activity in related sectors such as hospitality and retail.

By focusing on these key areas, the WITH Willmar Arts and Culture goals supports a dynamic, inclusive, and thriving community where creativity and innovation are celebrated.

WITH WILLMAR GUIDING PRINCIPLES

GUIDING PRINCIPLE	HOW ARTS + CULTURE CAN SUPPORT
Sustainability	Arts and Culture-based initiatives engage communities to identify and find solutions to local, national, and worldwide problems.
Inclusivity	Arts and Culture can serve as a bridge to connect our diverse cultures and promote events.
Innovation	Arts and Culture provide unique perspectives and innovation for community problem solving.
Resilience	By sharing, integrating, and strengthening our local cultures, the City can continue to develop its diverse identity and remain welcoming and strong in times of change.

STRATEGIES

Art and culture strategies are essential for fostering vibrant and connected communities. They serve as powerful tools to celebrate diversity, preserve heritage, and strengthen local identities. These strategies stimulate economic development by attracting tourism, supporting creative industries, and encouraging innovation. Additionally, integrating art and culture into urban planning and public spaces enhances livability, making communities more appealing and livable. They also inspire dialogue, creativity, and critical thinking, addressing social challenges and fostering understanding. By investing in art and culture strategies, Willmar can unlock its full potential, uniting people and driving sustainable growth.

Develop public art ordinance and policies to encourage and support diverse offerings of public art and creative placemaking projects throughout Willmar.

A public art ordinance can provide numerous benefits to a city, enhancing its cultural, social, and economic landscape. A public art ordinance promotes the integration of art into public spaces, enriching the cultural experience for residents and visitors. It shows local talent and reflects the city's identity and heritage. Art installations can create landmarks and focal points that define a city's character and sense of place. They contribute to a unique and memorable identity for the city.

- **Partner(s):** City of Willmar; Willmar Area Arts Council; Southwest Minnesota Arts Council; Willmar Education and Arts Center
- **Timeline:** Short-term
- **Resources:** City of Saint Paul, MN; Golden City, CO Arts and Culture Strategic Master Plan; Jefferson City, MO Cultural Arts Master Plan; National Civic League
- **Benefit:** An ordinance for public art can significantly enhance the livability for residents, stimulate economic growth, and create a more vibrant, connected, and culturally rich community.
- **Measure of Success**: Adoption of public art ordinance; Community support; Annual review that shows an increased number of public art projects.

Utilize Underused Spaces for Arts and Cultural Activities

Identify existing underused spaces that can be repurposed for trials, presentations, creation, and exhibitions. Locations such as parks, public facilities, and other institutions may serve as ideal venues for activities. Developing partnerships to encourage low-cost access to space is essential. Additionally, implementing an incentive program will assist nonprofits in establishing and utilizing these venues.

- **Partner(s):** City of Willmar; Arts and Culture non-profits, Developers, Stakeholders
- **Timeline:** Medium-term
- **Resources:** City-owned properties; Parks; Property Owners; Annual Event Organizers

- **Benefit:** This approach offers the benefits of easy space identification and the flexibility to design these spaces for various creative uses.
- **Measure of Success**: Utilizing underused spaces provides support for revitalization efforts and reduces the cost barrier for artists to contribute to the region.

Establish an Artist-in-Residence Program

Artists-in-residence can introduce innovative ideas and approaches, inspiring new ways of thinking and problem-solving. This can benefit various sectors, including education, business, and urban development. Public art projects and community collaborations can enhance the aesthetics of public spaces, creating a sense of place and identity. These projects can transform underused or overlooked areas into vibrant, welcoming environments.

- **Partner(s):** City of Willmar; Willmar Area Arts Council; Southwest Minnesota Arts Council; Willmar Education and Arts Center; Ridgewater College
- **Timeline:** Medium-term
- **Resources:** Lanesboro Artist Residency Programs; Minneapolis Creative City
- **Benefit:** Establishing an artist-in-residence program can bring a myriad of benefits to a community.
- **Measure of Success**: An artist-in-residence program involves evaluating both qualitative and quantitative outcomes.

Incorporate Urban Design Standards in Streetscapes

Incorporating a design standard in streetscapes is essential for Downtown Willmar and Unified Developments (*see Land-Use Chapter*) to create cohesive, attractive, and functional urban environments. A well-defined design standard ensures uniformity in elements such as lighting, signage, street furniture, landscaping, and paving, contributing to a visually appealing public realm. An Urban Design Standard will also promote safety and accessibility by providing clear and intuitive pathways for pedestrians, cyclists, and motorists. Design standards can help preserve the unique character and identity of a city while fostering a sense of pride and belonging among residents.

- **Partner(s):** City of Willmar; Developers, Business Owners, Residents, Stakeholders
- **Timeline:** Short-Medium term
- **Resources:** National Capital Planning Commission; Carmel, IN Arts and Design District; Golden Valley, MN
- **Benefit:** Implementing a thoughtful approach to streetscape design can significantly improve the quality of spaces, making Willmar more livable, enjoyable, and resilient.
- **Measure of Success**: Pilot programing and research into how Urban Design standards may stimulate economic growth by making commercial areas more inviting and attractive to businesses, customers, and tourists.

Wayfinding & Gateway Signage

Wayfinding and gateway signage are essential tools for enhancing navigation and creating a welcoming identity for cities. Wayfinding signage provides clear and consistent guidance, helping residents and visitors easily navigate and locate key destinations, such as parks, landmarks, businesses, and public services. Gateway signage, on the other hand, serves as an entry point, offering a visually striking and cohesive first impression that reinforces the community's identity, culture, and pride. Together, these systems create a user-friendly and attractive environment while supporting economic and social development.

- **Partner(s):** City of Willmar, Kandiyohi County, Chambers of Commerce, Accessibility Advocates, Artists, Willmar Convention Bureau
- **Timeline:** Short-Medium term
- **Resources:** Cleveland Heights Gateways & Wayfinding Signage Plan; St. Helens Wayfinding Master Plan; Brooklyn Park Wayfinding Program Development
- **Benefit:** Simplifying navigation for residents and visitors while enhancing the community's identity with visually impactful signage. These systems support economic growth by attracting tourism and boosting local businesses, while also promoting accessibility through inclusive design principles. Additionally, they encourage environmentally friendly travel methods, such as walking, cycling, and public transit, by providing clear and effective guidance.
- **Measure of Success**: Analyzing feedback from user experiences gathered through surveys and public forums, alongside increased foot traffic to local attractions and businesses. Economic growth, reflected in higher revenue and tourism, will further indicate the effectiveness of navigation and branding improvements. Additionally, accessibility compliance and active stakeholder engagement will serve as key benchmarks for the strategy's overall impact.

Establish an Entertainment Arts District Overlay

Entertainment district overlay zoning is a specialized zoning tool designed to encourage and regulate the development of vibrant, mixed-use areas that focus on entertainment, dining, arts, and cultural activities. This zoning overlay supplements the existing base zoning by introducing additional regulations or incentives tailored to the unique needs of an entertainment district. It aims to create a lively and pedestrian-friendly environment while balancing the interests of businesses, residents, and visitors. Key features often include extended operating hours, relaxed noise ordinances, signage allowances, and design standards that promote aesthetic cohesion and accessibility.

- **Partner(s):** City of Willmar; Business Owners; Residents; State of Minnesota; Willmar Convention Bureau
- **Timeline:** Short-term
- **Resources:** City of Santee, CA; Columbia Missouri's North Village Arts District; Northeast Minneapolis Arts District
- **Benefit:** Implementing an entertainment district overlay zoning brings significant benefits, such as boosting economic growth by attracting businesses, tourists, and events that generate revenue and create jobs. It enriches the community's culture by fostering a

hub for arts and entertainment while enhancing residents' quality of life with diverse, walkable options. Additionally, it increases property values by making the surrounding areas more appealing and desirable.

- **Measure of Success**: Evaluating increased business revenue, property values, and tax contributions, reflecting strong economic performance. Higher foot traffic and attendance at events indicate strong visitor engagement, while positive feedback from residents and businesses highlights community satisfaction. Additionally, effective enforcement of regulations and minimal complaints about noise or disruptions demonstrate successful compliance and safety within the district.

Flags of Honor Memorial

CHAPTER FIVE:

MOBILITY

INTRODUCTION

Mobility, defined as the ability to move or be moved freely and easily, is an imperative aspect of community planning. This chapter will analyze the community's ability to move and access transportation throughout the City of Willmar. Mobility is essential for a modern, thriving community to connect residents to opportunities, services, and experiences. The City desires to create a transportation network that prioritizes safety, accessibility, and equity for our community. This chapter will outline goals and strategies to guide decision-making in all modes of transportation, including walking, biking, public transit, and automobiles.

FREIGHT SYSTEM

Willmar got its start as a hub for moving freight along the Great Northern Railway. Railroad freight and regional transportation are still intrinsic to Willmar's character today. The main railroad line runs east and west along Highway 12 splitting the city into two. In addition to the railroad, there are three other highways that pass through or start in Willmar. US 71 spans from Louisiana, through Willmar, on the way to Canada. Minnesota State Highway / Trunk Highway (TH) 23 runs through Willmar on its way from Sioux Falls, SD to Duluth, MN. Minnesota State Highway 40 starts in Willmar and goes to the western Minnesota border. Finally, U.S highway 12 spans from Michigan to Washington State and passes through Willmar.

MAJOR ROADWAYS

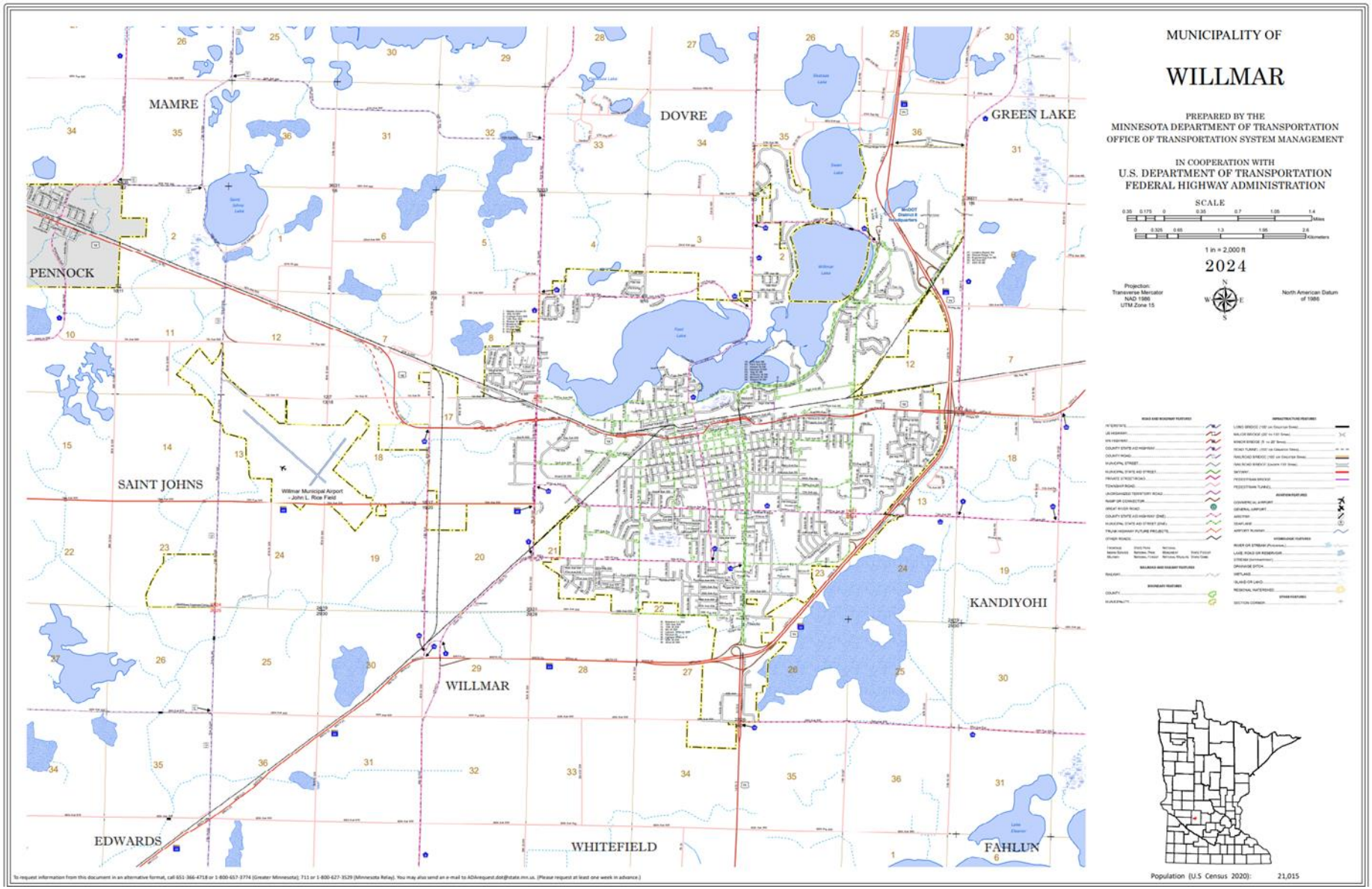
The City of Willmar is traversed by the major roadways of US Highway 12 and 71, and Minnesota State Highway 23 and 40. Willmar is also intersected by Kandiyohi County Roads 5, 15, 23, and 41. The major artery through town is US Highway 71 which is also our 1st St and main commercial thoroughfare through the city.

ROADWAY JURISDICTION

The roadway network within the community includes roadways owned and maintained by the Minnesota Department of Transportation (MNDOT), Kandiyohi County, and the City of Willmar. Most roadways are managed and maintained by the City of Willmar. Additionally, the City has jurisdiction over some local roads outside of city limits. The agency with jurisdiction over the roadway is typically responsible for the overall maintenance and operations of the roadway, completing any upgrades or maintenance work needed to support mobility along the corridor. **Figure 5-1** showcases Willmar's roadway system map.

The City of Willmar has jurisdiction over Business Highway 71 through the city, while the State of Minnesota maintains jurisdiction for US Highway 12 and Kandiyohi County maintains jurisdiction of all County Roads running through the city.

Figure 5-1. Roadway Jurisdiction



SAFE STREETS FOR ALL (SS4A) PLAN

The Safe Streets for All (SS4A) program provides federal funding support for planning initiatives to prevent death and serious injury on our streets. The City of Willmar was awarded a grant from the Federal Highway Administration (FHWA) in February of 2023 to conduct a SS4A study. Bolton & Menk was awarded the bid for the project and began a comprehensive Safe Streets for All (SS4A) Action Plan to help prevent and eliminate roadway fatalities and serious injuries within the city limits. This foundational plan highlights concerns about roadway safety and steps the City can take to proactively improve it.

The purpose of the Action Plan is to identify high crash locations, to engage with the community to receive their input, and recommend intersections and roadway segments that could be modified in accordance with the Vision Zero Program. Vision Zero is a traffic safety approach focused on eliminating traffic deaths and serious injuries, while improving access to safe, sustainable, and equitable mobility for everyone.

As part of the study, Bolton & Menk worked in tandem with Willmar City employees to engage the public for their input, including pop-up events at popular community events, such as Rockin' Robbins and the County Fair, and held a public seminar at Willmar Public Library. Bolton & Menk compiled a map of underserved communities around the city, identifying areas that have historically been underserved.

Between 2014 and 2023, there were 48 fatal and serious injury crashes on Willmar streets, averaging five per year. Future injuries, deaths, and crashes can be prevented through thoughtful infrastructure design and investment.

The SS4A plan produced the following:

1. A detailed crash analysis on all roadways within the City of Willmar, including a review of trends and contributing factors to fatal and injury crashes
2. A transportation equity analysis to understand and acknowledge the communities most impacted by traffic crashes
3. An action plan with policy recommendations and future study needs
4. A prioritized list of project areas with potential improvements to address traffic safety
5. A toolbox of crash mitigation strategies.

The final SS4A plan can be found as **Appendix 1A** to this Plan.

BICYCLE TRANSPORTATION

Willmar is a small town with relatively short distances from one end of the community to the other. A person would be able to bike to most of their destinations in a reasonable amount of time. However, much of the workforce in Willmar drive to work alone. The average commute time in Willmar is roughly 5-15 minutes. Given Willmar's small footprint and topography, a sizable portion of car trips could be replaced by biking with the implementation of proper infrastructure and planning.

A resident's choice to replace small car trips or change commuting patterns isn't just an individual choice but is influenced by other transportation factors as well as the land-use mix and development density. The three most influential factors are income, convenience, and safety. The convenience and safety of biking can be heavily influenced by our infrastructure. Relevant bicycle Infrastructure can include vertical & horizontal separation from car traffic, designated and protected bicycle lanes, functional bike parking, cleared and maintained bicycle infrastructure, and engineered traffic calming. Biking as transportation could have a major impact on the number of cars trips an individual has to make to live comfortably. Replacing car trips with bike trips would have a significant impact on an individual's health and carbon footprint.

Parked bicycles in downtown Willmar

TRAILS

Willmar is home to several regional destinations, including Robbins Island Park, Willmar & Foot Lakes, and the Glacial Lakes State Trail. The Glacial Lakes State Trailhead is on the northeast side of town and follows Highway 23 northeast to Paynesville. This regional destination brings cyclists from all over to enjoy various stops along the trail in New London, Spicer, and Willmar. There is also a newly completed trail that connects the Glacial Lakes State trailhead to Eagle Lake. With Willmar being in a rural area, there are plenty of gravel roads that connect to scenic byways all around the City. These can also be used by cyclists due to their low volumes.

The vast majority of Willmar has a well-connected grid pattern. With most posted speed limits in these areas at 30 mph, some of the less busy streets are acceptable roads for bikers but could benefit from additional bicycle-specific infrastructure. Willmar has some bicycle facilities along roads and trails throughout town, but they are not connected enough for bikers to use them exclusively when traveling to a specific destination. Therefore, the grid of low speed, low trafficked streets are essential for cyclists looking to fully navigate the city.

WILLMAR BIKE SHARE

Willmar has a bike share program, run through the City's parks and recreation department, that provides 40 bikes across 11 docking stations around town. This program was crafted to provide low-cost bicycle access to residents and visitors. The bike share program utilizes an app that unlocks the bikes at a rate based on time rather than distance. The bikes are set up with a basket to provide a modicum of utility

Bicycling in downtown Willmar

as well. The bike share program is seasonal and typically runs from the middle of June to the middle of October.

BIKE, PEDESTRIAN, AND TRAILS PLAN

The City of Willmar is actively developing a Bike, Pedestrian, and Trails Plan with the purpose of guiding non-vehicular transportation improvements in Willmar. This plan will draw on residents' experiences with local biking and walking systems along with technical analysis to prioritize improvements that will have the greatest positive impacts for Willmar residents. The Bike, Pedestrian, and Trails Plan also conducted community engagement and worked with the Comprehensive Plan team to integrate this plan as much as possible with both the SS4A and Comprehensive Plans. The Bike, Pedestrian, and Trail Plan will help to improve connectivity within the community, aligning with the Comprehensive Pan's aim to ensure neighborhoods are accessible and linked by nonmotorized routes, and to make sure all residents have access to the City's amenities. The plan will analyze these routes for improvements ranging from separate bike lanes to paved road shoulders. The Bike, Pedestrian, and Trails Plans will be completed and adopted in Summer 2025 directly after the completion of the Comprehensive Plan.

CENTRAL COMMUNITY TRANSIT (CCT)

Willmar has a public transit option named Central Community Transit. This is a regional system that serves Kandiyohi, Meeker, and Renville counties. This rural transit system evolved as a method for seniors in the region to get to appointments in the city from smaller towns in the region. CCT has fixed routes around Willmar that serve the public, as well as a dial and ride option, allowing people to request specific pick-up and transport to a specific destination. People in Willmar can get anywhere in town on the bus, and they can get a ride to most towns within the three counties listed for a fee.

PLANNING NEEDS

TRAFFIC IMPROVEMENTS

As part of the completion of the Safe Streets for All (SS4A) plan, Willmar will begin applying for additional funding for projects identified by the SS4A plan to improve traffic safety and flow. This may include conducting pilot programs on certain roads and intersections to gauge effectiveness and community feedback before making improvements permanent.

COMPLETE STREETS

Complete Streets is an approach to planning, designing, building, operating, and maintaining streets that enable safe access for all who use them, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. Unfortunately, most residents still feel the need to use their personal vehicle for transportation around Willmar. While Willmar has improved sections of bike trails around the City, they are not fully interconnected, making it difficult to travel from one trail area to another through the City. Most people also find walking or biking to businesses difficult due to the distance or safety concerns, especially in high traffic areas, such as First Street. The recent Bike, Pedestrian,

and Trail Plan identified areas throughout the City that are difficult to navigate for non-vehicle users. This provides the City with the opportunity to focus on these areas to create a more “complete streets” system for non-vehicle users to improve their access, safety, ease of use, and enjoyability. These improvements can include different forms of lane separation and other improvements for bikes and pedestrians that provide additional safety. Linking the entire City with our many beautiful surrounding trails would promote the expansion of bike and pedestrian travel, reducing the burdens of vehicle traffic and promoting the health and enjoyment of Willmar’s residents.

RAILROAD CROSSING IMPROVEMENTS

Willmar continues to work with BNSF, the operator of the railyard and rail network, to improve safety and livability improvements at rail crossings. Willmar and BNSF will be conducting studies to focus on safety, security, accessibility, and multimodal transportation improvements at rail crossings for all modes of transportation.

WITH WILLMAR GUIDING PRINCIPLES

Willmar’s overall goals of being a sustainable, inclusive, innovative, and resilient community are reflected in the guiding principles of the Mobility chapter. By addressing issues identified by residents and professional studies, Willmar can achieve the City’s overarching vision of ensuring that all residents, regardless of age, ability, or income, have access to safe and reliable transportation options.

GUIDING PRINCIPLE	HOW MOBILITY CAN SUPPORT
Sustainability	Willmar should: • Promote active transportation by investing in pedestrian and cycling infrastructure to create complete streets and trails to navigate the City as a whole. • Enhance public transit by expanding and improving networks. • Reduce emissions by implementing traffic calming measures and promoting a walkable environment.
Inclusivity	Willmar should: • Promote accessible transportation services and infrastructure to ensure accessibility to people with disabilities, older adults, and other vulnerable populations. • Provide equitable access to transportation by addressing disparities in underserved communities. • Engage with the entire community to ensure feedback is gathered from all segments of the population and diverse community members are included in the planning and decision-making process.

Innovation	Willmar should: • Utilize data analytics and new technologies to improve transportation planning and decision-making. • Test new mobility solutions through pilot programs to evaluate effectiveness.
Resilience	Willmar should: • Diversify transportation options that promote systems that are less reliant on personal vehicle travel • Develop transportation plans for emergency and disaster response.

STRATEGIES

Recent activities and studies that have focused on mobility provide an understanding of the issues and opportunities that will move the community forward. The following recommendations and strategies should be considered as future action steps to promote safe and efficient movement for community members and visitors.

EMPHASIZE SAFETY

Reducing accidents and making streets safer for pedestrians, cyclists, and drivers should remain a top priority.

- **Partner(s):** City of Willmar; MNDOT; Kandiyohi County; FHWA; Parks and Recreation; BNSF; Willmar Bikes.
- **Timeline:** Long-term (1-25 Years)
- **Resources:** Safe Streets for All (SS4A) Plan; Bike, Pedestrian, and Trails Plan.
- **Benefit:** Infrastructure improvements for vehicle transportation on roadways, intersections, and high traffic areas; Creation and improvement of trail networks for both bicycle and pedestrian traffic to allow navigation of the entire city in an efficient and safe manner.
- **Measure of Success**: Analysis of ongoing serious injury and crash data to ensure the City continues to move toward or maintain the aim for zero deaths on Willmar roadways.

ACCESSIBILITY FOR ALL RESIDENTS

Accessibility is about ensuring that everyone, regardless of age, ability, or income, can get around easily. It means thinking about sidewalks, public transit, and options for people who can't drive.

- **Partner(s):** City of Willmar; MNDOT; Kandiyohi County; FHWA; Parks and Recreation, Willmar Bikes; CCT; Local Taxi Services; Volunteer Driver Services; Local Senior Care Providers.
- **Timeline:** Long-term (1-25 Years).
- **Resources:** Safe Streets for All (SS4A) Plan; Bike, Pedestrian, and Trails Plan; Parks and Recreation Master Plan.
- **Benefit:** Providing transportation to seniors, people with all abilities, and all those who need assistance in transit to ensure they attend to their needs, including medical appointments, food, public services, and other necessities in the city.
- **Measure of Success**: Measuring the capability of our residents to access essential services to ensure that nobody is neglected due to their inability to find transportation.

TRANSPORTATION EFFICIENCY

Minimizing traffic congestion and travel times is key for a smooth-running city. Good transportation connections are essential for businesses to thrive and for people to access jobs. Efficiency involves improving traffic flow, public transit, and promoting alternative modes of transportation.

- **Partner(s):** City of Willmar; MNDOT; Kandiyohi County; FHWA; Parks and Recreation, Willmar Bikes; CCT; Local Taxi Services.
- **Timeline:** Long-term (1-25 Years).
- **Resources:** Safe Streets for All (SS4A) Plan; Bike, Pedestrian, and Trails Plan; Parks and Recreation Master Plan.
- **Benefit:** Efficient travel will reduce stress on drivers, time spent in vehicles, pollution into our environment, and improve safety.
- **Measure of Success**: We must continue to evolve studies that inform road improvement projects that increase efficiency and safety to the public and periodically interact with the public to determine the effectiveness of said improvements.

HEALTHY COMMUNITY

Encouraging walking, biking, and public transit helps reduce air pollution and promote healthier lifestyles.

- **Partner(s):** City of Willmar; MNDOT; Kandiyohi County; FHWA; Parks and Recreation, Willmar Bikes; CCT; Local Taxi Services.
- **Timeline:** Long-term (1-25 Years).
- **Resources:** Safe Streets for All (SS4A) Plan; Bike, Pedestrian, and Trails Plan; Parks and Recreation Master Plan.
- **Benefit:** The community would benefit from a healthier population that emphasizes walking and biking, when possible, as well as benefit from reduced air pollution, which could lead to happier lifestyles and less healthcare costs.
- **Measure of Success**: As the City rolls out initiatives that promote community health, it must continue to interact with the public to determine the effectiveness of the initiatives to determine their effectiveness on community health.

EXPANSION AND IMPROVEMENT

Construction and improvement of road dedications and additional trails into functioning lanes for road users will expand the options and availability for navigating the City.

- **Partner(s):** City of Willmar; MNDOT; Kandiyohi County; FHWA; Parks and Recreation, Willmar Bikes, BNSF.
- **Timeline:** Long-term (1-25 Years).
- **Resources:** Safe Streets for All (SS4A) Plan; Bike, Pedestrian, and Trails Plan; Parks and Recreation Master Plan.
- **Benefit:** Expansion of infrastructure into future road dedications could allow for additional housing and can be done in a fashion that would allow greater access to a complete road and trail network.
- **Measure of Success**: As Willmar expands, we must engage with residents of new developments to ensure ease of access to our roads and trails.

CHAPTER SIX:

HOUSING

INTRODUCTION

Housing and residential neighborhoods provide a core part of the identity of Willmar for its residents, in terms of its role in providing basic shelter; community character; livability; a means of wealth creation; and proximity to jobs, services, and amenities. Likewise, housing policy for the city has shaped how housing has increased in supply, what it looks like, how property is valued, and even who lives here.

Although the housing patterns throughout Willmar have been largely established for decades, they are not static. The high land values that characterize this community have attracted continued investment in properties – from extensive renovation to teardowns to larger scale infill development. This reflects the changing needs and preferences of residents, as well as the need for thoughtful guidance for change. The housing vision for Willmar guides policies related to housing affordability, choice, quality, and community context.

Even as the city contemplates changes to the housing stock to meet existing and future housing needs, it is important to note that the majority of residential neighborhoods in Willmar are guided to remain predominantly single-family housing. Growth and change will be directed to designated areas, as described in the Land-Use Chapter. Future housing policy will strike a balance between maintaining existing housing and adding needed new options.

This chapter provides an overview of existing housing conditions, issues and opportunities related to housing, aligning housing WITH Willmar's vision, and trends and strategies that can be utilized to improve housing within Willmar.

- Addressing changing needs and preferences in Willmar regarding housing type, size, style, and location will have implications both in areas of change and areas of stability citywide.
- Affordability may remain a central issue and challenge for Willmar in the coming years, as the community's range of housing options align with the needs of Willmar residents at all life stages and income levels.
- There is a need to provide housing for a broad range of people who wish to live, work, and attend school in Willmar. The city intends to preserve, create, and maintain an equitable community that promotes racial, ethnic, and socioeconomic diversity.

THE ROLE OF PLANNING IN HOUSING

Housing can have impact on several aspects on a community, including sustainability and the community's liability and financials. As sustainability becomes more of a pressing issue for municipalities, land-use has come under more scrutiny. Housing can play a huge role in advancing or threatening sustainability. For example, placing denser housing along a transit line is an ideal location for cities looking to reduce car trips and overall traffic in their community. This has also given rise to mixed-use developments that may have street level commercial uses with 3-5 stories of residential above. There has also been an effort to diversify uses in traditional neighborhoods, so more services and goods do not require a car trip. These trends are an effort to increase the efficiency of developed land.

Often, it is more cost effective for a city to serve denser infill development than to extend services from its current network. The availability of these services influences the livability for residents as well. The condition and quality of housing stock reflect what it is like to live in a community or neighborhood.

Planning is also responsible for helping guide development in a manner that best serves the public. This means matching economic development pursuits with available housing or pursuing new developments. Thoughtful ordinance changes can help identify sites that are ideal for infill development or find new opportunities in the market. Allowing accessory units to serve as residential dwellings has been a huge shift to increase affordable housing and help seniors age in place. Planning seeks to help match the housing to the community in the present and the future.

EXISTING CONDITIONS

Due to traditional land-use decisions, housing tends to be the predominant land-use in most small communities. Figuratively, housing forms the character and feel of a place becoming a defining characteristic of the community. A community's housing stock should reflect who lives and works in the community. Therefore, housing is a crucial part of the community's overall character and culture. There must be a balance between employment and housing, or there will be a demand to reach that equilibrium. For example, a push to pursue high wage employment centers will require market-rate or luxury housing. The same happens when communities pursue low-wage employment centers, and they lack affordable housing. However, a growing national problem is the lack of medium-density housing, including townhomes, rowhomes, and duplexes. The lack of medium-density housing has forced workers to get innovative with their housing and commute times. "Drive until you can afford it" has become the unofficial housing slogan for many Americans. This trend has led to sprawling housing stock and has created bedroom communities across the country. Willmar is no exception with its predominant housing options being single- and two-family homes throughout the community.

PRECEDENCE

Housing is undeniably a complicated issue with many facets, so Willmar has conducted several studies to help inform the City of the best practices for housing and what strategies can help lower housing costs and increase supply.

2022 Housing Task Force

In 2022, the City convened a taskforce of stakeholders across the community to help address the ongoing housing crisis in the city. This taskforce was made up of private businesses, non-profits, retired professionals, business owners, and local government officials. The objective of the taskforce was to review data and personal stories in these industries to try to develop a collaborative approach to address the housing issues in Willmar. The focus of the committee was to examine why single-family homes were not built in Willmar at the rate of other types of housing. Multiple remedies were explored such as land trusts, waiving permit fees, rehabbing dilapidated houses, HRA-led development, and

streamlining classes with Ridgewater College to provide labor. Ultimately, the recommendation from the taskforce was to create a joint board made up of the County and City that would continue to explore options for prioritizing new construction of single-family housing.

2015 Housing Study and Multi-Family Development

There was a housing study conducted in 2015 by Community Partners Research Inc. that highlighted some of the gaps in Willmar's housing stock. The study revealed a dearth of multi-family housing options in the city. Willmar needed to add 175 units to keep up with the growing demand for housing. There had been no large multi-family housing developments in the ten years prior in Willmar. This left the rental market incredibly strained without the flexibility to accommodate new growth.

From 2017 to 2022, Willmar saw an increase in large multi-family housing projects. Over the last five years, Willmar has been able to add 469 multi-family units to the housing stock. The bulk of the units have been at market rate, but some of the projects have been TIF-funded and require a minimum of 20% of the units to be affordable.

2022 Housing Study

This Housing Study was conducted to update the work of the 2015 Housing Study. The Study outlined several housing needs that must be addressed to keep pace with demand through 2030. By 2030, Willmar is projected to grow by roughly 2,700 people. These people will all need somewhere to live, creating a need for new developments within the City. Additionally, senior housing is projected to be the greatest need in the community for the next several years. However, it is important to consider that the consistent growth across all age groups will create housing demand across the spectrum for all housing types. New subdivisions for detached single-family homes along with townhomes will be needed to keep up with demand. A growing hole in the Willmar housing market is large dwelling units with more than three bedrooms. Willmar will need roughly 50 units with three or more bedrooms to fill this need. Willmar will also need to add 100 units of market

Downtown Willmar, Minnesota

rate senior housing. In total, Willmar will need to add roughly 195 units each year to meet demand for the projected growth across the community.

HOUSING AND DEMOGRAPHICS

Willmar has limited rental housing options and availability has been a major issue, as most rental complexes are full. New developments on the northwest and southeast sides of the city have opened options to better serve the rental housing market. These developments are geared towards market rate. There are roughly 4,000 registered rental properties in Willmar dispersed throughout the residential zones in the community. In total, 701 rental units are in the one- and two-family zoning districts of Willmar.

Housing development in Willmar needs to keep pace with Willmar's growing workforce. Employment in Willmar grew 32% from 2010 to 2018, with much of that growth occurring in the manufacturing, and healthcare/social services sectors. A slight majority of Willmar residents are also employed in the community, representing 53.3 percent of residents. However, over 8,000 people commute to Willmar to work, compared to the 4,300 Willmar residents that also work in the community. Housing growth has not kept up, and a broad range of housing is needed.

Housing Tenure

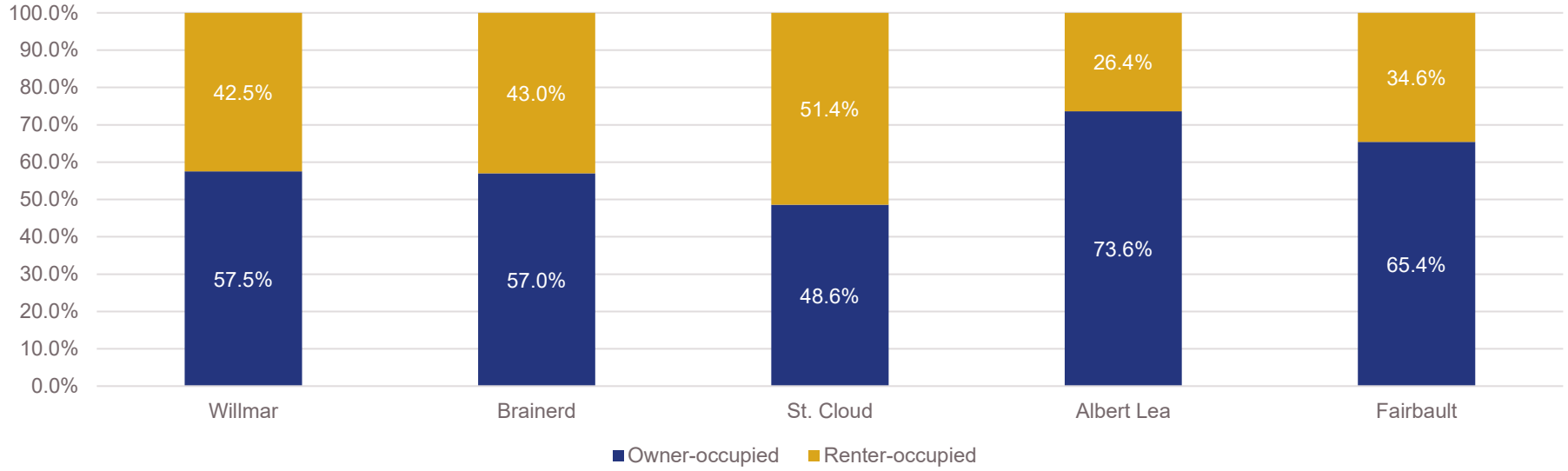
Housing tenure refers to the status of owning vs. renting a home. Many households own their property, whether free and clear, or are paying off a monthly mortgage. Owning a home is one of the biggest investments a household will make. Ownership provides an incentive to invest in one's property and retain property value. In addition, owners benefit from a fixed 30-year mortgage in that monthly payments are fixed over time. Throughout the U.S., the value of owner-occupied homes has risen significantly (along with costs) due to limited supply and increasing demand. Owner-occupied homes include traditional detached single-family homes, attached single-family homes (e.g., townhomes). Other arrangements provide an opportunity to own a housing unit independent of the land (e.g., condominiums and manufactured home parks).

Many homeowners start out as renters. Renting is typically a lower-cost option than owning but does not provide the opportunity to build equity. In addition, renting households do not benefit from federally subsidized mortgages and can be impacted by rent increases as markets change. Renting allows for greater mobility but provides less stability than owning. Renting households are not incentivized to maintain their property. Without reinvestment, aging rental properties can fall into disrepair.

Vacancy rates are another important metric to consider when planning future housing growth. Vacancy rates measure the percentage of housing that is not currently being lived in by anyone. Generally, a healthy rental vacancy rate is between 5 and 10 percent. A vacancy rate below 5 percent suggests high demand, which can lead to higher rents. A vacancy rate above 10 percent suggests oversupply, which can lead to lower rental prices and potential financial losses for landlords. Vacancy rates for rental housing stock are generally much higher than vacancy rates for owner-occupied homes, given the nature of short-term lease agreements and higher household mobility.

According to 2023 American Community Survey estimates, the City of Willmar's housing stock is 57.5 precent owner occupied. This ratio is similar to other regional centers throughout the state (see **Figure 6-1**).

Figure 6-1. Owner-Occupied and Renter-Occupied Housing



Source: American Community Survey, 2023

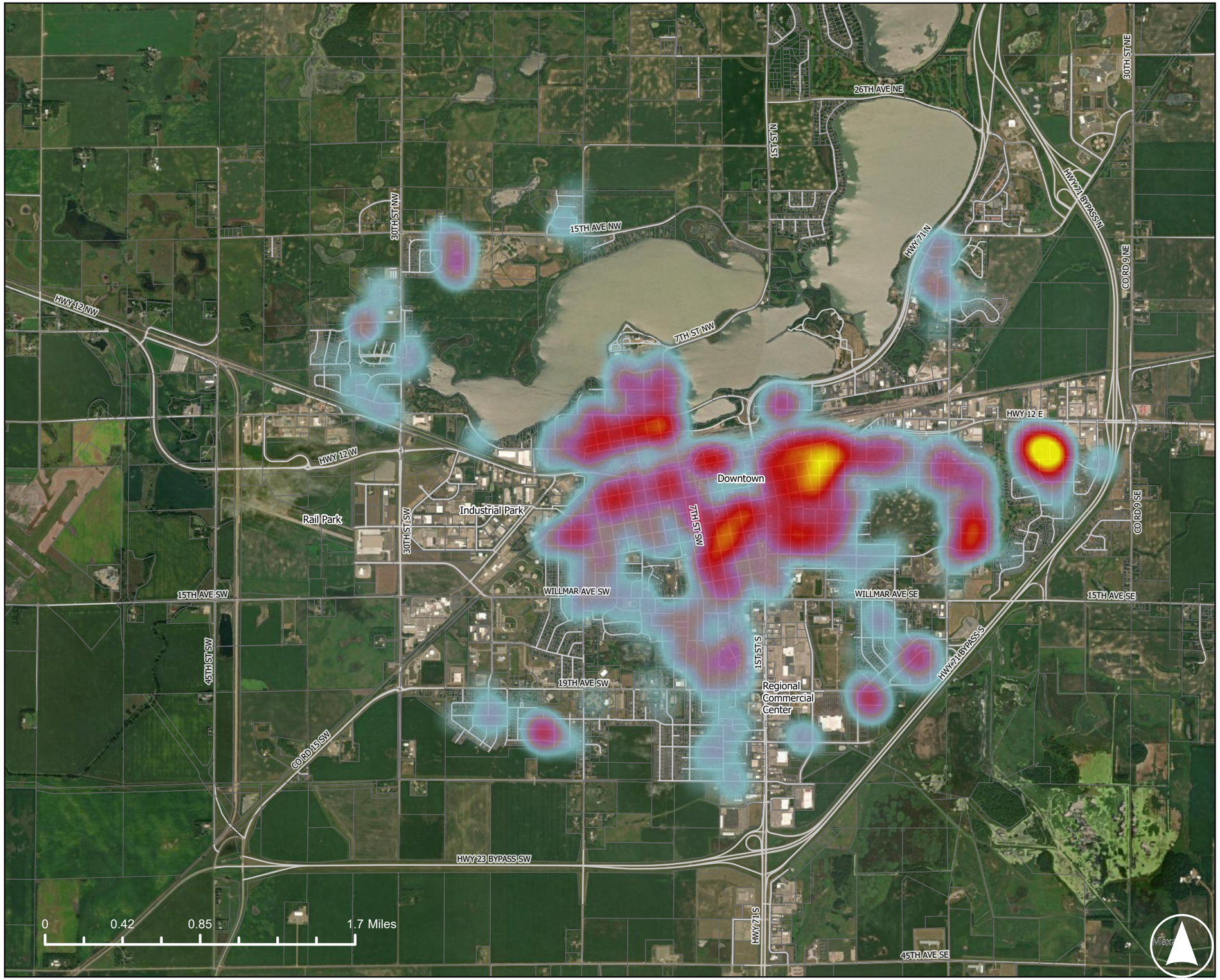
Rental Unit Density

The distribution of rental properties within a city is important to consider when planning for new community amenities and opportunities for growth. **Page 6-6** showcases the density of rental properties within Willmar. In general, rental properties are dispersed around the community, with greater amounts of rental units near the intersection of Highway 71 and Highway 12, downtown Willmar, and directly surrounding downtown. These areas have increased density and are likely to be able to support additional community amenities, including new businesses and public facilities.

Rental Unit Density

Sparse

Dense



WITH WILLMAR COMPREHENSIVE PLAN

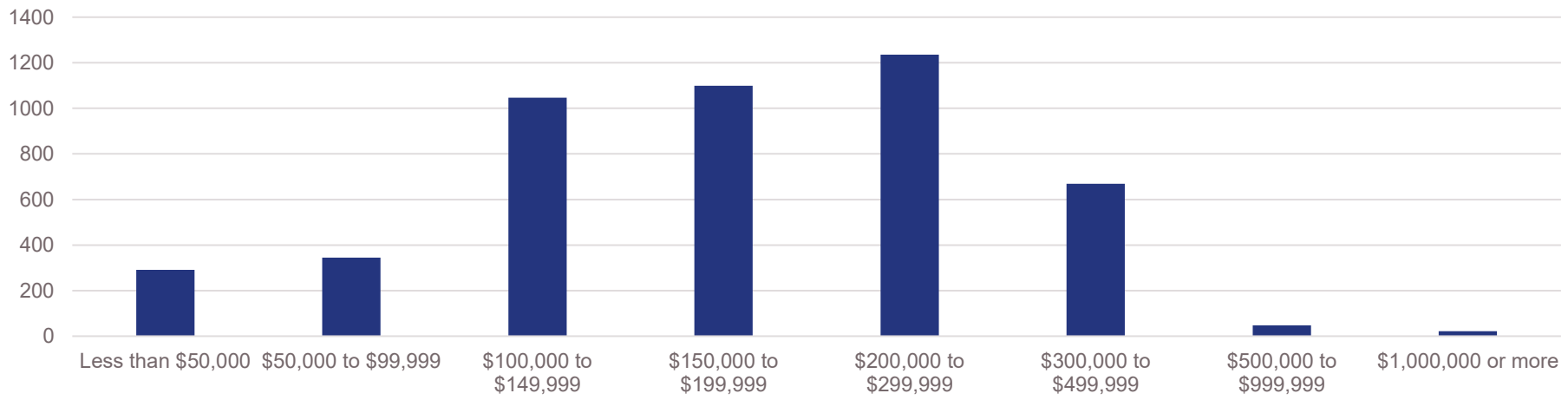
Ownership Statistics

Roughly 57.5% of residents in Willmar live within an owner-occupied residence as of 2023. A variety of factors influence a person's choice to own a home, including housing prices, amenities, and lifestyles.

Affordability

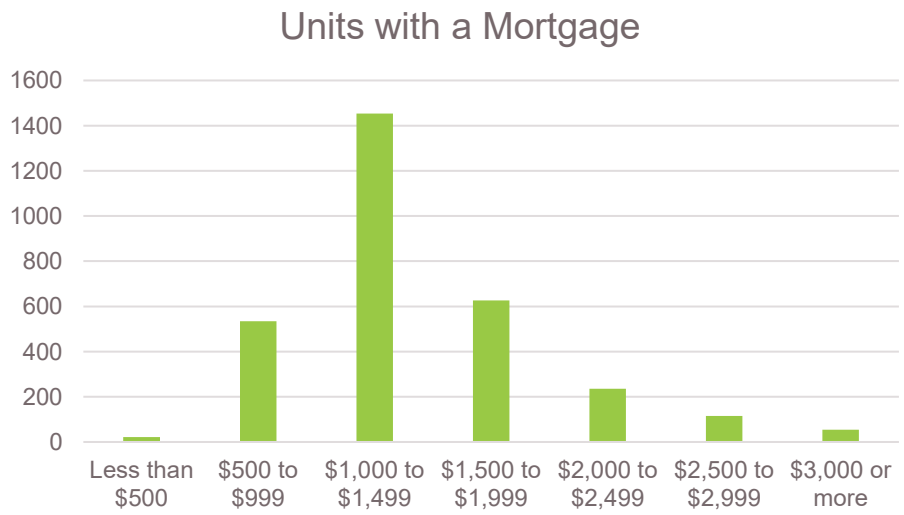
Willmar's housing market is similar to other regional cities, with most houses that go to the market being sold quickly. The average value of a home in Willmar is estimated to be $186,000 according to the 2023 American Community Survey estimate (see **Figure 6-3**). Of the 4,757 owner-occupied units in the community, nearly 64 percent currently have a mortgage. Owner-occupied homes with a mortgage have an average monthly housing cost of $1,346, while the average housing cost of those without a mortgage is $609 (see **Figure 6-4**).

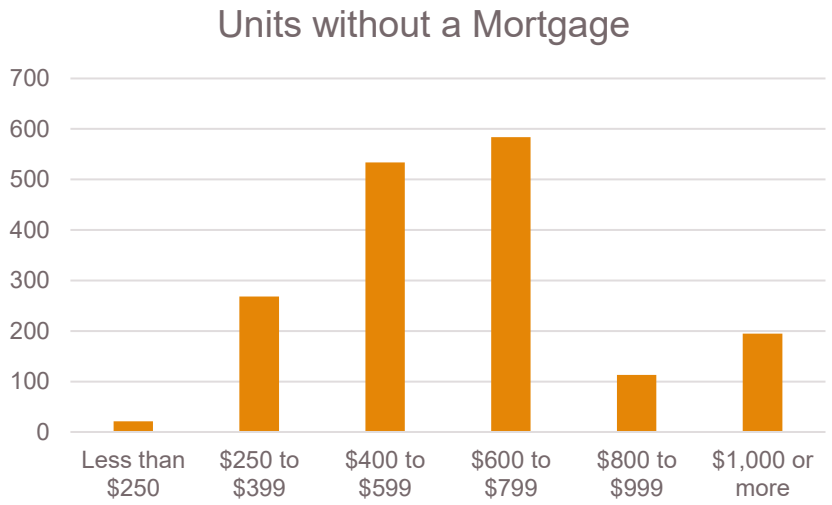
Figure 6-3. Owner-occupied Housing Value, 2023



Source: American Community Survey, 2023

Figure 6-4. Owner-occupied Average Housing Costs, 2023

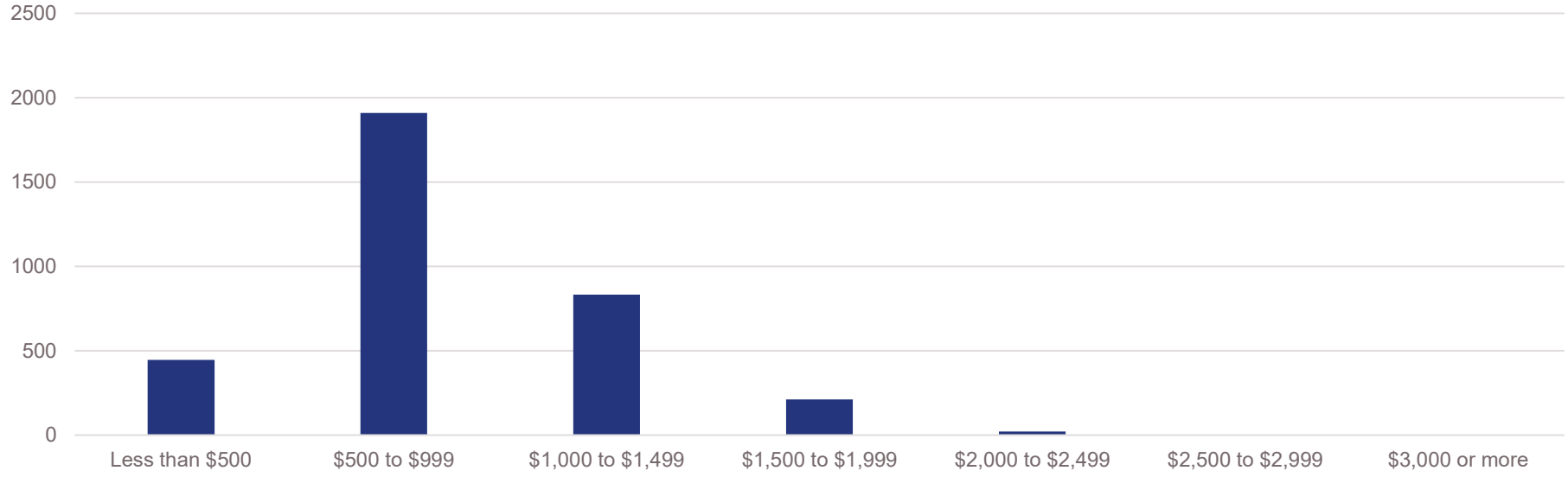




Source: American Community Survey, 2023

There are 3,422 occupied units in the community that pay an estimated over $830 per month in rent. Based upon the American Community Survey estimates, there are no units within the community that pay more than $2,500 per month (see **Figure 6-5**). For a $830 monthly payment to be considered affordable (approximately 30 percent of total income), the household will have to earn at least $33,200 annually. As of 2023, reports show that 9.2 percent of Willmar's households paying rent spend 30 to 34.9 percent of their total income on rent and 26.9 percent spend more than 30 percent of their total income on rent.

Figure 6-5. Monthly Rent Estimates, 2023

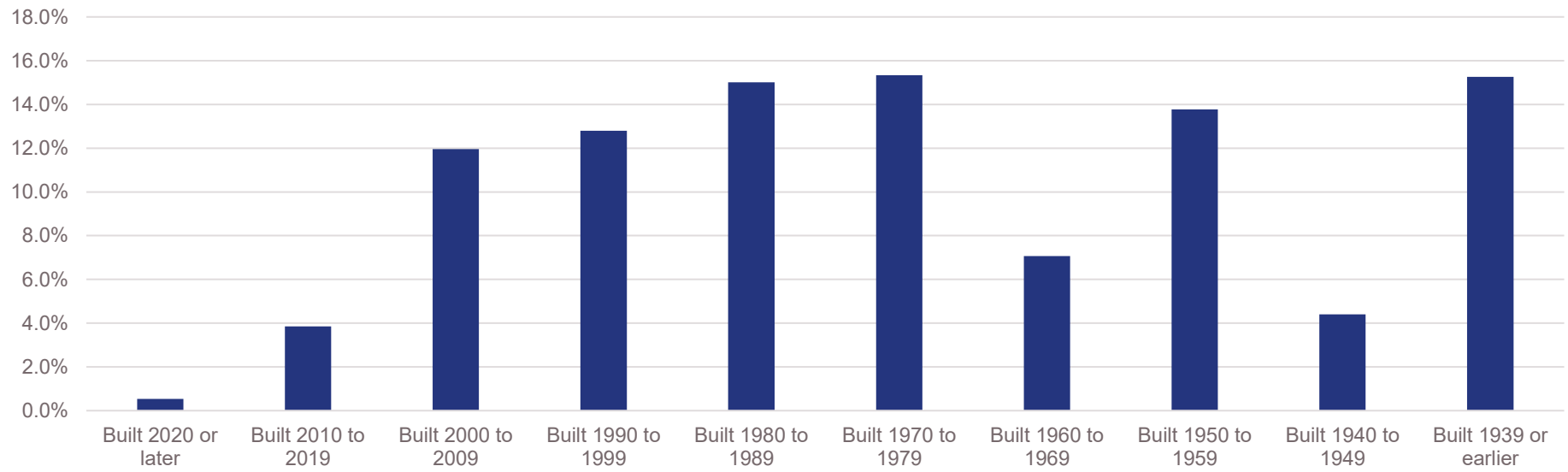


Source: American Community Survey, 2023

Housing Stock Age

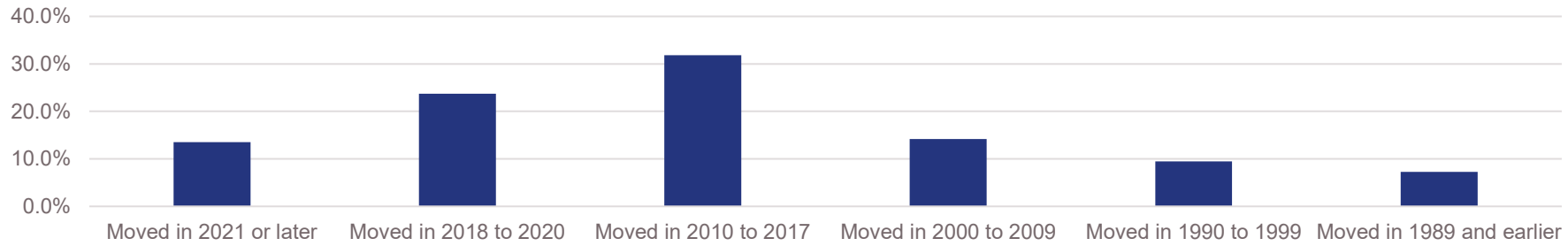
Willmar's housing stock is relatively diverse in age with 55% of the homes being built before 1980 (see **Figure 6-6**). There has been a push with new construction in some neighborhoods, but the older homes in the established neighborhoods give Willmar its cozy small-town charm.

Figure 6-6. Year Housing Built, 2023



Source: American Community Survey, 2023

Figure 6-7. Year Household Moved into Unit, 2023

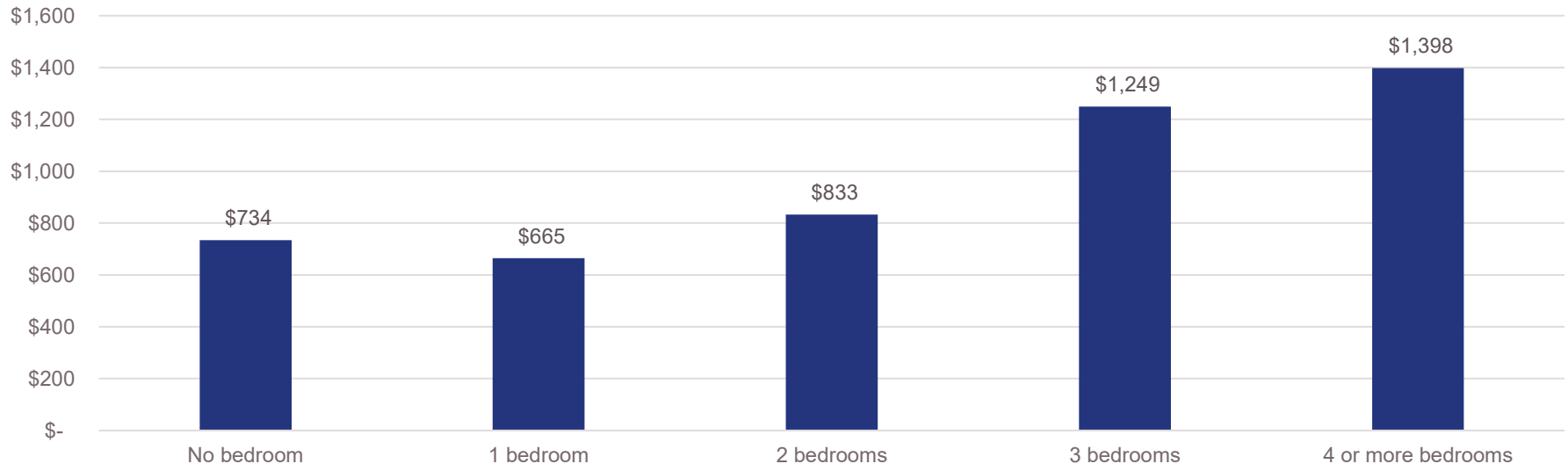


Source: American Community Survey, 2023

Renter Statistics

Since 2017, Willmar has introduced 469 rental units to the housing market. These units are disbursed along the northwest and southeast corners of Willmar, with the Block 25 Lofts constructed in the central business district. 48% of these units have one bedroom, 40% of these units have two bedrooms, and the remaining 12% have 3 bedrooms. The average household size of Willmar's rental population is 2.4. The average rent increases with the number of bedrooms per rental unit – from $665 for a one-bedroom to $1,398 for four or more bedrooms (see **Figure 6-8**). The city recognizes that many of these newer units cost more than the median reported by the latest census survey data. The medians for one- and two- bedroom units are estimated to rise over $1000 by the time official data becomes available.

Figure 6-8. Median Rent by Number of Bedrooms, 2023



Source: American Community Survey, 2023

Luxury and Affordable Apartments

In Willmar, a large amount of large-scale multi-family development is affordable housing with income restrictions. Availability is strained, so it may be necessary to study if more affordable units are needed to accommodate the needs of the community. However, there is also a shortage of market-rate and luxury apartments in the City. The Block 25 project in downtown Willmar, as well as several new multi-family buildings on the northwest and southeast sides of Willmar, are aiming to fill this need. Before this project, single-family homes and luxury duplexes were the only options for this subset of the community.

PLANNING NEEDS

The issue of housing presents several planning-related needs for the City of Willmar. In particular, the supply of medium density housing between apartments and single-family homes is not keeping up with demand, presenting problems for affordability and availability.

ISSUES

Medium-Density Housing

Like most cities, Willmar greatly lacks medium density housing, which includes townhomes, row homes, duplexes, and small multifamily (2-12 unit) apartments.

Density

Willmar lacks dense housing, which can promote sustainability and inclusivity by removing the need for a car, encouraging multi-modal means of travel.

OPPORTUNITIES

Sustainable Housing Developments

Denser housing developments which use sustainable construction methods and materials and guidelines such as LEED can reduce carbon emissions and increase resiliency and sustainability in the community. However, these design standards increase the cost of housing construction and must be balanced with affordability goals.

Townhomes and Generational Housing

Willmar can prioritize new building typologies that are inclusive to all residents, including more affordable townhomes, apartments, and 5 to 7-bedroom generational housing.

WITH WILLMAR GUIDING PRINCIPLES

Willmar's overall goals of being a sustainable, inclusive, innovative, and resilient community are reflected by the guiding principles of the Housing chapter. By addressing issues identified by residents, Willmar can achieve the city's overarching vision.

GUIDING PRINCIPLE	HOW HOUSING CAN SUPPORT
Sustainability	Willmar can encourage sustainability by promoting housing practices that push environmental stewardship, resource efficiency, and the long-term well-being of the community.
Inclusivity	Willmar can support inclusivity by fostering the development of a wide variety of housing for residents of all ages, cultures, and abilities.
Innovation	Willmar can support innovation by exploring incentives for housing developments that address a documented issue within Willmar in a new, sustainable manner.
Resilience	Willmar can promote resiliency in housing by integrating policies that enhance the adaptability and durability of the community during extreme weather events.

STRATEGIES

The housing needs of the community have changed considerably since the last Comprehensive Plan update. Several trends have emerged that have shifted consumer preferences in the wake of housing stock and affordability issues, and the advent of smart home technology. Willmar can implement strategies to align its housing with the goals of the community and the plan.

Aging in Place

As adults age, their housing needs may shift. Increasingly, older adults are choosing to remain in their homes rather than moving to an assisted living facility as they get older. These adults prefer single level living to avoid staircases as their mobility decreases. Willmar community members believe that there is a need for additional senior housing options within the community. Communities can implement policies and programs that will provide opportunities for older adults to age in place or move into a housing option that appropriately meets their needs. Willmar can prioritize and incentivize the construction of senior-focused housing, which includes single-level homes, assisted living facilities, and active 55+ communities. In addition, Willmar could implement programming and planning level efforts to help their older population safely

and independently age in place. Programming can assist with home maintenance or needed upgrades, such as accessibility improvements, and planning can ensure that housing is near goods and services and has access to public transportation.

RESOURCES	SOURCE	DETAIL
Aging in Place Toolkit	Community Housing Resource Center	Toolkit for government decision making to support aging in place.
Aging in Place Report	AARP	Report identifying livability policies and practices to support aging in place.

Addressing Housing Diversity

Local governments are increasingly aware of a lack of housing diversity within their communities, which includes duplexes, townhomes, rowhomes, and apartments with between 3 and 12 units. These housing options provide ownership opportunities for homebuyers who may not be able to afford a single-family home or want the amenities common in apartment and townhome communities. Lower density multifamily housing also provides increased opportunities for rental units, which helps provide a variety of housing at a variety of prices within a neighborhood.

To address medium-density housing, local governments have taken a variety of steps to increase construction and/or allow for the construction of new housing. One solution commonly taken by communities is allowing medium-density housing to be constructed in single-family neighborhoods. Since these housing types are built at a scale and form that is consistent with single-family neighborhoods (up- down duplexes, side-by-side rowhomes), they can be incorporated into the existing community without drastically changing the feel of the area. This will allow Willmar to increase residential densities while protecting the character of the existing community.

STRATEGIES

Alternative Construction Materials

Innovative, sustainable construction methods and materials are becoming increasingly common to help cities offset carbon emissions and lower their carbon footprint. Alternative building materials take a variety of forms, and new products are released frequently. Willmar can encourage alternative construction materials by expanding allowable building materials to include sustainable, innovative materials, such as those shown below.

Table 6-1. Example Alternative Building Materials

Material	Description and use
Reclaimed wood	Reclaimed wood is wood previously used in structures that have since been demolished. Reclaimed wood can be used to offset deforestation and is commonly seen in new construction as accent walls, non-load bearing walls, hardwood floors, and furniture.
Reclaimed bricks	Reclaimed bricks are bricks that were previously used in a structure that has since been demolished. Reclaimed bricks add historic character to a new construction and reduce the need for new bricks. Reclaimed bricks can be used for veneers and accent walls.
Recycled steel	Steel that has been salvaged from demolished buildings can be melted down, purified, then reused in new construction such as load-boarding beams and columns, non-load bearing walls, and other building metalwork. Recycled steel decreases the necessity of mining new material, increasing sustainability.
Precast concrete	Precast concrete is produced in a factory setting, then brought to a work site for use as load-bearing walls, foundations, and floors. Precast concrete increases the efficiency of the construction process, produces less waste, and uses less water than site-cast concrete.
Hempcrete	Hempcrete is an innovative building solution that is more lightweight and sustainable than traditional concrete. Hempcrete is made from hemp shives, lime, crushed aggregate, and water. This material can be used for non-load bearing walls, provides some insulation, and is a carbon sink.

Alternative Housing Typologies

New housing typologies are crucial to support a diverse and inclusive community within Willmar. Many families prefer housing that varies from standard single-family or apartment homes. Willmar can support and incentivize the construction of alternative housing typologies, which can both increase the stock of housing and allow for a diverse array of options for new and existing community members. Many of these typologies are not generally allowed by current zoning. Implementation of these typologies will require a zoning amendment or new zoning ordinance.

Table 6-2. Alternative Housing Typologies

Typology	Description
Multigenerational housing	Housing that accommodates large families, which includes several generations of family members (grandparents, parents, cousins, children, etc.) is becoming increasingly sought after by the community. Multigeneration housing

Typology	Description
	requires an increased number of bedrooms, bathrooms, and gathering spaces. Willmar can support the construction of 5–7-bedroom homes to accommodate multigenerational living situations, proving more options for the community.
Prefab homes	Prefabricated housing is constructed off-site, then brought to a parcel and attached to utilities and a foundation. Prefab homes are often modular and customizable, offering a variety of options for potential homeowners. They are cheaper to construct than traditional homes, providing a more affordable option for the community. It should be noted that prefab homes are a different housing typology than mobile homes.

Supporting Increased Density

One solution commonly utilized by communities to increase the housing stock without sprawling outward is allowing middle housing to be throughout the community. Since these housing types are built at a scale and form that is consistent with single-family neighborhoods (stacked duplexes, side-by-side rowhomes), they can be incorporated into the existing community without drastically changing the feel of the area. This will allow Willmar to increase residential densities while protecting the character of the existing community. Several homes in Willmar's established core neighborhoods are denser than single-family homes but do not detract from the character of the neighborhood. Potential changes to ordinances will simply bring these homes into compliance and allow for the construction of more of this typology. Zoning strategies can be implemented to encourage the development of denser housing, including:

- Allowing single-family housing, duplexes, and triplexes in districts that support the lowest residential development.
- Implementing form-based code in neighborhoods near downtown.
- Lowering or removing parking minimums.

In addition, financial incentives can be provided to facilitate the development of medium-density housing in both new neighborhoods and established ones.

Housing Stock Preservation

Preserving the existing housing stock is a common strategy that communities adopt to help maintain their supply of affordable housing. In many cases, preserving an existing home is more financially effective than building new housing because new construction costs more, more materials are needed, and takes time to build. Naturally affordable housing is often offset by the loss of existing housing through deterioration or abandonment. Funding opportunities exist that can allow a local community to support housing preservation efforts, including USDA Housing Preservation Grants.

"Naturally Occurring Affordable Housing" consists of older multifamily rental properties that meet affordability standards but are not subsidized by federal programs. Many of these properties were built between 1940 and 1990 and are at risk of being lost to deterioration or conversion to less affordable housing. Willmar can combine its housing preservation efforts with the identification of these properties to ensure that they are maintained in good condition as affordable housing units.

A variety of financial tools can be utilized by the city to support the preservation of the housing stock and maintenance of the local housing stock. Federal grant dollars are available through programs such as the Low-Income Housing Tax Credit (LIHTC), HOME grants, and Community Development Block Grants. Local programs may also be established.

Housing Needs Assessment

Monitoring housing needs and gaps helps to provide a community with current information to inform actions and investments. The City of Willmar should prepare regular housing assessments to monitor housing related progress and continue to identify needed investments and policy revisions.

Housing and residential neighborhoods provide a core part of the identity of Willmar for the community.

CHAPTER SEVEN:

ECONOMIC OPPORTUNITIES

INTRODUCTION

Willmar's local economy provides access to goods, services, and entertainment for not only residents and visitors, but for the greater region. Willmar plays an important role in the regional economy, as an employment center for high wage industries and as a regional hub that supports a robust medical, advanced manufacturing, agricultural businesses, biosciences, and a variety of support services. Willmar contributes to the region's economic diversity and strength and attracts talent to the region through its excellent health care, broad variety of housing options, great schools, shopping, recreation, dining, entertainment and other amenities important for having a high livability.

The Willmar community competes for talent and quality employment opportunities, not only with other regions in Minnesota, but also with communities across the Upper Midwest. The central Minnesota region ranks highly among its peers for several factors including job opportunities, educational attainment, livability, multi-modal transportation accessibility, recreation and business friendliness. In 2023, Willmar was ranked as the top Micropolitan community in Minnesota and 66th in the country. A vibrant local economy must strike a balance of a capable workforce, local services, and a growing demand. These are all considerations for the tools and resources that should be available in the community. In this plan, the Economic Development Chapter explores the role of economic development in the city's long-range planning. The purpose of this chapter is to highlight the data points and resources that should be referenced to support a thriving economy.

EXISTING CONDITIONS

Willmar's local economy provides a wide variety of jobs for a wide variety of people. Many industries operate within the city, including tech, manufacturing, retail, shipping, and warehousing. This diverse business community provides resilience to economic shocks, such as the COVID-19 pandemic.

EMPLOYMENT DEMOGRAPHICS

An important indicator of future growth and development in a community is its economic base. Community population growth patterns are largely determined by the employment opportunities provided in a city. Although Willmar has a diversified economic base, agricultural production and agri-business are the chief industries of the city and surrounding area. Willmar has also established itself as a regional center for medical/professional/financial services, education, government, transportation, and wholesale and retail trade.

Overall

A total of 18,531 jobs were identified in the city as of 2020, representing an increase of 33.4 percent from 2010.

Table 7-1. Employee Trends

Year	Employed Persons	Increase	Percentage Growth
1990	**12,421**		
1995	**14,740**	2,319	18.7%
2000	**16,143**	1,403	9.5%
2005	**16,769**	626	3.9%
2010	**13,891**	-2,878	-17.2%
2015	**17,381**	3,490	25.1%
2020	**18,531**	1,150	6.6%
2023	**16,963**	-1,568	-8.5%

Source: US Census, American Community Survey

Industrial

Below are the major Industrial employers within the City of Willmar.

Table 7-2. Major Industrial Employers

Company	Product/Service	Employees
Jennie-O Turkey Store	Turkey Processing	5,000 to 9,999
FedEx	Logistics	100 to 249
Burlington Northern-Santa Fe Railroad	Rail Transportation	100 to 249
RELCO	Technology	100 to 249
West Central Steel/Central MN Fabricating	Other Fabricated Metal Product	50 to 99
Gurley Foods	Food Manufacturing	100 to 249

DIVERSE BUSINESS OPPORTUNITIES

Kandiyohi County is home to a diverse and skilled set of companies with global reach. Historical roots in agriculture have made Kandiyohi County an Agricultural Technology hub. The Advanced Manufacturing industry originating here reaches hundreds of companies in dozens of countries on six different continents. Kandiyohi County is a regional medical epicenter, with the state's largest community-owned hospital serving 14 counties. There are numerous clinics offering superior medical care in more than 40 specialties. With the area lakes drawing thousands of visitors each year, Kandiyohi County has developed into a major retail and dining hub, pumping nearly $800 million into the county's economy every year.

Developers continue to add value with new retail and services in Willmar's commercial districts. Likewise, many commercial properties are being renovated to reposition their stores and office buildings in their market. This has been done through façade renovations, interior remodeling, new businesses moving into Willmar, and existing businesses moving to newly built facilities. Some improvements are a result of spin-off companies redefining their management, sales and technology, production and warehousing functions into new locations and buildings that work well for their emerging operations. These transitions expand employment opportunities to undeveloped areas and converted buildings.

Employment opportunities in Willmar are primarily concentrated along arterial roads, such as 1st Street (Business HWY 71/MN HWY 23), Highway 12, 19th Avenue, and County Road 5. Employers value locations that give them access to a regionally diverse talent pool.

Willmar Building, downtown Willmar

Willmar continues to see a steady increase in the number of workers aged 20-44 years, and Latino and East African working populations increasingly contribute to the city's workforce. "The way this community has embraced its growing workforce, its immigrant workforce, and is navigating those challenges is really a model for the rest of the state," stated Steve Grove, MN DEED Commissioner.

INDUSTRIAL

The American economy has been shifting away from manufacturing and has decentralized once massive urban industrial land-uses. This has left cities with massive mills, smokestacks, plants, etc., outlasting the industry that built them. Some cities have taken a historic preservation approach to preserve the buildings and update the uses with coworking spaces or housing. This has given rise to a nationwide brownfield redevelopment effort in places with obsolete industrial sites. Brownfield sites have some form of pollution from past use, and it requires rehabilitation in some capacity before it can be repurposed. When this is done correctly, cities can maintain their historic identity through repurpose of the old to embrace the new.

Site selection is a major part of locating industrial uses. The main factors are access to highways/interstates and utilities. Governments at every level recruit big industry to come to their region to boost employment, but the key factors will always be affordable power, access to water, and access to a reliable transportation network. Nationally, 90% of industrial parks are located within 2 miles of a major highway system. Most of the industrial development within Willmar is in the vicinity of the former airport. These industrial areas are located north of the former airport and south of U.S. Highway 12, south of the former airport along Willmar Avenue and 22nd St. SW, and northeast of the airport where the 200-acres Willmar Industrial Park is located. U.S. Highway 12, MN Highway 23, MN Highway 40, and the BNSF Railway provide transportation access to this area. The completion of the new airport in 2006 freed up the old airport for industrial park expansion.

Other areas of industrial development are along the BNSF railroad directly west and east of downtown, and west of Lakeland Drive. Scattered industrial uses exist at various locations throughout the city. Scattered parcels of undeveloped land exist within the developed portions of the city, as well as in the fringe areas. Undeveloped lands include those currently vacant or used for agriculture. These areas are zoned for agricultural, industrial, commercial, residential or open space uses.

Shovel-Ready Industrial Sites

In 2016, the City of Willmar and the Economic Development Commission pursued the Shovel-Ready Site Certification from the Minnesota Department of Employment and Economic Development (DEED). The Shovel-Ready certification serves as an indicator that a site on the market is suitable for development upon purchase and approval. Developers of these lots are provided with readily available land surveys, soil analysis, environmental studies, and infrastructure engineering. The Shovel-Ready sites serve as an incentive for industrial development to occur in Willmar's industrial park. The Shovel-Ready sites are located on the former airport property along County Road 5.

Figure 7-2. Shovel-Ready Development Sites

TECHNOLOGY AND RESEARCH

The MinnWest Technology Campus is a Willmar business community and home to approximately 30 companies. MinnWest Technology Campus is where innovation creates a collaborative network of talent and expertise in the areas of agribusiness, bioscience, and technology. Among them are national and global leaders in their industries.

COMMERCIAL AND RETAIL

The U.S. retail sector has been transforming as consumers increasingly shop online and enjoy free home delivery. Consequently, onsite retailers are forced to rethink their role and explore new ways to successfully diversify their sales strategies. These changes are expressed in higher vacancies and turnover in the retail sector.

From a real estate perspective, technology and other trends may have the following impacts:

- As online sales increase, onsite retail stores may become less prevalent
- As onsite purchases diminish, there will be fewer retail jobs
- Wellness facilities may see growth in size, quality and options
- Retail and leisure may unite at cinemas, restaurants, bars, and recreation centers
- Consumers may trend towards product and service “experiences”

Willmar’s retail offerings are anchored by national & regional chains with local businesses filling out the balance of the retail sector.

Higher-end services and retail exist in limited scope and of small size. Retail is slowly adapting to better serve customers as online shopping, teleworking and online education expand. Willmar's commercial retail sectors are clustered at the major corridors of Highway 12, Highway 23 and 1st Street.

Small Commercial Business

Willmar's small commercial businesses provide services and conveniences to area residents that enhance a sense of community. These businesses are often family-owned and contribute to a vibrant entrepreneurial ecosystem. However, such businesses can experience challenging transitions when owners retire, sell, or pass businesses or properties to the next generation of family and/or business partners, or new owners. Programs, such as KCED's Elevate Community Business Academy, are critical to support the small business community.

Reinvestment in real estate varies significantly, most often in relation to owner goals or market demands. In some cases, commercial and retail uses are no longer as viable or competitive as online shopping, teleworking and online education increase. Some examples include:

- Transition of downtown sites to new mixed use (housing, retail and small commercial)
- Redevelopment of 1st Street and Minnesota Ave to a line of retail (New Caribou and Dominos locations).
- Traditionally, churches, schools, and parks have been the primary neighborhood services, but there is an appetite to amend the Zoning Code to allow neighborhood commercial nodes that provide services and retail closer to people's homes.

Collaboration

Maximizing engagement to vet and gain ideas with commercial property owners is critical to developing a regular and effective marketing schedule, promoting and incentivizing correct development, and continuously enhancing business opportunities in Willmar. Because change is occurring on so many

Small commercial downtown

fronts at once – demographic, transportation, housing, technology, and the growing transitions to online shopping, teleworking, and distance education – is especially important for businesses and multifamily housing owners to share information and strategies for the community to continuously and successfully adapt over time.

Well organized and supported business and property owner associations could expand several vital functions to maintain economic vitality in the various commercial communities across Willmar. Key functions might include:

- Clarifying annual vision and monthly strategy for each commercial neighborhood, including strategic housing goals for each area in support of local businesses.
- Collaboration with commercial property stakeholders for event sponsorship and participation.
- Strengthening design and appearance standards for new and renovated development.
- Establishing a weekly marketing and promotion program on television, radio and newspaper that showcases individual and community events, amenities, and new happenings.
- Coordinate shared parking, interior parking, shared vehicle, multi-modal and other transportation strategies that strengthen Willmar's mixed-use districts.
- Support business development through targeted marketing strategies with partners, such as Kandiyohi County, KCED, Chamber of Commerce, and others.

HEALTHCARE

The healthcare sector is one of the fastest growing segments of the national economy. There are currently over 4,000 healthcare jobs in Kandiyohi County, making it the area's top industry. Growth is expected to continue as the "Baby Boom" generation creates increased demand for medical services. Kandiyohi County's age 65+ population, which typically accounts for the highest per capita health care spending, is expected to grow by 11% between 2020 and 2030.

Some notable trends that have recently occurred in this sector include:

- Many specialty clinics, medical offices and other facilities now prefer proximity to hospital campuses.
- In addition to an aging population, investment in new technology is driving facility renovation and new construction.
- Cost containment is driving a trend to lower cost delivery settings, including medical office buildings, urgent care and day-surgery facilities.
- New payment systems favor medical office space that creates opportunities for collaboration to help providers minimize costs and maximize outcomes.
- Patient recovery in hotels is becoming increasingly commonplace. Located near medical campuses, these small hotels remove patients from high-cost hospital beds, while allowing them to conveniently access medical services. Such hotels can also serve family members of hospitalized patients. Several such facilities have been created in the MSP metro area in recent years, including

Hilton hotels near Abbott Northwestern and TRIA Orthopedic in Bloomington and a Marriott Courtyard near TRIA Orthopedic in Woodbury. For these reasons, and the lack of a downtown hotel in Willmar, there appears to be a need for a hotel that is connected to the CentraCare (formerly Rice) Hospital.

Medical offices can also generate a significant tax base and diverse employment opportunities, while providing important services to residents of Willmar and West Central Minnesota. As the retail footprint shrinks and changes, the growth of the healthcare sector presents an important opportunity for the community.

INTERGOVERNMENTAL COOPERATION

Minnesota cities receive their authority to cooperate with other units of government from state law. The Joint Powers Act provides broad authority for intergovernmental cooperation. In addition, other statutes authorize cooperation between cities and other units of government for specific projects and programs. Under the Joint Powers Act, any city may enter into an agreement with one or more governmental units to cooperatively exercise powers that are common to all parties. For the purposes of the Act, the term “governmental unit” includes:

- Cities
- Counties
- Towns
- School districts
- Service cooperative under Minn. Stat. § 123A.21
- Independent nonprofit firefighting corporations
- Other political subdivisions of this or another state
- Other states
- Federally recognized Tribes
- The University of Minnesota
- The Minnesota Historical Society
- Licensed nonprofit hospitals
- Certified rehabilitation facilities and extended employment providers
- Certain licensed day and supported employment services
- Any agency of the State of Minnesota
- Any agency of the United States
- Any “instrumentality of a government unit having independent policymaking and appropriating authority”

Below are two of the City of Willmar's key Intergovernmental relationships:

Economic Development Commission (EDC)

The City of Willmar works closely with Kandiyohi County and City of Willmar Economic Development Commission (KCED) to promote economic development activity by attracting new businesses, assisting with expansion, retaining existing businesses, and promoting rehabilitation and/or redevelopment of areas. The KCED plays a critical role in advising and making recommendations on all economic development matters in Willmar and Kandiyohi County. KCED's mission is to be a catalyst for economic growth for Kandiyohi County.

From the KCED's website:

Willmar has the fastest growing population of diverse individuals outside of the Twin Cities Metropolitan Area. Located in the heart of West Central Minnesota, the City of Willmar has connections to the busiest north/south and east/west railway. The city boasts not only an expansive shovel-ready industrial park, but also a thriving technology park on a historic campus. Willmar has a diversified economic base of agricultural production and agri-business that create a synergy of related industrial and technology companies that form the chief industries of the city and surrounding area. Willmar has also established itself as a regional center for medical, financial, education, government, transportation, wholesale and retail trade. There is also a diverse small business and retail community throughout the city. Willmar was designated an All-America City in 2005 and is a designated Main Street community. The city has supported a "Renaissance Zone" and "Opportunity Zone" to encourage development in specific corridors.

Orderly Annexation

Intergovernmental cooperation also includes orderly annexation agreements. The City of Willmar shall seek an orderly annexation agreement with surrounding townships. The city and townships generally agree that City governments most efficiently provide government services in areas developed for residential, commercial, industrial, and governmental uses. Agreements recognize that orderly urban development using city services in a responsible, controlled and environmentally sound manner is in the best interest of the entire community and region. The City of Willmar and township also recognize that orderly annexation and development of areas designated in annexation-agreements are effective in ensuring the public health, safety, and welfare by providing for logical community development and extension of city services as urban development occurs.

PLANNING NEEDS

With changing economic conditions and consumer preferences moving away from physical stores, several planning-related needs arise that challenge the economic landscape of Willmar. It will be important to continue to diversify Willmar's economy to prevent any economic uncertainty from harming the community.

PLANNING NEEDS

Maintaining Economic Competitiveness

With shifting consumer preferences and changing economic conditions, it is important that Willmar work to diversify its economy to allow for fluctuation without hurting the local economy. In addition, Willmar will need to continue competing with nearby regional hubs for jobs and residents.

Access to Jobs for All

Housing and jobs are generally separated into different areas within the city of Willmar. This creates issues or those who cannot drive or do not live near job centers.

Innovative Technology

Technology is rapidly innovating the economy and Willmar should stay at the forefront of new technological trends to maintain competitiveness with other cities.

Rail Park Expansion

The relocation of Willmar's airport poses new opportunities for development in the expanded rail park..

Industrial Park Growth

The growth of the warehousing industry provides an opportunity to attract new industrial businesses to Willmar that can bring new jobs and services to the community.

Highway 12 Extension

The Willmar Wye (Highway 12) was completed in 2022, realigning Highway 12, Highway 40, and the railroad tracks, providing new opportunities for industrial uses along the corridor between the existing railroad and the new Highway 12.

WITH WILLMAR GUIDING PRINCIPLES

Willmar's overall goals of being a sustainable, inclusive, innovative, and resilient community are reflected by the guiding principles of the Economic Development chapter. By addressing issues identified by residents, Willmar can achieve the city's overarching vision.

GUIDING PRINCIPLE	HOW ECONOMIC DEVELOPMENT CAN SUPPORT
Sustainability	Willmar should encourage carbon-friendly economic developments that can help mitigate the impacts of climate change on the community.
Inclusivity	Willmar should ensure that all residents have access to jobs and services, regardless of their choice of transportation.
Innovation	Willmar should continue to attract a diverse array of businesses to support the regional growth and changing economy.
Resilience	Willmar should build a diverse economy that includes a variety of industries that support the regional and state economy that can respond to state and federal policy and economic status changes.

STRATEGIES

Willmar's economic development industries are affected by various trends, particularly as technology continues to innovate and consumer preferences change. Willmar can use several strategies to create a resilient and adaptive economy, less likely to be affected by economic downturn or obsolescence.

STRATEGIES

Autonomous Freight/Rail Innovation

Innovative technologies are being developed and released that have the potential to reshape the entire freight and logistics industry. Autonomous vehicles, including autonomous freight trucks, can increase efficiency but require improvements to infrastructure in order to

operate. Willmar should monitor trends in autonomous vehicles and update infrastructure to support the growth and development of autonomous trucking in Willmar.

Rail freight has also seen technology innovations over recent decades with the increase in technology. Potential innovations on rail have implications within Willmar as the city seeks to expand the industrial rail park and create new rail-focused industrial properties.

Artificial Intelligence and Data Centers

A recent technological innovation has been the creation of consumer-focused artificial intelligence (AI). These powerful AI tools require immense amounts of data to operate, which is stored in data centers all over the world. Willmar could establish a data center ordinance regulating the construction of new data centers. Because Willmar is a regional hub for central Minnesota, it is possible that developers may propose data centers within the city. These data centers use a large amount of energy, potentially producing negative environmental impacts. They also produce excess amounts of noise from generators and electrical utilities. Further research should be conducted to determine potential adverse effects of data centers in Willmar, and these effects should be weighed against potential benefits.

COVID-19 Implications

The COVID-19 pandemic uprooted economic development and changed the way people purchased goods. More people working remotely, shopping online, and staying home led to a rapid increase in products being delivered from warehouses to homes. As Willmar is a regional hub for central Minnesota, many products are produced, stored, and shipped from the city. However, this translated to fewer people traveling to regional hubs for shopping, leading to a decline in brick-and-mortar retail stores. Because Willmar is a regional hub, its retail sector has had a negative impact due to the pandemic. Strip malls and shopping centers around the country are struggling, which could provide opportunities for redevelopment into mixed-use retail, housing, and office use. Manufacturing uses, such as those at Jennie-O, have seen declines due to outsourcing, economic challenges, and outside issues such as the avian influenza outbreak. Hormel, Jennie-O's owner, shifted production at the smaller Plant-1 in Willmar to Research & Development/Storage and a Wisconsin facility from turkey processing to value-added products. It is important that both retail and industrial uses are diversified to account for the decline of any sector. This will increase the adaptability and resiliency of Willmar's community.

Strengthening a Diverse and Inclusive Workforce

Willmar's community is proud of its diversity and inclusiveness. This pride should be reflected in the city's workforce, as a place of opportunity for people from all backgrounds. Willmar should actively and continually engage with diverse communities to determine their workforce needs and enact policies that work to achieve their needs.

Broadband Infrastructure

Increasing access to broadband infrastructure has been shown to increase economic growth, especially in rural communities. Broadband infrastructure is increasingly required as businesses become more reliant on the internet for daily needs. Partnering with telecommunications companies to increase broadband infrastructure within Willmar will provide businesses with new growth opportunities and give Willmar an edge over other small regional hubs.

The Minnesota Department of Employment and Economic Development (DEED) maintains the Minnesota Broadband Map, identifying locations served or underserved by broadband. As of December 2024, many residential and businesses throughout the community are served by broadband at a speed of at least 100 Mbps. There are many sites within the Industrial and Rail Parks that are identified as underserved, with speeds of less than 25 Mbps. There are several sites outside of the community that are also served at this level. Some of these areas may be eligible for funding programs for the construction of broadband infrastructure.

Office building downtown

Intergovernmental Cooperation

To facilitate economic development expansion, Willmar can form new relationships with other governments at the local, county, regional, state, and federal level. These relationships can create key economic opportunities for new and existing businesses in the city. Willmar already has an established Economic Development Commission, but additional partnerships should be explored as needs arise.

Industrial Rail Park

Willmar's expanded industrial rail park provides a plethora of new economic opportunities for the community. With potential new rail spurs, rail-oriented industrial developments should be prioritized to maximize the use of the new industrial park.

Downtown Mixed-Use

CHAPTER EIGHT:

NATURAL RESOURCES + RESILIENCY

INTRODUCTION

Bench overlooking Willmar Lake

The natural environment is important to a community's sense of place and identity. Lakes and rivers serve as recreational havens for residents; wetlands provide homes for terrestrial and aquatic species; and precipitation sustains crops, grasses, trees, and other vegetation. The natural resources of a city are among the most significant factors that make residents proud of their community and willing to further invest in its betterment. It is the responsibility of the city to protect and improve the natural resources that exist within its boundaries so future generations can continue to enjoy them. Natural resources are sensitive to damage by the growth and change of cities. Urban sprawl, the use of fertilizers, impervious surface runoff issues, and pollution are all factors that can negatively affect the environment. This Plan outlines the natural resources within Willmar and offers recommendations to improve the conservation and protection of the physical environment within the city.

EXISTING CONDITIONS

Willmar's residents take pride in their community in part because of its physical environment. The climate, open spaces, lakes, and wetlands all contribute to the natural beauty and unique amenities of the city, which should be responsibly maintained and protected. Residents love Willmar's abundant natural resources, which are outlined in this section.

CLIMATE AND PRECIPITATION

Because of its location near the center of North America, the Willmar area is subject to a variety of air masses that affect the amount of precipitation that falls here. During the winter months, cold, dry continental polar air dominates the region. Hot, dry continental tropical air

masses from the desert southwest, along with warm, moist maritime tropical air masses that originate over the Gulf of Mexico, are common during the summer months. Spring and Fall serve as transition periods, with fluctuations in temperatures and precipitation. Monthly average precipitation recorded by the National Weather Service ranges from 0.62 inches to 5.16 inches (see **Table 8-1**). Willmar has a recorded average annual precipitation of 28.21 inches. The temperature range for the community is also tracked on a quarterly basis by the National Weather Service.

Table 8-1. Monthly Precipitation Averages and Temperature Ranges (1971 - 2000)

Month	Average Precipitation (inches)	Temperature Range
January	0.82”	0 to 19 F
February	0.62”	--
March	1.54”	--
April	2.13”	34 to 55F
May	3.22”	--
June	5.16”	--
July	3.76”	61 to 86F
August	3.78”	--
September	2.80”	--
October	2.17”	36 to 58 F
November	1,55”	--
December	0.66”	--

WATERSHEDS AND TOPOGRAPHY

Willmar is part of two major watersheds: the Hawk Creek Watershed to the north and west and the South Fork Crow River Watershed to the south and east (see **Figure 8-1**).

Hawk Creek Watershed

The Hawk Creek Watershed covers approximately 975 total square miles, which includes 254 square miles of southwestern Kandiyohi County, and is characterized by a gently twisting till plain formed during the advance of the Des Moines Lobe glacial lobe. Groundwater flows

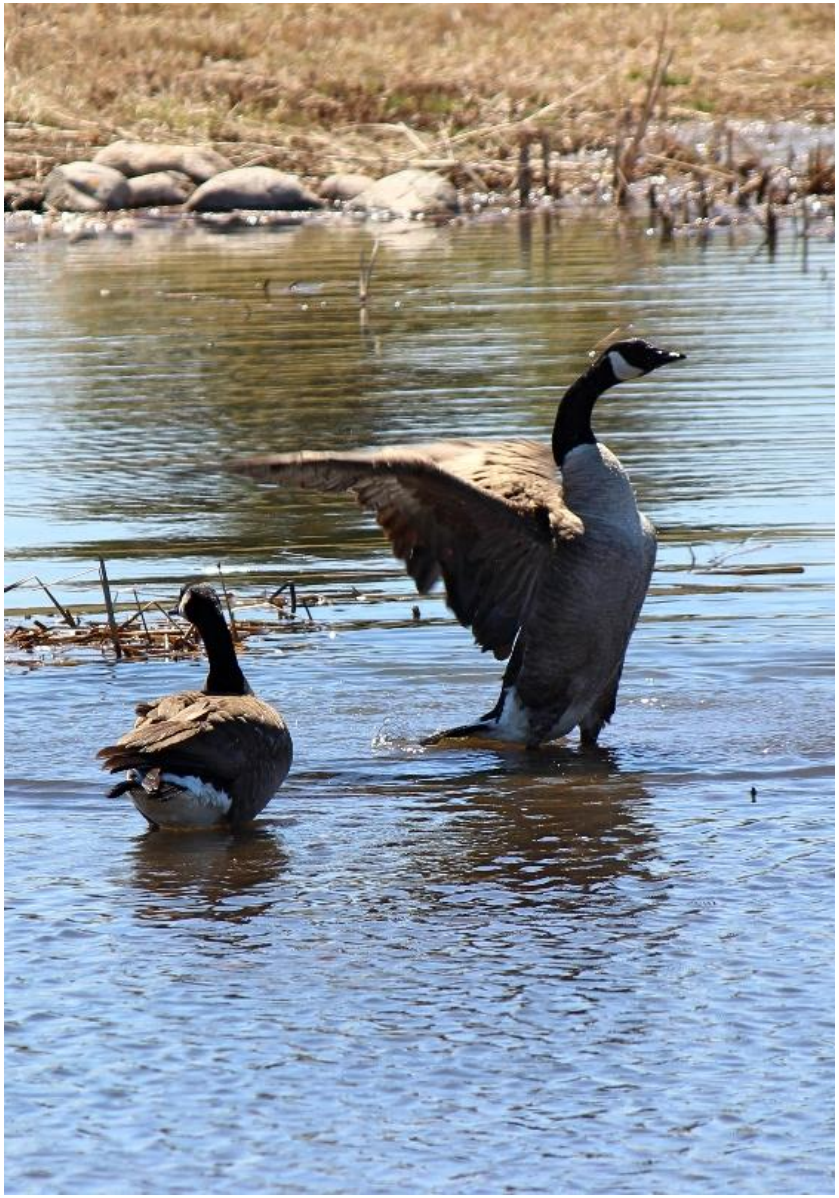
southwestward. Cretaceous sandstone aquifers are present over most of this area, but groundwater yields in many places are minimal as aquifers are less than ten feet thick. The northern and western portions of Willmar drain into the Hawk Creek Watershed. Elevations are flat within the watershed, ranging from 1,070 to 1,130 feet above sea level. The elevation of Willmar is approximately 1,126 feet above sea level.

The Hawk Creek – Middle Minnesota Comprehensive Watershed Management Plan was adopted in November 2021, establishing goals and strategies for managing the land and water resources with the watershed for the next ten years.

South Fork Crow River Watershed

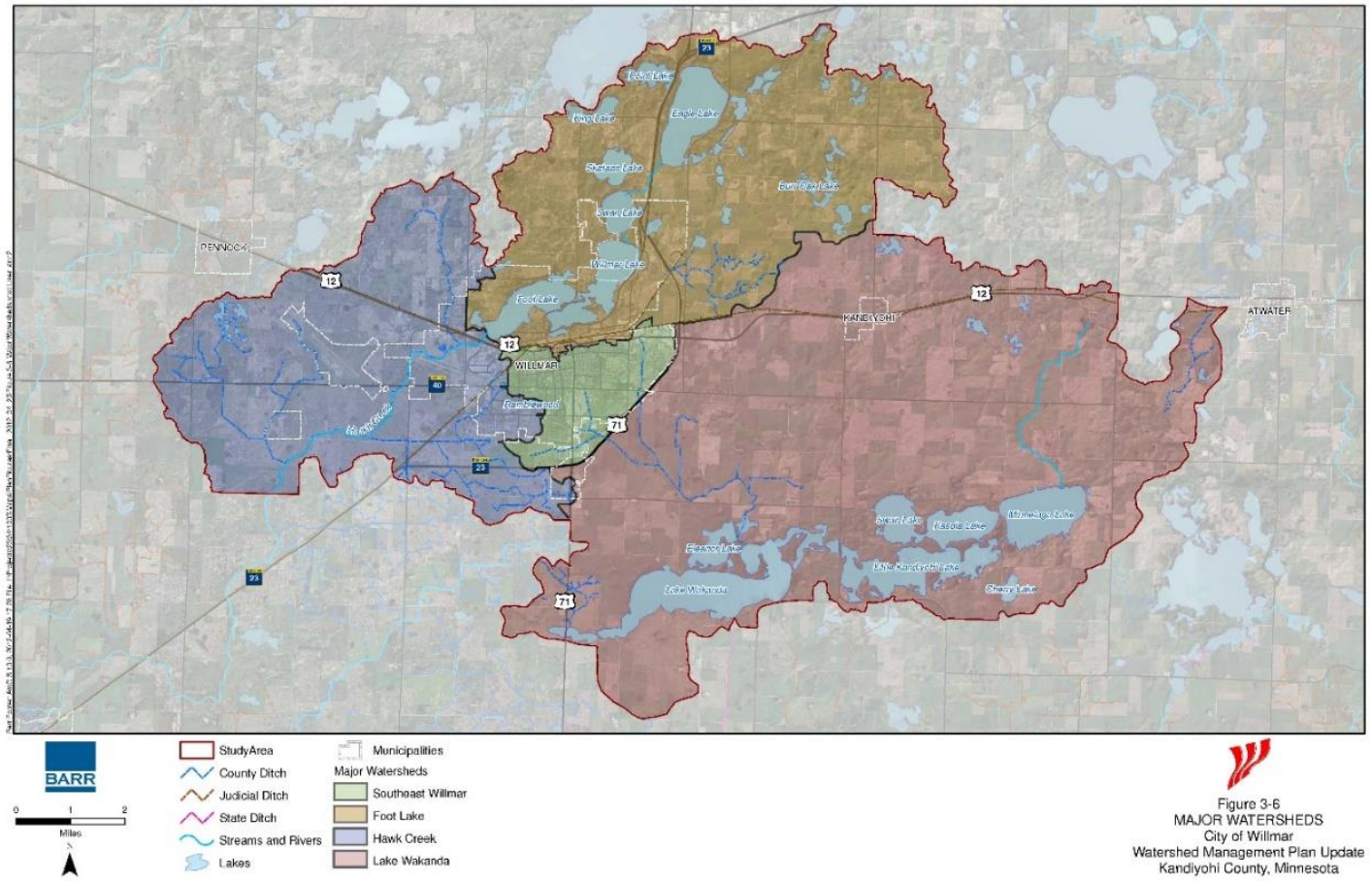
The South Fork Crow River Watershed covers approximately 1,279 total square miles including 218 square miles of southeastern Kandiyohi County. Groundwater flows west to east. The topography of this watershed is characterized by a gently rolling plain. This plain has a mantle of silty lake deposits. Cretaceous sedimentary rocks are present in the western two-thirds of the watershed, while Cambrian sedimentary rocks underlie the remaining eastern portion. The southern and eastern portions of Willmar drain to the South Fork Crow River Watershed. Like the Hawk Creek Watershed, elevations are flat within this watershed.

The South Fork Crow River Comprehensive Watershed Management Plan was completed in 2024 and includes projects and strategies for the wise use of land and water in the watershed. Both Comprehensive Watershed Management Plans include a variety of targeted voluntary conservation activities and best management practices that aim to improve water quality in measurable ways.



Canada Geese bathing

Figure 8-1. Major Watersheds



SOILS

It is important to review the natural resources in the area when considering future development so that sensitive ecological areas are not negatively impacted. Certain soil types are more conducive to development than others due to their physical properties; however, many soil types can support development with proper engineering considerations. Also, some soils make for prime farmland and should be carefully evaluated prior to development. The loss of prime farmland to other uses may put more pressure on marginal lands which may be erodible

and less productive. Soil type is a major factor in stormwater management for new development as some soil types are not suitable for infiltration and alternative stormwater management solutions are necessary.

WATER

The importance of groundwater and surface water must be considered when planning for future development. Recognizing the value of our water resources includes monitoring quality and quantity, and preventing degradation from erosion, runoff, pollution, and overuse. Sources of pollution are both urban and rural in nature and affect surface and ground water resources. Pollutants include chemicals from highway snow and ice removal, erosion from agricultural and construction sites, yard waste, herbicides and pesticides, and fertilizers.

LAKES

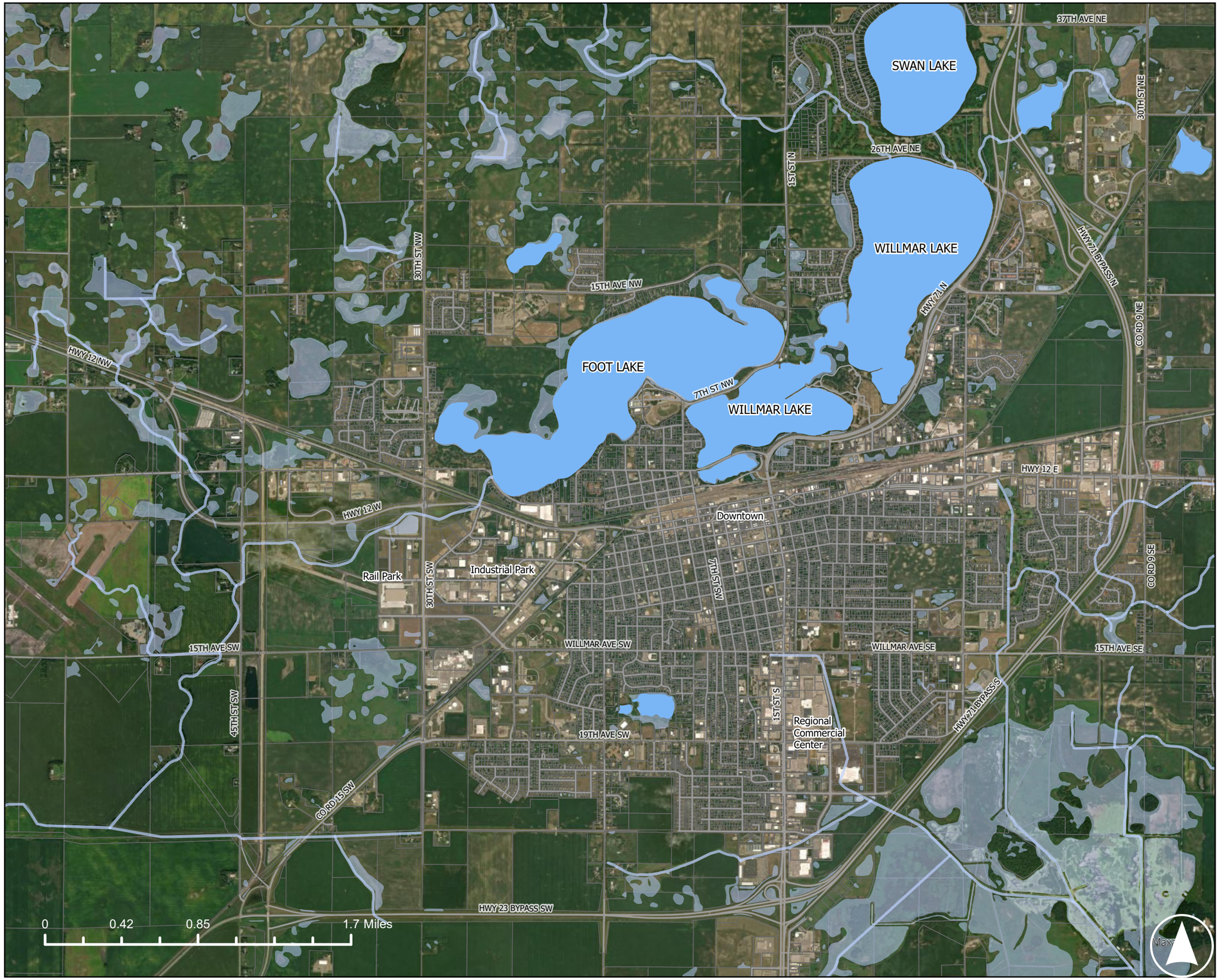
Prior to development in the area, Foot Lake, Willmar Lake, and the Ella Avenue slough were all a single body of water containing two islands. The need for improved transportation routes resulted in the construction of streets and highways that separated the original body of water into the four basins that exist today.

Today, Foot and Willmar lakes are within the corporate limits of Willmar. Both lakes are mostly developed, with limited undisturbed lakeshore. Municipal sanitary sewer and water serve the developed areas on these lakes. Past lakeshore development has threatened the natural aesthetics of shoreland areas and future development should be strictly regulated via the Shoreland Management Ordinance to ensure protection of the water resource.

In addition, there are two lakes partially within city limits - Swan Lake and Oslo Lake. Growth near Willmar is impacted by these and other lakes just north of the City which are undergoing residential development. Discussion has occurred regarding the potential for annexing certain lands around the lakes. Any future annexation in this area will be dependent upon property owner demand and the ability of the City to provide municipal services in a timely and cost-effective manner.

Lakes and Water

- Lakes
- Wetlands
- Waterways



WITH WILLMAR
COMPREHENSIVE PLAN

Willmar Lake

Willmar Lake is a moderate sized, shallow, and productive lake. It is 620 total acres, with the main bay covering 439 acres and the south bay covering 181 acres. The two bays are connected via a navigable channel that also allows for fish migration. Nutrient levels in the lake are high and algae blooms are common during summer months. Water clarity is poor, with average clarity readings of one to three feet. The lake has generally sparse submergent vegetation throughout, such as sago pondweed, coontail, and curlyleaf pondweed. Emergent vegetation is common near the channel area. Willmar Lake is aerated during the winter months to maintain oxygen levels and prevent fish die-offs. Maximum water depths vary between the two bays, with a maximum depth in the main bay of about eight feet and a maximum depth in the south bay of around 20 feet. The Robbin's Island regional park is located along the south side of the main lake, along with a golf course, numerous homes, and a few commercial businesses. There are multiple public boat accesses, along with a fishing pier located on the north shore of the south bay. Black Crappie, Bluegill, Northern Pike, and Walleye are common fish species found in the lake. Current fish management includes Walleye fry stocking, protecting important aquatic habitats such as emergent and submergent vegetation, preventing and educating about the spread of invasive species, and encouraging landowners to implement best management practices in the watershed.

Fishing on Willmar Lake

Foot Lake

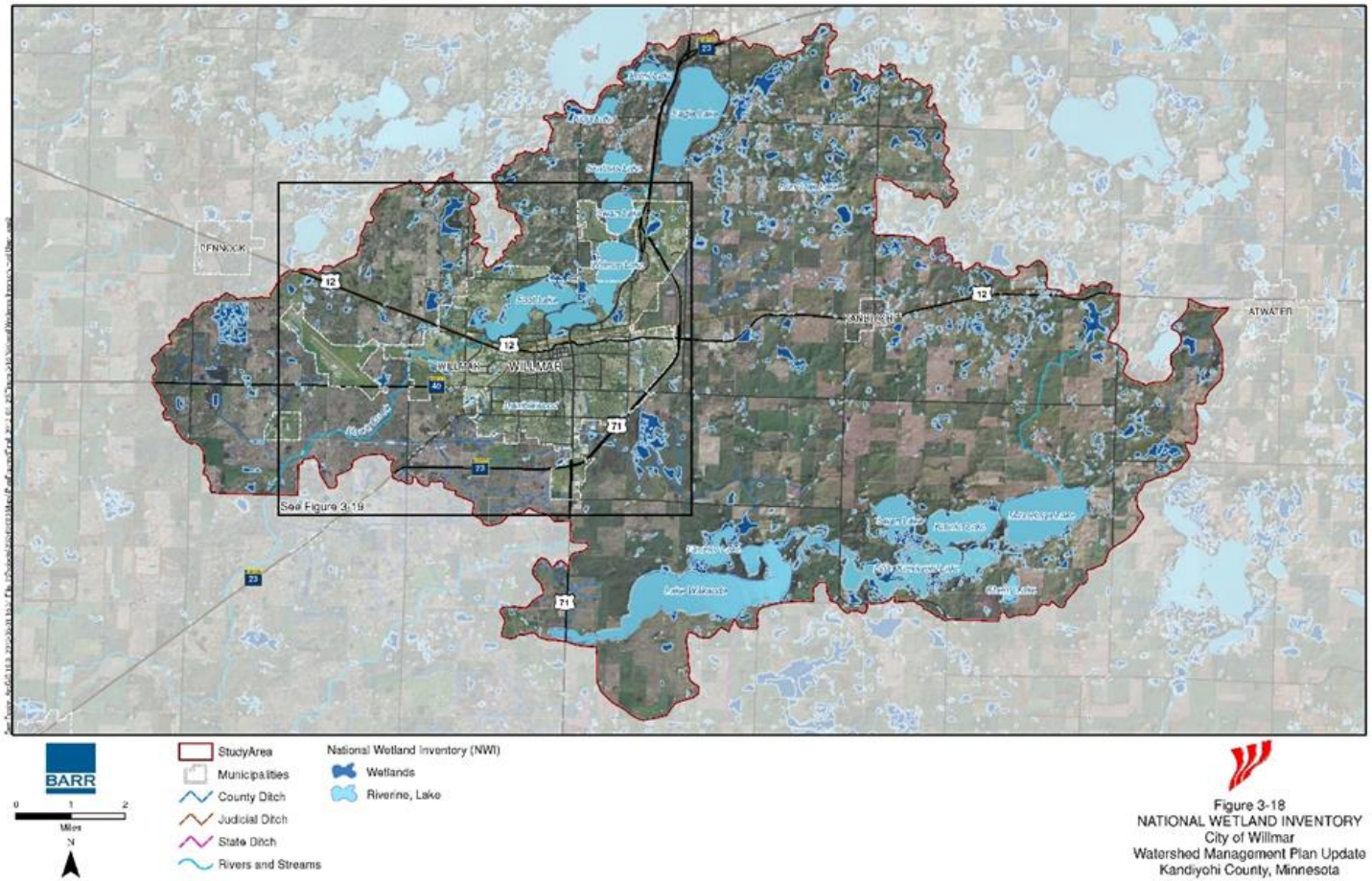
Foot Lake is downstream of Willmar Lake. It is a 492-acre basin with a maximum depth of around six feet. Foot Lake is connected to the Willmar Lake south bay via several culverts under the county road and fish movement between the basins occurs frequently. This lake has been a popular fishing lake for Black Crappie, Walleye, Northern Pike, Bluegill, Channel Catfish, and Largemouth Bass in recent years. The basin serves as a natural fish nursery area for the Willmar-Foot chain. Water quality in the lake is moderate, with average water clarity readings between three and four feet over the past two decades. There is moderate to abundant submergent vegetation scattered throughout the near shore areas. The Foot Lake outlet is considered the headwaters of Hawk Creek. The outlet dam is located along the southwest shore. The Kandiyohi County fairgrounds, a few businesses, and many houses are located along the shoreline. There are two public boat accesses on Foot Lake, one of which is located within the fairgrounds.

Foot Lake Lakeshore

WETLANDS

Several wetland areas exist throughout the Willmar area as defined by the National Wetlands Inventory, completed by the U.S. Fish and Wildlife Service (see **Figure 8-2**). State and Federal law (primarily the Wetlands Conservation Act) provide for mitigative action if wetland basins over a certain size are disturbed or destroyed by development. Aside from the significant environmental benefits and habitat provided by wetlands, the aesthetic value should also be considered when developing land in or near these areas.

Figure 8-2. National Wetland Inventory



PLANNING NEEDS

Several challenges face Willmar's natural resources in the future. The City should be prepared to enact policies that safeguard and preserve the natural beauty of the community for generations to come.

NEEDS

Water Quality

The water quality of Willmar's lakes, rivers, and groundwater has the potential to be further negatively impacted by the growth of the city, including new industrial, commercial, and residential properties.

Climate Change Concerns

The impacts of pollution, climate change, and extreme weather events may degrade the quality of Willmar's natural resources. Steps should be taken to ensure that Willmar's natural resources are protected and improved for future generations to enjoy.

STRATEGIES

Sustainable Development

Willmar could incentivize new developments, including both infill and expansion, to implement sustainable features that can protect Willmar's natural resources from harm. These may include certifications, green roofs, stormwater catchment systems, or carbon-neutral material usage.

Preservation Policies

Development on property directly adjacent to natural resources may need to be limited, favoring smaller developments and greenspace to preserve natural resources and reduce negative impacts.

WITH WILLMAR GUIDING PRINCIPLES

Willmar's overall goals of being a sustainable, inclusive, innovative, and resilient community are reflected by the guiding principles of the Natural Resources chapter. By addressing issues identified by residents, Willmar can achieve the City's overarching vision.

GUIDING PRINCIPLE	HOW NATURAL RESOURCES CAN SUPPORT
Sustainability	Willmar should protect and improve its natural resources and ensure growth does not compromise the quality of its lakes, rivers, groundwater, and soil.
Inclusivity	Willmar should promote access to its natural resources for all residents and visitors.
Innovation	Willmar should research and implement new strategies to further protect and restore its natural resources.
Resilience	Willmar should strengthen the durability and adaptability of policies that protect natural resources against extreme events.

STRATEGIES

Willmar's natural resources are important to the community, and it is important that Willmar implements strategies, programs, and projects that achieve protection and improvement of these natural resources.

Climate Change

Cities and towns play a unique role in both the prevention and cause of global climate change. A large portion of the carbon emissions driving climate change come from cities, be it transportation, industrial uses, or the construction of new structures and infrastructure. In central Minnesota, the daily average winter minimum temperature has increased by 6°F from 1895 to 2021. Lakes have lost an average of 10- 14 days of ice since the 1970s. Intense storms and flooding have occurred more frequently than any time on record, increasing the need for adaptive and resilient infrastructure. The effects of climate change are being felt by the City of Willmar today, making it crucial for the future of the city to be sustainable, innovative, inclusive, and resilient. Natural resources are fragile, and any changes to the climate can have catastrophic consequences for them.

RESOURCES	SOURCE	DETAIL
National impacts of Climate Change	National Oceanic and Atmospheric Administration (NOAA)	Information and data resources from national climate change research.
Statewide impacts of Climate Change	Minnesota Pollution Control Agency (MPCA)	Information and data resources from state climate change research.

STRATEGIES

Combatting Climate Change

As previously mentioned, cities and towns play a unique role in the prevention of climate change. Policies that counter the effects of climate change can help to mitigate future harm to natural resources. Small cities and towns around the world have found success in implementing policies that encourage renewable energy production, agricultural biodiversity, and policies that restrict waste.

RESOURCES	SOURCE	DETAIL
Carbon-Neutral Towns	Earth Day	Details of actions taken by smaller communities throughout the world.
Protecting Drinking Water	Minnesota Department of Health	Resources and tools for protecting drinking water.
Climate Change Impacts on Agriculture and Food Supply	U.S. Environmental Protection Agency	Resources and research on the connection of climate change to agriculture and food supply.

Sustainable Development

Increasing sustainability in developments can help offset potential climate change impacts and increase the resiliency of the community in extreme events. Willmar can implement various strategies in public construction near valuable natural resources and enact policies that encourage private developers to do the same.

TOOL	DESCRIPTION AND USE
Rainwater Catchment	Rainwater catchment systems capture rainwater from buildings, store it, and then repurpose it to water landscaping or for other uses when potable water is not necessary.
Pervious Pavers	Previous pavers can be used in place of concrete or asphalt paths and driveways to increase previous surface and reduce strain on stormwater management systems in extreme weather events.
Green Infrastructure	Green infrastructure includes green roofs; connected systems of parks, forests, and wetlands; community gardens; and native landscaping in place of traditional lawns.
Tree Preservation	Preserving mature trees and planting new trees can help reduce the urban heat island effect while increasing the natural beauty of a community.
Sustainable Materials	Sustainable materials can be encouraged throughout the city, especially near wetlands.

RESOURCES	SOURCE	DETAIL
Guidance on Managing Runoff	U.S. Environmental Protection Agency	Resources and concepts for the management of runoff.

Protection of Lakeshore

The development of lakeshore property can severely degrade the lakeshore habitat and water quality of the lake. Lakeshore can be degraded by several factors, including varying water levels, wave energy, natural erosion, mowing to the water's edge, and the movement of ice. The Kandiyohi Soil and Water Conservation District and the Hawk Creek Watershed Project offer technical assistance and project funding to homeowners who implement projects to restore the natural shoreline.

The Minnesota Department of Natural Resources (DNR) classifies lakes and water basins to provide general development guidance to reduce impacts and preserve these important water resources. Swan, Willmar, and Foot lakes are classified as general development lakes, while Oslo Lake is classified as a natural environment lake (see **Table 8-2**) The DNR provides a model ordinance to align with their requirements along with guidance for the management of development within 1,000 feet of the Ordinary High Water Level of each lake. This ordinance and updates to it have been used by the city to define shoreland management ordinances. Additionally, the DNR provides guidance on landscaping for shoreland owners, focusing on natural shoreland management and native plant communities, and has several tools for homeowners to track the quality of their shoreline.

Table 8-2. DNR Lake and Basin Classifications

Lake	Classification	Definition
Foot Lake	General Development	Large, deep lakes or lakes of varying sizes and depths with elevated levels and mixes of existing development. These lakes often are extensively used for recreation and, except for the exceptionally large lakes, are heavily developed around the shore. The second and third development tiers are common. The larger examples in this class can accommodate additional development and use.
Willmar Lake	General Development	
Swan Lake	General Development	

Oslo Lake	Natural Environment	Generally small, often shallow lakes with limited capacities for assimilating the impacts of development and recreational use. They often have adjacent lands with substantial constraints for development such as high-water tables, exposed bedrock, and unsuitable soils. These lakes, particularly in rural areas, usually do not have much existing development or recreational use.

RESOURCES	SOURCE	DETAIL
Restore Your Shore	Minnesota DNR	Tools and resources for shoreland restoration activities.
Shoreland Management Model Ordinance	Minnesota DNR	Model ordinance and guidance information.
Prior Lake, MN Lakeshore Preservation	City of Prior Lake	Example preservation program.

CHAPTER NINE:

PARKS + OPEN SPACE

INTRODUCTION

Parks and open spaces provide opportunities for people to connect, recreate, and engage with nature - from playing sports or games to going outside and interacting with nature. Parks help people relax, exercise, and have fun with friends and family. In a comprehensive plan, parks and open spaces create a network of amenities, programs, and facilities that cater to diverse interests and population groups. This section will outline what parks Willmar currently operates, issues and opportunities that face its parks, and what strategies can be implemented to guide Willmar toward its vision.

EXISTING CONDITIONS

The City of Willmar maintains over 30 parks throughout the city, each with a wide variety of opportunities for residents to participate in. Parks areas in Willmar include Robbins Island, Swansson Field, Dorothy Olson Aquatic Center, golf courses, and other recreational areas.

These parks and recreational areas provide different roles for the community, from the community members they serve, their size, and the amenities provided. All parks have been organized into six different park types described in the following pages:

- Regional Parks
- Major Recreational Facilities
- Neighborhood and Community Parks
- Open Spaces
- School Neighborhood Playgrounds and Recreational Facilities
- Other Recreational Facilities

Additionally, **Tables 9-1** through **9-7** describe each park type, listing the park location, the total size and the various amenities provided.

REGIONAL PARK AREAS

Regional Parks are large multi-use spaces that attract people from neighboring communities throughout the region. They offer a wide selection of amenities for all people, regardless of their age or ability. There is one regional park within Willmar.

Table 9-1. Regional Parks

Name	Location	Amenities
Robbins Island	Between Foot and Willmar Lakes in northeast Willmar	• Public swimming beach • Fishing • Hiking and nature trails • Picnic shelters • Softball field • Nine-hole disc golf course • Playground

MAJOR RECREATIONAL FACILITIES

Major Recreational Facilities in Willmar serve the entire community and visitors, providing indoor facilities and community parks dedicated to specific sports. These facilities are destinations for the community and offer a wide variety of amenities, including swimming, baseball, and softball.

Table 9-2. Major Recreational Facilities

Name	Location	Amenities
Swansson Field	Willmar Avenue and 18th Street SW	• Lighted baseball field • Lighted softball fields • Unlighted baseball diamond • Shelter • Soccer fields • Playground • BMX track • Tennis courts • Bike/recreational path
Dorothy Olson Aquatic Center	15th Avenue SW and 22nd Street SW	• Six-lane pool • One-meter diving boards • Water slides • Zero-depth wading pool • Restrooms

Name	Location	Amenities
		• Enclosed shelter • Picnic area
Civic Recreation Event Center and Arena	Civic Center Drive, Northeast Willmar	• 2 sheets of ice • 2,200-seat arena • Pickleball courts • Tennis courts • Basketball courts • Playground • Locker rooms • Meeting rooms

PARKS

Neighborhood and Community Parks are spaces that serve the neighborhood they are located within. These parks offer a variety of amenities for a variety of age groups, including walking trails, playground equipment, and picnic shelters. Neighborhood Parks are the most abundant category in Willmar, with a total of more than 20 parks.

Table 9-3. Parks (N = Neighborhood Park, C = Community Park)

Name	Location	Amenities
(N) Sperry Park	Homewood Avenue NE and N Highway 71	• Playground • Softball fields • Tennis courts • Shelter
(C) Rice Park	Kandiyohi Avenue and 2nd Street SW	• Lighted tennis courts • Shelter • Playground • Splash pad • Basketball court • Sand Volleyball court • Horseshoe pits

Name	Location	Amenities
(N) Jaycee Park and Bria's Playground	NW 7th Street and Ella Ave NW	• Playground • Basketball court
(C) Northside Park	Ella Avenue NW and 12th St. NW	• Playground • Baseball field • Basketball court • Shelter • Ice skating/hockey area (2)
(N) Bjorsell Park	Johanna Avenue SE and 4th St. SE	• Playground • Bocce ball court • Basketball court
(C) Lincoln Park	Trott Avenue SE near Lincoln Elementary School	• Shelter • Ice skating and hockey rinks (2) • Playground • Lighted baseball field • Basketball court
(C) Miller Park	Kandiyohi Avenue SW and 11th Street SW	• Playground • Shelter • Basketball court • Baseball diamond • Lighted tennis courts
(N) Hilltop Park	8th Street SW between Parkview Road and Richlane Avenue SW	• Shelter • Tennis court • Skating area • Playground • Basketball court • Horseshoe pits
(N) Minnegasco Park	Trott Avenue and 16th Street SW	• Playground
(N) Pleasant View Park	14th Avenue SE and 9th Street SE	• Playground • Covered shelters • Tennis courts • Basketball courts

Name	Location	Amenities
(N) Vos Park	1st Avenue NW and 30th Street NW	• Playground • Basketball court • Shelter
(N) Welshire Park	19th Street SE and 7th Avenue SE	• Playground
(N) Gesch Park	12th Street SE and Olena Avenue SE	• Playground • Basketball court • Baseball field
(N) Cardinal Park	20th Avenue SW and 25th Street SW	• Playground • Basketball court
(N) Southfield Park	28th Avenue SW	• Playground • Shelter • Softball field • Basketball court
(N) Valley Side Park	7th Avenue NW	• Shelter • Playground • Basketball court • Backstop
(C) Ramblewood Park	Southwest Willmar	• Basketball court • Playground • Crushed granite trail
(N) Hanson Park	North of Ridgewater College	• Playground • Open shelter • Nature area
(N) Sunrise Park	Willmar Ave SE and 23rd Street SE	• Playground • Bike path • Baseball field • Basketball court • Horseshoe pit
(C) Lions Park	Near South Swansson Field	• Picnic shelter • Dog Park

Name	Location	Amenities
(N) Hedin Park	West side of Willmar Lake	• Playground • Walking paths
(N) East Willmar Park	13th Street SE and Pleasant View Dr SE	• Playground
(N) Thompson Park	Ella Avenue NW near Foot Lake	• Picnic area

OPEN SPACES

Open Spaces are spaces that serve unique needs of a specific area or community. These are generally up to 1 acre in size and offer unique amenities.

Table 9-4. Open Spaces

Name	Location	Amenities
Canigo Park	12th Street NW and Lake Avenue NW	• Playground
Rainbow Park	24th Street SE and 5th Avenue SE	• Playground
Collegeview Park	13th Avenue NW and 28th Street NW	• Playground • Shelter • Basketball court
Richland Park	Richland Avenue SW and Richland Drive SW	• Tot playground
Wellin Park	14th Street SW	• Tot playground

SCHOOL - NEIGHBORHOOD PLAYGROUNDS

Parks in this category are located within a school complex but are open to the public for use. These are small parks that contain a variety of amenities, generally catering to younger school-age children.

Table 9-5. School Neighborhood Playgrounds

Name	Location	Amenities
Garfield School	Monongalia Ave SW and 8th Street SW	• Lighted hockey and ice-skating rink • Warming house • Playground
Roosevelt School	19th Avenue SW	• Baseball diamond • Soccer field • Playing field

SCHOOL - RECREATION FACILITIES

Parks in this category are located within a school complex but are open to the public for use. These are larger parks that contain a variety of amenities, generally catering to older school-age children and adults.

Table 9-6. School Recreational Facilities

Name	Location	Amenities
Ridgewater College	2101 15th Avenue NW	• Tennis courts • Baseball diamonds
Kennedy Elementary School	824 7th Street SW	• Tennis courts • Practice athletic field • Football stadium • All-weather track
Willmar Middle School	201 Willmar Avenue SE	• Tennis courts • Practice athletic field • Indoor swimming pool
Willmar Senior High School	2701 30th Street NE	• Tennis courts • Softball diamonds • Practice athletic fields • Indoor swimming pool

OTHER RECREATION/PARK FACILITIES

Several parks within Willmar are unique and do not fit into a specific category. These are generally dedicated to one use but can feature additional amenities for the public.

Table 9-7. Other Recreational Facilities

Name	Location	Amenities
Flags of Honor Park	North Business Highway 71 / 23 near Willmar Lake	• Picnic areas • Shelters • Angel of Hope • Walking path • Tribute to the Civilian Conservation Corp.
Bike paths	Throughout the City	• On and off-street paths and trails throughout the community
Bergquist Nature Area	Gorton Avenue near 19th Street NW	• Trails
Rau Park	7th Street NW on Foot Lake	• Scouting area • Fishing • Picnic area
Selvig International Park	4th Street SW and Becker Avenue SW	• Flagpole • Benches • Fountain
Valley Golf Course	Southeast Willmar	• Public nine-hole golf course
Eagle Creek Golf Club	Overlooking Willmar and Swan Lakes	• Semi-private 18-hole golf course

DISTRIBUTION OF PARKS

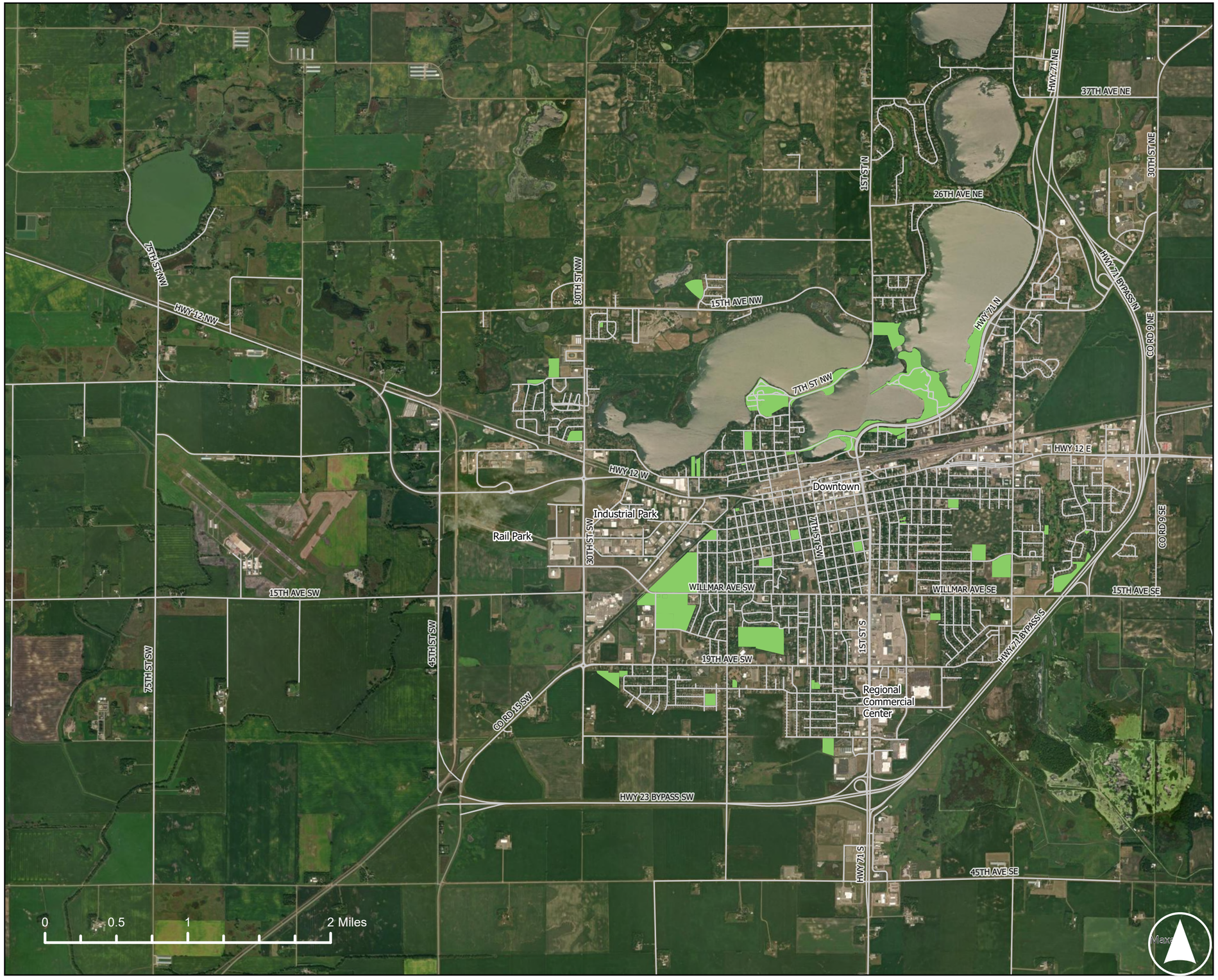
In many communities, parks are not evenly distributed for all residents to access. A walkshed analysis **(Figure 9-2)** was completed to determine if Willmar's parks are dispersed evenly or if there are locations where residents cannot easily walk to a park. The analysis found that most homes within Willmar are located within a quarter mile of a park. However, there are a few locations where homes are not within a convenient walking distance to a park. The Regional Commercial Center along 1st St S and surrounding neighborhoods do not have convenient access to parks. Additionally, new neighborhoods in northeast Willmar do not have convenient access to parks. When setting up new parks, the city should prioritize locations that do not currently have access to parks to encourage a more equitable distribution of community amenities.

Dorothy Olson Aquatic Center

Willmar Parks

City Parks

Existing Parks

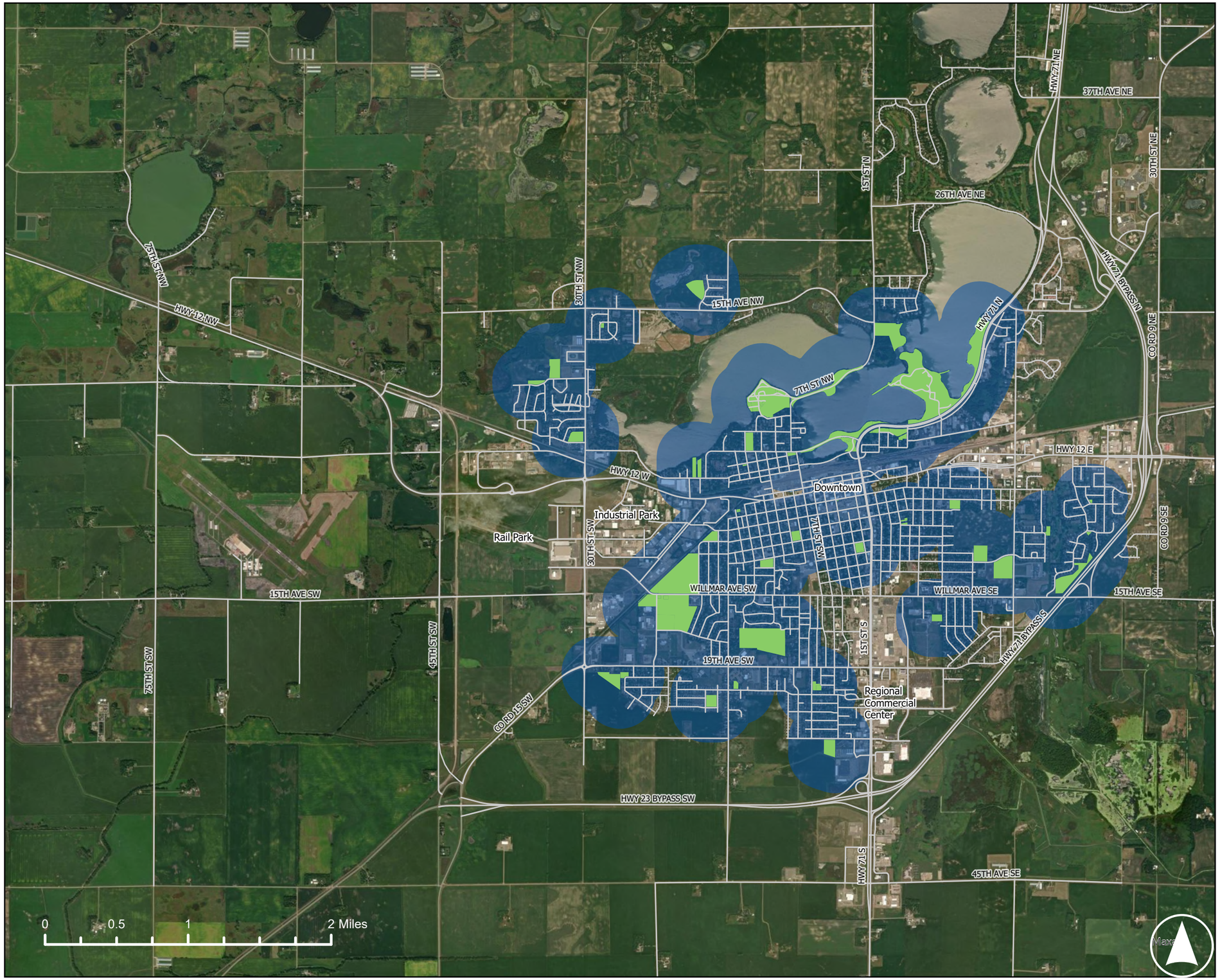


WITH WILLMAR COMPREHENSIVE PLAN

Walkshed Map

City Parks

- Existing Parks
- 5-Minute Walk (1/4 Mile) from a Park



WITH WILLMAR COMPREHENSIVE PLAN

INDOOR FACILITIES

The City of Willmar has a variety of indoor facilities for year-round recreational use.

City Auditorium

Willmar City Auditorium

The City Auditorium offers space for a variety of leisure and competitive activities for residents of the community and the surrounding areas. Programming and Activities at the Auditorium are managed by the Parks and Recreation Department.

City Auditorium History

The City Auditorium was built between 1936 and 1937 by the Works Progress Administration. Artistic sculpture panels on the front facade of the building and a Memorial Room have secured the building into the list of the National Register of Historic Places.

War Memorial Room

Located on the main level of the City Auditorium just inside the main entrance, the War Memorial Room was designed for visitors to reflect and honor veterans who served our country with bravery. This Austere Room is located on the first floor of the Willmar City Auditorium. It was completed in 1937 as a WPA project. Engraved stones from each state line the walls, an effort initiated by the American Legion to honor Minnesota veterans.

Civic Center

The Willmar Civic Center is one of the largest outstate facilities with a seating capacity of 2,200 (hockey season) and 4,000 people for dry floor shows.

With a full concession stand and 12 locker rooms, the Civic Center has two regulation sheets of ice located in the Cardinal and Blue Line Arenas, which house both hockey and curling.

Numerous dry floor events, expos, concerts and more take place inside the facility each year, including the KWLM Spring Show, Rebel Camper Show, Quilt Show, West Central Tribune Garage Sale, Shrine, and Jose Cole Circus, West Central Builders Show, Willmar Ag Show, and Ridgewater College Graduation.

Community Center

The Willmar Community Center is a vibrant hub offering a diverse range of activities, events, and programs designed to engage residents of all ages and backgrounds. Whether you're looking to craft, sew, cook, knit, play games, solve puzzles, exercise, dance, enjoy music, or participate in youth programs, there's something for everyone to explore and enjoy.

Beyond its scheduled programs, the Community Center serves as a welcoming space where you can host meetings, catch up with friends over coffee, or enjoy a midday meal through the LSS Senior Dining program. Additionally, the Community Center provides rental space to many groups, including singing choruses, drumming ensembles, clubs, and more.

PLANNING NEEDS

While Willmar features a robust park system with many amenities available to residents, there are several planning-related needs that face the community. These challenges create opportunities to improve the park and recreation offerings, including equitable access to the parks and the potential impacts of climate change on greenspace. There are also several opportunities that can be implemented by the City to address issues and create a park system that aligns WITH Willmar's overall vision.

NEEDS

Equitable Access

Not all parks are physically accessible by all community members due to the lack of multimodal connections (i.e., trails and sidewalks). In addition, amenities are not spread equally.

Climate and Resiliency

Willmar's parks have the potential to be impacted by the changing climate, extreme weather events, and economic uncertainty.

STRATEGIES

Future Amenities – 21st Century Parks

Innovative and sustainable playgrounds and other park amenities are beginning to gain popularity across the country and could be implemented within the City of Willmar.

Greenspace Preservation

An increased amount of greenspace could be preserved for parks, increasing pervious surfaces and trees as a guard against climate-related concerns.

WITH WILLMAR GUIDING PRINCIPLES

Willmar's overall goals of being a sustainable, inclusive, innovative, and resilient community are reflected by the guiding principles of the Parks and Open Space chapter. By addressing issues identified by residents, Willmar can achieve the City's overarching vision.

GUIDING PRINCIPLE	HOW PARKS CAN SUPPORT
Sustainability	Willmar can encourage sustainability in its parks by preserving greenspace and existing trees.
Inclusivity	Willmar can ensure inclusivity in its parks by providing amenities that cater to a wide variety of residents, regardless of their age or ability.
Innovation	Willmar can support innovation by working with local organizations and community members to bring new and desired amenities to its parks.
Resilience	Willmar can preserve greenspace in its parks to increase pervious surface in extreme weather events and flooding.

STRATEGIES

Willmar's parks and recreational facilities are subject to many emerging trends that are actively shifting the community's needs and desires. Several strategies can be utilized to help align Willmar's parks with both these trends and the goals of this plan.

New Park Amenities

Parks are an ever-evolving space that are built to reflect the needs and desires of all age groups. The needs and wants of the community change over time, and Willmar's parks should be altered as necessary to reflect the shift in community need. Willmar is already adapting to community desires. For example, the City installed an inclusive playground and outdoor fitness court at Robbins Island Regional Park. In addition, pickleball continues to be an emerging trend and Willmar has installed several pickleball courts at Sperry Park. Other trending amenities include natural playgrounds, physical fitness equipment along trails, curling courts, and amphitheaters/bandshells for events. Willmar should continue to evaluate the needs of the community and adjust the amenities of parks within the City to align with those needs.

Destination Playground

Sustainability

Sustainability in park design is becoming an increasingly common trend in new and renovated park systems. Parks and open space serve a vital role in regulating carbon emissions and often serve as "carbon sinks" – places where carbon is absorbed by green spaces. Park design that seeks to reduce impervious surfaces and increase greenspace, especially tree coverage and native landscaping supports sustainable design. When parks are renovated, native grass can be added in place of unused open fields or near water bodies. Additionally, buildings can be constructed with rainwater catchment systems that can water plants during short periods of drought.

Community Gardens

Community and allotment gardens provide space for the community to grow healthy fruits, vegetables, and other plants. Community gardens are operated by groups of invested people who are provided with a share of the harvest based on their commitment to the operation of the garden. In an allotment garden, each person is given their own space to grow fresh produce and harvest from their respective spaces. Both

options offer those who do not have a private garden the chance to grow and supply fresh produce. Community and allotment gardens are a good option for neighborhood parks and do not require significant maintenance from the city, as they are community-run. Willmar currently has a community garden at the Willmar Community Center and an allotment garden at the United Methodist Church. Additional garden locations could be placed in an equitable manner so that everyone has the option to access a community or allotment garden.

STRATEGIES

Recreational Tourism

Wilmar's parks play multiple roles within the community, including support of economic development. Existing parks and amenities draw visitors to the community from a broader region to enjoy lakefront parks and amenities such as Robbins Island. When these visitors come into the community for recreation, they may also visit restaurants, shops, or other amenities in the community, supporting other uses. The community's parks and recreation opportunities should be leveraged to assist and enhance tourism and economic development efforts. Strategies to leverage Willmar's parks include providing connections and wayfinding between recreational areas and community destinations, community events that connect visitors to amenities, and the location of new recreational areas within new growth and investment areas.

Park Investments

Existing and future park and recreation investments by the City of Willmar will require on-going maintenance and investment to maintain existing infrastructure and support needed upgrades and investments. Historically, the process of identifying these investments and the identification of funding has occurred through the annual Capital Improvement Plan (CIP) process for the City. Through this process, City departments identify their project and funding needs and establish budget and priorities for each system. Creating a scoring and prioritization process for future park investments would support this CIP process while prioritizing investments that support community, site, and environmental needs and considerations. The following criteria may be explored to establish the Investment Priority Ranking for City of Willmar Parks.

Table 9-8. Park Investment Needs Scoring Metrics

Need Type	Category	Possible Score	Scoring Metric	Purpose
Community Needs	**Race and Poverty**	100	Percent of the Census Blocks within a quarter mile that identify as extreme poverty and non-white	Identify investments to benefit minorities and lower income communities.

Need Type	Category	Possible Score	Scoring Metric	Purpose
	Youth and Seniors	100	Percent of the Census Blocks within a quarter mile that identify youth and seniors	Identify investment to benefit youth and seniors.
	Neighborhood Condition	100	Percent of the Census Blocks within a quarter mile with high vacancy and high crime rates	Identify investments to support struggling neighborhoods.
	Resident Health	100	Percent of the Census Blocks within a quarter mile that identify with major medical issues	Identify investments to support community with medical issues.
Community Needs Score		**400**	**Sum of the four categories to create the full Community Need Score**	
Site Needs	**Site Condition**	100	100 pts = poor 66.6 pts = fair 33.3 = good 0.00 = excellent	Identify investments that benefit parks in poor condition
	Investment Need	100	100 pts = highest need 66.6 pts = average 33.3 = low 0.00 = low need	Identify investments where current infrastructure is in need of highest repair.
Site Needs Score		**400**	**Sum of the two categories multiplied by 2.**	
Environmental Overlay	**Black Carbon**	100	Highest average black carbon levels by walkshed	Identify investments in areas with higher carbon levels.
	Tree Canopy	100	Lowest percent tree canopy by walkshed	Identify investments where tree canopy can be improved.
Environmental Overlay Score		**200**	**Sum of the two categories**	

Park Master Plans and System Wide Planning

The City of Willmar completed a Parks and Recreation Master Plan in 2015 to review the condition of existing parks and infrastructure and explore future needs and investments. This plan has served as an investment and vision tool for the last 10 years, including the definition of 10-year Capital Improvement Program needs and park improvements. Many of these investments have been made, though needs and system conditions have changed over the ten years of implementation. An update to the master plan would provide a refreshed analysis of the current system condition and identification of future needs and goals from a community perspective.

Regional Park and Recreation

The City of Willmar includes regional parks and destinations that serve not only the Willmar Community but visitors and the regional community. Similarly, there are nearby regional park and recreation destinations that may be regularly used by Willmar residents. The Prairie Wood Environmental Learning Center is a prime example. Continued partnerships with the Prairie Woods team and other regional recreation destinations may support future programming and investment opportunities.

Additional Strategies

In addition to the strategies defined within this chapter, park and recreation investment opportunities should continue to be explored as infrastructure and programming enhancements are made. The following opportunities should be explored as investment decisions are made.

Opportunity	Description
New Pocket Parks	Look for opportunities to purchase and develop smaller parcels of open space for recreational use. Pocket parks are generally developed as the opportunity arises through other development activities. These smaller park areas also create great opportunities to support the Arts and Culture strategies identified within this Plan.
Passive Recreation Enhancements	Create additional opportunities for passive recreation throughout the park and trail system, such as benches for sitting, picnic tables, and wildlife viewing opportunities.
Sidewalk and Trail Connections	Look for opportunities to develop new sidewalk and trail connections to support multimodal movement throughout the community. These connections may improve connectivity to existing parks and trails or to high traffic locations throughout the community.

Willmar's parks are a valuable community asset that will be preserved and protected for generations to come.

CHAPTER TEN:

PUBLIC FACILITIES

PUBLIC FACILITIES

After the Comprehensive Plan has been adopted, the City of Willmar will develop and adopt an amendment to the Plan containing this Public Facilities chapter. The chapter will address indoor facilities available to the public, including city, county, and other government buildings. The Chapter will also outline opportunities for investment through the planning horizon.

CHAPTER ELEVEN:

IMPLEMENTATION

INTRODUCTION

The Implementation chapter emphasizes the future actions and investments defined through the WITH Willmar planning process. The recommendations and actions identified within this chapter provide guidance for the City to achieve the goals and priorities identified in this process. This guidance includes actions, policies, and initiatives for each plan element to guide implementation efforts for years to come. Over the next twenty years, staff, elected and appointed officials, and the community should reference this section when evaluating potential policies, investment actions, growth scenarios, and development proposals.

The actions identified in this chapter were built from community input, staff recommendation, focus group feedback, and plan analysis. While actions and recommendations are identified for each plan element, the list is not all-inclusive. Future actions and activities will arise through future planning and policy as well. This chapter can help the city track its progress toward achieving the goals and objectives identified in the plan and should be reviewed by City staff, elected officials, and appointed officials on a regular basis.

Robbins Island Pedestrian Bridge

IMPLEMENTATION PLAN STRUCTURE

The actions and recommendations presented in the following pages are organized by plan element (i.e., housing, transportation, etc.). The implementation plan proposes specific regulatory, programmatic, and planning actions, as well as general strategies. Each action relates to one or more of this plan's core themes: **Work, Innovate, Thrive, and Home**.

Plan Category	Description	How is this displayed?
Plan Element / Supporting Elements	Defines the plan element that the recommendation or action connects to. May include more than one supporting element.	Plan element icons:
Recommendation	Describes the recommendation or action to be completed.	Narrative description.
Timeline	Identifies a general timeline for completion of the action. Timelines include: • On-going: Continuation of current actions • Short-Term: 1-2 years • Medium-Term: 3-5 years • Long-Term: 6+ years	On-going Short-Term Medium-Term Long-Term
Complexity	Indicates the overall complexity for accomplishing each action. Factors that inform a low, medium, or high level of complexity include cost, coordination with partners, and the completion of additional studies.	Low, medium, or high level of complexity:
Benefit	Identifies the general benefit of the action for the community. Factors that inform the benefit include those that directly support progress of the Plan and increase the City's capacity for success.	Overall benefit identified in narrative.
Partners	Identifies key community partners who can support implementation of the action.	Potential partners have been identified by name.
Measures of Success	Metrics or specific actions that can be used to assess or measure the impact of the action or recommendation.	Measures have been listed.

Plan Category	Description	How is this displayed?
With Willmar Alignment	Relationship to core themes of this plan: • W: Work with Willmar • I: Innovate with Willmar • T: Thrive with Willmar • H: Home with Willmar	With Willmar icons: W I T H

Land-Use + Development

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	1994 Zoning Code: Review and identify outdated zoning regulations, eliminate barriers to housing development, and address inconsistencies to ensure alignment with the Comprehensive Plan.	Short-Term	●●●	• Development aligns with the vision of the Comprehensive Plan • Development standards are practical, enforceable, and transparent.	• City of Willmar • Developers • KCED • Residents and Landowners • Business Community • Consultant • Other Cities	• Adoption of a new zoning ordinance reflecting the vision of the Comprehensive Plan and the needs of the community.	W	I	T	H
	Process Improvement: Streamline permitting processes to focus on centralizing and digitizing applications, simplifying requirements, and standardizing forms.	On-going	●●○	• Guarantees efficiency, reduces delays, reduces development cost, and improves customer satisfaction	• City of Willmar • Developers • Willmar Municipal Utilities	• Reduced application processing times, lower error rates, and higher staff productivity. • Implement survey and gather feedback; track application volume.		I	T	
	Overlay Districts: Establish overlay districts that encourage development in key gateway areas of the City.	Short-Term	●●○	• Encourages strategic growth and economic activity in key gateway areas, attracting new businesses and investments. • Enhances aesthetics, functionality, and community involvement while supporting infrastructure upgrades in these important locations.	• City of Willmar • Government Agencies • Willmar Municipal Utilities • Developers • Residents	• Track increases in business openings and investments in the overlay districts, indicating successful stimulation of development. • Collect feedback from residents and businesses on the improvements in the gateway areas.	W	I	T	
	Growth Management: Apply Urban Growth Boundary (UGB) guidelines to guide decision-making for development interests beyond city limits.	On-going	●○○	• Limiting development outside the UGB will promote the efficient provision of public services and facilities and preserve growth areas for future urban development.	• City of Willmar • Kandiyohi County • Developers • Residents and Landowners	• Track and evaluate the concentration of new development within the UGB versus outside of it. • Assess the density and efficient use of space, reduced sprawl, and better		I	T	H

Land-Use + Development

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
						preservation of greenfield and agricultural lands outside the boundary.				
	Fund for Future Annexation: Plan for the financial implications of annexing new land, ensuring they can provide necessary services without straining their budget.	Short-Term	●●○	• Provides a thorough fiscal impact analysis to estimate any cost associated with annexation. • Funds should be used for: Utility extensions, Road Improvements, Legal expenses, etc.	• City of Willmar • Kandiyohi County • Township Supervisors • Developers • Residents and Landowners	• Compare the costs associated with annexation to the budget of the annexation fund. Efficient use of funds and staying within budgets are key success indicators.		I	T	
	Supportive Infrastructure. Coordinate with Engineering to ensure development can be adequately served by municipal facilities.	On-going	●○○	• Ensures city services have the capacity to provide for additional growth.	• City of Willmar	• Capacity of public facilities. • Infrastructure costs.	W	I	T	H
	Development Tracking: Implement an annual report of development activity that illustrates building permits, housing density, and other major development indicators.	On-going	●●○	• Ensures that the location, type, and timing of development are aligned with Comprehensive Plans.	• City of Willmar • Kandiyohi County • Government Agencies	• Housing units. • Redevelopment projects. • Cost of Services. • City Revenue.		I	T	
	Plan and Acquire Property: Create a list of potential properties for development opportunities; evaluate site alternatives, costs, and development capacity.	Short-Term	●●○	• Promotes leadership to make informed decisions that maximize the potential of acquired properties. • Ensures that resources are used efficiently, and the selected sites align with long-term development goals.	• City of Willmar • Kandiyohi County EDC • Kandiyohi County • Developers • Government Agencies	• Assess how well the acquired properties and subsequent developments align with the goals and objectives outlined in the Comprehensive Plan. • Monitor the progress of development projects on acquired properties.	W	I	T	H
	Mixed-Use Development: Create zoning and design standards that promote regional and neighborhood commercial and mixed-use	Short-Term	●●●	• Improves neighborhood accessibility, cohesion, and character.	• City of Willmar • Developers • Residents and Landowners	• Establishment of mixed-use zoning / design standards. • New mixed-use development.	W	I	T	H

Land-Use + Development

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	development, ensuring alignment with the community vision.			• Improves development flexibility and zoning transparency.	• Business Community • Government Agencies	• New neighborhood commercial development.				
	Implement DTW Pilot Program: Evaluate strategies from previous downtown plans to promote investment, beautification, innovation, and traffic calming initiatives.	Medium-Term	●●○	• Encourages innovative approaches to urban design and infrastructure to enhance the overall appeal and functionality of downtown. • Programing can attract new businesses and investors, boosting economic growth and revitalizing the area.	• City of Willmar • Downtown Community • Government Agencies • Residents and Landowners • Developers	• Establish Economic Metrics to track the number of new businesses, investments, and job creations within the downtown.	W	I	T	H
	Rail Corridor: Assess the impact of the BNSF corridor on Willmar's downtown economy, multimodal transportation, and pedestrian experience, while addressing concerns related to noise, lighting, and safety.	Short-Term	●●●	• Better utilization of rail corridors, reduced traffic congestion, and environmental benefits. • Provides valuable insights for informed decision-making and long-term planning.	• City of Willmar • BNSF • Kandiyohi County	• Increased economic activity, higher usage of multimodal transportation, and improved pedestrian experience. • Reduced noise levels and enhanced lighting quality, along with effective infrastructure improvements, will demonstrate successful mitigation of noise and lighting concerns in Willmar's downtown.	W	I	T	

Arts + Culture

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Public Art Standards: Establish guidelines to promote and support a wide range of public art and creative placemaking projects across Willmar.	Short-Term	●○○	• Supports placemaking and community aesthetics. • Develops community identity. • Supports local artists.	• City of Willmar • Willmar Area Arts Council • Southwest Minnesota Arts Council • Willmar Education and Arts Center	• Adoption of public art standards. • Community reception. • Number of public art projects.	W	I	T	H
	Wayfinding & Gateway Signage: Install gateway signage within highway entry corridors.	Medium-Term Long-Term	●●●	• Supports placemaking and community aesthetics. • Develops community identity. • Enhances wayfinding.	• Arts and Culture non-profits • Willmar Area Art Council • City of Willmar	• Installation of gateway signage. • Community reception.		I	T	
	Activate Underutilized Spaces: Utilize underused spaces for arts and cultural activities.	On-going	●●○	• Supports placemaking and revitalization. • Encourages low-cost, productive use of available spaces.	• City of Willmar • Arts and Culture non-profits • Developers • Stakeholders • KCED	• Number of events, demonstration projects, or redevelopment initiatives. • Community reception.	W	I	T	
	Artist in Residence Program: Establish a Residency Program to enhance the aesthetics of public spaces, creating a sense of place and identity.	Medium-Term	●●○	• Supports local artists. • Promotes art and cultural activities.	• City of Willmar • Willmar Area Arts Council • Southwest Minnesota Arts Council • Willmar Education and Arts Center • Ridgewater College	• Establishment of program. • Increase in Public Art Installations and events.	W	I	T	H

Arts + Culture

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Streetscape Design: Develop and implement streetscaping guidelines.	Medium-Term	●●○	• Supports placemaking and revitalization. • Supports innovative approaches to stormwater management.	• City of Willmar • Developers • Business Owners • Residents • Government Agencies	• Incorporation of streetscaping guidelines into zoning ordinance, corridor studies, or downtown study. • Completion of street-scaping demonstration projects.		I	T	
	City Art: Develop both an inventory and acquisition plan to properly manage publicly owned art assets such as paintings, sculptures, photographs, etc.	On-going	●○○	• Manage maintenance plans for publicly owned art. • Grow inventory of publicly-owned artifacts that reflect Willmar's history and culture.	• Arts and Culture non-profits • Willmar Area Art Council • City of Willmar • Government Agencies	• Increased Inventory of publicly owned art. • Designated funding to source and maintain assets.		I	T	

Mobility

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Safe Streets for All: Implement and prioritize safety improvements in planning for streets and bicycle-pedestrian facilities, working towards a goal of reducing fatalities on all roadways.	On-going	●●○	• Reduces the frequency and severity of injurious crashes. • Promotes active transportation and reduces car-dependency.	• City of Willmar • MNDOT • Kandiyohi County • FHWA • Parks and Recreation • Willmar Bikes	• Number of fatal and serious injury crashes. • Number of safety improvements completed. • Integration of safety into all aspects of transportation planning and facility design.		I	T	H
	Accessible Facilities: Continue working to fill sidewalk gaps and ensure pedestrian facilities and transit programs are accessible to those with disabilities.	On-going	●●●	• Improves accessibility for children, people with disabilities, and all residents. • Promotes healthy lifestyles.	• City of Willmar; • MNDOT • Kandiyohi County • Parks and Recreation • Willmar Bikes • CCT • Local Senior Care Providers	• Number of Sidewalks added/improved. • Number of non-compliant ADA facilities. • Adoption of plan, policy, or program focused on sidewalk installation / maintenance.	W	I	T	H
	Align Transportation Priorities: Integrate strategies and priorities from the Bicycle, Pedestrian, and Trails Plan and the Safety Action Plan into capital improvement plan, corridor studies, and facility design.	On-going	●○○	• Ensures plan consistency and encourages implementation.	• City of Willmar • MNDOT • Kandiyohi County • Parks and Recreation • Willmar Bikes	• Plan integration and project completion.	W	I	T	H
	Innovative Design: Implement traffic calming treatments and other innovative design solutions to ensure safety is priority for multi-modal users.	Long-Term	●●●	• Promotes traffic calming and safer streets. • Reduces maintenance costs. • Improves traffic flow.	• City of Willmar • MNDOT • Kandiyohi County • FHWA • Parks and Recreation • Willmar Bikes	• Successful completion of priority projects.	W	I	T	

Mobility

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Connected Community: Establish and improve multimodal access within and between neighborhoods, over barriers, and between major destinations and recreation areas.	On-going	●●●	• Improves system coverage and reduces travel times. • Improves opportunities for walking and biking.	• City of Willmar • MNDOT • Kandiyohi County • FHWA • Parks and Recreation, • Willmar Bikes • CCT	• Number of projects completed. • Reduction of overall travel times.	W	I	T	H

Housing

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Aging in Place: Develop policies and programs that expand housing options for aging in place.	Short-Term	●○○	• Helps residents continue to thrive as they age.	• City of Willmar • AARP • Community Housing Resource Center	• Establishment of programs or funding that support accessible housing. • Expansion of housing stock that accommodates aging-in-place. • Development / improvement of senior living communities.	W	I	T	H
	Diversify Housing Stock: Promote the need to increase housing types to add a range of styles, floorplans, and price points.	On-going	●○○	• Increases housing inventory for homebuyers and renters. • Expands stock of market-affordable homes. • Supports workforce recruitment and retention.	• City of Willmar • Community Housing Resource Center • Developers • City Council	• The number of units / building permits for alternative housing types, including single-family attached, small multifamily, mixed-use, etc.	W	I	T	H
	Residential Zoning: Expand residential zoning for the allowance of more housing types such as: factory-built homes, duplexes, townhomes, etc.	Medium-Term	●●○	• Increases housing choice for homebuyers and renters. • Expands stock of market-affordable homes. • Supports workforce recruitment and retention. • Supports aging in place.	• Planning staff • Planning Commission • City Council • Residents	• Adoption of zoning amendment(s). • Increase in alternative housing typologies and medium-density housing within established neighborhoods.	W	I	T	H
	Affordable Housing: Establish, finance, and implement a Community Land Trust or Land Bank to acquire and develop permanent affordable housing options.	Short-Term	●●○	• Ensures the development and preservation of permanent affordable housing options, making housing more	• City of Willmar • Kandiyohi County Housing Redevelopment Authority	• Track the number of affordable housing units developed and maintained by the land trust. • Gather feedback from residents and		I	T	H

Housing

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
				accessible to residents. • Promotes community stability, reduces displacement, and enhances residents' livability.	• Willmar Area Community Foundation • Affordable Housing Organizations	stakeholders on the availability and quality of affordable housing options.				
	Rental Housing Program: Update the 1990 Rental Housing Maintenance and Occupancy Ordinance to conform with modern industry standards and best practices of neighboring municipalities.	Short-Term	●○○	• Promotes consistent and fair regulations across the region, benefiting both tenants and landlords. • Ensures higher quality and safer rental housing for residents.	• City of Willmar • Residents • Landlords • Kandiyohi County • Minnesota Housing • Government Agencies	• Track the number of rental units meeting updated safety and maintenance standards. • Gather feedback from tenants regarding their living conditions and overall satisfaction.		I	T	H
	Housing Maintenance: Leverage available programs and explore alternative local options to provide financial assistance for housing maintenance and rehabilitation.	Medium-Term	●●○	• Improves housing conditions for owners and renters. • Helps revitalize core neighborhoods. • Supports aging in place.	• City of Willmar • State housing agencies • Local lending institutions • Government Agencies	• Increased utilization or establishment of program providing funding or incentives for housing maintenance.	W	I	T	H
	Regional Collaboration: Collaborate with Kandiyohi County and regional housing partners to support and implement housing programs; establish regional housing committee.	On-going	●●○	• Promotes alignment of community goals and resources. • Improves planning efficiency.	• City of Willmar • Kandiyohi County • Housing developers • Government Agencies	• Formation of committee with regular meetings.	W	I	T	H

Housing

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Housing Needs Assessment: Complete a housing needs assessment to understand market trends, demographic needs, and housing gaps.	Medium-Term	●●○	• Provides valuable information to developers and decision makers. • Increases awareness of community housing challenges.	• City of Willmar • Community Housing organizations • Kandiyohi County EDC	• Completion of housing needs assessment.	W	I	T	H

Economic Opportunities

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Small Business Support System: Create and implement tools and programs for existing and future small businesses.	Medium-Term	●●○	• Fosters local entrepreneurship. • Expands variety of local goods and services. • Strengthens community.	• City of Willmar • Kandiyohi County EDC • Businessowners • Community organizations	• Establishment of small business support organizations and programs. • Increasing number of small businesses in Willmar.	W	I	T	
	Community Partnerships: Continue to collaborate with the EDC to implement programs and policies that support a thriving Willmar economy.	On-going	●○○	• Promotes alignment of community goals and resources. • Improves planning efficiency.	• City of Willmar • Kandiyohi County EDC • Government Agencies	• Recurring meetings with the EDC. • Establishment or expansion of regional economic development programs.	W	I	T	
	Supportive Infrastructure: Continue working to expand and improve utilities and services for businesses and workers, including broadband and wireless communication networks.	On-going	●○○	• Supports existing businesses and business growth. • Supports remote work.	• City of Willmar • Regional utility providers • State and federal agencies.	• Expansion / improvement of utilities. • Available shovel-ready sites.	W	I	T	H

Economic Opportunities

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Industrial Parks: Continue to promote development and investment in the Willmar Rail Park and Industrial Park.	On-going	●●○	• Capitalizes on available land and infrastructure. • Expands local tax base. • Builds on existing industry strengths.	• City of Willmar • Kandiyohi County EDC • Businessowners • Government Agencies	• Available shovel-ready sites. • Increased industrial development.	W	I	T	
	Workforce Training: Develop technical workforce training and continuing education programs.	On-going	●●○	• Connects workforce skills with local business needs. • Opens new career pathways for local workforce.	• City of Willmar • Kandiyohi County EDC • Business Owners • Government Agencies	• Program utilization. • Increased hiring and business development.	W	I	T	H

Natural Resources

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Community Resilience: Continue to support and promote local hazard mitigation planning efforts.	On-going	●●○	• Supports mitigation and preparedness for fire, extreme heat, winter weather, and other hazards.	• City of Willmar • Kandiyohi County • Minnesota Pollution Control Agency	• City involvement in hazard mitigation plan update.	W	I	T	H
	Renewable Power: Explore the development of solar and / or wind energy systems (accessory or community-scale).	Short-Term	●○○	• Develops resililiency and redundancy of power supply. • Reduces energy costs.	• City of Willmar • Utility providers • Residents • Business Owners	• Adoption of zoning amendment(s) allowing by-right approval. • Community interest.	W	I	T	H
	Natural Amenities: In the subdivision and site planning processes, incorporate and maintain natural amenities, and promote public access to these areas.	On-going	●○○	• Promotes active recreation and social activity. • Improves aesthetics and property values. • Supports stormwater management.	• City of Willmar • Developers	• Creation, retention, and dedication of natural areas.			T	H

Natural Resources

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Green Infrastructure: Promote nature-based strategies for stormwater management, including stormwater retention areas, bioswales, rain gardens, etc.	On-going	●●○	• Reduces cost of stormwater management. • Improves development aesthetics. • Improves water quality.	• City of Willmar • Developers • Planning Commission • Minnesota DNR	• Expanded use of nature-based solutions. • Creation of educational materials for developers and landowners.	W	I	T	H
	Urban Forests: Support continued planting and maintenance of boulevard trees and other forested areas.	On-going	●●○	• Protects against infestation. • Improves / maintains property values. • Provides numerous ecosystem services.	• City of Willmar	• Tree diversity, health, and abundance.			T	H
	Shoreland Regulations: Monitor changes to the DNR's model shoreland ordinance and update shoreland zoning as needed to conform with state standards.	On-going	●○○	• Promotes appropriate use and development of shoreland areas. • Mitigates development impacts to shoreland. • Ensures consistency with state standards.	• City of Willmar • Minnesota DNR • Kandiyohi County	• Amendment of shoreland ordinance. • Shoreland properties comply with regulations.			T	H

Parks and Open Space

Supporting Elements	Recommendation	Timeline	Complexity	Benefit	Partners	Measure of Success	W	I	T	H
	Parks and Recreation Plan: Update and maintain master parks plan.	Medium-Term	●●○	• Provides an inventory of community facilities, assessment of existing and future needs, and strategies for park system development.	• City of Willmar • Parks and Recreation Department	• Completion and maintenance of master parks plan, followed by development or improvement of park facilities that cater to the desires of the community.		I	T	H
	Wayfinding and Interpretive Signage: Expand wayfinding and / or interpretative signage for public water access, parks, and trails.	Long-Term	●●●	• Supports regional tourism, businesses, and artists. • Promotes awareness of resource value and resource enhancement efforts.	• City of Willmar • Parks and Recreation Department • Kandiyohi County • State agencies	• Installation of signage.	W	I	T	
	Park Dedication: Review requirements for public open space dedication and cash-in-lieu. Amend development regulations if needed.	On-going	●●○	• Provides parkland set-aside or program funding.	• City of Willmar • Parks and Recreation Department • Developers	• Dedicated acreages or funding are sufficient to meet ongoing needs.		I	T	H
	Public Buildings: Continue to update public facilities to comply with modern ADA standards. Explore new indoor amenities based on community wishes.	On-going	●●○	• Ensures accessibility of community facilities for all residents. • Promotes community identity.	• City of Willmar • Public Works Department • State agencies • Kandiyohi County	• Updated community facilities. • Evolving amenities within Willmar's public buildings.	W	I	T	H
	Funding: Pursue state and federal grant funding programs for competitive park and trail projects.	On-going	●●○	• Increases city capacity to design and construct large capital projects.	• Parks and Recreation Department • Kandiyohi County	• Solicitation of funding as opportunities arise. • Number / amount of grants awarded.		I	T	
	Regional Coordination: Continue to coordinate with Kandiyohi County and state agencies to advance regional parks and tourism opportunities.	On-going	●●○	• Aligns state and regional goals and resources.	• City of Willmar • Parks and Recreation Department • Kandiyohi County • State agencies	• Regular meetings with state and regional partners.		I	T	

Appendix 1A

WITH WILLMAR COMPREHENSIVE PLAN

Safe Streets for All Safety Action Plan

June 2025

INC. 1901 WILLMAR MINNESOTA

Prepared by: BOLTON & MENK

ACKNOWLEDGEMENTS

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CHAPTER 1
INTRODUCTION

WHAT IS A SAFE STREETS FOR ALL ACTION PLAN?

The City of Willmar, Minnesota developed this comprehensive Safe Streets for All (SS4A) Action Plan to help prevent and ultimately eliminate roadway fatalities and serious injuries within the city limits. This foundational plan highlights areas of concern with regard to roadway safety and steps the City can take to proactively improve roadway safety.

The purpose of the Action Plan is to identify high crash locations, to engage with the community to receive their input and direction, and recommend intersections and roadway segments that could be modified in accordance with the Vision Zero Program. Vision Zero is a traffic safety approach focused on eliminating traffic deaths and serious injuries, while improving access to safe, sustainable, and equitable mobility for everyone. A Safe Systems Approach is a guiding model to address safety on our roads. It includes six principles that are reinforced through five primary objectives, creating a holistic approach to making our transportation systems safer for people.

WILLMAR'S ACTION PLAN COMPONENTS

- A detailed crash analysis on all roadways within the City of Willmar, including a review of trends and contributing factors to fatal and injury crashes
- A transportation equity analysis to understand and acknowledge the communities most impacted by traffic crashes
- An action plan with policy recommendations and future study needs
- A prioritized list of project areas with potential improvements to address traffic safety
- A toolbox of crash mitigation strategies

Between 2014 and 2023, there were a total of 48 fatal and serious injury crashes on Willmar streets, averaging nearly five per year. Each one of those people involved was a part of the Willmar community. These injuries, deaths, and crashes are preventable.

COMMITMENT TO SAFETY

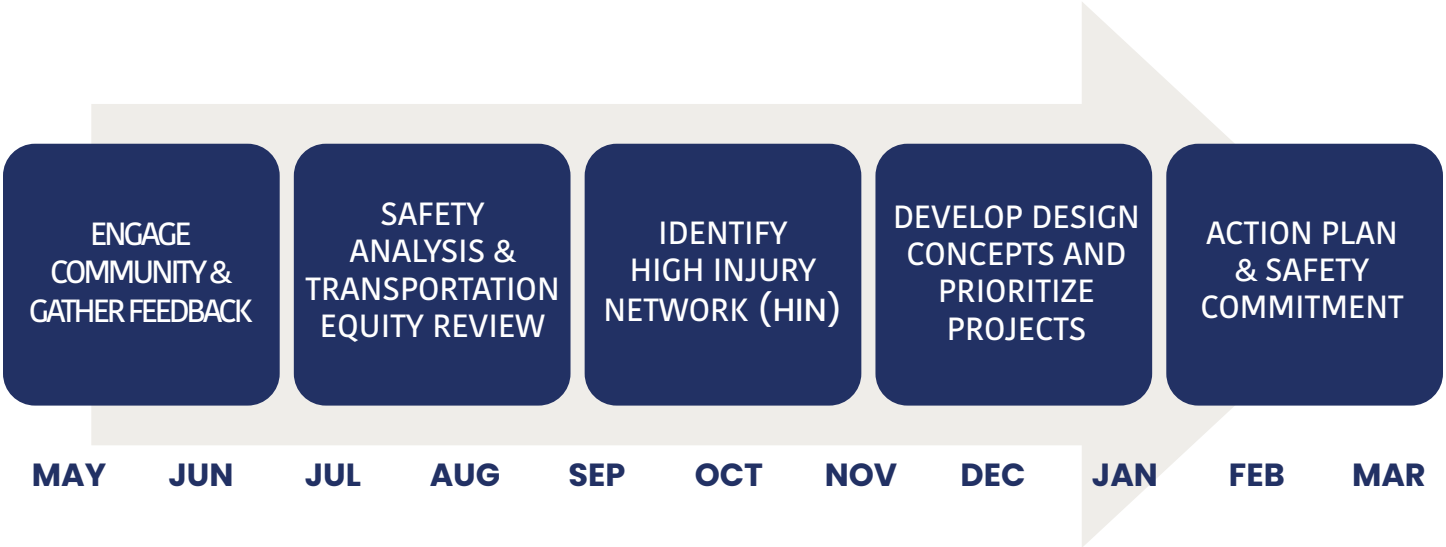
In June 2025, the Willmar City Council unanimously passed a resolution committing to the goal of eliminating roadway fatalities and serious injuries on all Willmar roads by 2045. A long-term goal this ambitious will require incremental progress in the short- and mid-term. As such, the City is setting an additional goal to track progress at the 10-year mark of the adoption of the resolution. This includes a 50 percent reduction in fatal and serious injury crashes by 2035.

Eliminate fatalities & serious injuries by 2045

50% reduction by 2035

Further, the City of Willmar acknowledges that achieving these goals will require significant and ongoing coordination with partner agencies including MnDOT and Kandiyohi County and across city departments. Prioritizing safety investments must be elevated in the planning of future projects and policies to ensure Willmar is meeting its goal over a sustained period.

PROCESS OVERVIEW



HOW DOES THIS PLAN RELATE TO OTHER CITY GOALS?

The City of Willmar acknowledges the importance of maintaining a safe transportation system for everyone and the critical role it plays in quality-of-life, economic vibrancy, equity and sustainability throughout Willmar's communities. This Action Plan supports many of Willmar's longstanding goals developed and adopted through other planning projects, most notably the city's comprehensive plan.

The City of Willmar Comprehensive Plan (2009) identified a litany of current and emerging transportation trends affecting residents. Transportation safety concerns were predicted to be exacerbated by the community's continued growth. Notably, the city emphasized concerns around pedestrian safety. Trails, paths and bike lanes were strongly supported by both the public and city staff. These emerging trends guided the following transportation safety policies that were established in the 2009 plan, including:

- Develop a transportation system that properly balances considerations of safety, cost, accessibility and environmental protection.
- Control land use development at major intersections and interchanges to avoid compromising the safety, accessibility and function of the streets involved.

An update to the 2009 Comprehensive Plan, named "With Willmar", is currently in progress and is expected to be completed by early 2025. Key goals of the new comprehensive plan related to this Action Plan are as follows:

SAFETY	Prioritize community safety and ensure a secure environment
INFRASTRUCTURE	Invest in modern and sustainable infrastructure
ENGAGEMENT	Promote a collaborative environment that is open to active participation in shaping Willmar's future

In addition, The Willmar City Council passed a "Welcoming City" resolution in 2018 stating all residents are welcome in Willmar no matter their race, religion, sexual orientation, and country of origin. The resolution declares the following:

> *Whereas the City of Willmar and the surrounding area is stronger when all community residents are unified, engaged, and valued as both neighbors and contributors to the public good;*
>
> *Whereas in further recognition of the great ideal of equality and freedom as outlined in the United States Constitution and amendments;*
>
> *Whereas in pursuit of a community in which all residents without regard to age, gender, sexual orientation, socioeconomic status, race, ethnicity, religion, or country of origin should be free to pursue life, liberty, and happiness;*
>
> *Now, Therefore Be It Resolved, that the Willmar City Council, as a representative of the City of Willmar, hereby declare and resolve the City of Willmar to be a welcoming city to all who wish to come and contribute to the public good and future success of the community.*

PRIORITIZING EQUITY

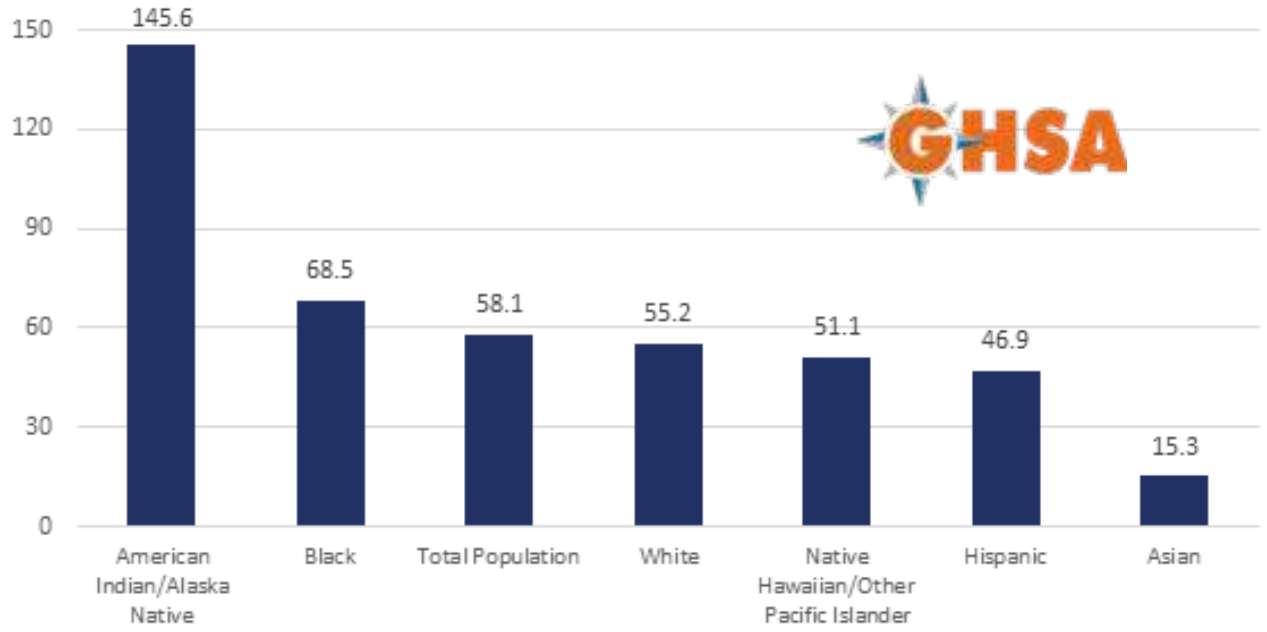
Within the City of Willmar and across the nation, traffic safety is an equity issue. According to USDOT, equity in transportation seeks fairness in mobility and accessibility to meet the needs of all community members. A central goal of transportation equity is to provide equitable access to affordable and reliable transportation options based on a population's needs. Ultimately people should feel safe while traveling using any mode to access employment, school, grocery shopping, and a variety of other activities to fully participate in society.

Transportation systems can create negative impacts on the well-being of community members including exposure to pollution, high concentrations of traffic crashes, service gaps, inadequate infrastructure, and divisive roadway construction. While all users experience safety risks when using the transportation system, certain communities are disproportionately burdened. Resulting from a lack of institutional power, BIPOC, low-income, and other marginalized groups disproportionately experience transportation-related injuries and fatalities. An extensive equity analysis has been included in Appendix B: Transportation Equity Analysis Technical Memorandum. Findings from the Equity Analysis will be applied to project prioritization and the plan implementation to monitor, reduce, and, ideally, eliminate disparities.

DISPARITIES IN SAFETY

How crashes impact marginalized groups in Willmar can be challenging to deduce, because local crash data does not include income or racial data. However, many national crash safety trends are assumed to manifest in Willmar, as they are consistent across communities across the nation. People of color, particularly Native and Black Americans, are significantly more likely to face death and serious injuries on our roadways (see Figure 1), especially when walking. Across the US, the number of people killed while walking reached a new high in 2022, with an estimated 7,500 pedestrians struck and killed, up 19 percent since 2019. This is of particular importance to marginalized communities as they are more likely to rely on walking and biking, more likely to live on a busy road, and less likely to influence transportation decision making.

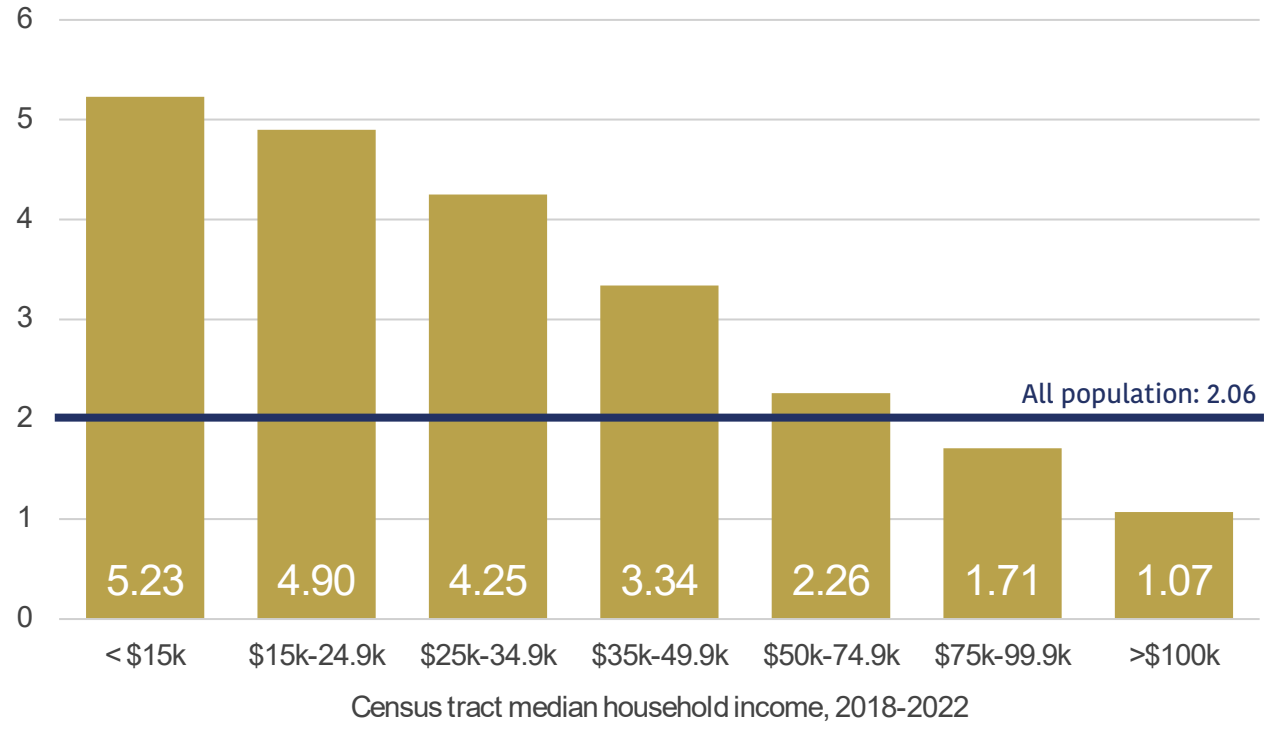
Figure 1. Total U.S. Traffic Deaths per 100,000 People, 2015-2019 (Source: GHSA)



Disparities in transportation safety are closely tied to the road infrastructure present in low-income and BIPOC neighborhoods (see Figure 2). Three-quarters of the United States' sixty most dangerous roads for pedestrians are in low-income neighborhoods, and more than half are in predominantly minority neighborhoods.

The City of Willmar has committed to eliminating fatal and serious injury crashes by 2045 . This ambitious goal is only achievable by addressing transportation safety disparities in our community and working to provide greater transportation safety improvements to those with the greatest need.

Figure 2. Pedestrian Fatalities per 100,000 People by Census Tract Income (Source: NHTSA)



HISTORIC CONSIDERATIONS

Minnesota, like the rest of the nation, has a history of infrastructure investments that have divided communities, prioritized automobiles, and led to increased safety risk and inequitable transportation outcomes. Transportation systems are complex and interact with several other systems such as housing, land use, parks and recreation, law enforcement, and climate resilience. For example, the type of neighborhood someone lives in will often determine their choices for transportation and which destination can be safely accessed. For example, 90% of white households in Willmar are homeowners, while only 22% of BIPOC households own their home. Integrating an understanding of disparities in housing can allow transportation planners to effectively prioritize projects that serve lower income groups, like renters.

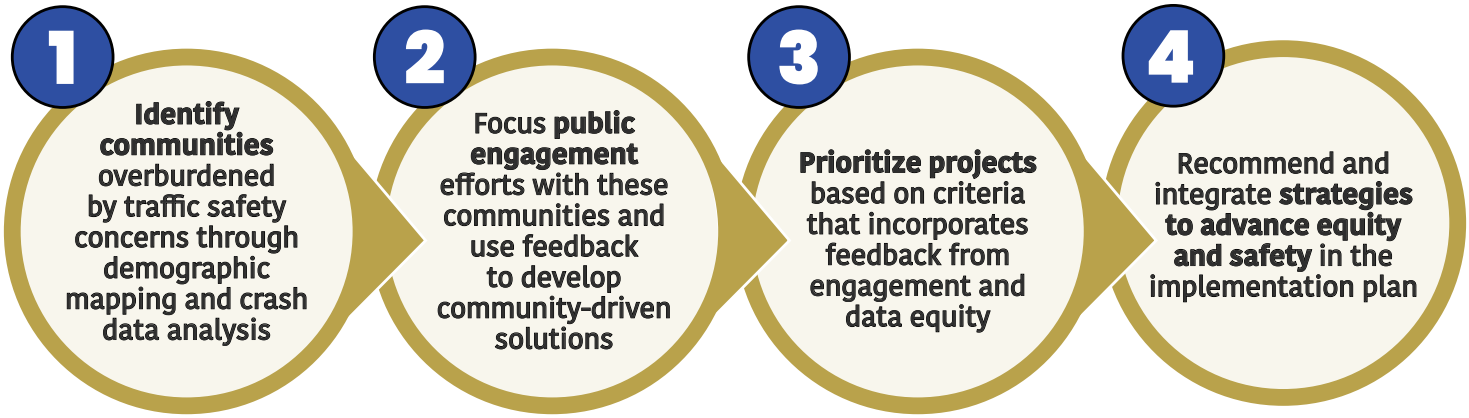
To reach the City's goal of zero traffic fatalities and serious injuries, the history of harmful policies and the impact of adjacent systems must be considered to realize the vision for traffic safety in Willmar.

HOW TRANSPORTATION EQUITY APPLIES IN WILLMAR

The City of Willmar is committed to understanding how these larger trends in transportation safety are experienced locally. Local governments have a responsibility to reverse the history of harmful practices and implement planning practices and policies that respond to the needs of all people. The focus on equity ensures that projects will be selected, funded, designed, and implemented in a way that aligns with the city's equity goals. This Action Plan will also support other equity-focused goals from past city planning, including:

- **Willmar Comprehensive Plan:** Trails and Pedestrian Addendum (2011): This plan committed to a complete streets concept that fostered transportation equity for those who do not drive.
- **Willmar ADA Transition Plan (2019):** This city committed to implementing 100% of accessibility barriers identified within the plan within 30 years.
- **Safe Routes to School (SRTS) Plans** (2013-Current): The city has seen many school-focused SRTS planning efforts that integrate equity into planning. One of the "6 E's of SRTS Planning" is equity.

The 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 four ways equity is integrated throughout the Plan, including:



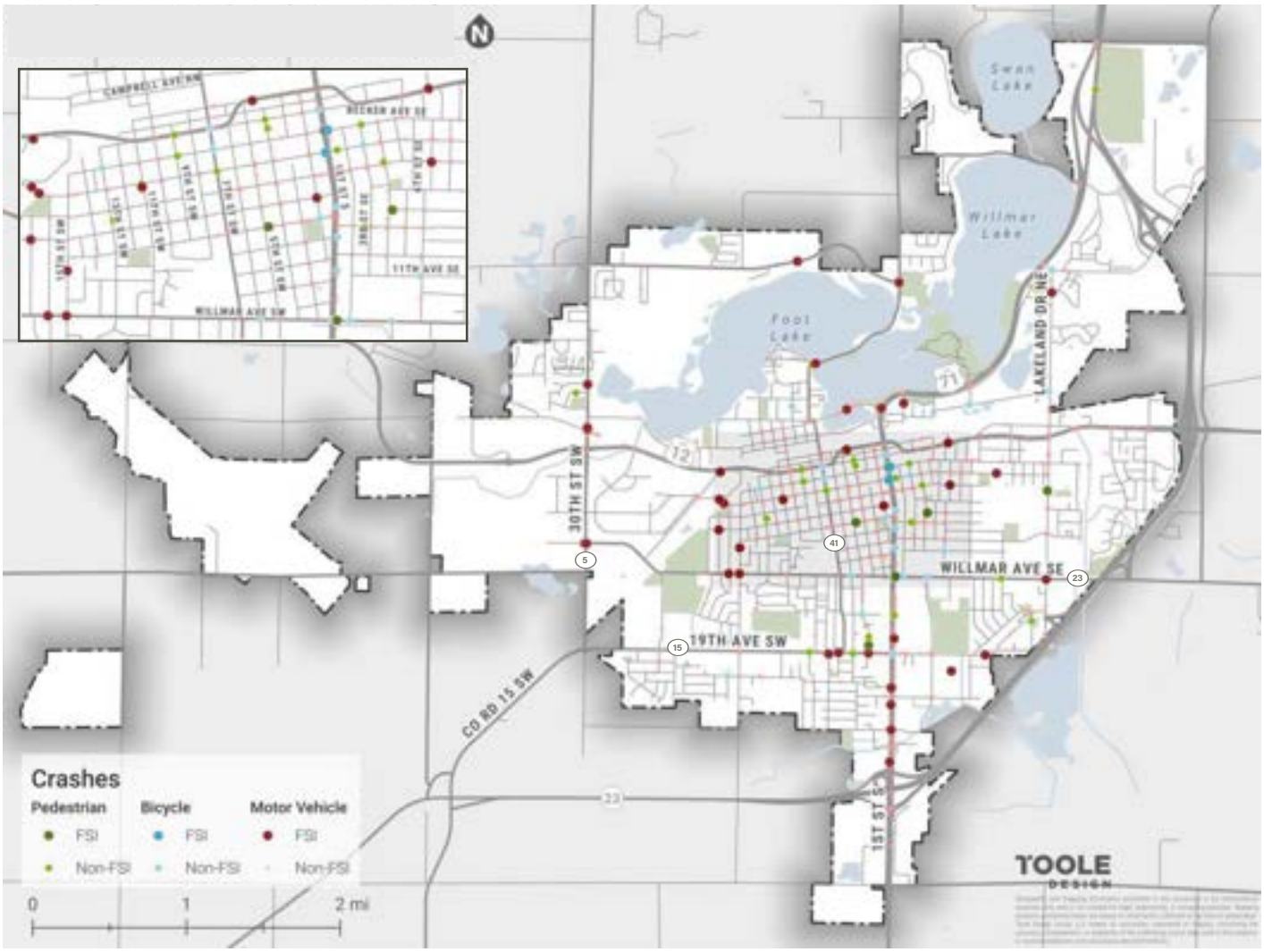
CHAPTER 2
CRASH ANALYSIS

The citywide crash analysis is a central component to the Action Plan. It includes an evaluation of peer jurisdiction crash trends, 10-year crash trends in Willmar, an equity analysis of crashes in Willmar, and the development of a High Injury Network for all modes.

This analysis is based on crashes within the City of Willmar from January 1, 2014, to December 31, 2023, downloaded from the MnCMAT2 system maintained by the Minnesota Department of Transportation on July 20, 2024. At the time of development of this plan, 2024 data was not fully available and thus was excluded from the analysis. Crash data from the MnCMAT2 system is derived from police crash reports for reportable (crashes exceeding $1,000 in damages) and reported (crashes that were reported to police) crashes. Crash locations are shown in Figure 5.

The crash analysis identifies significant trends over the 10-year analysis period. The takeaways identified below are detailed in the full Crash Analysis document, available in Appendix E. Figure 3 shows the location of all fatal and injury crashes within the City of Willmar within the study period by mode of travel (vehicle-only, vehicle-bicycle, or vehicle-pedestrian). Fatal and Serious Injury (FSI) crashes are identified with the larger dots.

Figure 3. Fatal and Injury Crash Locations (2014-2023)



GENERAL CRASH TRENDS

During the 10-year analysis period, there were a total of 3,682 crashes (including property damage only). Of those crashes, 62 involved a vulnerable road user (VRU) which includes people walking, biking, or using a personal mobility device. 795 crashes reported injuries that include a total of 48 fatal or serious injury crashes.

Figure 4 shows the number of fatal or serious injury crashes (FSI) by year while Figure 5 shows the number of fatal, serious injury, and minor injury crashes (FI) for the same time period. Figure 6 shows total vulnerable road user-related crashes (VRU). Each graph shows the linear trendline for the 10-year period. FI and FSI crashes are trending upward in the City of Willmar while VRU crashes are trending downward.

Figure 4. Fatal or Serious Injury Crashes (FSI) per Year (2014-2023)

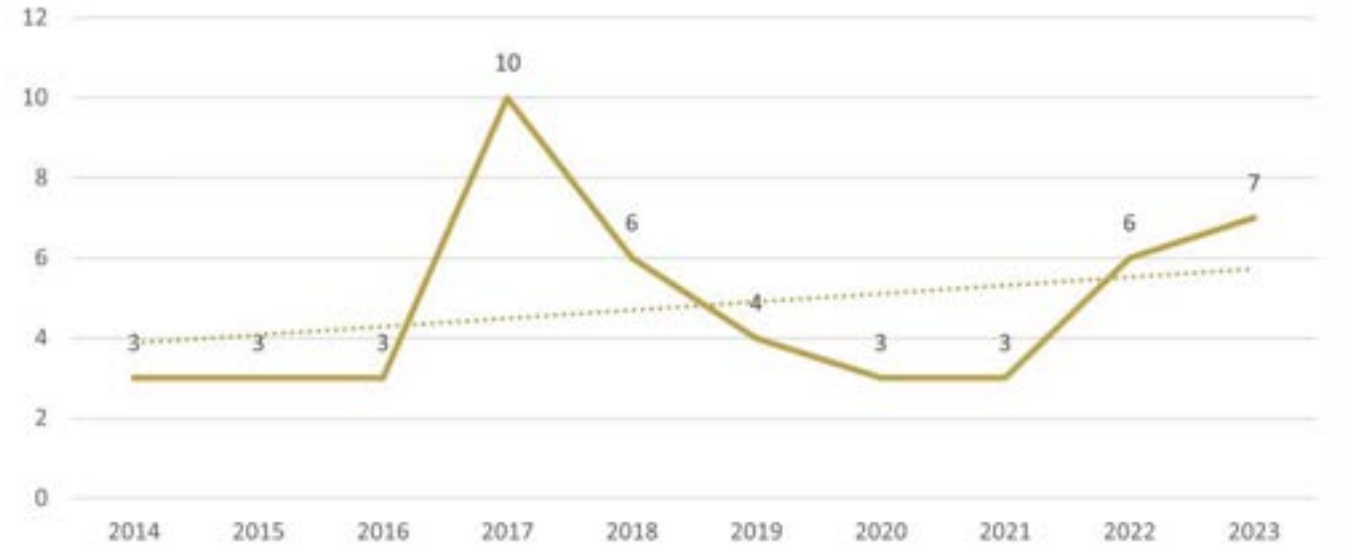


Figure 5. Fatal, Serious Injury, and Minor Injury Crashes per Year (2014-2023)

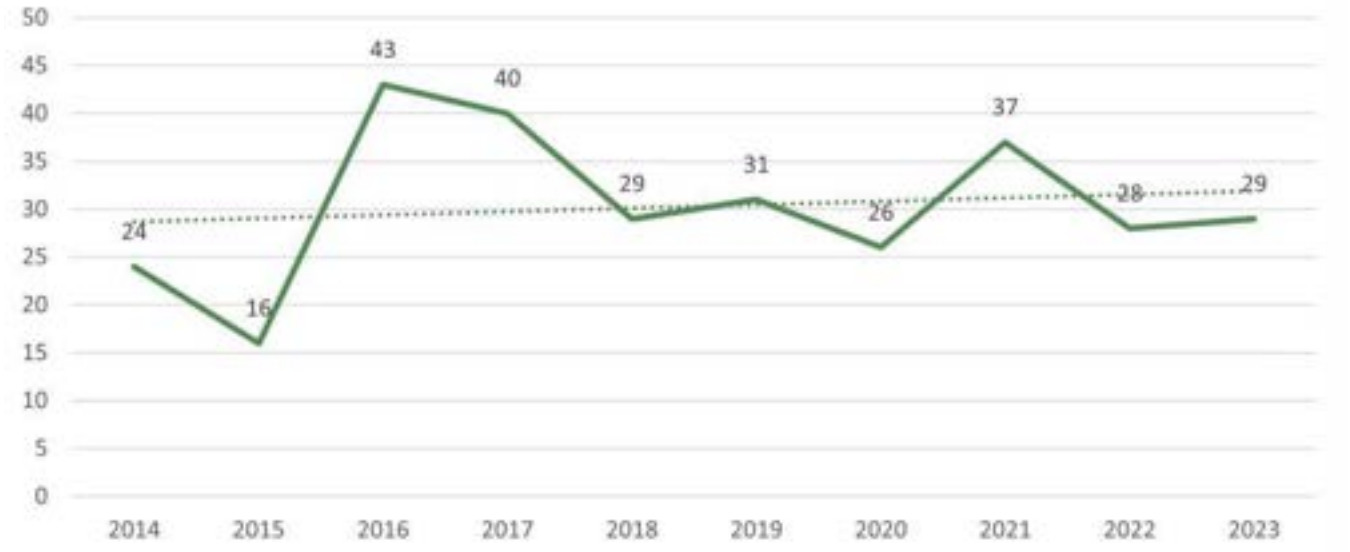
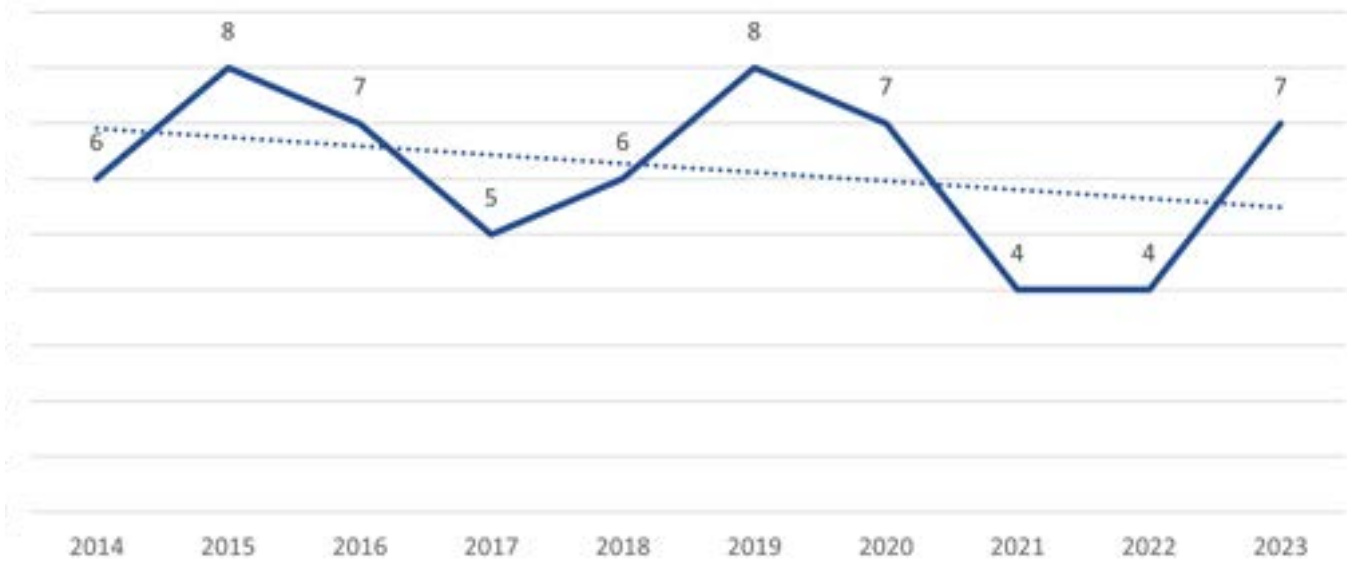


Figure 6. Vulnerable Road User (VRU) Crashes per Year (2014-2023)

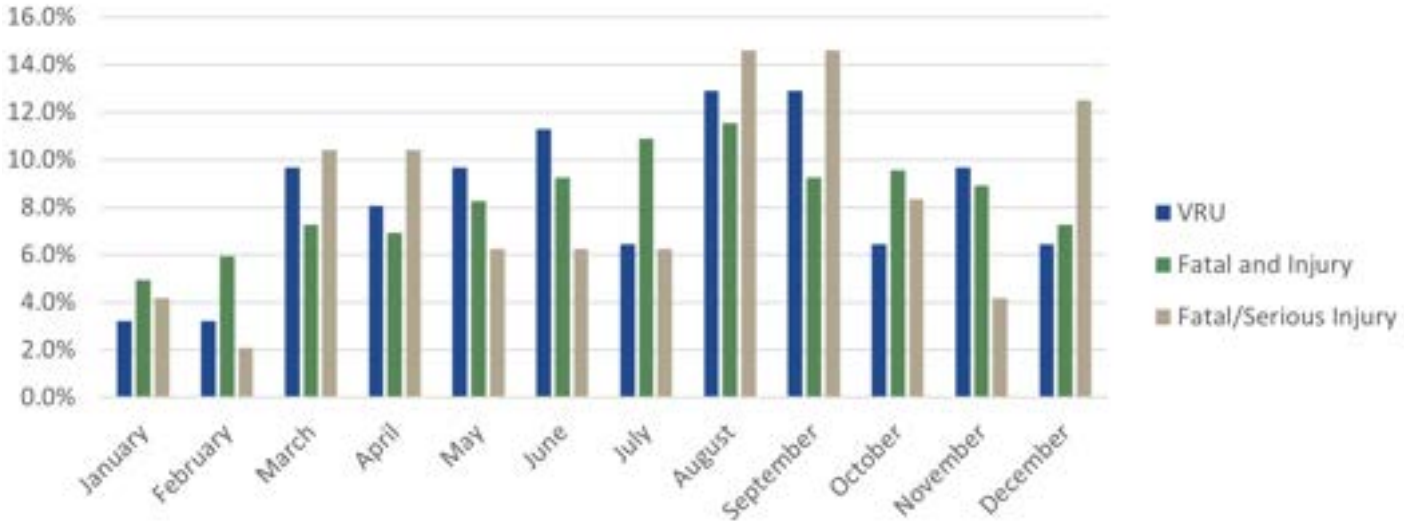


CRASHES BY MONTH

Figure 7 shows the number of crashes by month across all years analyzed. Generally, higher amounts of FI and FSI crashes occurred in later summer and fall compared to winter and spring with the exception of a spike in FSI crashes in December.

VRU crashes are higher in March through September compared to the rest of the year. The increase in VRU crashes in August and September may be due in part to the beginning of school activities.

Figure 7. Crashes by Month (2014-2023)



CRASHES BY TIME OF DAY

Figure 8 shows the total amount of crashes occurring at different times of day to show what times are overrepresented. The times of each crash were sorted into 3-hour increments related to the amounts and types of activities typically occurring at those times:

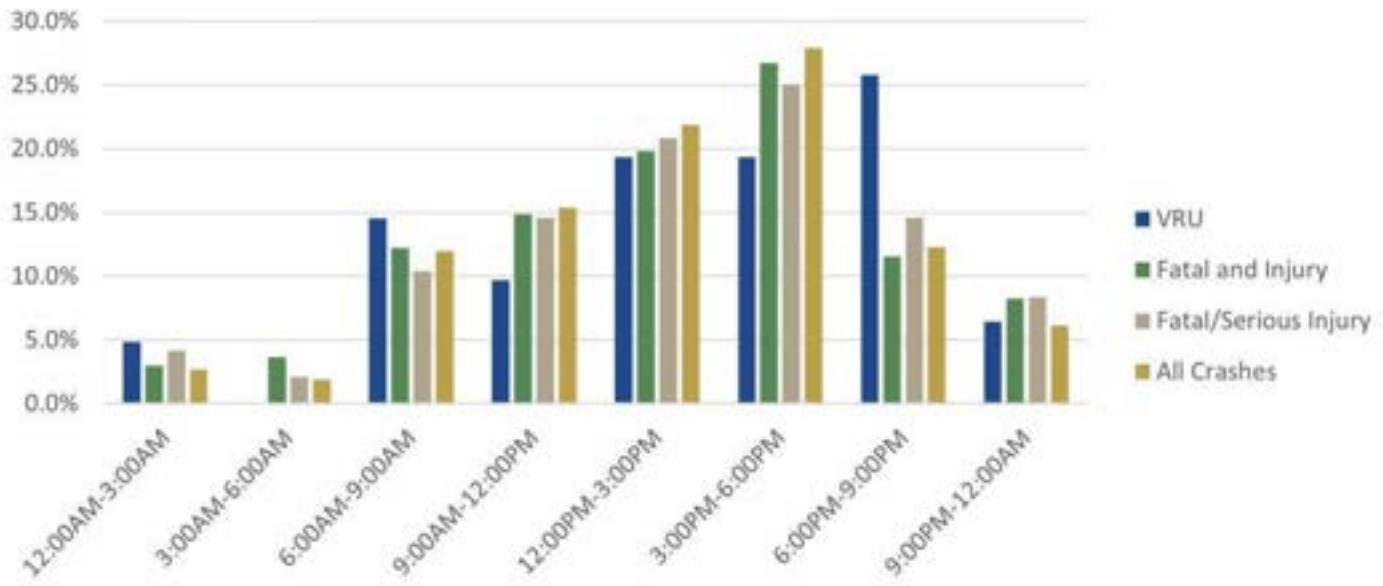
- 12am – 3am: Overnight (includes bar closing time)
- 3am – 6am: Early morning (very little activity apart from some early commuting)
- 6am – 9am: Morning commute (includes typical work and school start times, large stores opening)
- 9am – 12pm: Late morning (includes small shops opening, early lunch)
- 12pm – 3pm: Lunch "rush"
- 3pm – 6pm: Afternoon commute (includes dinner time)
- 6pm – 9pm: Early evening (includes most after-school and recreational activities, small shops closing)
- 9pm – 12am: Late evening (includes large stores closing)

Generally, FSI and FI crashes closely follow the same time of day trends as all crashes. VRU crashes are overrepresented in the later afternoon/early evening hours and underrepresented in the earlier afternoon hours.

The number of crashes by month across all years analyzed. Generally, higher amounts of FI and FSI crashes occurred in later summer and fall compared to winter and spring with the exception of a spike in FSI crashes in December.

VRU crashes are higher in March through September compared to the rest of the year. The increase in VRU crashes in August and September may be due in part to the beginning of school activities.

Figure 8. Crashes by Time of Day (2014-2023)



CRASHES BY MODE

Table 1 shows crashes by mode of travel and severity level in Willmar. Overall, vehicle crashes occur the most frequently but have the lowest severity level. Still, there were 41 FSI and 262 FI vehicle-only crashes, amounting to 1.3% and 8.2% of all vehicle-only crashes, respectively.

We also see that pedestrian and bicyclist involved crashes are more likely to be severe. 16.6% of pedestrian-involved crashes resulted in a serious injury or fatality, whereas 6.3% of bike-related crashes resulted in a serious injury or fatality. Both of these FSI crash rates are over five times more prevalent than vehicle-only crashes. These numbers increase to 69.9% and 62.6% for pedestrian-related and bike-related crashes, respectively, when including minor injuries, compared to 8.2% of vehicle-only crashes.

Table 1. Crashes by Mode and Severity (2014-2023)

SEVERITY	TOTAL NUMBER					PERCENT OF TOTAL				
	All	Vehicle Only	Bike	Pedestrian	All VRU	All	Vehicle Only	Bike	Pedestrian	All VRU
FATAL	3	2	0	1	1	0.1%	0.1%	0.0%	3.3%	1.6%
SERIOUS INJURY	45	39	2	4	6	1.2%	1.1%	6.3%	13.3%	9.7%
MINOR INJURY	255	221	18	16	34	6.9%	6.1%	56.3%	53.3%	54.8%
POSSIBLE INJURY	492	473	11	8	19	13.4%	13.1%	34.4%	26.7%	30.6%
PROPERTY DAMAGE ONLY	2887	2885	1	1	2	78.4%	79.7%	3.1%	3.3%	3.2%
TOTAL	3682	3620	32	30	62					

CONTRIBUTING FACTORS

Table 2 shows the top five contributing factors by crash severity. Failure to yield right of way was the leading factor for all injury crashes, including fatal and serious injuries.

Table 2. Top Five Contributing Factors by Crash Severity

FATAL / SERIOUS INJURY CRASHES	ALL INJURY CRASHES
1. **FAILURE TO YIELD RIGHT OF WAY (GENERALLY FOR VEHICLES)**	1. **FAILURE TO YIELD RIGHT OF WAY (GENERALLY FOR VEHICLES)**
2. DRIVER SPEEDING	2. INATTENTIVE OR DISTRACTED
3. DISREGARDING TRAFFIC SIGNS	3. FOLLOWING TOO CLOSELY
4. INATTENTIVE OR DISTRACTED	4. FAILED TO KEEP IN PROPER LANE
5. DART / DASH	5. DRIVER SPEEDING

CRASH CAUSATION

CRASH TYPES

Figure 9 shows the total number of all crashes (including non-injury crashes) and Figure 10 shows the total number of FSI and FI crashes by collision type. Figure 11 shows the percentage of all crashes, FSI crashes, and FI crashes showing which types are overrepresented.

The top three types of crashes for all crashes (including non-injury crashes) are angle, rear end, and single vehicle run off road crashes. The top three types for FSI crashes are angle, single vehicle run off road, and pedestrian crashes. The top three types for FI crashes are angle, single vehicle run off road, and rear end.

By percentage, single vehicle crashes (run off road and other), pedestrian, bicycle, left turn, and head on crashes are overrepresented in FSI and FI crashes when compared to all crashes. Rear end and sideswipe crashes (opposing and same direction) are underrepresented in FSI and FI crashes compared to all crashes. Angle crashes were roughly equally represented in FSI and FI crashes compared to all crashes.

Figure 9. Total Crashes by Collision Type - All Crashes (2014-2023)

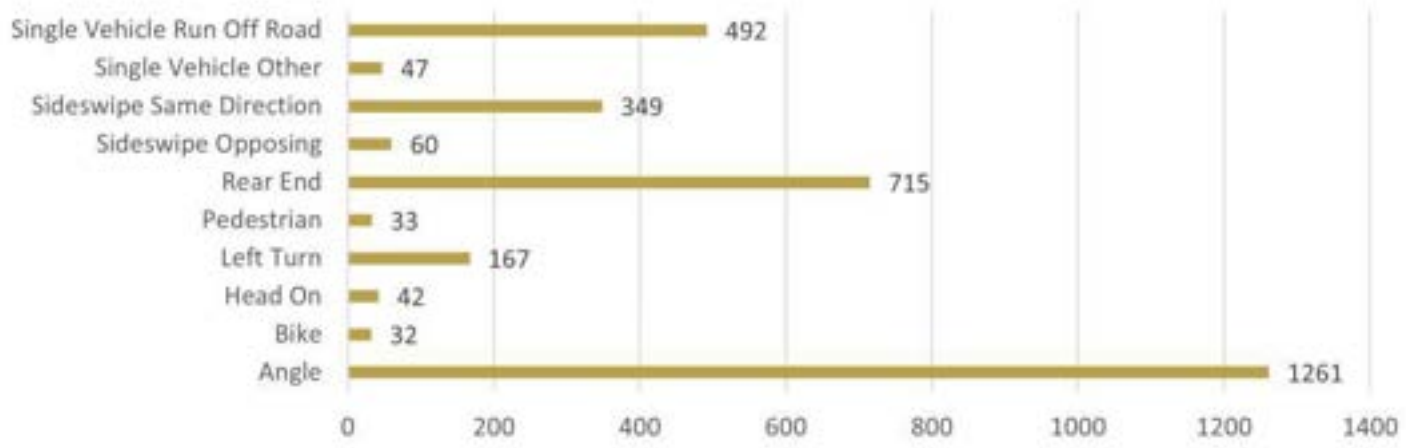


Figure 10. Total Crashes by Collision Type - FSI and FI Crashes (2014-2023)

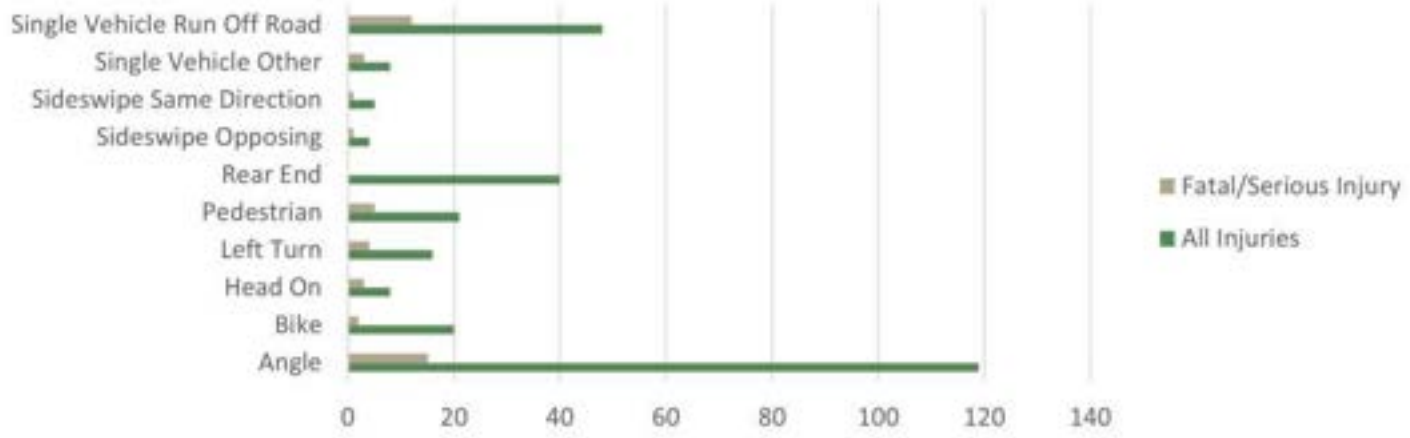
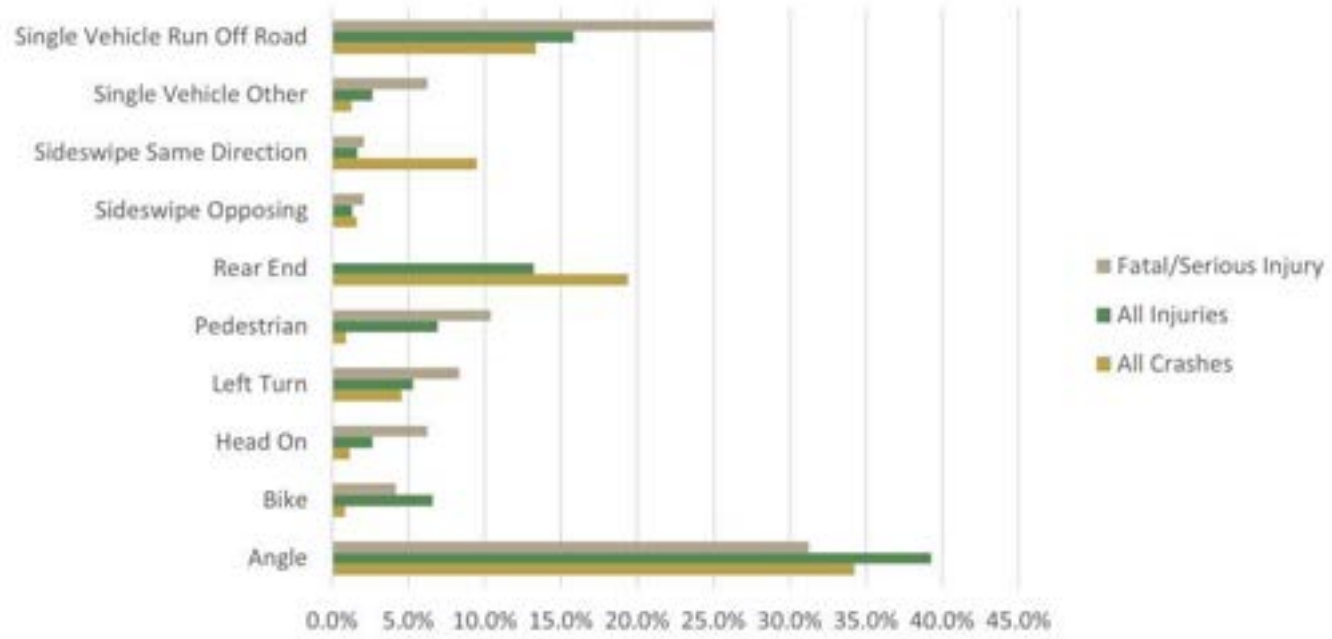


Figure 11. Percent (%) of Crashes by Type (2014-2023)



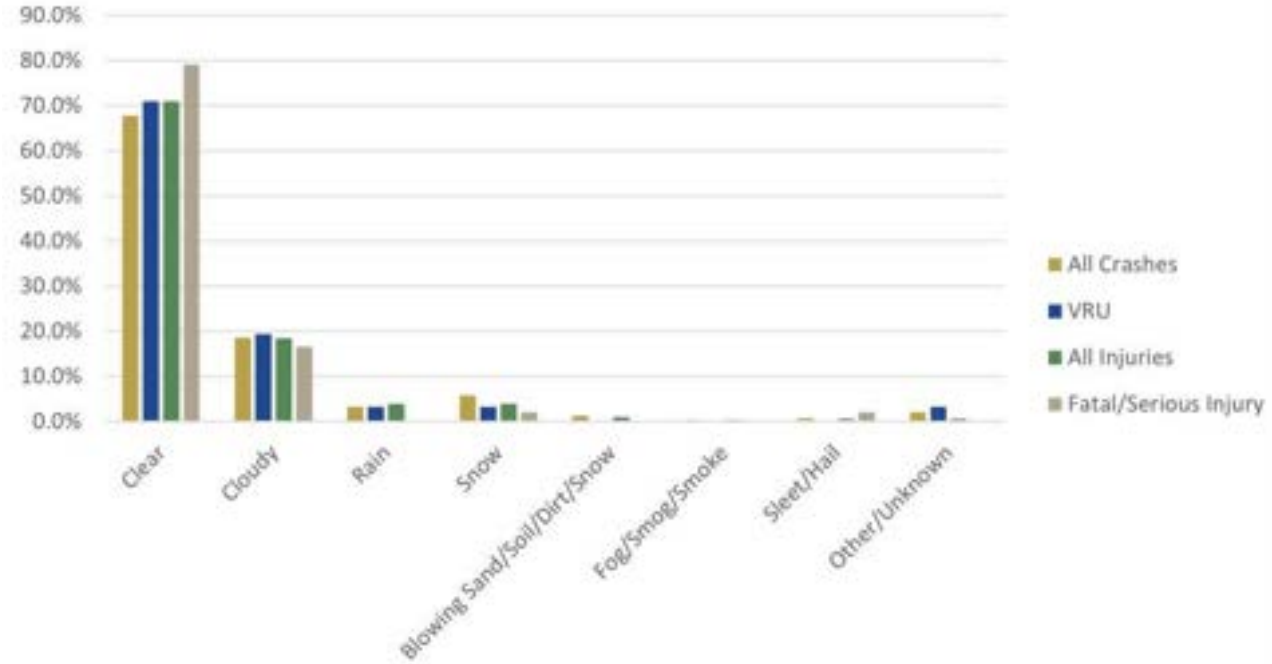
ENVIRONMENTAL CHARACTERISTICS

WEATHER CONDITIONS

The majority of all crashes, FI crashes, FSI crashes, and VRU crashes in Willmar occurred when the weather was clear or cloudy, not during winter weather or rain (Figure 12). FSI, FI, and VRU crashes occurred more frequently in clear and cloudy conditions compared to all crashes (including non-injury crashes). While the cause of this trend is somewhat unclear, some theories include:

- Drivers are generally more cautious and driving more slowly during rainy and snowy weather
- People walking and biking do so less often during rainy or snowy weather compared to clear and cloudy weather

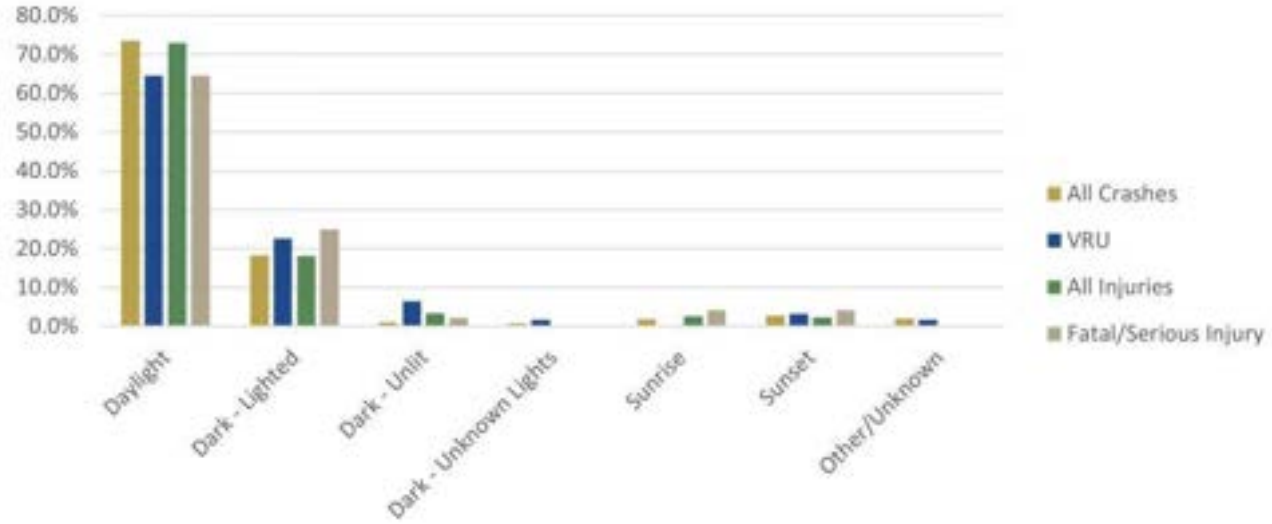
Figure 12. Percentage of Crashes by Weather (2014-2023)



LIGHTING CONDITIONS

The majority of FI and FSI crashes in Willmar occurred during daylight conditions. Comparing all crashes (including non-injury crashes) to FI, FSI, and VRU crashes, a greater amount of FSI and VRU crashes occur in dark, lighted conditions. This could indicate that existing lighting is not illuminating enough of the roadways and intersections to provide adequate visibility outside of daylight hours. Dark, unlit conditions were also overrepresented in FSI, FI, and VRU crashes compared to all crashes. Figure 13 shows all crashes compared to FSI, FI, and VRU crashes for each lighting condition.

Figure 13. Percentage of Crashes by Lighting (2014-2023)

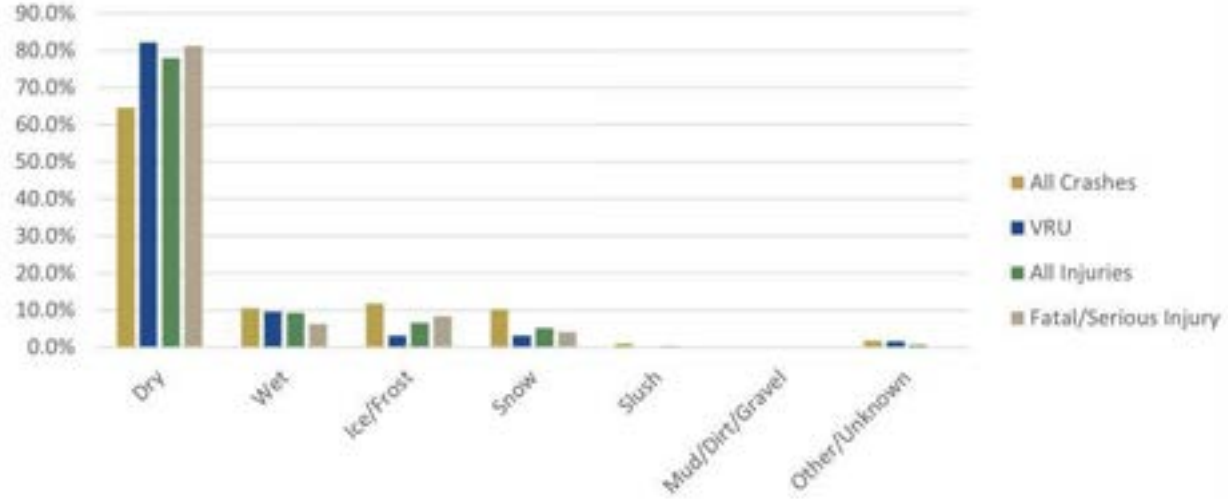


PAVEMENT CONDITIONS

The majority of all crashes, FI crashes, FSI crashes, and VRU crashes in Willmar occurred when the weather was dry or wet, not during snowy or icy conditions (Figure 14). FSI, FI, and VRU crashes occurred more frequently in dry conditions compared to all crashes (including non-injury crashes) and less often during wet, snowy, and icy pavement conditions. While the cause of this trend is somewhat unclear, some theories include:

- Drivers are generally more cautious and driving more slowly with wet, snowy, and icy pavement
- People walking and biking do so less often when pavement is wet, snowy, or icy compared to dry pavement

Figure 14. Percentage of Crashes by Pavement Condition (2014-2023)



PEER JURISDICTION REVIEW

Crash data from similar sized jurisdictions across Minnesota was analyzed to compare Willmar's crash rates against its peers. Seven peer jurisdictions were identified due to their size, demographic makeup, and geographic characteristics, including Alexandria, Austin, Bemidji, Brainerd, Faribault, Hutchinson, and Marshall.

Crashes for each community were totaled for 2014 to 2023 (see figures below). Willmar experienced a relatively low amount of fatal crashes compared to peer communities but also experienced higher rates of serious injury and minor injury crashes compared to its peers.

Table 3. Peer Jurisdiction Demographic Analysis

CITY	POPULATION (2020)	% WHITE	% OF COLOR	% HISPANIC OR LATINO
Willmar	**21,015**	**61%**	**28%**	**24%**
Alexandria	14,335	91%	7%	4%
Austin	26,174	65%	26%	17%
Bemidji	15,574	76%	24%	3%
Brainerd	14,395	90%	8%	3%
Faribault	24,453	67%	29%	15%
Hutchinson	14,599	91%	6%	5%
Marshall	13,628	77%	22%	9%

Figure 15. All Crashes

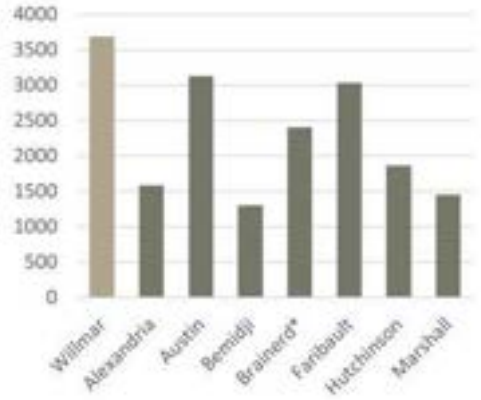


Figure 16. Serious Injury

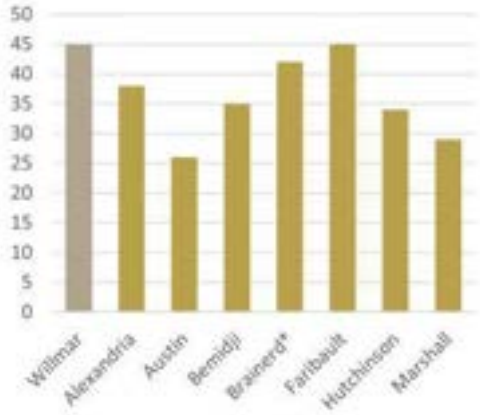


Figure 17. Fatal Crashes

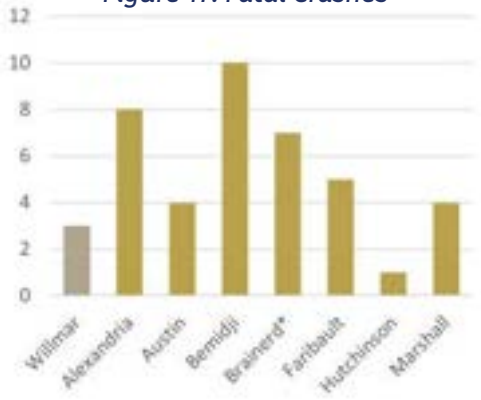
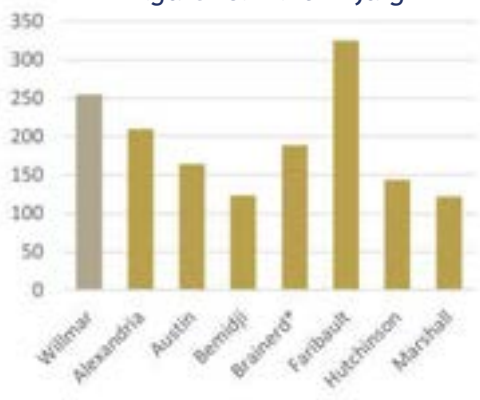


Figure 18. Minor Injury



CRASHES PER 1,000 RESIDENTS

Crash rates per 1,000 residents for each community were totaled for the 2014 to 2023 time period and reported in below. Crash rates per 1,000 residents helps to adjust the total number of crashes into a more true even comparison, but it does not account for the amount of commercial activity or pass-through trips that may be present in each community drawing people from other communities.

Willmar experiences a relatively low amount of fatal crashes per 1,000 residents compared to peer communities. Serious injury and minor injury crashes per 1,000 residents are close to the average within the peer communities studied. Willmar had the highest rate when including all crashes (including non-injury crashes) due to a high amount of non-injury crashes.

Figure 19. All Crashes per 1,000 Residents (2014-2023)

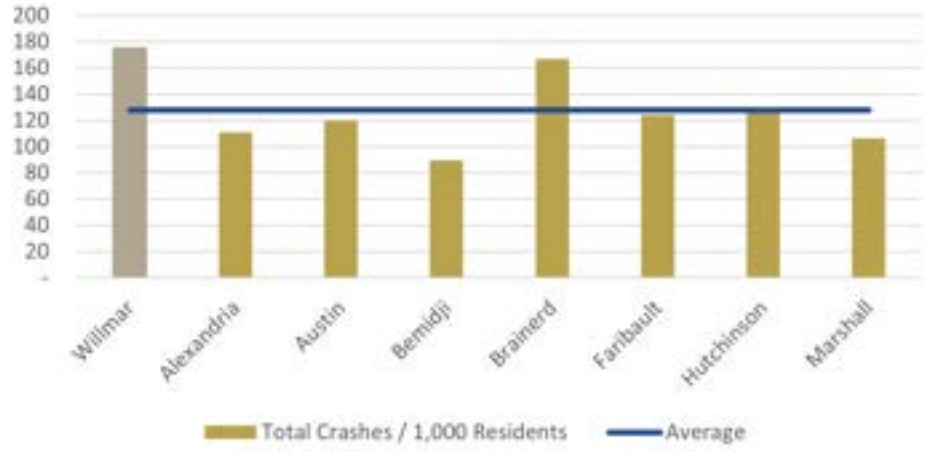


Figure 20. Fatal Crashes per 1,000 Residents (2014-2023)

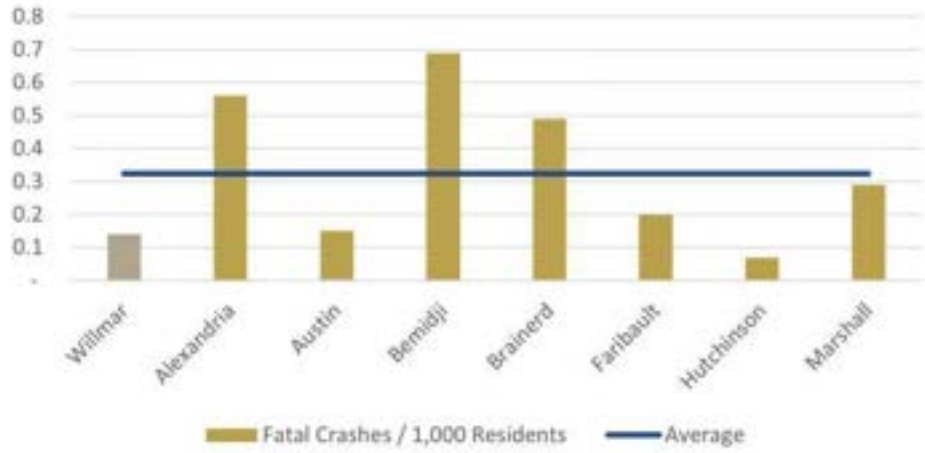
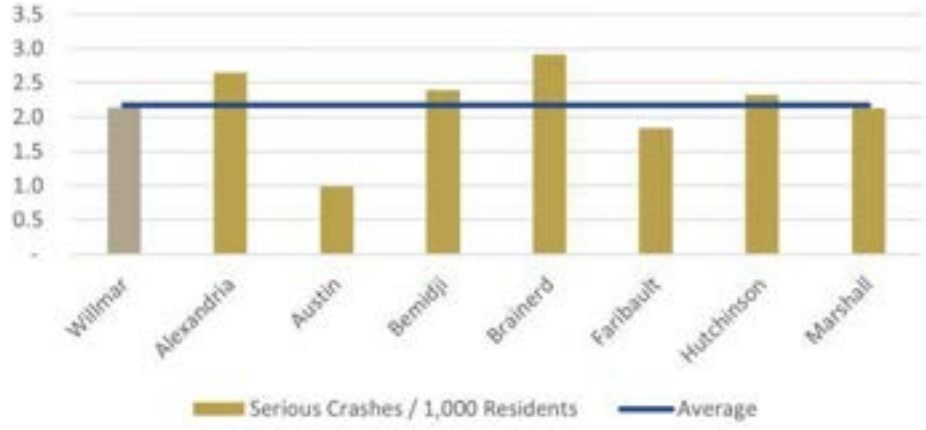


Figure 21. Serious Injury Crashes per 1,000 Residents (2014-2023)



CRASHES BY TYPE

Crash types for fatal and injury crashes in each community were compared to show which crash types Willmar is experiencing more or less of compared to other communities. This analysis is expressed in raw totals of crashes and as a percentage of overall fatal and injury crashes. Figure 22 and Figure 23 show the crash types for each community with Willmar shown on the bottom of each crash type.

Figure 22. Total Amount of Fatal and Injury Crashes by Type - Peer Review (2014-2023)

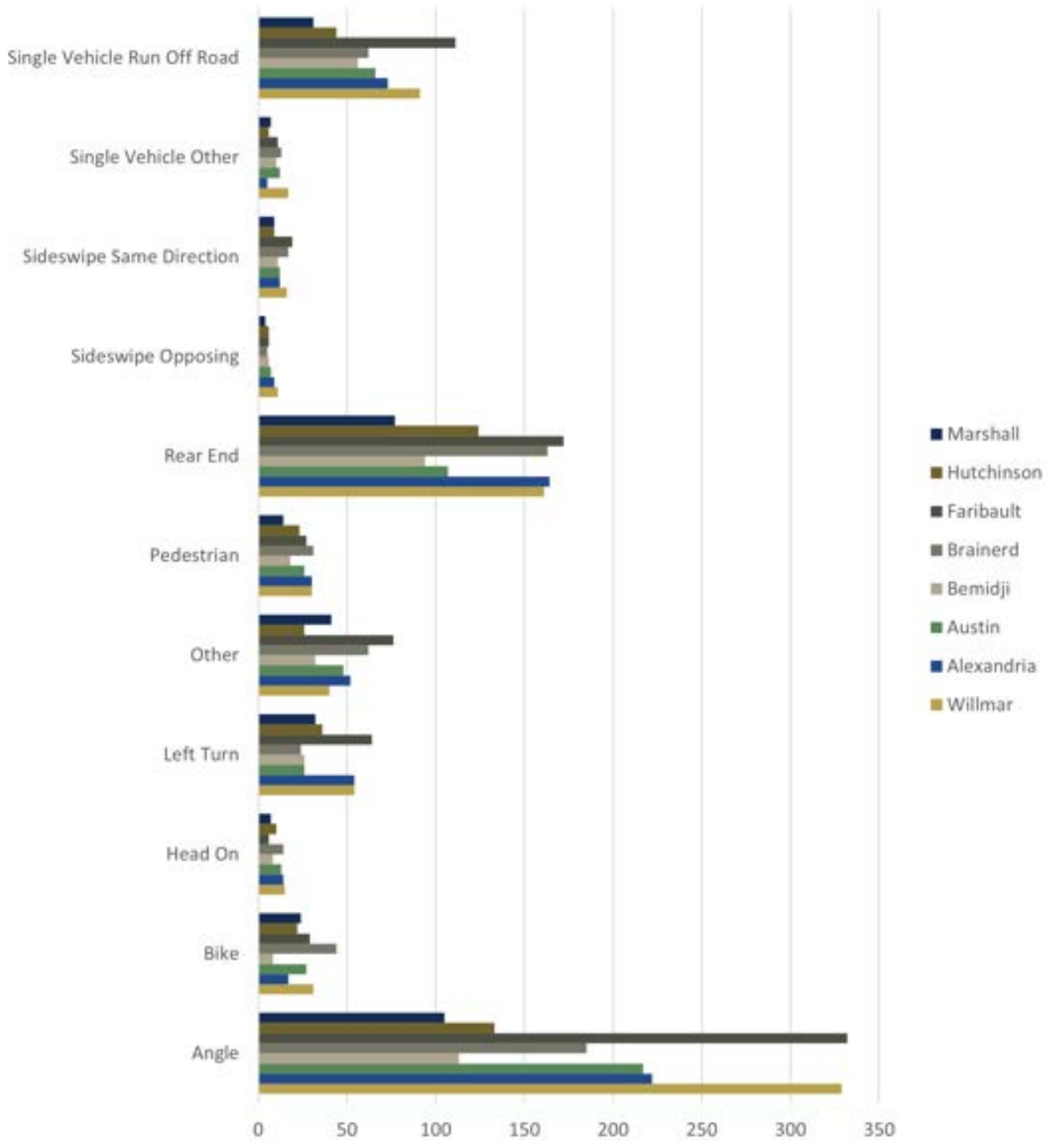
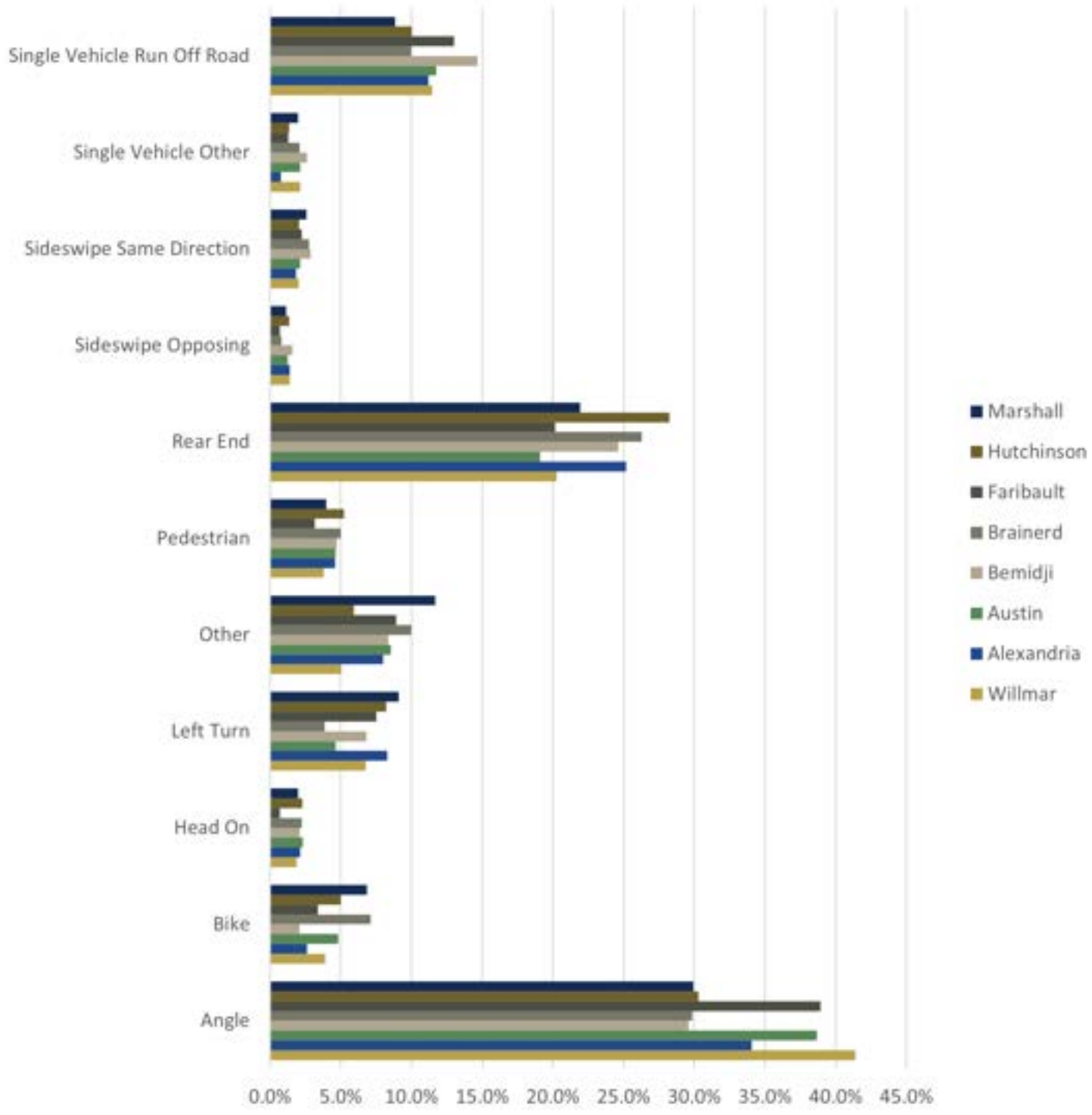


Figure 23. Fatal and Injury Crashes by Percent of Total - Peer Review (2014-2023)



Compared to its peer communities, Willmar has a high amount of angle ("t-bone") crashes both by total number and, especially, by percentage of total fatal and injury crashes. The total number of rear end fatal and injury crashes in Willmar was relatively high but when adjusted for percentage of total fatal and injury crashes the rear end crashes were relatively low compared to peer communities. For other crash types, Willmar was either near the average or below average in both total number of crashes per type and in percentage of total crashes per type.

HIGH INJURY NETWORK

High Injury Networks (HINs) are spatial representations of locations of fatal or serious injury crashes. These networks allow decision-makers to easily see locations of past crash history and allow analysts to find trends in the HINs that identify potential safety issues in other transportation facilities that do not have past crash history but may still have safety issues that need to be addressed. The following section provides detail on Willmar's High Injury Network. Additional details may be found in **Appendix C**.

CRASH DATA SOURCE

The crash data used for the development of the HIN was downloaded from the MnCMAT2 system maintained by the Minnesota Department of Transportation on July 20, 2024 for years 2014 to 2023. At the time of development of this plan, 2024 data was not fully available and thus was excluded from the analysis. Crash data from the MnCMAT2 system is derived from police crash reports for reportable (crashes exceeding $1,000 in damages) and reported (crashes that were reported to police) crashes.

WILLMAR'S HIGH INJURY NETWORK

The development of the HIN is based on the locations of fatal and injury crash locations on the transportation system within the City of Willmar, regardless of the owning or maintaining jurisdiction. In addition, Willmar's HIN also includes a majority of non-fatal/serious injury crashes and roadway segments with multiple crashes along the corridor

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

Crash data was analyzed for roadways with all jurisdictions within the City of Willmar's borders, including on roadways maintained by the Minnesota Department of Transportation (MnDOT) and Kandiyohi County. Although the City of Willmar 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.

Willmar's High Injury Network for vehicle-only crashes accounts for approximately 20% of the roadway system within city limits.

The Vulnerable Road User High Injury Network accounts for approximately 6%.

Vehicle Only and Vulnerable Road User High Injury Networks

Using the fatal and injury crash locations, two separate HINs were developed: one for crashes only involving vehicles ("vehicle-only") and one for crashes involving a vulnerable road user ("VRU"). A vulnerable road user is defined as someone who is walking, biking, or using a personal mobility device. Per FHWA guidance, motorcyclists are considered vehicles and not considered vulnerable road users. Additional details on the development of the two HINs is available in Appendix ##.

Figure 24 and Figure 25 show the vehicle-only HIN and vulnerable road user HIN, respectively. The vehicle-only HIN accounts for approximately 20 percent of the total roadway system mileage within the City of Willmar's borders while the vulnerable road user HIN accounts for approximately six percent.

The vehicle-only HIN includes many MnDOT or Kandiyohi County-owned facilities within the City of Willmar's borders as well as many Municipal State Aid Streets (MSAS) and other local streets. Compared with the total mileage of each system within the City of Willmar, roadways on the MnDOT trunk highway, County State Aid Highways (CSAH), and MSAS systems were overrepresented, and roadways on the county road and local non-state aid systems were underrepresented. Much of the vehicle-only HIN is located within the downtown core of the City of Willmar, but many other minor arterial and collector streets outside the downtown area are also included on the vehicle-only HIN.

The vulnerable road user HIN also includes many MnDOT or Kandiyohi County-owned facilities within the City of Willmar's borders as well as many MSAS and other local streets. Compared with the total mileage of each system within the City of Willmar, roadways on the CSAH and MSAS systems were overrepresented, and roadways on the MnDOT trunk highway, county road, and local non-state aid systems were underrepresented. Much of the VRU HIN is located within the downtown core of the City of Willmar, but other streets outside the downtown area are also included on the VRU HIN.

Figure 24. Vehicle-Only High Injury Network

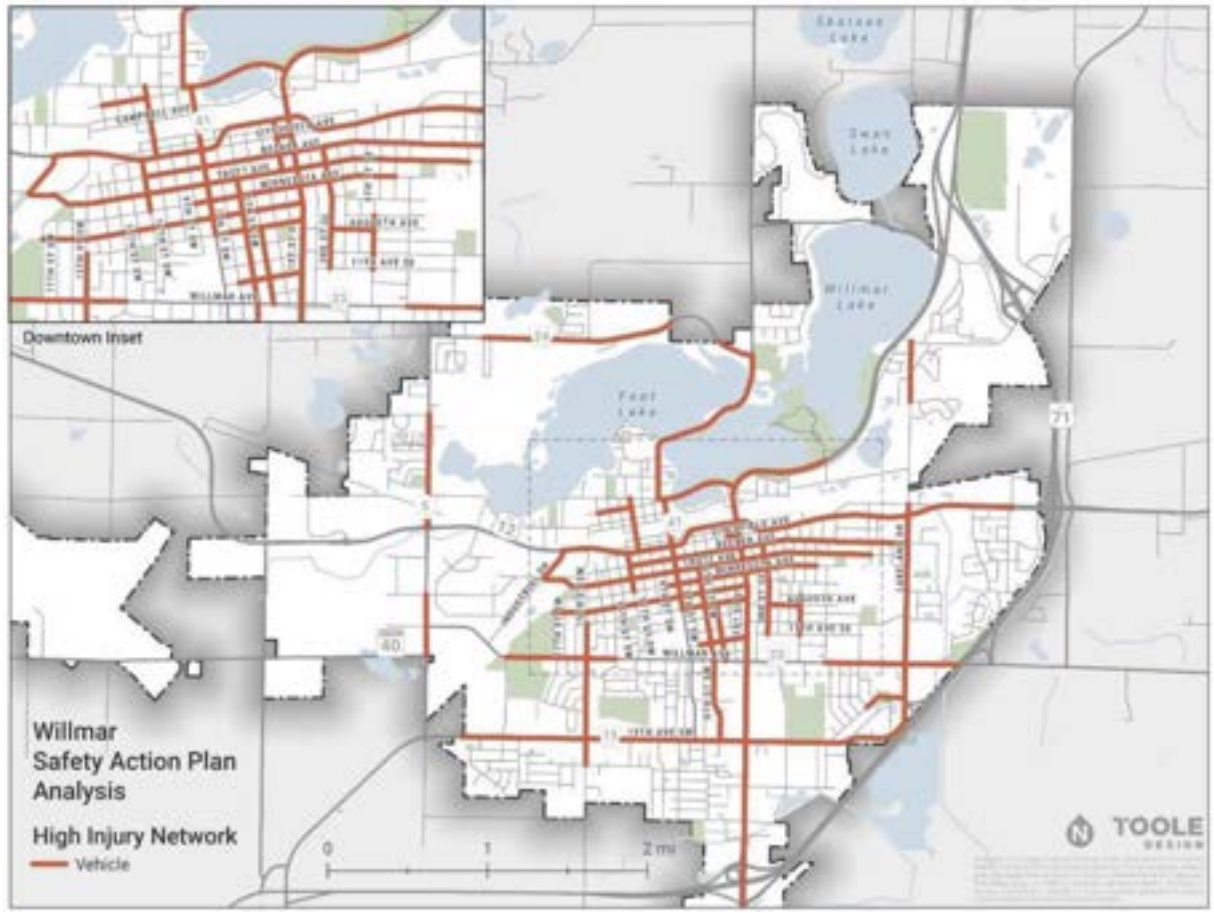
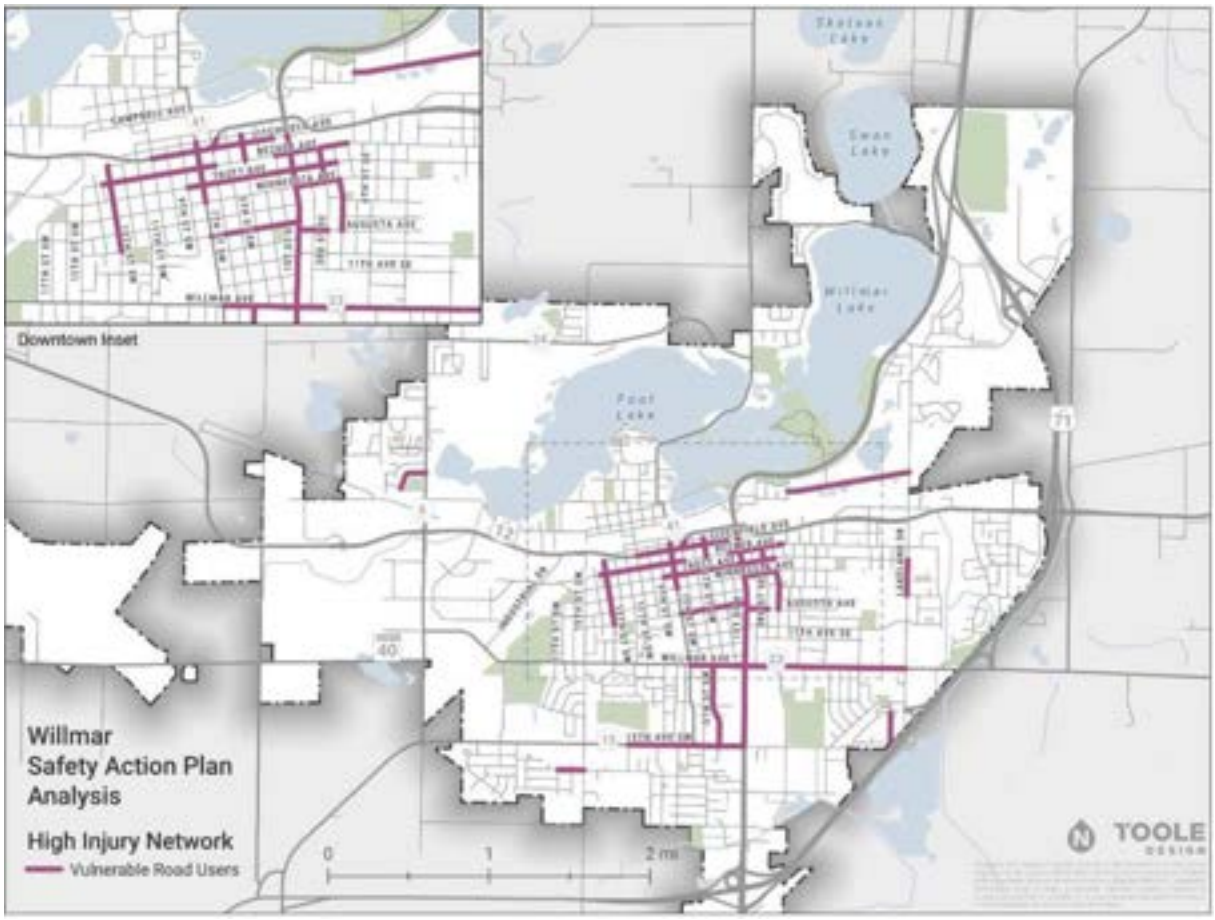


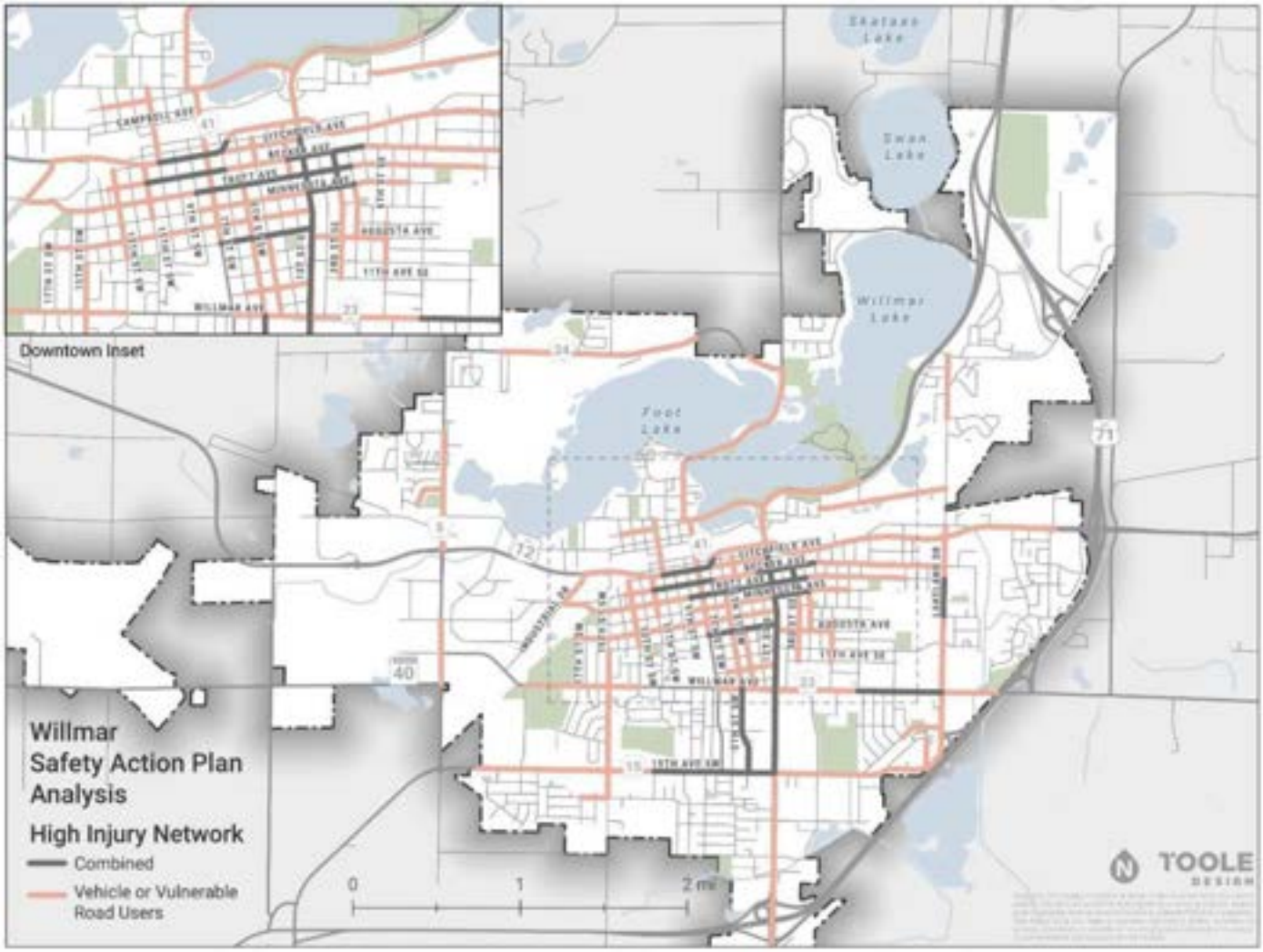
Figure 25. Vulnerable Road User High Injury Network



Combined High Injury Networks

Adding together both the vehicle-only and vulnerable road user HINs gives a combined HIN, shown in Figure 26. Roadways shown in the darker gray color are present on both HINs, while roadways shown in the lighter peach color are present on one of the two HINs. Other roadways not shown on either color are not included on either HIN.

Figure 26. Combined High Injury Networks



HIGH INJURY NETWORK TRENDS

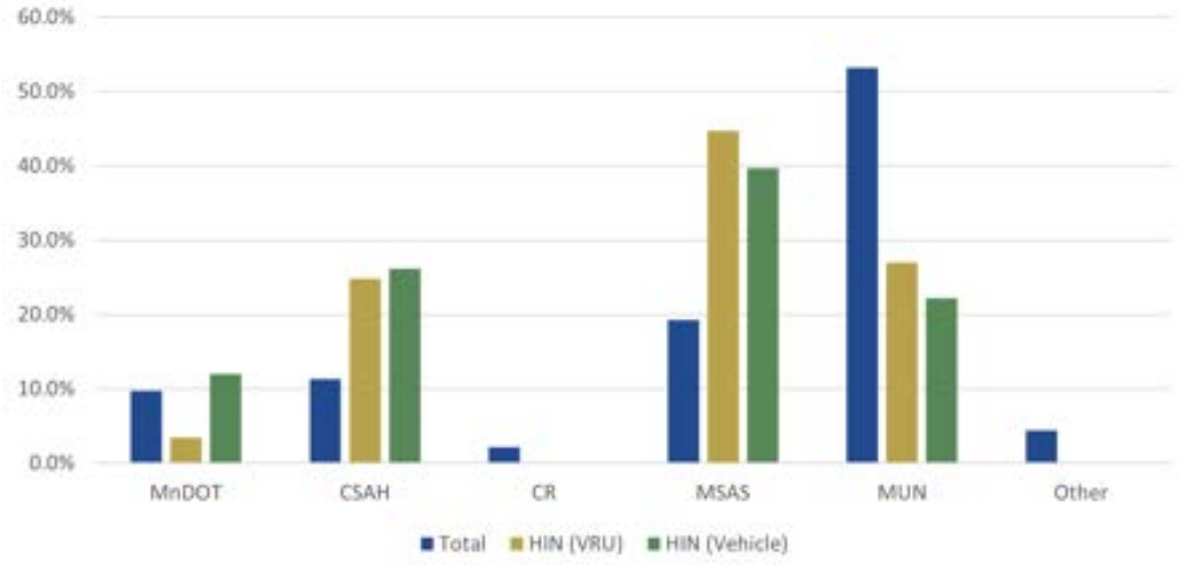
Following development of the HINs, different trends were identified which are intended to prompt further research and analysis into potential causal or correlated risk factors.

As previously noted, certain roadway systems are overrepresented when analyzing the HINs as shown in Figure 27. The blue bar represents the percentage of each system on the total roadway network within the City of Willmar, and the gold and green bars represent the percentage of each system on the VRU and vehicle-only HINs, respectively. Where the gray or maroon bars exceed the blue bar represents and over-representation of that roadway system on the HIN.

As previously noted, CSAH and MSAS system roadways are overrepresented in both HINs while MnDOT facilities are overrepresented in the vehicle-only HIN. While it is unlikely that roadway

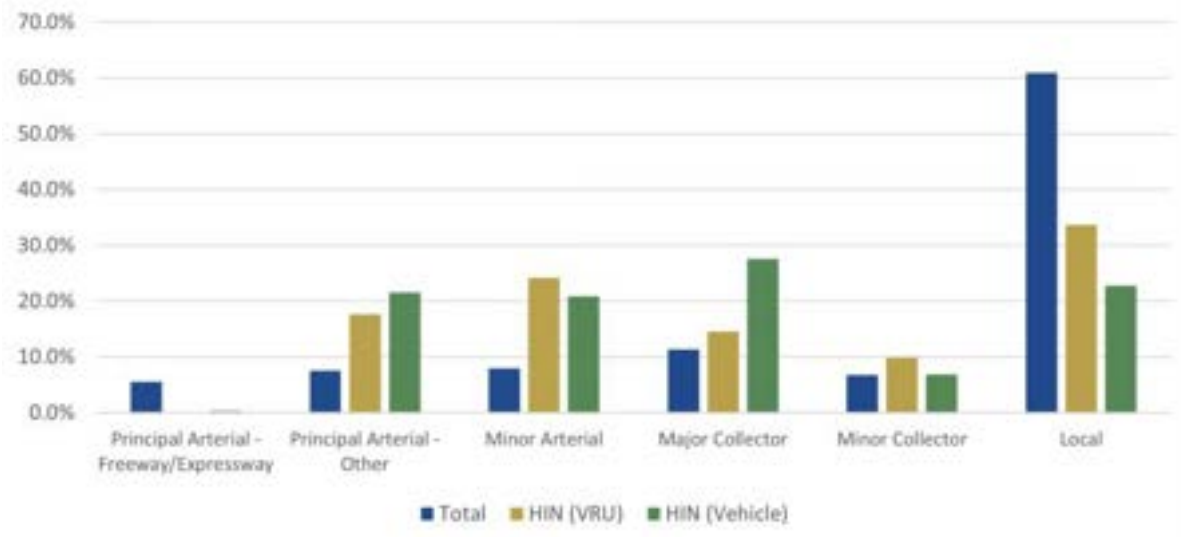
ownership by a certain jurisdiction directly contributes to safety concerns, different roadway design standards by the various jurisdictions may affect the safety of a roadway and be impacted by overall traffic volumes and speed limits. Local roadways in Willmar also have significantly lower traffic volumes with lower speeds, which contributes to a lower crash rate overall.

Figure 27. HIN Mileage by Roadway System



Similarly, mileage by functional classification can be analyzed to determine whether various types of arterials, collectors, or local roadways are overrepresented on the HINs, as shown in Figure 28.

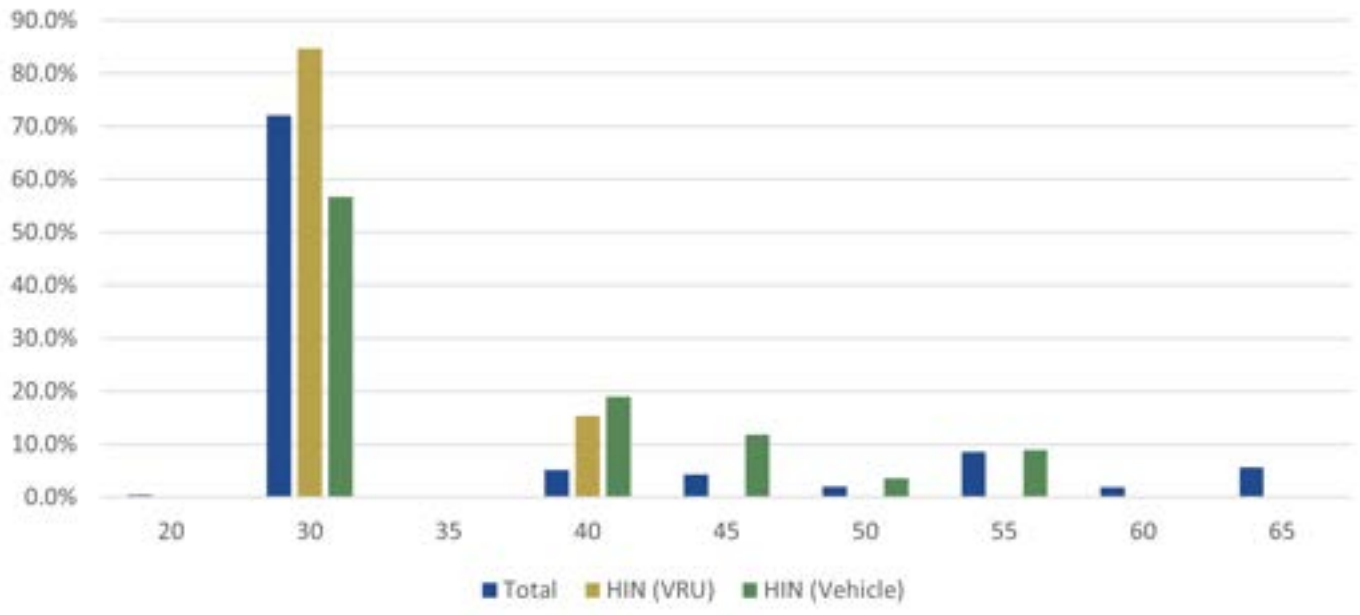
Figure 28. HIN Mileage by Functional Classification



Principal arterials (other than freeways or expressways), minor arterials, and major collectors were overrepresented on both HINs, while minor collectors were overrepresented on the VRU HIN. Local roadways were underrepresented on both HINs, and no principal arterial freeways or expressways (US 71/MN 23 bypass) were included on either HIN. Functional classification often is correlated to vehicle traffic volumes and affects certain characteristics of a street, such as access control, traffic signal or stop sign spacing (or lack thereof), lane widths, and parking availability. "Greater" functional classification tends to reduce access and increase speed, while "lower" functional classification tends to increase access and reduce speed.

The HINs were also analyzed for speed limits as shown in Figure 29.

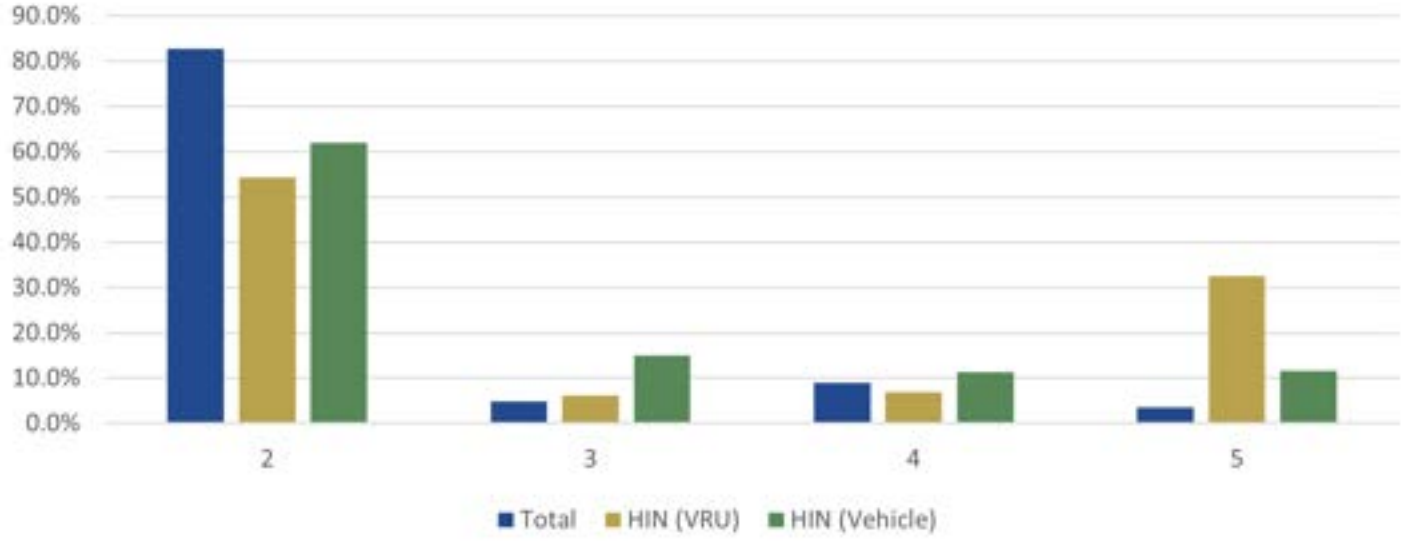
Figure 29. HIN Mileage by Speed Limit



Speed limits of 40 mph and above were overrepresented on the vehicle-only HIN, while speed limits of 30 and 40 mph were overrepresented on the VRU HIN. Speed limits tend to correlate with operating speed, especially where speed limits have historically been set by 85th percentile speed. Where vehicle speeds increase, more kinetic energy is present within the system leading to potential for more severe crashes. Vulnerable road users may not feel safe operating along or across roadways with operating speeds in excess of 40 mph, and most destinations for people walking or biking are within areas of lower speed limits.

Figure 30 shows each HIN compared to the percentage of mileage with various amounts of through and continuous two-way left turn lanes (TWLTLs).

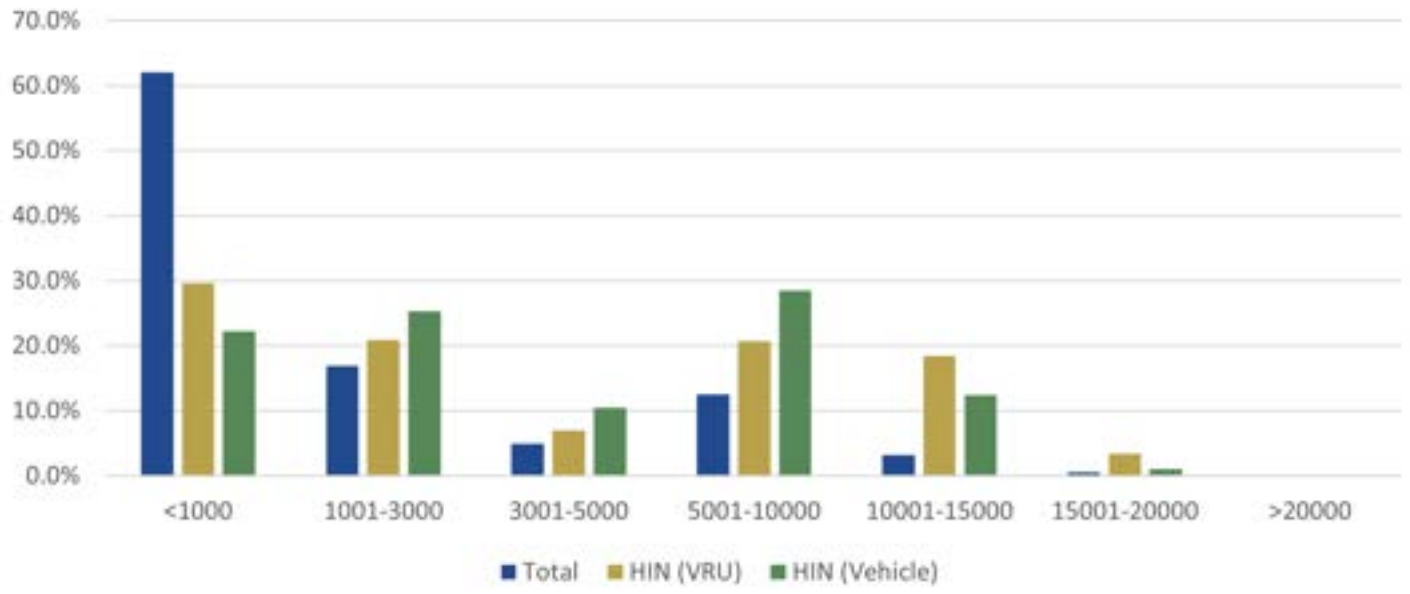
Figure 30. HIN Mileage by Number of Through and TWLTL Lanes



Roadways with three lanes (typically one through lane in each direction plus one TWLTL) and five lanes (typically two through lanes plus one TWLTL) are overrepresented in both HINs, while roadways with four lanes (typically two through lanes in each direction) are overrepresented in the vehicle-only HIN. Roadways with only two lanes are underrepresented in both HINs. Number of through and TWLTL lanes approximates the amount of potential conflict points for those intending to access or cross the roadway, with more conflict points generally leading to more potential for crashes.

Finally, each HIN was compared to the total roadway network by vehicle average daily traffic (ADT) volume, with ranges as specified in Figure 31. Please note that roadways without volumes provided in MnDOT traffic volume maps were assumed to have less than 1,000 vehicles per day based on previous experience in other communities.

Figure 31. HIN Mileage by Vehicle ADT



Generally, as a roadway increases in traffic volume it also becomes more overrepresented in both HINs. Vehicle ADT volume can be considered as potential exposure to risk for crashes with more vehicles providing more opportunities for crashes.

RISK FACTORS

Analysis of the high injury networks shows certain risk factors related to increased fatal and injury crash likelihood, as seen in Table 4. These risk factors are explained in greater detail in Appendix D: Risk Factors Analysis Technical Memorandum.

Table 4. Risk Factors in Willmar

RISK FACTOR THEME	RISK FACTOR	VEHICLE ONLY CRASHES	VULNERABLE ROAD USER CRASHES
SIGHT DISTANCE	**Stopping Sight Distance** • Downgrades exceeding 3% • Horizontal curvature	X	X
	Intersection Sight Distance • Intersection skew • Obstacles in line of sight • Additional travel lanes	X	X
SPEED	**Speed Limits**	X	X
EXPOSURE	**Average Daily Traffic (ADT) Volumes**	X	X
	Street Width / Crossing Distance	X	X
	Driveway and Intersection Quantity and Spacing	X	
	Intersection Offset	X	
	Railroad Crossings	X	
ENVIRONMEN-TAL	**Lighting**	X	X
	Incomplete Adjacent Sidewalk Network and/or Missing Crossings		X

CHAPTER 3
COMMUNITY ENGAGEMENT

The city led a collaborative, robust community and stakeholder engagement campaign in two phases to better understand transportation safety issues and challenges that people using Willmar roadways experience. The first phase (May – September 2024) focused on understanding existing conditions, concerns, and opportunities. The second phase (October 2024 – January 2025) focused on sharing draft priority areas and recommendations to confirm final recommendations are in alignment with the community and stakeholders.

Compared to most peer communities in Minnesota outside of the Minneapolis-St. Paul metropolitan area, a higher percentage of Willmar residents identify with historically disadvantaged communities, such as BIPOC individuals, people with disabilities, and low-income households. Engagement strategies and communication materials were designed with these communities in mind, and trusted community organizations that serve these populations were identified as project partners. Additionally, engagement demographics were monitored throughout Phase One to identify gaps that could be addressed in Phase Two engagement strategies.

ENGAGEMENT STRATEGIES

The city led a robust community and stakeholder engagement campaign to inform this plan. Engagement activities included two online surveys, an interactive online comment map, six pop-up events, three focus groups, and one open house. Communication about the overall project and engagement opportunities included a project website, fact sheet, and emails to community partners. The Phase One survey was also promoted through the City's Facebook page. During Phase Two, a flyer was distributed to families in the Willmar Public School District through "Peach Jar" promoting the second survey.

The Phase One online survey and comment map were open from July 2024 to September 2024. The survey received 261 responses, and the map received 35 online comments. A paper map of the online comment map was also brought to pop-ups and focus groups, where approximately 80 additional comments were received. A social media post from the city received 129 comments, which were tracked with general and locational comments as appropriate.

Figure 32. AIM Focus Group and With Willmar Comprehensive Plan Workshop (top to bottom)

The Phase Two online survey was open from January 2025 to February 2025. The survey received 25 responses, including one in Spanish. A paper version of the survey was brought to the pop-ups throughout this phase, and an additional 30 responses were gathered.

In-person engagement included six pop-up events, three focus groups, and one open house. During Phase One, the following activities took place:

- Willmar Fests Block Party Pop-up
- Rockin' Robbins Free Outdoor Community Concert Pop-up
- Kandiyohi County Fair Pop-up
- Advocacy and Inclusion Matters (AIM) Focus Group
- United Community Action Partnership (UCAP) Karen Community Meeting Focus Group
- UCAP Somali Community Meeting Focus Group
- With Willmar Comprehensive Plan Workshop Open House

Phase Two in-person engagement included:

- Willmar High School Zero Hour Pop-up
- AIM Annual Meeting Pop-up
- Willmar Boys Basketball Pop-up

In addition to these engagement efforts, the city collaborated with leaders from overlapping jurisdictions, including the Police Department, Fire Department, Kandiyohi County, and MnDOT. A specific set of questions for feedback was developed to facilitate one-on-one meetings with each agency throughout the project.

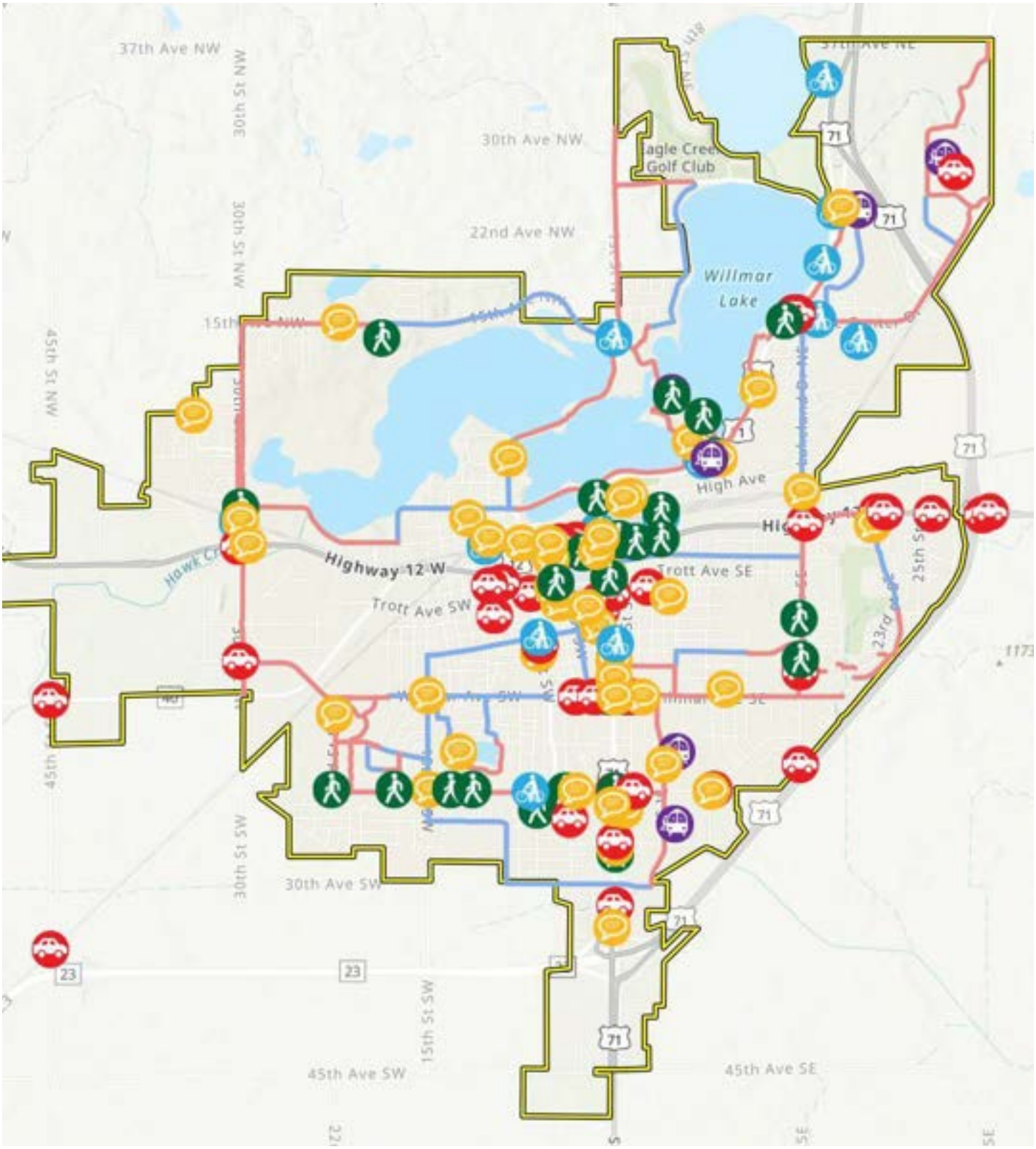
ADVISORY COMMITTEE

The Advisory Committee was formed at the beginning of the project to provide valuable insight into roadway experience and safety throughout the planning process. This committee met three times throughout the project. Their first meeting focused on an introduction to the project and review of data, equity analysis, and the public engagement plan. At the second meeting, the committee reviewed the safety analysis and an engagement update. Their final meeting focused on a draft implementation matrix and project concepts, including countermeasures and pilot opportunities, for feedback.

Advisory committee members represented the following agencies and organizations:

- City of Willmar Planning, Public Works, Parks, and Community Growth Departments
- Central Community Transit
- Mid-Minnesota Development Commission
- Willmar Public School, ISD 347
- Willmar Bus
- Ridgewater College
- Willmar Bikes

Figure 33. Willmar Safe Streets for All Safety Action Plan Online Interactive Comment Map



WHAT WE HEARD

Through project communications, engagement strategies, and the Advisory Committee, the city was able to gain understanding of residents' and stakeholders' key transportation safety concerns and barriers. A full engagement summary can be found in the following pages. Key findings can be summarized as follows:

A top concern for respondents was **multimodal transportation infrastructure**. Biking was repeatedly a top safety concern because of the lack of separate facilities for bicyclists and motorists. Similarly, respondents shared frustration with lack of sidewalks in some neighborhoods.

Speeding and downtown congestion was another frequent theme amongst comments. Pedestrians, bicyclists, and drivers all reported railroad crossings as a frequent location for reckless driving when trains block intersections for long period of time. Additional concern was expressed for congestion of vehicles downtown due to pedestrians and parked vehicles in the roadway.

Accessibility accommodation is a key theme identified because of its frequency amongst historically disadvantaged communities. Respondents reported needs such as accessibility improvements at intersections for pedestrians (including countdown timers, landings, and ramps), longer pedestrian crossing signals at major intersections, especially along first street, and improved maintenance of sidewalks and trails in the winter.

Numerous locations of concern were shared throughout the city, most notably, **Uptown Mall, First Street, County Road 5, Highway 12, Robbins Island, Kennedy Elementary, and Lakeland Elementary**. Respondents also frequently mentioned a desire for the **Pedestrian Bridge** over the Burlington Northern Santa Fe Railroad to be open again.

During Phase 2, when respondents were asked to rank **priority locations for projects**, Trott Ave/ Becker Ave, Willmar Ave SE, 1st Street, and Lakeland Drive at Lakeland Elementary were the top four ranked projects, in that order.

ENGAGEMENT SUMMARY

City of Willmar - Safe Streets for All

ENGAGEMENT OVERVIEW:

261 *Survey Responses*

190 *Pop Up Interactions*

35 *INPUTiD Comments*

70 *Focus Group Attendees*

129 *Social Media Comments*

682 *Estimated Interactions*

PUBLIC SURVEY RESULTS

78% Live in Willmar

9% Own a business in Willmar

45% Work in Willmar

12% Visit Willmar

MOST COMMON FORMS OF TRANSPORTATION:

1st Drive a vehicle

2nd Walk

3rd Bike

4th Transit

61% Don't feel safe driving within the city

54% Don't feel safe walking within the city

35% Don't feel safe biking within the city

14% Don't feel safe taking transit within the city

WITH WILLMAR COMPREHENSIVE PLAN

THEMES FROM COMMENTS ABOUT TRANSPORTATION SAFETY IN WILLMAR:

- Road & Intersection Safety Concerns
- Road Conditions & Maintenance
- Speeding & Reckless Driving
- Public & Alternative Transportation Options
- Downtown Area Congestion
- Community Safety & Law Enforcement

TOP LOCATIONS PEOPLE WISH TO TRAVEL WITHOUT A CAR:

- Robbins Island
- Retail & Restaurant Areas
- Downtown Willmar
- Community Center
- Kandi Mall & Nearby Stores
- Ridgewater College & Nearby Trails
- Schools (Especially High Schools)
- Parks & Outdoor Spaces
- Health & Human Servies Buildings

KEY AREAS FOR IMPROVEMENT:

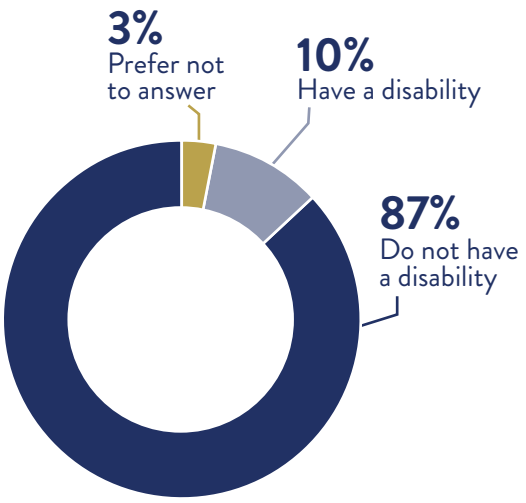
- Uptown Mall
- First Street
- County Road 5
- Highway 12
- Robbins Island
- Pedestrian Bridges
- Kennedy Elementary
- Lakeland Elementary
- Additional Small Clusters around 19th Avenue

WITH WILLMAR COMPREHENSIVE PLAN

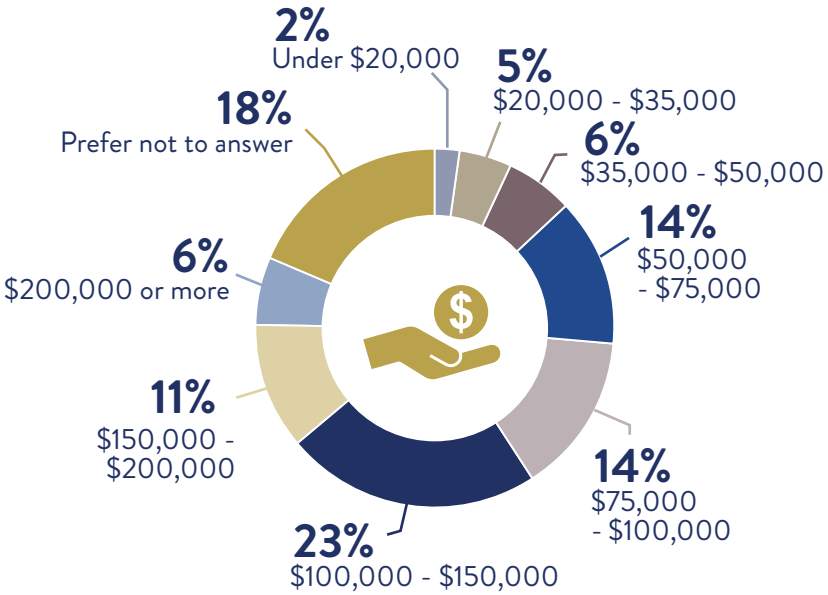
SURVEY DEMOGRAPHICS

AGE:

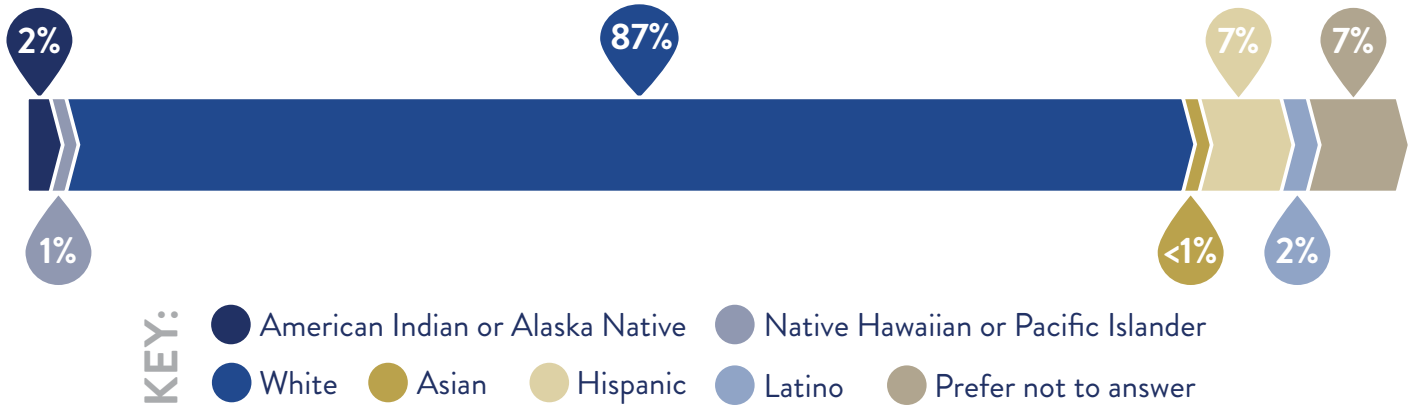
DISABILITY STATUS:



HOUSEHOLD INCOME:



RACIAL & ETHNIC BACKGROUND:



WITH WILLMAR COMPREHENSIVE PLAN

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CHAPTER 4
EQUITY ANALYSIS

Equity can be defined in different ways depending on the context, but is generally described as the fair distribution of costs and benefits of an action. Transportation equity more specifically is defined by:

- Compensation for inequities between groups in society
- Provides greater benefit to those with greater need
- Recognizes current and past inequities
- Considers the local demand for resources
- Equally distributes cost and benefit between those with equal ability and need
- Ensures everyone has transportation access and options that allow them to participate fully in society

IMPORTANCE OF AN EQUITABLE TRANSPORTATION SAFETY SYSTEM

Addressing safety disparities and establishing equitable systems allows for a comprehensive transportation system. Removing transportation barriers for people, particularly for those who do not drive due to ability, income, age, or a combination of these factors, eliminates gaps that exist in the system and makes a safer and more comfortable network for all users. People should feel safe and empowered to travel using any mode to access employment, school, grocery shopping, and a variety of other activities to fully participate in society.

Owning a vehicle and traveling by car can be burdensome for many people in the community. Transit, walking, and bicycling play a vital role in the overall transportation system by offering increased mobility, independence, and access to opportunity for people without vehicles. This stresses the need for a comprehensive transportation safety system. Historically marginalized groups are more likely to shoulder the burdens of the transportation system or have benefits of the system withheld because of the ongoing effects of past policies and investment patterns, which results in disparate transportation experiences and an inequitable transportation system. Connected and accessible multimodal infrastructure for these groups results in better access to daily physical activity and improved quality of life.

EQUITY ANALYSIS APPROACH

An equity analysis can be used to determine how people with sociodemographic vulnerability are impacted differently. It can identify communities that have disproportionate safety, access, or other transportation system outcomes. It can then examine how these communities are impacted and provide insights on how future transportation investments can remove sociodemographic disparities and redress past harms. The knowledge gained through the equity analysis will be used in the Willmar Action Plan as a component of project prioritization and the plan implementation to monitor, reduce, and, ideally, eliminate disparities. This equity analysis will follow the approach in Figure 34. Additional details on each approach component is provided in Appendix B.

Figure 34. Equity Analysis Approach

EQUITY FOCUS AREAS IN WILLMAR

To determine the priority Equity Focus Areas for the Willmar Action Plan, the project team weighted ten indicators of potential disadvantage (IPD) scores and categorized census block groups into the same structure ranging from well below average to well above average (see Appendix B). Primary Equity Focus Areas for the plan include the census block groups identified as "well above average", located downtown and around the Willmar Lake area. Secondary Equity Focus areas are identified as "above average", which are the census blocks around the Foot Lake, and west of MN-23, south of Willmar Avenue. Equity Focus Areas show high concentrations of IPD and were therefore prioritized during community engagement, analysis, recommendations development, and implementation stages of the Willmar Action Plan.

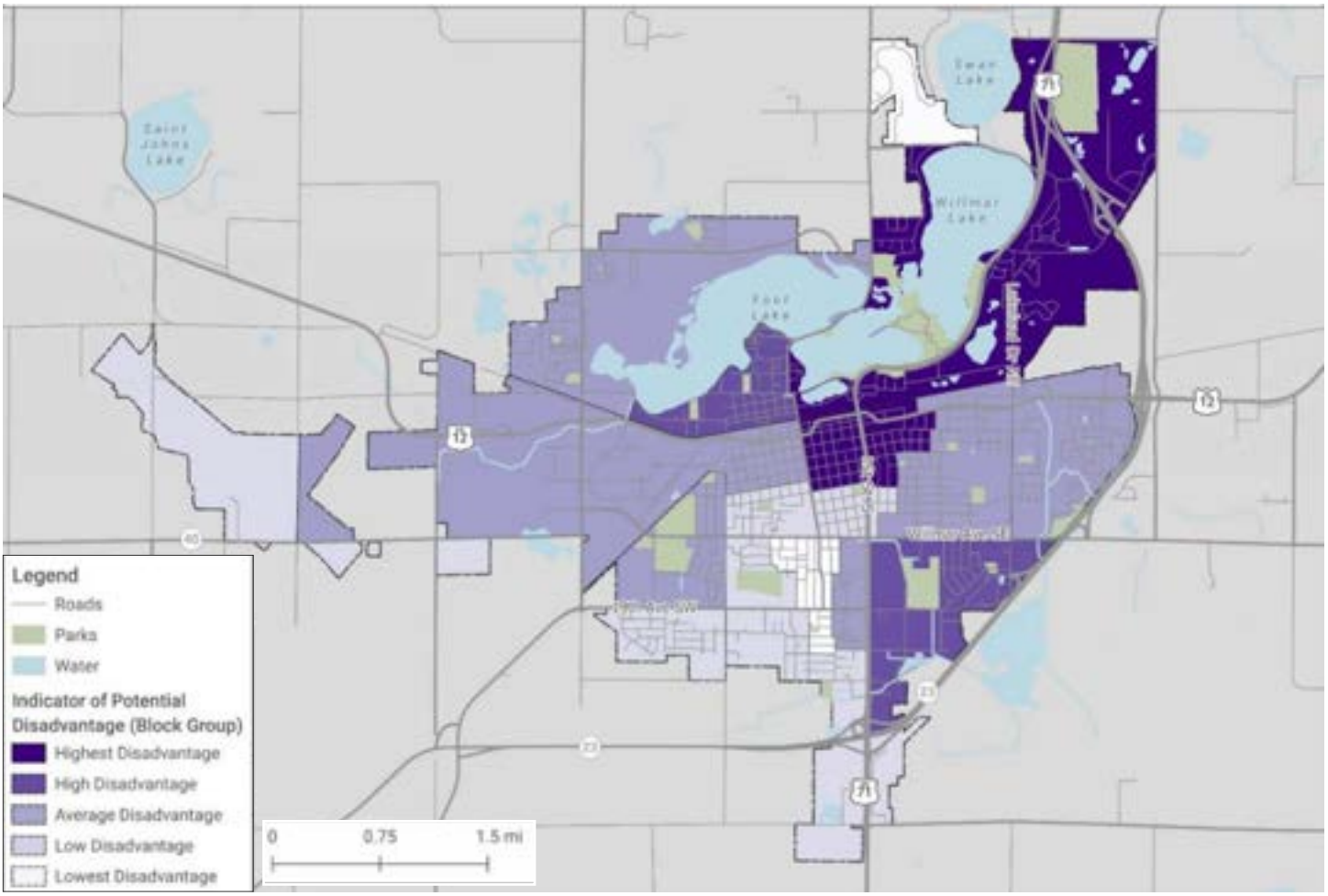
STRATEGIES TO ADVANCE EQUITY

The equity analysis is a component of the Action Plan with the purpose of influencing the decision making as a result of this project. Recognizing that traffic violence (and other negative outcomes of the transportation system) has disproportionate impacts on BIPOC, low-income households, and other communities that have been marginalized, focusing interventions and improvements to serve these communities advances equity. This section describes the strategies through which findings from this equity analysis can and should impact the planning and implementation of transportation safety projects in Willmar.

CONTINUED ASSESSMENT

The equity analysis reveals populations and areas that should remain in the forefront when deciding how to address planning issues, such as transportation safety. By assessing the distribution of impacts in the Equity Focus Areas and for BIPOC communities and low-income households over time, Willmar can monitor the impact investment decisions are having. In this way, investments can be prioritized to address performance while prioritizing disproportionate impacts and underinvestment among historically marginalized communities.

Figure 35. Equity Focus Areas



DATA TYPES

The safety analysis in this plan provides only part of the puzzle in the form of qualitative data through equity mapping and the high injury network (HIN). To understand transportation disparities, we need to have a qualitative data analysis in the form of historical context and understanding people's lived experience. This equity analysis includes historical context, but the best data to understand people's live experiences comes from community engagement. This data helps define transportation disadvantage, identify areas of safety risk, highlight barriers to access and mobility, understand how gaps and barriers impact people, establish the existing conditions and context, and begin to understand how safety issues can be addressed. Feedback from engagement can also be used to adjust the analysis to include new or different communities or assess different impacts.

It is important to remember that inequities are a result of past discrimination, disinvestment, and disenfranchisement. Understanding the history of the region relative to racialized communities and other key communities can highlight what harms should be redressed. These may not be limited to transportation although they will affect one's mobility. Advancing equity is a continual process; the equity analysis is one step in a multidisciplinary, multi-sectoral endeavor.

STORYTELLING

Willmar can influence equity outcomes through storytelling using the high-level issues and patterns identified in the equity mapping analyses with an overlay of the historical context. The story crafted by this analysis can and should be modified based on the results of regional engagement. An equity analysis groups people into broad demographic-based populations, but there are nuances in how people within a population experience the same impact. Furthermore, populations based on demographic data are different than communities that are considered a group based on shared experiences and interests. Demographic data also has geographic bounds (defined by the US Census) that may not align with neighborhood boundaries. As a result, equity analyses present rough estimations of communities and impacts they may experience. These broad analyses will not describe the lived experience of individuals or how overlapping and intersecting identities compound mobility impacts.

To facilitate storytelling and examine more individualized outcomes, we can employ the concept of personas. Using the results of the equity and safety risk analyses and engagement, we can distill mobility challenges and contributing factors along with how an individual's identities interact with these challenges. We can use this to craft personalized examples of how individuals throughout the region experience the transportation system. These personas can help make disparate impacts more tangible and understandable to people from dominant populations in local jurisdictions.

EXPANDING ANALYSIS

Equity has largely been considered in the environmental justice and Title VI context, which often creates analyses to address a requirement and mark a checkbox. The equity analysis for the Action Plan identifies and prioritizes locations for interventions and helps determine types of interventions informed by the analysis and the aim of achieving equitable outcomes.

Starting with the Action Plan, Willmar can continue to integrate equity analysis into decision making by using the equity analysis process to assess potential outcomes like accessibility and use the results to influence which projects are selected and prioritized. This lays the foundation for a more systemic equity framework that uses equity to make decisions throughout the agency for this and future planning projects.

REVIEW OF EXISTING PLAN & POLICY DOCUMENTS

Various local, regional, state, and federal plans, studies, and initiatives were reviewed for policy content. As part of this plan, the following were reviewed:

LOCAL	• Willmar Comprehensive Plan (2009) • Willmar Comprehensive Plan: Trails and Pedestrian Plan Addendum (2011) • Willmar Pedestrian and Bike Route System Initiative (2021) • Safe Routes to School Plans (Roosevelt Elementary, Kennedy Elementary, Willmar Middle School) • Willmar ADA Transition Plan (2019)
REGIONAL	• Kandiyohi County Bicycle and Pedestrian Trails Plan (2024) • Kandiyohi County ADA Transition Plan (2020) • District 8 Bicycle Plan (2019)
STATE	• Minnesota Strategic Highway Safety Plan / Highway Safety Plan • Minnesota Safe Routes to School Strategic Plan
FEDERAL	• USDOT Pedestrian Safety Action Plan

LOCAL

Willmar Comprehensive Plan (2009)

The 2009 City of Willmar Comprehensive Plan identified a litany of current and emerging transportation trends affecting residents. Transportation safety concerns were predicted to be exacerbated by the community's continued growth. Notably, the city emphasized concerns around pedestrian safety. Trails, paths, and bike lanes were strongly supported by both the public and city staff. These emerging trends guided the following transportation safety policies that were established in the 2009 plan, including:

- Develop a transportation system that properly balances considerations of safety, cost, accessibility and environmental protection.
- Control land use development at major intersections and interchanges to avoid compromising the safety, accessibility and function of the streets involved.

An update to the 2009 Comprehensive Plan is currently in progress and is expected to be completed by early 2025.

Willmar Comprehensive Plan: Trails and Pedestrian Plan Addendum (2011)

The City of Willmar extrapolated upon the 2009 Comprehensive Plan with the development of a Trails and Pedestrian Plan Addendum in 2011. A key purpose of this plan was to improve the safety of those choosing active transportation by enhancing facilities citywide. Critically, the 2011 Trails and Park Plan established safety as a top priority and that safety should be the most important aspect of bicycle and pedestrian design.

Further, this plan provided guidelines and standards for prioritizing potential bike and pedestrian improvements. Prior to being added to the City's capital investment program a project scope must be technically and economically realistic. To even be placed on the future project list a candidate project must meet the following criteria:

- The project is needed to improve safety.
- The project enhances, improves, or replaces an existing facility, The project closes an existing gap in the existing bike or pedestrian system.
- The project will remove a significant barrier to bicyclists and pedestrians.
- The project is needed to meet plans for a city-wide bicycle and pedestrian system that connects the identified key destinations in the community.

Willmar Pedestrian and Bike Route System Initiative (2021)

This initiative was approved on September 20th 2021 and established the City's bike and pedestrian network, while also allocating funding for signs and wayfinding along the newly designated routes.

Safe Routes to School Plans

- **Roosevelt Elementary School**: In 2013 Roosevelt Elementary developed a safe route to school (SRTS) plan with planning assistance from MnDOT. This planning effort analyzed existing conditions around the school, prioritized areas to improve, and suggested pedestrian countermeasures to protect students. Located in southwest Willmar, this plan focused on the area around Roosevelt Elementary and identified improvements for crossing 19th Ave SW. SRTS plans also identify programming that educates on biking and encourages students and families to use active transportation.

- **Kennedy Elementary School**: This SRTS plan is very similar to the Roosevelt Elementary effort, because they were both guided by MnDOT planning assistance. As such, the 2013 Kennedy Elementary School SRTS Plan also identified problem areas to address to expand safe pedestrian access to more students. This effort focused on the neighborhoods adjacent to the school in central Willmar and identified a myriad of pedestrian improvements to facilitate crossing and connections.

- **Willmar Middle School**: Developed in 2013, the Willmar Middle School SRTS Plan was consistent with the contemporaneous plans at the two elementary schools. The middle school plan conducted similar surveys, evaluations, and provided future recommendations for infrastructure investment. This plan focused on facilitating safer pedestrian crossings on Willmar Ave SE and 1st St S, in central Willmar.

Willmar ADA Transition Plan (2020)

Adopted in 2020, The City of Willmar's Americans with Disability Act (ADA) Self-Evaluation and Transition Plan provided a comprehensive street-level analysis of ADA accessibility within public right-of-way. The plan established criteria to prioritize ADA accessibility projects. Locations and roadways with access to public locations like government facilities, public libraries, schools, and hospitals were to be prioritized.

As part of this planning effort the City established ADA design standards and procedures that are in line with regional and nationwide practices. These guidelines are to be implemented in the design of all future transportation projects.

REGIONAL

Kandiyohi County Bicycle and Pedestrian Trails Plan (2024)

The primary objective of this plan was to determine priorities for biking and walking improvements within Kandiyohi County. The City of Willmar's robust trail network makes up a significant share of the County's trails. The Kandiyohi County Bicycle and Pedestrian Planning Task Force identified six priorities to consider when implementing trail improvements, including:

- Maintenance of Kandiyohi County's existing trails
- Improved trail-to-trail and trail to community connectivity
- Creation of more looped trail routes
- Incorporation of unique trail destinations and points of interest
- Addition of trail amenities
- Installation of improved trail signage

Kandiyohi County ADA Transition Plan (2020)

Like Willmar's ADA Self-Evaluation, this plan provided a comprehensive assessment of ADA accessibility of pedestrian facilities within County right of way, the effort focused on pedestrian ramps and at signalized intersections. Importantly the County Committed to periodically updating the ADA evaluation. Further, Kandiyohi County established new ADA design guidelines that apply to new construction projects, reconstructions, and rehabilitations. The county also established policies regarding accessibility improvement requests.

District 8 Bicycle Plan (2019)

The District 8 Bicycle Plan built on MnDOT's previous efforts to develop a connected network of statewide routes. During this effort MnDOT worked with local partners to establish Bicycle Investment Routes. Bicycle Investment Routes are planning tools intended to guide future investments in bicycle facilities across the district. This plan also developed a priority framework that local agencies can use to prioritize bike projects, including:

- Local connections through 'Urbanized Areas.'
- Populations and equity considerations
- Nearby activity generators
- Network connectivity
- Plan consistency
- Safety improvements

STATE

Minnesota Strategic Highway Safety Plan / Minnesota Highway Safety Plan

The Minnesota Strategic Highway Safety Plan (SHSP) identifies the direction for focusing traffic safety resources and provides data driven, actionable strategies to reduce statewide traffic fatalities in Minnesota. The plan involved extensive stakeholder engagement across the state and resulted in the identification of 39 strategies and 168 tactics to reduce roadway fatalities in Minnesota.

Minnesota Safe Routes to School Strategic Plan (2020)

The Minnesota Safe Routes to School Strategic plan set out to improve walking and biking to school for children across the state. The plan included refined visions, goals, strategies, and action steps to expand, strengthen, and monitor Minnesota's SRTS Program. Additionally, the

strategic plan rolled out new performance evaluation measures that are used to assess the effectiveness of the state's SRTS program.

FEDERAL

USDOT Pedestrian Safety Action Plan

The USDOT Pedestrian Safety Action Plan is an overarching document that guides statewide, regional, and local plans. It recognizes the challenges of pedestrian safety and has collaborated with other agencies such as Federal Highway Administration (FHWA) and National Highway Traffic Safety Administration (NHTSA) to complete actions that will reduce pedestrian deaths and serious injuries. Additionally, the Safe System Approach has been adopted by the USDOT as a system to achieve their goal and create a safer transportation system.

SAFE SYSTEMS APPROACH

A Safe Systems Approach is a guiding model to address safety on our roads. The Safe System Approach has been developed and adopted by the United States Department of Transportation as an effective way to address and mitigate the risks posed by our transportation systems.

The Safe System Approach includes six principles that are reinforced through five objectives. These principles and objectives create a holistic approach to make our transportation systems and public right of ways safer for people. Compared to traditional road safety practices, the Safe System Approach focuses on the design and operation of our transportation systems to anticipate human mistakes and lessen the impact of crashes to save lives.

Vision Zero is a strategy to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.

SAFE SYSTEM PRINCIPLES

1. Death and Serious Injuries are Unacceptable
2. Humans Make Mistakes
3. Humans are Vulnerable
4. Responsibility is Shared
5. Safety is Proactive
6. Redundancy is Crucial

SAFE SYSTEM ELEMENTS

1. Safe Road Users
2. Safe Vehicles
3. Safe Speeds
4. Safe Roads
5. Post-Crash Care

highways.dot.gov/safety/zero-deaths

CHAPTER 6
PROJECT PRIORITIZATION

PROJECT PRIORITIZATION FRAMEWORK

Developing a hierarchy of safety improvements begins with the conception of a framework for establishing criteria for identifying priority projects. Funding to make roadways safer, let alone maintaining the condition of this infrastructure, is limited. Ensuring that dollars are spent wisely to maximize their impact of safety begins with factors which are outlined by a data-driven scoring system for all roadway intersections and segments within the city. This scoring methodology will score and prioritize projects identified through the Action Plan and other processes moving forward.

Incorporating factors from a variety of engineering, public planning, and equity-based fields 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.

PRIORITIZATION FACTORS

Factors chosen for scoring include Crash History and Risk, Access to Opportunity, and Project Benefit. These factors are scored and weighted as shown in Table 5 with an emphasis on the established crash history and risk factors present at a given location. The framework also awards points using community data to reflect the impact on other city priorities such as quality of life and equitable mobility for all. Improvements with a higher potential for providing safety benefits or mitigating identified safety risks are scored above projects with a lesser safety benefit.

CRASH HISTORY AND RISK

The following criteria measure the crash history and risk along roadway segments and intersections. These criteria measure previous crash history, as well as factors like speed and traffic volume that are more likely to make it a high-crash location.

- **High Injury Network (HIN) / Vulnerable Road User (VRU) HIN**: Segments and intersections located along the HIN (identified in the Action Plan) scored higher in prioritization. Locations received the highest points if along both the vehicle and VRU HIN.
- **Dangerous Driving Behaviors**: Locations where hard breaking, aggressive acceleration, and distracted driving events are more prevalent scored higher in prioritization.
- **Excessive Speed**: Locations with high 85th percentile observed vehicle speeds (compared to the posted speed limit) scored higher in prioritization.
- **Traffic Volume**: Locations with higher vehicle volumes scored higher in prioritization.
- **Rail Crossings**: Locations that would improve safety at an at-grade rail crossing scored higher in prioritization.

Access to Opportunity

The following criteria measure the activity around a proposed project location, aiming to capture factors like equity, proximity to key destinations, and residential areas, pedestrian volumes, and needs of residents.

- **Proximity to Activity Generators:** Locations near key destinations like schools, parks, libraries, community centers, and grocery stores scored higher in prioritization.
- **Equity Priority Area:** Locations in the Equity Priority Area (established in the Action Plan) scored higher in prioritization.
- **Pedestrian Activity:** Areas above the average for pedestrian activity scored higher in prioritization.
- **Proximity to Residential Spaces:** Locations within 500 feet of residential land uses scored higher in prioritization.

PROJECT BENEFIT

The project benefit criteria are designed to assess the potential safety advantages of a project as informed by the proposed countermeasure.

- **Crash Reduction Potential:** Locations that have a higher potential crash reduction (>50% reduction) scored higher in prioritization.
- **Area Impacts:** Locations with a safety treatment that has a larger influence area of benefit, or is able to be widely implemented, scored higher in prioritization.

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 Action Plan strategies. Specific scores assigned for each criterion can be found in Table 5. Specific weights should be continuously evaluated and may be changed in the future.

Table 5. Scoring Criteria

Criteria	Scoring Details	Max Points
Crash History and Risk		**20**
High Injury Network (HIN) + Vulnerable Road User HIN	8 points: Project on HIN for Vehicles and VRU's or at least one leg is HIN for Vehicles and VRU's 4 points: Project on HIN for Vehicles or VRU's or at least one leg is HIN for Vehicles or VRU's 0 Points: Project not on HIN for Vehicles or VRU's	8
Dangerous Driving Behaviors[1]	3 points: 3 Dangerous Driving Behavior Rates above citywide average 2 points: 2 Dangerous Driving Behavior Rates above citywide average 1 point: 1 Dangerous Driving Behavior Rate above citywide average 0 points: Dangerous Driving Behavior Rates below citywide average	3
Excessive Speeds[2]	3 Points: 85th percentile speed > 5 mph above posted speed limit 1 Point: 85th percentile speed > 3 mph above posted speed limit 0 Points: 85th percentile speed < 3 mph above posted speed limit	3
Traffic Volumes	*Roadway Segment Projects* 5 points: > 12,000 vehicles per day 4 points: 10,000-12,000 vehicles per day 3 points: 7,500-10,000 vehicles per day 2 points: 5,000-7,500 vehicles per day 1 points: 2,500-5,000 vehicles per day 0 points: < 2,500 vehicles per day *Intersection Projects* 5 points: > 18,000 vehicles per day 4 points: 15,000-18,000 vehicles per day 3 points: 12,000-15,000 vehicles per day 2 points: 8,000-12,000 vehicles per day 1 points: 4,000-8,000 vehicles per day 0 points: < 4,000 vehicles per day	5
Rail Crossings	1 point: Project improves safety at an at-grade rail crossing 0 Points: Project does not improve a rail crossing	1
Access to Opportunity		**15**
Proximity to Activity Generators	5 Points: Within 500 ft of a school, park, library, community center, or grocery store 0 Points: Not within 500 ft of a school, park, library, community center, or grocery store	5
Equity Priority Area	5 Points: Project within or bordering an identified area with high potential for disadvantage 0 Points: Project not within or bordering an identified area with average or low potential for disadvantage	5
Pedestrian Activity[3]	3 Points: Above Average Pedestrian Activity within project area 0 Points: Below Average Pedestrian Activity within project area	3
Proximity to Residential Areas	2 Points: Within 500 ft of residential land uses 0 Points: Not within 500 ft of residential land uses	2
Project Benefit		**15**
Crash Reduction Potential[4]	10 Points: High potential crash reduction (>50% reduction) 5 Points: Medium potential crash reduction (10-50% reduction) 0 Points: Low potential crash reduction (<10% reduction)	10
Area Impacts	5 Points: Safety treatment has a large influence area of benefit, or is able to be widely implemented 0 Points: Safety treatment has limited area of influence	5
	Potential Maximum Score	**50**

Notes

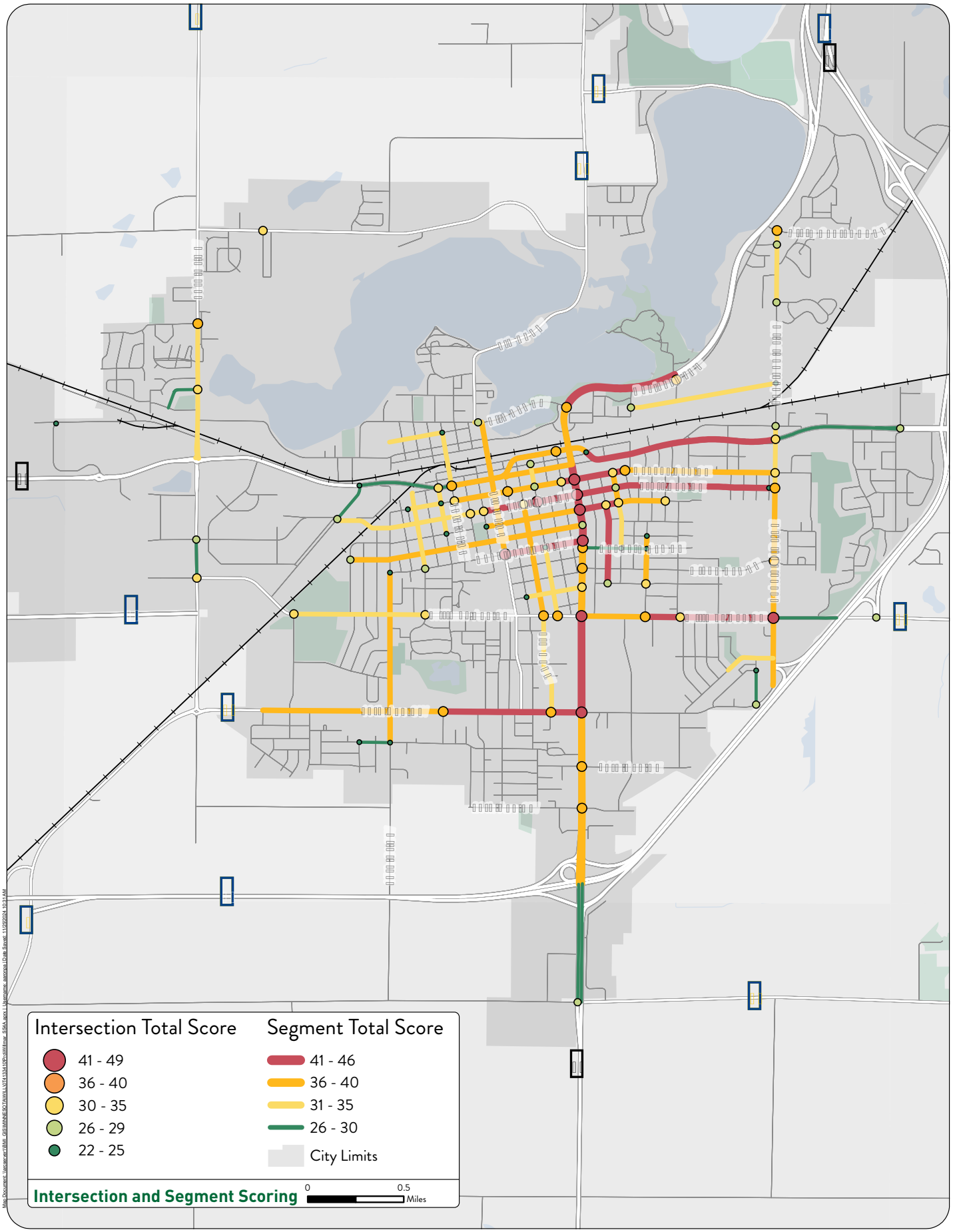
1. Dangerous Driving Behavior metrics from FlowLabs data. Includes Hard Braking, Aggressive Acceleration, and Distracted Driving Events.

2. 85th percentile speed data obtained from FlowLabs.

3. Daily Pedestrian Activity data obtained from FlowLabs.

4. Potential crash reduction estimated using Crash Modification Factors or FHWA and MnDOT safety data.

Figure 36. Segment Scoring



ROADWAY SEGMENTS AND INTERSECTION SCORING RESULTS

Figure 36 shows the results of the initial prioritization of project locations. Higher scoring locations are shown in red, and lower scoring locations are shown in green.

DATA SOURCES

- **High Injury Network:** Developed as part of this Action Plan.
- **High Crash Network for Vulnerable Road Users**: Developed during Action Plan Phase 1.
- **Dangerous Driving Behavior**: Data sourced via FlowLabs dataset obtained by the project team for the use in development of the Action Plan.
- **Excessive Speed:** Speed data sourced via FlowLabs dataset obtained by the project team for the use in development of the Action Plan.
- **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 traffic volume data was available, it was assumed the roadway carries 1,000 vehicles per day.
- **Proximity to Activity Generators**: Used linear distance to a point or boundary. Data was sourced via the Minnesota Department of Education and Kandiyohi County GIS.
- **Equity Priority Area**: Developed during Action Plan Phase 1. Defined as census blocks in which an above average proportion of the population is present within a weighted score across 10 different Indicators of Potential Disadvantage.
- **Pedestrian Activity:** Speed data sourced via FlowLabs dataset obtained by the project team for the use in development of the Action Plan.
- **Proximity to Residential Spaces**: Used linear distance to a point or boundary. Data was sourced via the Kandiyohi County GIS and the City Land Use Plan.
- **Project Benefit**: Based on countermeasures mentioned in the project description.

POTENTIAL FUTURE UPDATES

This methodology should be considered active and adjustable. Future updates to the prioritization criteria may consider:

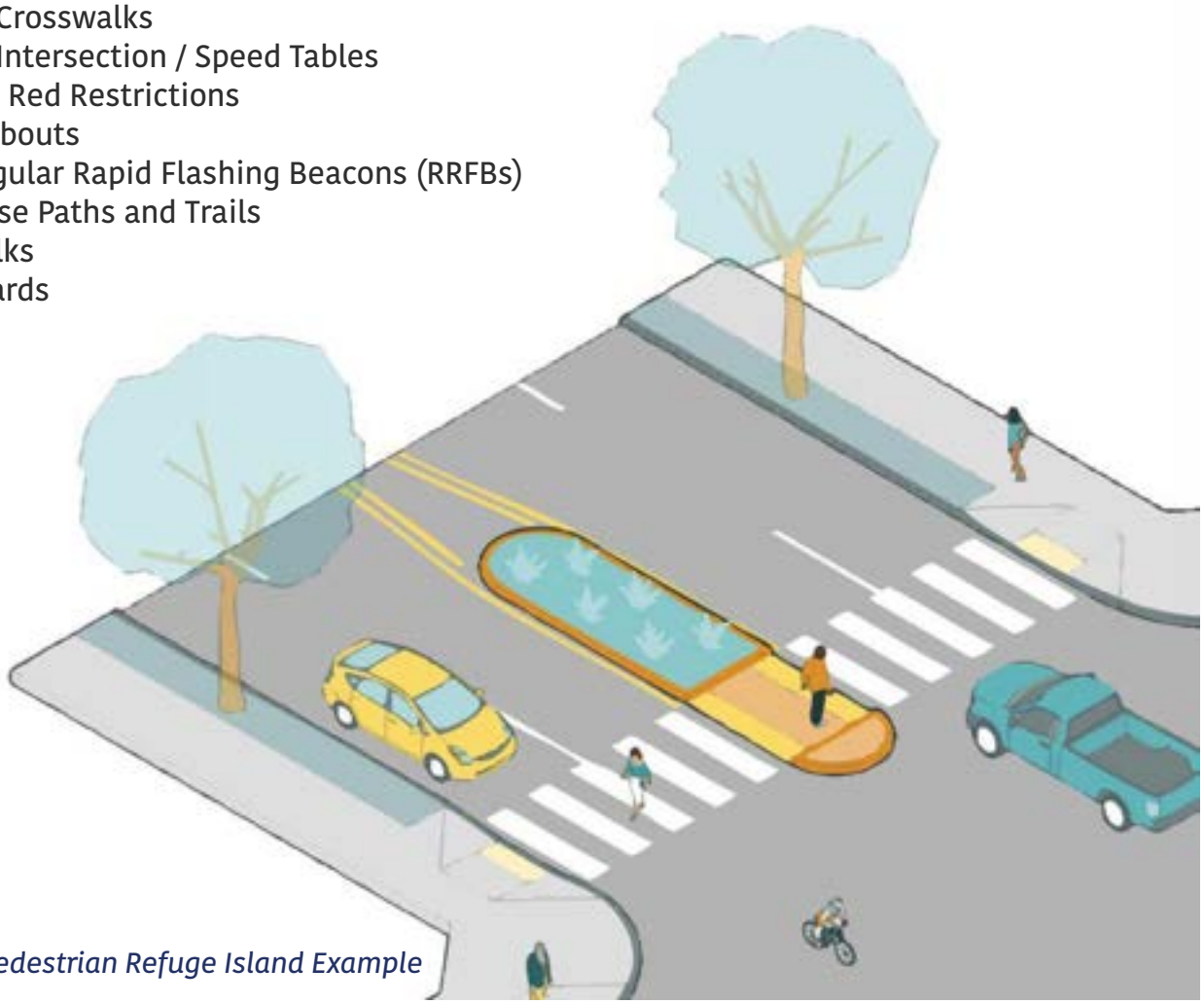
- Refining points and weighting to better align with City priorities
- Further aligning the process with other prioritization processes (i.e., CIP prioritization)
- Replacement or supplementing 'big data' sources in determining crash risks associated with speeding or dangerous driving behaviors based on feedback from local law enforcement and the public
- Reallocation of points awarded for VRU oriented projects and their alignment with city goals for pedestrian and bicycle plans
- Further analyzing safety trends challenges in each project area to determine appropriate treatments targeting specific crash history trends at a location and refining project benefit scoring
- Determining the appropriate role of community support and engagement in how projects are prioritized

CRASH MITIGATION STRATEGIES

To achieve zero roadway fatalities and serious injuries by 2045, the City of Willmar will need to comprehensively address roadway safety issues across the community. 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 City 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 becasue that would reduce the level of safety for all road users.

This plan has created a Safety Countermeasure Toolbox, composed of the proven safety countermeasures that are recommended for Willmar's roads. Detailed descriptions on each of the countermeasures, listed below, are located in Appendix F.

- 4-to-3 Lane Conversions
- Chicanes
- Curb Extensions
- High-Visibility Crosswalks
- Floating Bus Stops
- Lighting
- Leading Pedestrian Invervals
- Pedestrian Refuge Islands
- Raised Crosswalks
- Raised Intersection / Speed Tables
- Turn on Red Restrictions
- Roundabouts
- Rectangular Rapid Flashing Beacons (RRFBs)
- Multi-use Paths and Trails
- Sidewalks
- Boulevards



Pedestrian Refuge Island Example

PROGRESS & TRANSPARENCY

The City of Willmar is committed to ensuring transparency and accountability in implementing the recommendations made within the Safety Action Plan and on its progress toward reducing roadway fatalities and serious injuries. The City's process includes the following key steps:

1. **Implementation of Action Plan Recommendations**
   The recommendations within the Action Plan will be put into action with the goal of reducing roadway fatalities and serious injuries. The projects identified in the Action Plan involve infrastructure improvements, safety programs, or policy changes aimed at enhancing road safety for all users, including drivers, cyclists, and pedestrians.

2. **Progress Reporting**
   As the City progresses into implementing these recommendations, they will regularly measure and report on key performance metrics, such as the reduction in fatal and serious injury crashes and the reduction in pedestrian and bicycle crashes. These reports will include updates on the status of various projects, challenges faced, and successes achieved.

3. **Annual Reports**
   At the conclusion of each fiscal year, the City of Willmar will publish an annual report that outlines the progress made in implementing the Action Plan over the previous year and highlight areas where additional improvements are needed.

   These reports will be comprehensive and data-driven, offering insight into the impact of measures taken on improving road safety within the community. The City will request data from MnDOT, with a focus on fatal and serious injury crashes, to be included in the annual report.

4. **Public Accessibility**
   To ensure that this process remains transparent, both the initial Action Plan and the subsequent annual reports will be posted online. This will allow residents and stakeholders to track down the City' efforts.

   By making these documents publicly available, the City encourages community engagement and feedback, ensuring the plan reflects the evolving needs and concerns of the public.

5. **Advocacy**
   The City will meet annually with the Safety Action Plan Advisory Committee to discuss projects, funding sources, and progress of the Safety Action Plan.

   The City will continue to advocate and identify funding sources for projects that are identified in the plan. The City will continue to partner with MnDOT and Kandiyohi County in pursuing safety as an overarching theme in all transportation projects.

This structured approach supports continuous improvement and ensures that the City of Willmar remains focused on its goal of reducing roadway fatalities and serious injuries.

TIMING

Since there is no specific funding designated for the projects outlined in this plan, establishing a timeline for their implementation is challenging. Nevertheless, the prioritized list of projects should be regularly reviewed to pinpoint potential opportunities for execution. For instance, pavement rehabilitation projects should be assessed to determine if there are any safety needs within the project limits; if safety needs are identified, the city should modify the project scope to incorporate additional safety enhancements. Additionally, the city should continually compare the list of priority projects with available discretionary grant opportunities to secure extra funding that could help expedite the implementation timeline.

The Capital Improvement Plan (CIP) prioritization process should be revised to include a safety criterion to ensure that safety needs are advanced along with standard maintenance needs within the typical annual budget.

It is not anticipated that all projects and locations mentioned in this document will be completed by the 2045 goal, but the city should persist in seeking opportunities to gradually advance priority safety improvements.

FUTURE STUDIES

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

- **Willmar Key Corridors Study**: US 12 and 1st Street are the primary roadways through Willmar and both are identified as being on the HIN within city limits. Due to the volume of activity served by these roadways, their role in safe, efficient, and equitable mobility, and the identified safety risks present, comprehensive corridor studies of both roadways are recommended to understand the full range of needs on these corridors and what improvements will best serve the traveling public.
- **Comprehensive Review of High Crash Intersections**: Similarly, while this analysis identified the top high crash intersections within Willmar, 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.
- **Railways Studies and Visioning**: Rail traffic is integral to Willmar and is a key part of its history as a regional center in western Minnesota. However, rail crossings are identified as a key risk factor to traffic safety and are among the most heard safety concerns from the general public. As such, several studies may be considered and conducted to set forth a vision for railroad infrastructure in Willmar in collaboration with the railroad owners:
    - Perform a citywide railroad quiet zone study to identify treatments needed at at-grade rail crossings to implement quiet zones within city limits.
    - Perform a grade separation feasibility and planning study to reduce and remove rail-vehicle and rail-pedestrian conflicts from the system. Establish grade separation priorities and explore possible avenues for funding these improvements.
- **Citywide Speed Limits Study**: Speed-related crashes can sometimes be attributed to poorly established or inappropriate speed limits. With a nationwide rethinking of city speed limit policies taking place, an assessment of Willmar's own speed limits and speed limit policies is recommended. A citywide speed limit on local and collector streets of 20 or 25 miles per

hour may encourage a driving coulture which promotes safety for all users of Willmar's roadways.

PRIORITY PROJECT AREAS

In an effort to develop strategies and countermeasures for priority projects, the top scoring segments and intersections were reviewed in further detail. This includes locations that scored above 40 in the scoring criteria and that are shown in red in Figure 36. As a result, a total of 10 project areas have been identified and are displayed in Figure 37.

CROSS-JURISDICTIONAL COORDINATION

Nearly 40 percent of Willmar's high-injury network (HIN), as well as three of the 10 priority projects, are located on either MnDOT or county roadways. This includes two projects on MnDOT's US 12 and one project on CSAH 15/19th Avenue SW. Coordination with MnDOT and Kandiyohi County occurred as part of this planning process and will remain important in the future as projects are identified and implemented to ensure safety remains a top priority on these corridors, including locations both on and off of the HIN.

MnDOT currently has a project identified on US 12 that generally supports recommended improvements identified as part of this safety plan. The project, which is expected to be programmed in District 8's next Capital Highway Investment Plan (CHIP), will likely include a road diet, ADA improvements, and signal modifications, and pedestrian improvements.

ACTION PLAN

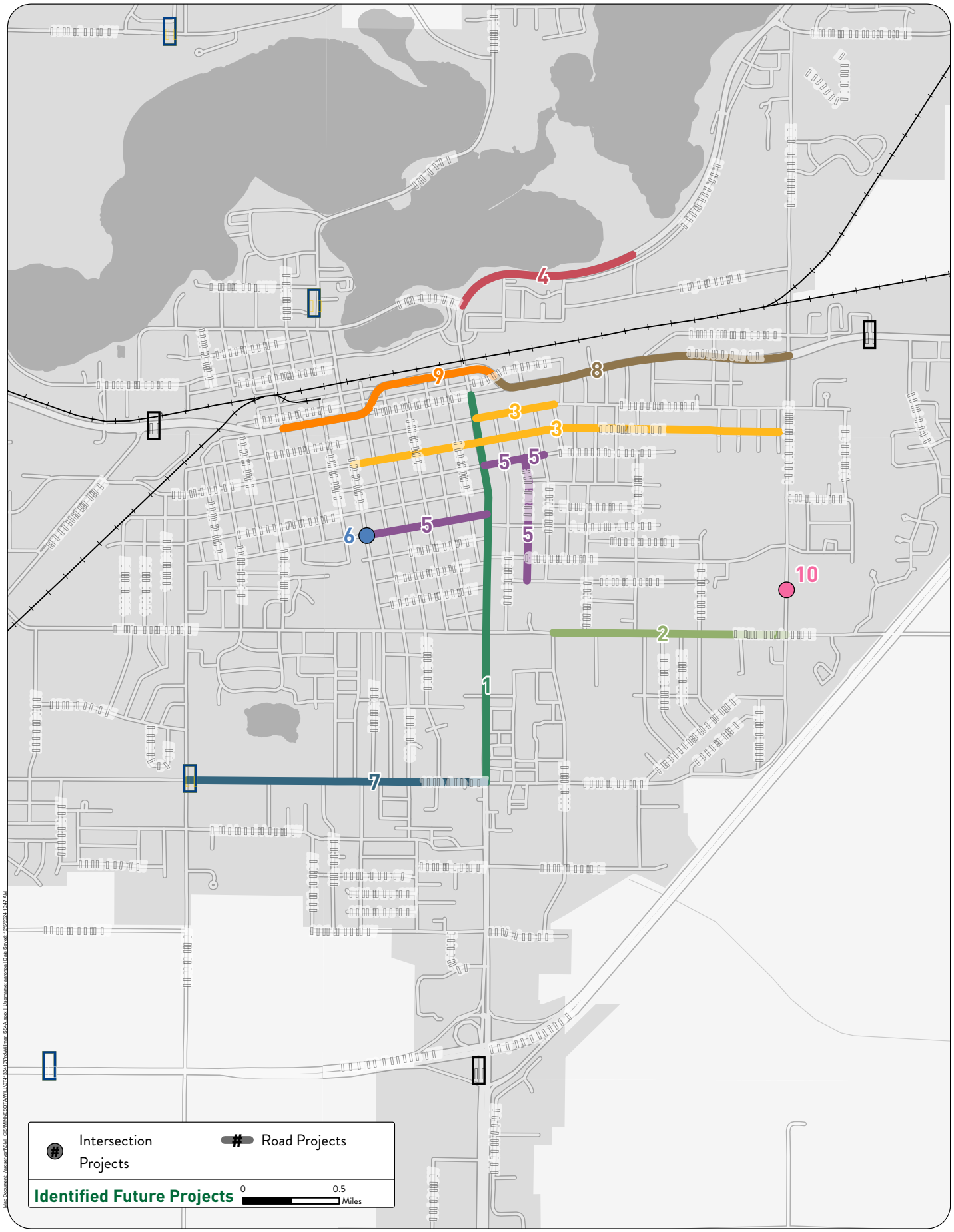
Willmar commits to taking the following actions to implement the recommendations made in this Action Plan. These actions, studies, and improvements will enable implementation of the Plan and advance the City's goal to eliminate all deaths and serious injuries on roadways within the City by 2045, with a fifty percent reduction by 2035.

These actions are prioritized based on timing and their likelihood to reduce roadway fatalities, area of impact, and also follow project development principles. 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 Willmar 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 Kandiyohi County and MnDOT.

Table 6. Action Plan

TIMING	ACTION
SHORT-TERM	Submit an application for a SS4A Demonstration Grant for Trott Ave & Residential Streets Traffic Calming Pilot Projects
	Submit an application for additional SS4A Planning Grant funding to perform detailed corridor studies of 1st St S and US 12
	Conduct a corridor safety study of 1st Street S from Ella Ave to TH 23 in collaboration with Kandiyohi County
	Review the City's current CIP to identify programmed projects within the HIN and determine appropriate safety countermeasures that may be added to the project scope
	Perform a Citywide Safe Routes to School study in coordination with local public and private schools
	Review and revise the City's development review policies for Access Management and Driveway Best Practices
	Review the City's existing policy on stop signs on local and collector road intersections
	Evaluate and update the City's Street Width and Typical Section Standards for local streets based on the opportunities and risk factors identified in this plan
	Adopt a Low Salt Design Criteria for all public facilities and incorporate into site development review processes
	Develop a funding strategy and plan that identifies potential funding avenues and resources necessary to construct and maintain future safety improvements
MID-TERM	Conduct a corridor safety study of US 12 from US 71 to Industrial Dr SW in collaboration with MnDOT and Kandiyohi County
	Perform an inventory of streetlights within the City and evaluate lighting upgrades at all intersections
	Form a City Traffic Safety Committee consisting of city engineering and planning staff, elected officials, and members of the public to establish city policy on traffic safety and review safety concerns raised by residents
	Host an ongoing traffic safety concerns feedback opportunity on the City website
	Develop a funding strategy and plan that identifies potential funding avenues and resources necessary to construct and maintain future safety improvements
LONG-TERM	Develop and publish a City Traffic Calming Toolbox and Criteria for implementation on local streets where speeding is a noted concern
	Conduct a Citywide Rail Quiet Zone Study
	Conduct a Citywide Grade Separated Rail Crossing Study in coordination with BNSF
	Perform a Citywide Speed Limits Study and consider Citywide Speed Limits on Local Roads
ONGOING	Review traffic safety enforcement needs and activities with local law enforcement
	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
	Continue coordination with Kandiyohi County and MnDOT to identify and make safety improvements on county- and state-owned streets within Willmar
	Conduct ongoing crash equity analysis and engagement to share the findings of this analysis with community members, policy makers, elected officials, and partners and identify direction for future equity work related to traffic safety

Figure 37. Priority Project Locations



PRIORITY 1: 1ST STREET

Location & Size: The 1st Street project area stretches from Litchfield Avenue to 19th Avenue and includes 16 intersections along 1.3 miles of roadway.

Safety Concerns: High volume of crashes, angle and left turn crashes, limited access management, 5-6 lanes of traffic, outdated signals and pedestrian push buttons, non-compliant ADA facilities, high vehicle speeds, narrow sidewalks.

Improvements Recommended for Consideration:

- Roundabouts
- Signal Safety Package
- Access Management
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Shared Use Paths
- RRFB's

Estimated Construction Cost:

Segment 1A: $8,000,000 - $10,000,000
Segment 1B: $14,000,000 - $16,000,000

Existing

Raised Median Concept

Pedestrian Refuge Island

Pedestrian refuge islands protect pedestrians and bicyclists by providing a waiting area and allowing two-stage crossings for slower pedestrians.

PRIORITY 2: WILLMAR AVENUE SE

Location & Size: The Willmar Avenue SE project area begins at Lakeland Drive and ends at 5th Street SE, covering one mile of roadway and nine intersections.

Safety Concerns: High vehicle speeds, 5 lanes of undivided traffic, access management concerns.

Improvements Recommended for Consideration:

- Roundabouts
- Access Management
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Curb Extensions
- Bike Lanes
- Shared Use Paths
- RRFB's

Estimated Construction Cost:

$250,000 - $12,500,000

Existing

Road Diet Concept

Roundabout Concept

PRIORITY 3: TROTT AVENUE / BECKER AVENUE

Location & Size: This project area consists of 22 intersections along Trott Avenue between Lakeland Drive and 7th Street SW, and Becker Avenue between 1st Street S and 5th Street SE.

Safety Concerns: High vehicle speeds, wide typical section, many uncontrolled intersections, intersection sight distance, long crossing distances for pedestrians.

Improvements Recommended for Consideration:

- High Visibility Crosswalks
- Median Refuge Islands
- Curb Extensions
- Intersection Daylighting
- Lighting

Estimated Construction Cost:

$500,000 - $2,000,000

Pedestrian refuge island concept at Rice Memorial Hospital

High-Visibility Crosswalk

Distinguishable by use of longitudinal, ladder, or continental-style markings more readily visible to approaching motorists as opposed to parallel lines.

PRIORITY 4: BUSINESS 71

Location & Size: This project area begins at Ella Avenue and continues to 10th Street NE at the entrance to Robbins Island Regional Park.

Safety Concerns: High vehicle speeds, intersection sight distance issues, lack of safe pedestrian crossing facilities.

Improvements Recommended for Consideration:

- Roundabout
- Access Management
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Shared Use Paths
- RRFB's

Estimated Construction Cost:

$7,500,000 - $10,000,000

Existing

Road Diet Concept

Roundabout Concept at Robbins Island Regional Park Entrance

PRIORITY 5: MINNESOTA AVENUE / KANDIYOHI AVENUE SW / 3RD STREET SE

Location & Size: Located along several segments, this project encompasses 13 intersections on the following roadways: Minnesota Avenue between 1st Street S to 4th Street SE; Kandiyohi Avenue SW between 7th Street SW and 1st Street S; and 3rd Street SE from Minnesota Avenue SE to 11th Avenue SE.

Safety Concerns: High vehicle speeds, wide typical section, many uncontrolled intersections, intersection sight distance, long crossing distances for pedestrians.

Improvements Recommended for Consideration:

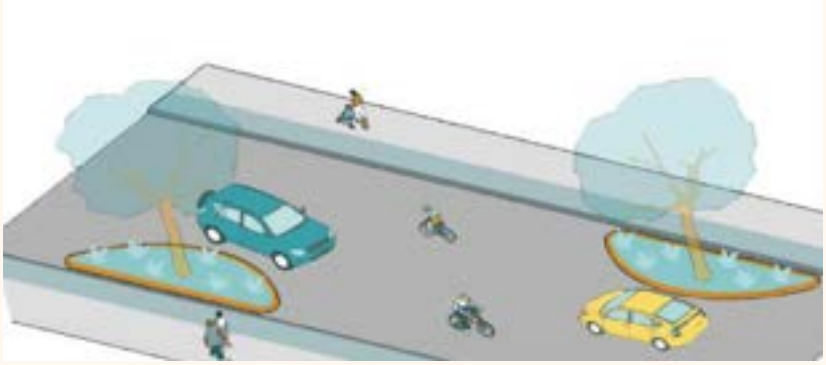
- Curb Extensions
- High Visibility Crosswalks
- Median Refuge Islands
- Intersection Daylighting
- Lighting

Estimated Construction Cost:

$250,000 - $1,500,000

Curb Extensions

Curb extensions shorten crossing distances and increase pedestrian comfort and visibility.



Chicanes

Chicanes slow motor vehicle speeds by diverting the path of travel. They are often made of curb extensions or islands that create “S” curves along the roadway.

PRIORITY 6: KANDIYOHI AVENUE SW AT 7TH STREET SW

Location & Size: A single intersection project near Kennedy Elementary School.

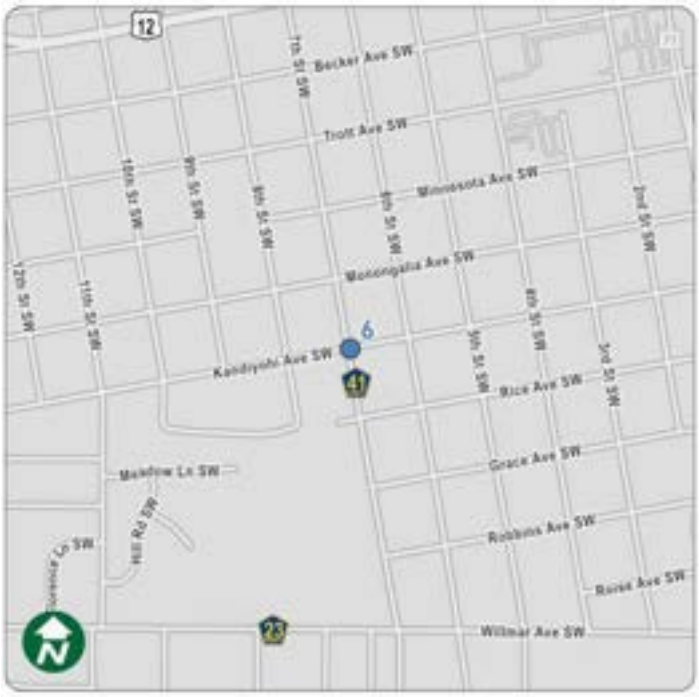
Safety Concerns: High vehicle speeds, vulnerable user destinations, school peak hour traffic volumes, intersection sight distance issues, long pedestrian crossing distances.

Improvements Recommended for Consideration:

- Roundabout
- High Visibility Crosswalks
- Median Refuge Islands
- RRFB's
- Lighting

Estimated Construction Cost:

$7,500,000 - $10,000,000



Roundabout concept near Kennedy Elementary School

PRIORITY 7: 19TH AVENUE SW

Location & Size: The 19th Avenue SW project stretches between 1st Street S and 15th Street SW, a one mile segment that includes 11 intersections.

Safety Concerns: High vehicle speeds, high volume of crashes, 5 lanes of undivided traffic, access management concerns, lack of bike facilities, intersection lighting needs, long pedestrian crossing distances.

Improvements Recommended for Consideration:

- Turn Lanes
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Curb Extensions
- Bike Lanes
- Shared Use Paths
- RRFB's
- Lighting

Estimated Construction Cost:

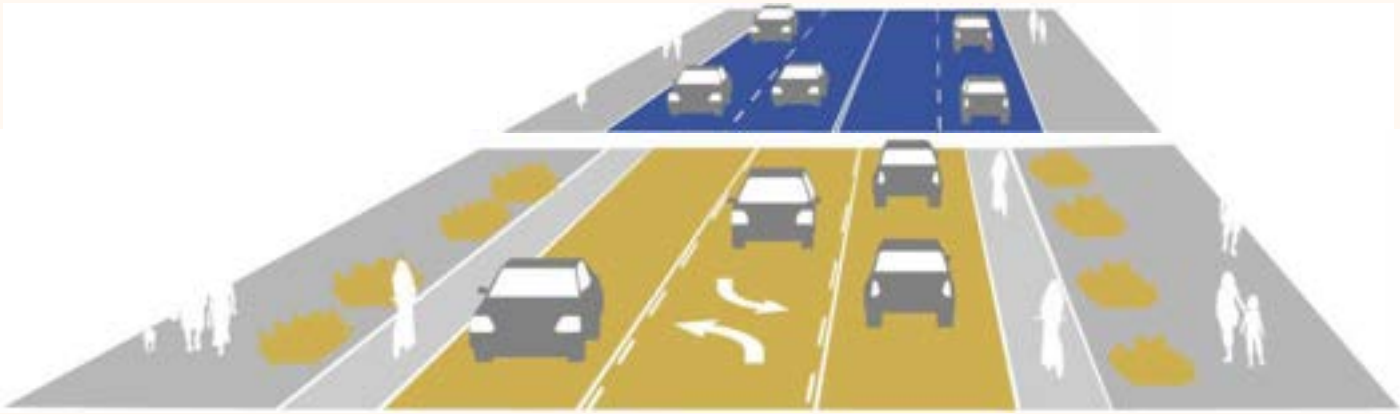
$1,000,000 - $10,000,000

Rectangular Rapid Flashing Beacon (RRFB)

Used in combination with warning signage, RRFBs provide a high-visibility warning to drivers when pedestrians are using a marked crosswalk.

4-to-3 Lane Conversions

Road diets reduce the speed of traffic, reduce crossing distances and optimize available roadway space to improve levels of safety and comfort for pedestrians and bicyclists.



PRIORITY 8: US 12 (EAST SEGMENT)

Location & Size: This stretch of US Highway 12 begins at Lakeland Drive and ends at Benson Avenue SW, covering one mile of roadway and 10 intersections.

Safety Concerns: High vehicle speeds, access management concerns, lack of turn lanes, few pedestrian crossing facilities.

Improvements Recommended for Consideration:

- Roundabout
- Signal Safety Package
- Access Management
- Turn Lanes
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Bike Lanes
- Shared Use Paths
- Lighting

Estimated Construction Cost:

$1,000,000 - $15,000,000

PRIORITY 9: US 12 (WEST SEGMENT)

Location & Size: This second stretch of US Highway 12 begins at Benson Avenue SW and ends at 10th Street NW, covering 0.75 miles of roadway and 8 intersections.

Safety Concerns: High vehicle speeds, access management concerns, lack of turn lanes, few pedestrian crossing facilities, 4 lanes of undivided traffic.

Improvements Recommended for Consideration:

- Roundabout
- Signal Safety Package
- Access Management
- Turn Lanes
- High Visibility Crosswalks
- Median Refuge Islands
- Road Diet
- Bike Lanes
- Shared Use Paths
- Lighting

Estimated Construction Cost:

$1,000,000 - $12,500,000

PRIORITY 10: LAKELAND DRIVE AT LAKELAND ELEMENTARY SCHOOL/YMCA

Location & Size: This single intersection project is located at the entrances of the Kandiyohi County YMCA and Lakeland Elementary School.

Safety Concerns: High vehicle speeds, vulnerable user destinations, school peak hour traffic volumes, 4 lanes of traffic.

Improvements Recommended for Consideration:

- Roundabout
- Access Management
- High Visibility Crosswalks
- Median Refuge Islands
- RRFB's
- Lighting

Estimated Construction Cost:

$1,000,000 - $2,000,000

Roundabout Concept at Lakeland Elementary / YMCA

POTENTIAL PROJECT IMPROVEMENTS

The priority project locations and improvements recommended for consideration listed above are a result of the outlined safety analysis and prioritization framework. All project locations and potential improvements are considered at a planning or concept level to jumpstart conversations and revamp local project development processes such that safety enhancements are integral to all investments in public transportation infrastructure going forward. The above projects should be considered fluid and easily modified to meet local needs and align with programmed or budgeted funding.

The developed projects range from small improvements which can be implemented across many locations at once to larger more impactful projects which significantly reconstruct the built environment in one specific project area.

The project concept drawings and cost estimates provided in Appendix A are for discussion purposes only. Concepts are drawn using aerial photography only and do not include three-dimensional design. Large-scale improvements which significantly alter existing roadways and intersections will require traffic analysis to confirm and refine the designs such that delays under existing and forecast traffic volumes remain acceptable. Impacts to private property and access to private property must be communicated and coordinated with the affected parties. Finally, cost estimates are developed at a preliminary level and include a 20% contingency to account for work that may be required once project development progresses.

SMALL-SCALE PROJECTS

Small-scale projects offer a wide area of impact as the smaller scope and cost of these improvements allow the opportunity for widespread implementation at a large number of locations or across many miles of roadways. Project development timelines and complexity are more likely to be shorter and simpler due to the smaller scope of these improvements. These projects are also more likely to be included in CIP-listed projects without significant change in project scope or cost. The locations selected for concept depiction are identified as priority areas but other areas for implementation should be considered.

Identified projects recommended for consideration include:

- Curb Extensions
- Median Refuge Islands
- Road Diet (4 to 3 lane conversion via restriping)

LARGE-SCALE PROJECTS

Large-scale projects require significant reconstruction of existing infrastructure and come with high construction costs. However, these projects may offer significant safety benefits for all users within the project areas. These concepts will require a more extensive project development process, including traffic analysis, design, and potentially environmental documentation, right-of-way acquisition, etc. These projects may be multi-jurisdictional in nature and may require advanced coordination with other stakeholder agencies. The locations selected for concept depiction are identified as priority areas but other areas for implementation should also be considered.

Identified projects recommended for consideration include:

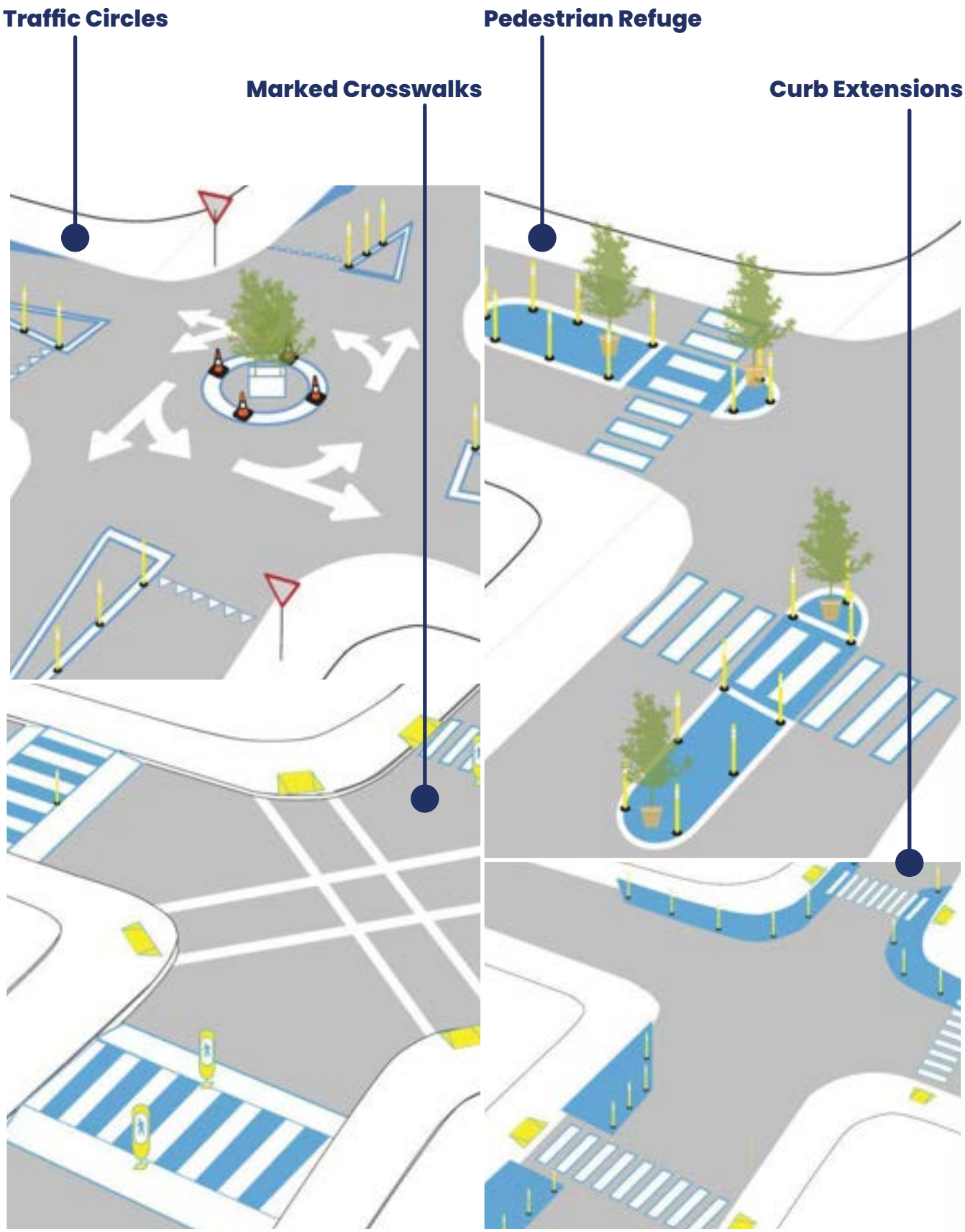
- Mini-Roundabouts (Kandiyohi Ave at 7th St identified as example location)
- Roundabouts (Lakeland Dr at Lakeland Elementary School identified as example location)
- Road Diet + Roundabouts + Access Management (1st Ave S from Litchfield Ave to Willmar Ave via reconstruction identified as example location)
- Road Diet + Roundabouts + Access Management (TH 23 from Ella Ave to Robbins Island Regional Park via reconstruction identified as example location)
- Road Diet + Roundabouts (Willmar Ave SE from 5th St SE Ave to Lakeland Dr SE via reconstruction identified as example location)

PILOT PROJECTS

Several project types may be piloted on a temporary basis before investing in making permanent changes to city infrastructure. These projects can be beneficial in many ways as they allow the public to learn how to use the new facilities and provide feedback on how they feel the improvements elevate safety and performance. It also allows city staff to learn what the optimal design and environment for implementation may be and to make minor changes on the fly.

Pilot projects should not only allow opportunity for public and city staff feedback but must also consist of traffic data collection to understand the before and after affects these improvements have on traffic speed, pedestrian and vehicular safety, or other target metrics. This data-driven approach will aid the city in fine tuning designs and in identifying proper locations for project implementation.

Pilot projects are generally small scale, localized improvements. Temporary curb extensions, median refuge islands, and dedicated pedestrian and bike spaces can all be achieved via use of temporary striping materials and delineators. Other traffic calming mechanisms such as neighborhood traffic circles, chicanes, chokers, and speed cushions may also be tested. A pilot project aimed at a temporary implementation of curb extensions and median refuge islands as part of Priority Project #3 and/or #5 should be considered before investing in permanent solutions. Given the residential neighborhood nature of these project areas, other traffic calming mechanisms should also be considered for temporary pilot projects.



Source: Tactical Urbanism Organizers (TURBO) Project Catalog

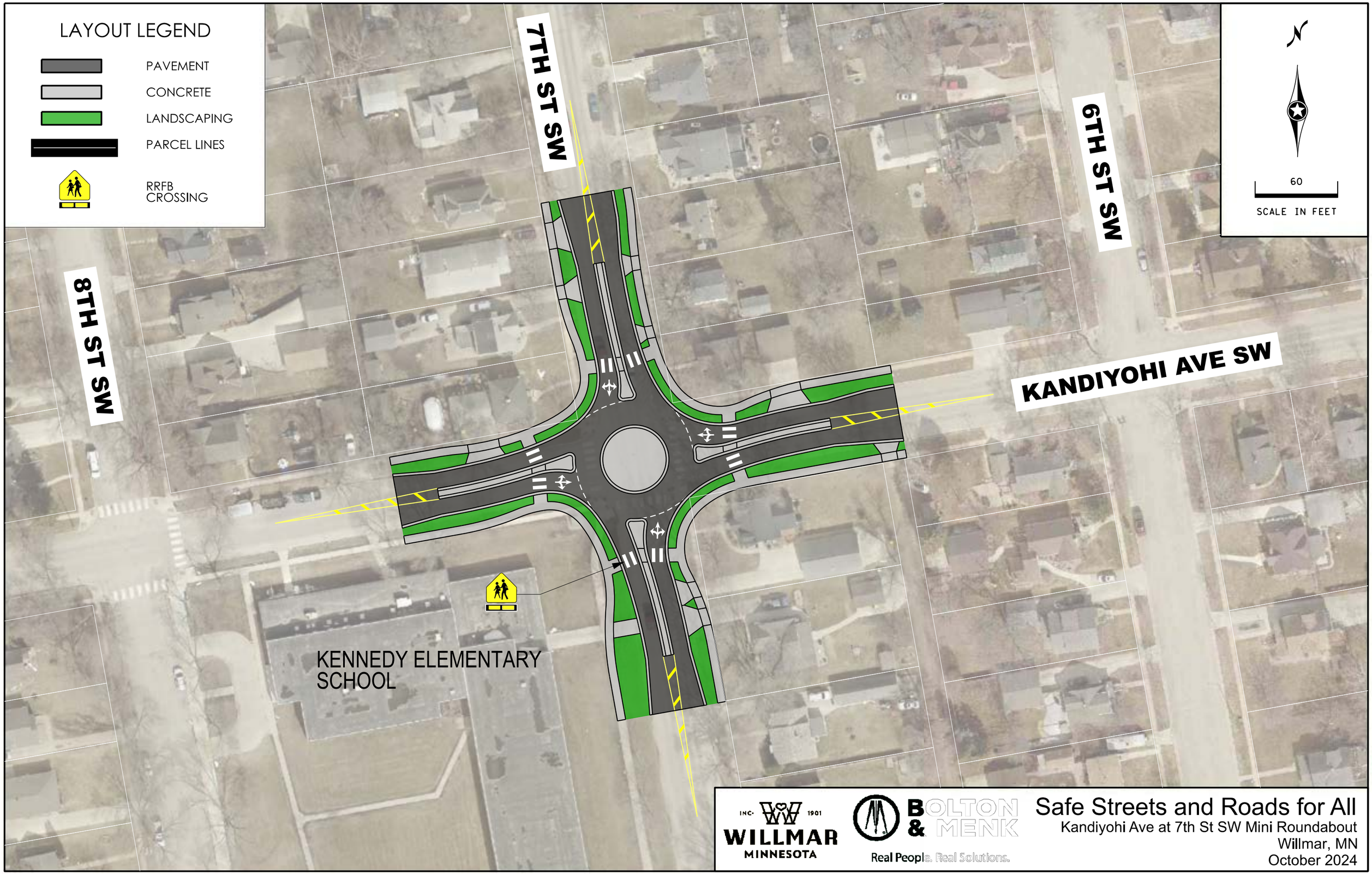
DESIGN CONCEPTS

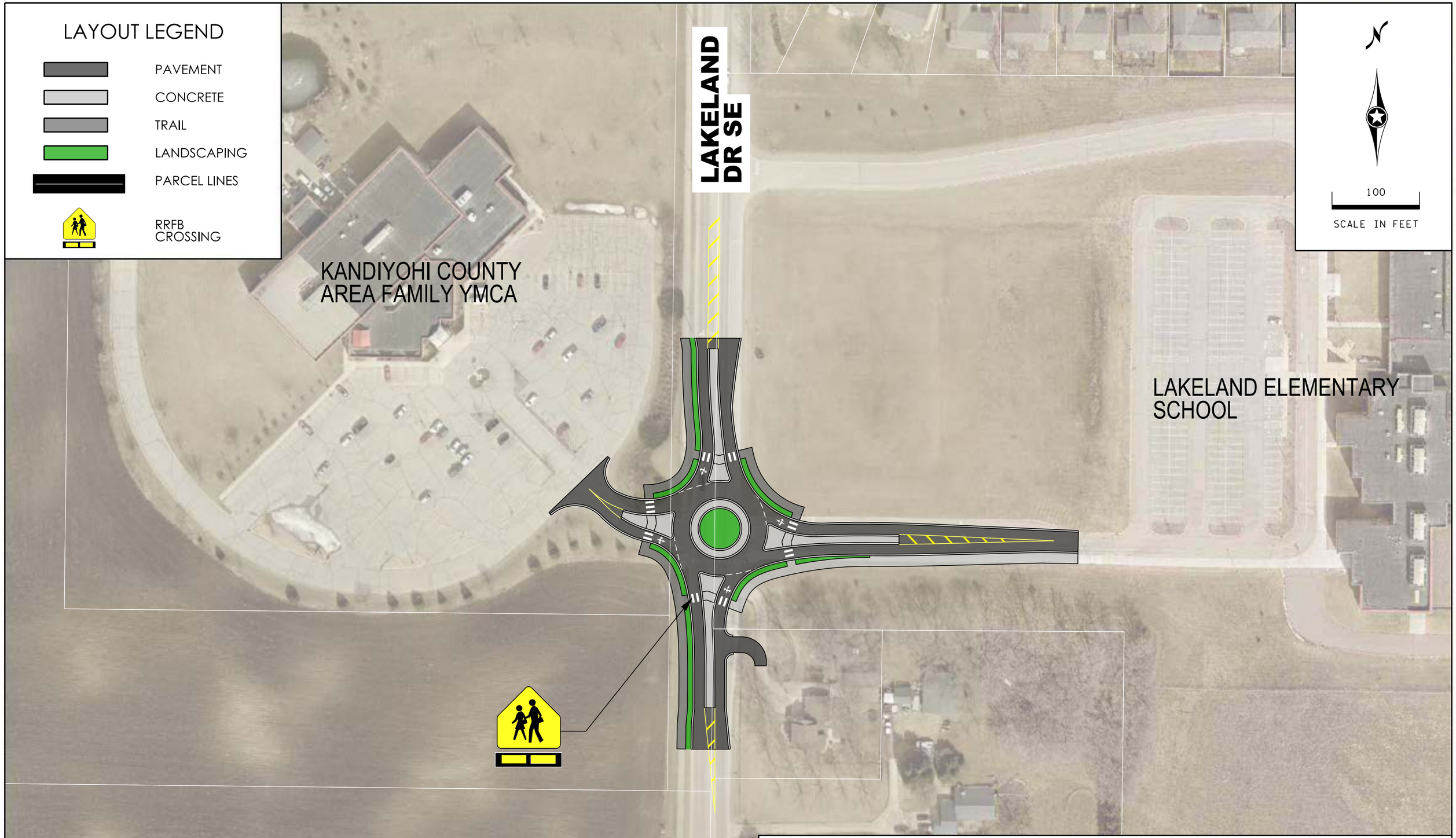
Safe Streets and Roads for All

Curb Extensions

Willmar, MN

October 2024


LAYOUT LEGEND
PAVEMENT
CONCRETE
LANDSCAPING
PARCEL LINES
RRFB CROSSING
N
60
SCALE IN FEET
7TH ST SW
6TH ST SW
8TH ST SW
KANDIYOHI AVE SW
KENNEDY ELEMENTARY SCHOOL
INC. 1901
WILLMAR
MINNESOTA
BOLTON & MENK
Real People. Real Solutions.
Safe Streets and Roads for All
Kandiyohi Ave at 7th St SW Mini Roundabout
Willmar, MN
October 2024



INC. 1901 WILLMAR MINNESOTA

BOLTON & MENK
Real People. Real Solutions.

Safe Streets and Roads for All

Lakeland Dr at Lakeland Elementary Roundabout
Willmar, MN
October 2024

LAYOUT LEGEND
PAVEMENT
CONCRETE
PARCEL LINES
RRFB CROSSING
N
20
SCALE IN FEET
RICE MEMORIAL HOSPITAL
TROTT AVE SW
FAMILY PRACTICE
RICE REHABILITATION CENTER
INC. 1901
WILLMAR
MINNESOTA
BOLTON & MENK
Real People. Real Solutions.
Safe Streets and Roads for All
Pedestrian Refuge Islands
Willmar, MN
October 2024

INC. 1901 WILLMAR MINNESOTA

BOLTON & MENK
Real People. Real Solutions.

Safe Streets and Roads for All

Willmar Ave SE Road Diet
Willmar, MN
November 2024

WILLMAR MINNESOTA

BOLTON & MENK
Real People. Real Solutions.

Safe Streets and Roads for All
Willmar Ave SW Restriping
Willmar, MN
October 2024

LAYOUT LEGEND
PAVEMENT
CONCRETE
TRAIL
LANDSCAPING
PARCEL LINES
RRFB CROSSING
71
12
1ST AVE S
2ND ST SE
3RD ST SW
2ND ST SW
5TH ST SW
WILLMAR MINNESOTA
BOLTON & MENK
Real People. Real Solutions.
Safe Streets and Roads for All
1st Ave S Road Diet
Willmar, MN
November 2024

WILLMAR MINNESOTA INC. 1901

BOLTON & MENK
Real People. Real Solutions.

Safe Streets and Roads for All

Business 71 Road Diet
Willmar, MN
November 2024

APPENDIX B

TECHNICAL MEMORANDUM

TRANSPORTATION EQUITY ANALYSIS

TOOLE DESIGN

212 3RD AVENUE N.
SUITE 352
MINNEAPOLIS, MN 55401

612.584.4094
TOOLEDESIGN.COM

MEMORANDUM

July 10, 2024

To: Christopher Frank
Organization: City of Willmar
From: Sarah Davis, Jaz Warren, and Dean Chamberlain
Project: Willmar Safety Action Plan

Re: Transportation Equity Analysis

OVERVIEW

This memo explains the framework for the Willmar Safety Action Plan (SAP) transportation equity analysis, which defines equity, describes the methods used for the equity analysis, lays out historical context, identifies equity focus areas, and sets the foundation to incorporate equity as an overlay to the recommendations of the SAP. This memo presents the results of the equity analysis, which includes demographic maps and statistical analysis. Finally, it shares conclusions and recommendations to help guide and create a comprehensive transportation safety system that is grounded in the context of Willmar and is set up to be equitable and implementable.

Definition and Principles

Equity can be defined in different ways depending on the context, but generally is described as the fair distribution of costs and benefits of an action. Transportation equity more specifically is defined by:

- Compensates for inequities between groups in society
- Provides greater benefit to those with greater need
- Recognizes current and past inequities
- Considers the local demand for resources
- Equally distributes cost and benefit between those with equal ability and need
- Ensures everyone has transportation access and options that allow them to participate fully in society

Importance of an Equitable Transportation Safety System

Addressing safety disparities and establishing equitable systems allows for a comprehensive transportation system. Removing transportation barriers for people, particularly for those who do not drive due to ability, income, age, or a combination of these factors, eliminates gaps that exist in the system and makes a safer and more comfortable network for all users. People should feel safe and empowered to travel using any mode to access employment, school, grocery shopping, and a variety of other activities to fully participate in society.

Owning a vehicle and traveling by car can be burdensome for many people in the community. Transit, walking, and bicycling play a vital role in the overall transportation system by offering increased mobility, independence, and access to opportunity for people without vehicles. This stresses the need for a comprehensive transportation safety system. Historically marginalized groups are more likely to shoulder the burdens of the transportation system or have benefits of the system withheld because of the ongoing effects of past policies and investment patterns, which results in disparate transportation experiences and an inequitable transportation system. Connected and accessible multimodal infrastructure for these groups results in better access to daily physical activity and improved quality of life.

Equity Analysis Approach

An equity analysis can be used to determine how people with sociodemographic vulnerability are impacted differently. It can identify communities that have disproportionate safety, access, or other transportation system outcomes. It can then examine how these communities are impacted and provide insights on how future transportation investments can remove sociodemographic disparities and redress past harms. The knowledge gained through the equity analysis will be used in the Willmar SAP as a component of project prioritization and the plan implementation to monitor, reduce, and, ideally, eliminate disparities. This equity analysis will follow the approach in Figure 1. The following sections of this memo will walk through each component of the approach and present findings.

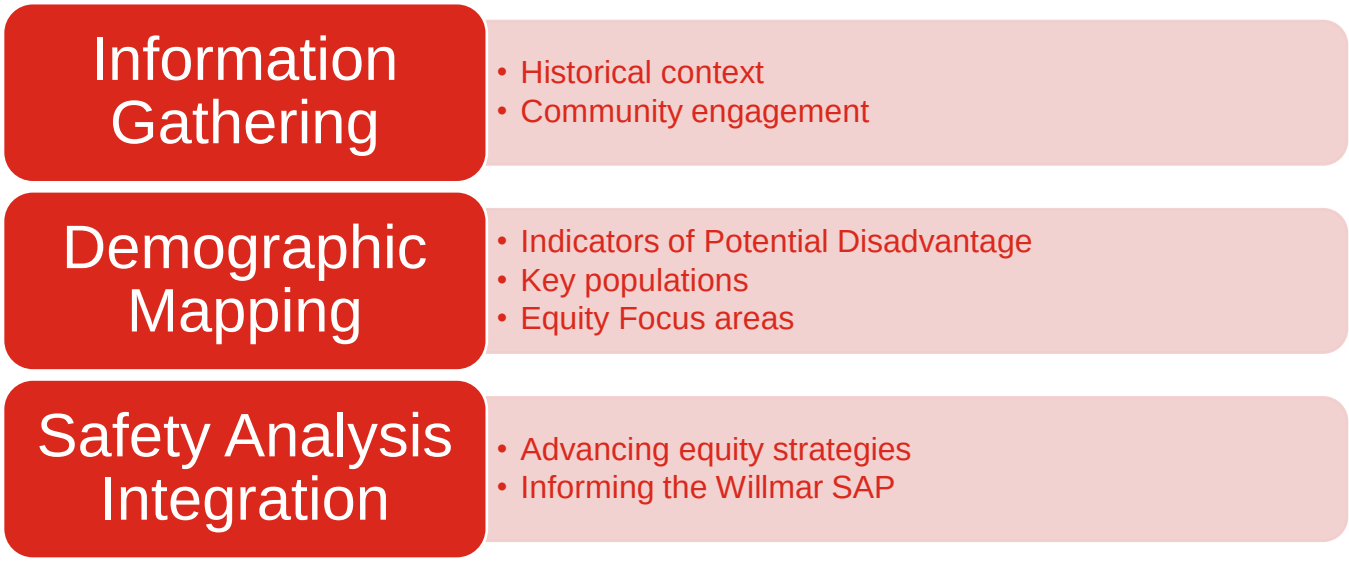


Figure 1: Equity Analysis Approach

INFORMATION GATHERING

Historical Context: Transportation Related Policies and Practices

Transportation is a key element of people's daily lives that not only allows them to access their day-to-day needs and activities, but also serves as a place for the community to gather and interact socially. Nearly everyone regularly uses the transportation system, whether to access jobs, education, food, services, activities, etc. Transportation systems are complex and comprehensive, often overlapping with other systems, such as housing, land use, law enforcement, and climate efforts.

Policies and practices surrounding these systems can create inequitable transportation access and unsafe transportation systems for BIPOC, those who are low income, and other marginalized groups, often due to a lack of representation and institutional power. Some burdens these groups may experience include higher exposure to pollution, public health and climate impacts, higher concentrations of traffic crashes, service gaps, inadequate infrastructure, and divisive roadway construction. Local governments have a responsibility to reverse these practices and implement planning practices and policies that respond to the needs of all people.

This section explains some ways in which infrastructure, housing policies, land use planning, law enforcement practices, and climate resilience continue to act as a barrier for an equitable transportation system. Acknowledging and understanding how these systems influence one another helps present-day planning efforts, such as the SAP, avoid further harm, build trust from the community, and develop fair policies and practices.

Infrastructure

It is important to work towards providing multimodal transportation options to all Willmar residents. Currently, there is an overwhelming focus on automobile-oriented transportation investments in many suburban and rural areas, which is a significant contributor to inequitable transportation outcomes. The contemporary planning framework evaluates system performance on how quickly vehicles can travel from point A to point B. This framework dictates roadway investments, prioritizing expansion and reducing travel delays, often at the expense of transportation safety.

Cities and towns throughout Minnesota are working to implement more multimodal planning frameworks to meet the needs of non-drivers. Historically, funding structures have disproportionately challenged smaller jurisdictions due to less capacity to seek funding, maintain facilities, and implement new projects. The Safe Streets for All (SS4A) program provides more communities the ability to expand multimodal service comparable to growing metropolitan areas and address mobility challenges of marginalized groups.

Highways

Minnesota, like other American states, has a history of highway infrastructure that has led to inequitable transportation outcomes. Around mid-century, destructive roadway practices and a car-centered culture shift began to proliferate across the US. This occurred in conjunction with a cultural movement to avoid racial integration and reinforce segregation. The transportation system quickly transformed to facilitate these shifts, developing practices that divided BIPOC communities, created transportation barriers, increased serious crashes, and led to higher concentrations of pollution. For generations these outcomes have severely impacted disparities in health, homeownership, wealth, and access to jobs, education, and medical services. Further harm can be avoided if decision makers remain aware of the impact of past and current policies and practices.

Minnesota voters approved a state constitution amendment in 1920 that authorized a system of 70 trunk highways to be constructed to accommodate the surge in vehicles and roadway travel demand.[1] US-12 runs east-west through northern Willmar, creating a barrier for communities to the north to access destinations and resources south of the highway. US-71 can be a barrier between the Willmar Civic Center, Willmar Lake, and Willmar High School and the rest of the city, however, there is a shared use path along Civic Center Drive that improves connectivity. The US-71 and MN-23 highway interchange is in southern Willmar and may be a barrier for people to access the shopping and institutions near this interchange. US-71 also turns into 1St St in Willmar, which is a major north-south corridor through the center of the city.

Railway

A major railyard north of downtown serves as a barrier between the lake area and the rest of Willmar. Railyards can have similar harmful impacts to communities as highways. In demographic mapping, the areas around the railyard are highlighted as having higher than average concentrations of BIPOC, households in poverty, and people whose first language is not English. This concentration of disadvantaged population near the railyard is consistent with national patterns, where communities of color and lower income are more likely to have polluting land uses in their neighborhood.[2]

Truck emissions, noise pollution from locomotives and railyard equipment all create an environment that has negative impacts on the nearby communities' health and quality of life.[3] Research has shown that there is a widening racial and economic gap when it comes to air pollution. These communities are also more likely to

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[1] Stangl, Alexis. (2022). A History of Transportation Amendments to the Minnesota Constitution. State of Minnesota: State Counsel Research, and Fiscal Analysis.

[2] Cheryl Katz (2012). People in Poor Neighborhoods Breate More Hazardous Particles. Scientific American.

[3] Tracking Harm: Health and Environmental Impacts of Railyards (2012). Trade, Health and Environment Impact Project.

experience high levels of violence, homelessness, and unemployment.[4] The railyard creates a major barrier for people walking and biking in the city and has long term harmful impacts on the surrounding community.

Transit

Public transportation that is fast, convenient, and easy to use is associated with increased access to healthcare services and healthy food[5], as well as access to jobs and education. Conversely, when people depend on public transportation that is inadequate, irregular, or inconvenient, they are more likely to forego accessing necessary destinations, including health services.[6]

The dedication of transportation funding and subsidies nationally and in Minnesota, including gas tax revenue, to road and highway projects has funded transportation projects and plans that focus on reducing motor vehicle delay and that continue to prioritize driver convenience on Minnesota's transportation network. Policies and practices that prioritize travel by private vehicle over travel by transit, walking, or biking disproportionately harm People of Color, people with disabilities, and low-income individuals who are less likely to own or operate a vehicle.

Kandiyohi County's local transit services and public transportation systems are integral parts of the community's transportation system, transporting significant numbers of people and offering mobility to individuals without other personal transportation options. Central Community Transit (CCT) provides public transportation for a fee to the region's residents. CCT operates 13 fixed routes from Monday – Friday from 7:00 AM to 8:00 PM. There are also several on-demand routes where riders call CCT to be picked up. CCT also operates several routes and on

demand services on Saturday. Jefferson Bus Lines has daily scheduled service from Willmar to Sioux Falls and the Twin Cities. See Figure 2 for the Wilmar CCT schedule.

Infrequent transit service is a factor of accessibility of transit and, consequently, transportation equity. However, the existing transit service in Willmar is consistent and connects people to across the city and outside of the city.

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[4] Spencer-Hwang R, Montgomery S, Dougherty M, Valladares J, Rangel S, Gleason P, Soret S. Experiences of a rail yard community: life is hard. J Environ Health. 2014 Sep;77(2):8-17. PMID: 25226779; PMCID: PMC4486117

[5] Litman, Todd. (2022). Evaluating Public Transit Benefits and Costs. Victoria Transport Policy Institute.

[6] Farhang, Lili and R. Bhatia. (2005). Transportation for Health. *Race Poverty, & the Environment*.

Providing more frequent bus service in Willmar can address income disparities and increase accessibility of the transportation system.

CCT WILLMAR CITY ROUTE

Monday - Friday

WILLMAR CITY ROUTE					Noon					
Ridgewater College	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	2:09	4:30	–	–
Regency West	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Lakeview Apartments (Highrise)	7:03	8:07	9:37	11:06	12:30	1:15	2:27	4:35	6:25	7:16
Robbins Island	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Highland Apartments	6:56	8:11	9:42	11:12	12:33	1:15	2:32	4:40	6:30	7:20
CentraCare (Lakeland Clinic)	–	8:14	9:46	11:15	12:35	1:18	2:35	4:44	–	–
CentraCare (Hospital)	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Becker Bus Station	6:59	8:17	9:48	11:18	12:41	1:21	2:37	4:48	6:38	7:28
West Central Industries	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
CentraCare (Main Clinic)	–	8:28	9:54	11:24	12:47	1:30	2:43	4:55	6:45	7:32
Skylark Mall	–	8:31	9:56	11:27	12:51	1:33	2:47	5:07	–	–
Target	–	8:39	10:00	11:31	12:55	1:38	2:50	–	–	–
Cub Foods	–	8:41	10:05	11:34	12:58	1:40	2:53	5:10	6:56	–
Walmart	–	8:44	10:08	11:41	1:01	1:42	2:56	5:15	7:00	7:46
Dana Drive S.E. Bus Stop Sign	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Uptown Willmar (Kandi Mall)	–	8:48	10:13	11:46	1:05	1:44	3:05	5:19	–	–
Cash Wise Foods	–	8:51	10:16	11:52	1:07	1:48	3:13 & 4:45	5:23	7:08	–
Woodland Centers	–	8:54	10:19	11:55	Call for Ride	1:51	3:22	Call for Ride	–	–
YMCA	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Cardinal Manor Apartments (407B)	–	9:02	10:29	12:02	1:14	2:00	3:33	Call for Ride	7:12	–
Northland Square (Regency East)	–	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	Call for Ride	–	–
Health & Human Services Building	–	Call for Ride	Call for Ride	12:08	1:27	Call for Ride	Call for Ride	Call for Ride	–	–

Figure 2: Willmar CCT Schedule

Active Transportation

Active transportation investments enable safer and more comfortable experiences for people walking, biking, or taking transit. However, active transportation planning has also fueled racial disparities through a focus on serving people who choose to walk or bike primarily for recreation and exercise over those who rely on these as their primary modes of transportation. Trail connections to recreational destinations such as the lake areas in northern Willmar are important, but typically are prioritized for affluent neighborhoods.

Infrastructure for walking and bicycling in Black and Latinx neighborhoods is disproportionately absent[7,8] and are lower quality with more

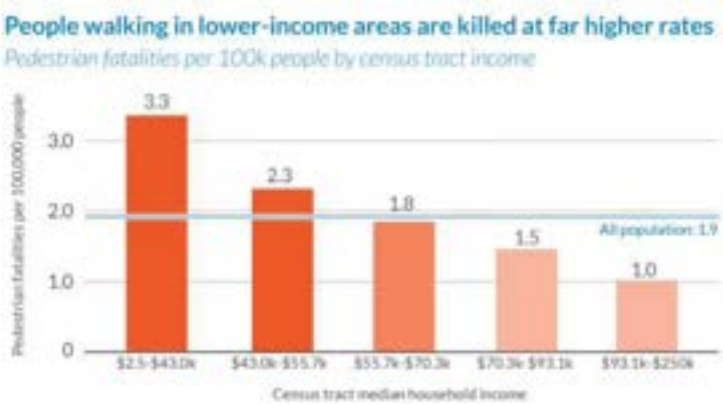

Figure 3: Pedestrian deaths in the United States by census tract income. (FARS data, 2016 – 2020) Error! Bookmark not defined.

[7] Barajas, Jesus. (2021). Biking where Black: Connecting transportation planning and infrastructure to disproportionate policing. *Transportation Research Part D: Transport and Environment*, 99, DOI: 10.1016/j.trd.2021.103027.

[8] Lee, Richard. I. N. Sener & S. N. Jones. (2017). Understanding the role of equity in active transportation planning in the United States, *Transport Reviews*, 37:2, 211-226, DOI: 10.1080/01441647.2016.1239660.

obstructions and accessibility issues, even though residents of these neighborhoods are less likely to own or rely on vehicles for transportation.[9,10]

That said, proposed bikeways and sidewalks in these neighborhoods are sometimes met with opposition as they often have led to gentrification issues and/or residents have continually asked for other needs to be met first (e.g., violence, education, health outcomes, etc.).[11] Where bicycle facilities have been built, many are off-street trails, both in recreational areas and along key streets including 19th Ave, Willmar Ave, and 5th St. The Willmar Bike Map also identifies several "bike road routes", which do not have dedicated space for bicyclists. These facilities are designed for riders who are confident riding in traffic, failing to serve users of all ages and abilities. Disproportionate effects of traffic crashes in Indigenous, Black, and Latinx communities emphasizes a need for safer active transportation facilities for vulnerable road users. Ensuring that all communities have access to safe and comfortable active transportation facilities greatly improves access to daily needs, services, employment, and activities.

Traffic Crashes and Fatalities

The aforementioned policies and practices have caused significant safety disparities in the transportation network across the US. Nationwide, crash analyses have found that American Indian and Alaska Native (AIAN), Black, and Latinx Americans face higher rates of traffic injuries and fatalities.[12,13] These disparities are particularly pronounced for pedestrians[14,15] (see **Error! Reference source not found.**). Across the US, the number of people killed while walking reached a new high in 2022, with an estimated 7,500 pedestrians struck and killed, up 19 percent since 2019.[16] People of Color, particularly Native and Black Americans, are substantially more likely to die while walking than any other race or ethnic group.[17]

While these crash trends are challenging to identify in Willmar because the crash data does not include information on race or income, this analysis assumes that national trends will be reflected in Willmar as they are generally consistent across communities.

Disparities in transportation safety are closely tied to the road infrastructure present in low-income and BIPOC neighborhoods. Three-quarters of the United States' sixty most dangerous roads for pedestrians are in low-income neighborhoods, and more than half are in predominantly Black or Latinx neighborhoods. Marginalized communities are more likely to rely on walking and bicycling for transportation and live by busy roads and are less likely to have access to safe transportation options or influence in transportation decision making. These factors lead to disproportionately safety impacts in these communities.

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[9] Kelly, C. M., Schootman, M., Baker, E. A., Barnidge, E. K., & Lemes, A. (2007). The association of sidewalk"H:\A0000\00MSP.00225.00_S_Willmar Safety Action Plan SS4A\PRODUCTION\GIS\Crash Data Mapping.qgz" walkability and physical disorder with area-level race and poverty. *Journal of Epidemiology and Community Health*, 61(11), 978–983. DOI: 10.1136/jech.2006.054775

[10] Rajaee, M, et al. (2021). Socioeconomic and racial disparities of sidewalk quality in a traditional rust belt city. *SSM Popul Health*, 16:100975. DOI: 10.1016/j.ssmph.2021.100975.

[11] Flanagan, Elizabeth, U. Lachapelle, & A. El-Geneidy. (2016). Riding tandem: Does cycling infrastructure investment mirror gentrification and privilege in Portland, OR and Chicago, IL? Research in Transportation Economics, 60: 14-24, DOI: 10.1016/j.retrec.2016.07.027.

[12] Governors Highway Safety Association. (2021). An Analysis of Traffic Fatalities by Race and Ethnicity.

[13] Nauman, Rebecca B. and Laurie F. (2013). Motor Vehicle Traffic-Related Pedestrian Deaths — United States, 2001–2010. *MMWR Morbidity and Mortality Weekly Report*, 62(15):277-282.

[14] Lucas, K. (2012). Transport and social exclusion: Where are we now? *Transport Policy*, 20, 105–113.

[15] Roll, Josh. (January 19, 2021). Analysis of Pedestrian Injury, Built Environment, Travel Activity, and Social Equity: Pedestrian and Social Equity in Oregon.

[16] Governors Highway Safety Association. (2023). Pedestrian Traffic Fatalities by State: 2022 Preliminary Data.

[17] Smart Growth America & National Complete Streets Coalition. (2022). Dangerous by Design.

Housing and Land Use

The neighborhood where a person lives determines what transportation options are safe, available, and accessible for them to use. This, in turn, impacts the spaces and destinations that can be accessed via the available transportation network. Conversely, investment in transit and active transportation infrastructure often corresponds to increased property values. Across the United States, housing policies, zoning laws, and land use practices have a history of being inequitable. Historically, planning and housing policies were regularly weaponized against low income and BIPOC communities to plan disinvestment, concentrate polluting industries, and maintain racial segregation. These types of projects should bolster these communities; however, transportation infrastructure investments often still lead to gentrification and displacement of residents in low-income areas.[18]Redlining and Racial Covenants

Around 1916, Black families began to relocate from the South to various cities in the Northeast, Midwest, and West. These families were fleeing aggressive segregationist laws and racial violence in the South. Racial tensions subsequently rose in northern states as competition for jobs increased and large cities became more crowded. Racial violence started to erupt across the US as a result of these growing tensions. In response, developers and white residents began to integrate racially restrictive language into housing deeds in the 1920s to prevent Black families and other communities of color from accessing quality housing. Real estate developers in the Twin Citites began writing racial covenants into property deeds in the 1910s, creating racially restrictive homeownership requirements. Much of this language exists in deeds today throughout Minnesota.[19] While this data is not easily accessible as research on racial covenants outside of the Twin Cities area has not been widely conducted at this time, this analysis assumes that historic practices were similarly conducted in the Willmar area are similar to many regions around the country.

Redlining and racial covenants were outlawed by the 1968 Fair Housing Act, but 30 years of legal housing discrimination has been detrimental to our urban spaces and has caused significant disparities in our communities. Communities of color are far more likely to suffer health impacts from proximity to hazardous land use and highways, lack access to medical care and greenspace, lack intergenerational wealth, experience housing insecurity, be forced to rent their home, or own an undervalued home.[20] This may explain the contrast between percentage of BIPOC homeowners vs white homeowners in some areas. For example, 90% of white households in Willmar are homeowners, while only 22% of BIPOC households own their home.[21]

Affordable Housing

Because neighborhoods provide different transportation access and transportation investments influence property values and vice versa, affordable housing is pertinent to transportation equity discussions. Around 60% of the Willmar housing is occupied by the owner, 60.5% of which have a mortgage. Disparities between BIPOC homeownership and white homeownership can be seen throughout the state and the country. The imbalance of challenges to affording housing are further exemplified by median household income and poverty rate discrepancies. The median household income of white families in Willmar is $62,608, compared to the $37,917 for Black households. Poverty rates ($26,208 or less annually) show that 53% of Black, 74% of American Indian, and 13% of white residents have an income below the poverty line.[22] It is important to note that affordable housing is not only connected to transportation, but also affordable food, healthcare, and childcare. Often, affordable

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[18] National Institute for Transportation and Communities (NITC). The Transportation, Land Use, and Housing Connection. https://nitc.trec.pdx.edu/land-use-and-housing-research

[19] Delegard, Kirsten. (2021). Racial Housing Covenants in the Twin Cities. MNOpedia.

[20] (2022). Mapping Prejudice: Racial Covenants. University of Minnesota.

[21] (2022). American Community Survey 5-Year Estimates. City of Willmar.

[22] (2022). American Community Survey 5-Year Estimates. City of Willmar.

housing areas are further from goods and services, with less safe and accessible transportation options to assist with additional distances.

Parks and Recreation

Access to green spaces such as parks and blue spaces such as lakes and pools is often inequitable. These natural areas and amenities are often surrounded by more affluent neighborhoods. Willmar has great parks and recreation access such as Willmar Lake, but these areas are divided from the nearby communities to the south by both a highway and a railyard. This makes these areas difficult and sometimes even unsafe to access as a pedestrian or bicyclist.

There are numerous benefits accesses to parks and recreation has on a person's health and quality of life. These benefits were emphasized especially during the COVID-19 pandemic, where people sought out parks and open space as some of the few spaces that were safe to go. Access to these spaces has positive impacts on both mental and physical health.[23]

Displacement and Gentrification

Low-income, BIPOC, and other marginalized groups have been intentionally and unintentionally displaced from their neighborhoods throughout American history. As discussed, BIPOC neighborhoods have been strategically selected for destructive infrastructure, such as highways, polluting industries, and disinvestment, particularly Black and Native American communities. This can force people to move out to make way for the development of these projects or cause them to leave over time due to neighborhood degradation.

For decades displacement has also been closely linked with gentrification. Gentrification is largely the process of white or higher-income residents moving to a historically marginalized neighborhood. This is often because these neighborhoods typically have cheap housing and development opportunities. Even projects that are intended to serve low-income residents, such as transit or active transportation facilities, if not paired with anti-displacement strategies, can cause gentrification by making the neighborhood more desirable.

Dedicated and consistent funding, business support, housing support, thorough engagement, project communication, and updated policies are strategies that can prevent displacement in the community. Safety and infrastructure projects intended to improve conditions in neighborhoods should be preceded by anti-displacement policies and strategies so that these residents are not forced out as a result of neighborhood infrastructure improvements.

Law Enforcement

Enforcement is conventionally viewed as a key component of achieving transportation safety and compliance. For this reason, an understanding of law enforcement policies and practices is important for the road safety and other transportation initiatives. Transportation enforcement has a discriminatory history throughout the US, impacting the level of safety on public streets and in public spaces for specific members of the community. BIPOC, especially Black residents, are more likely than white residents to be pulled over, have their car searched, be pulled over on a bicycle, be stopped by a cop while walking, and be ticketed on transit.[24] Some cities have implemented anti-harassment programs, hired unarmed personnel for transportation enforcement, and increased engagement between the community and law enforcement members. Another approach to providing more equitable traffic enforcement is to increase the use of automated enforcement and driver feedback signage. Red light and speed tracking cameras are highly effective at increasing safety, particularly with respect to speeding-

[23] Sarah Ruth Martinez (2023). Racism in the Water: Access for All in Outdoor Recreation. Ecology Law Quarterly.

[24] Barajas, Jesus. (2021). Biking Where Black: Connecting Transportation Planning and Infrastructure to Disproportionate Policing. https://www.sciencedirect.com/science/article/pii/S1361920921003254

related crashes[25], and have the potential to remove racial profiling from traffic enforcement. While automated enforcement is not currently legal in the state of Minnesota, this option could be researched for future implementation in the case of a change in legislation.

Law enforcement practices can also present an issue in the disability community, specifically for individuals that are neurodivergent. Populations with Autism or other Intellectual and Developmental Disabilities (IDD) may be at a disproportionate risk of escalated interactions with law enforcement. In the Rutgers report "Detour to the Right Place" individuals from the neurodivergent community are quoted stating that even high-functioning adults who can drive are concerned about how law enforcement officials would treat them.[26] Another concern for drivers with ASD is uncertainty about the appropriate protocols to handle situations involving law enforcement officials, as one may encounter after a traffic accident or for a traffic violation.[27] The report is clear that there is general discomfort for this group in handling situations with law enforcement. A lack of training can often lead to officers mistaking behaviors of autism for other unrelated issues, causing them to potentially escalate situations when it is inappropriate and put people with autism at risk of unnecessary harm. Law enforcement strategies and trainings should take into consideration the different lived experiences and circumstances of people in the community.

Climate Resilience

Climate and transportation equity are closely tied in a variety of ways. As extreme weather events increase, risk to transportation infrastructure and transportation users increase. Replacement, repairs, and regular maintenance needs for infrastructure will continue to increase. Damage and maintenance issues to infrastructure can disrupt users by causing safety and convenience issues. Transportation users will not only be impacted by damage to the infrastructure, but also directly by climate events. Increase in flooding, extreme heat, snow and precipitation can be a safety barrier for transportation users. This is particularly true for bicyclists, transit users, and especially pedestrians, the most vulnerable user of the transportation system.

Heavy precipitation/flooding, warmer winters, new species ranges, drought, medium heat, and wildfires were found to be the biggest potential climate impacts to Minnesota.[28] Willmar contains lakes and wetlands and is located between two watersheds, making flooding and droughts an important consideration.

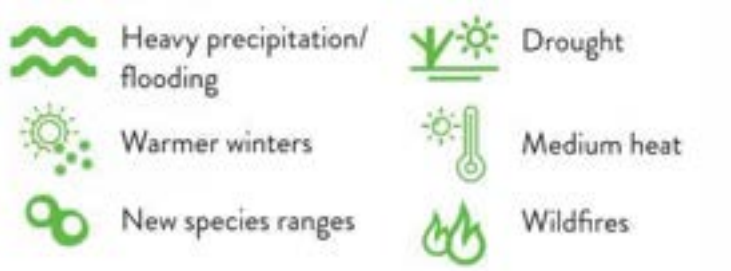


Figure 4: Potential Climate Impacts in Minnesota (MnDOT 2016 Sustainability Report)

Climate impacts disproportionately impact low-income, BIPOC, and other marginalized groups, who are typically the least responsible for climate change. Excess heat is responsible for at least 6,000 deaths a year and flash floods increasingly lead to fatalities, injuries, and property damage and loss. Marginalized communities are less likely than their white counterparts to have tree canopy coverage throughout their neighborhoods, making them more susceptible to heat. The transportation sector is a large contributing industry to greenhouse gas emissions, which degrade both air and water quality.

Funding to reduce climate impacts and combat climate-change contributors by managing natural resources and decreasing pollution is vital for the future transportation networks. Equitably implementing climate solutions, such

[25] National Transportation Safety Board. (2017). Reducing Speeding Related Crashes Involving Passenger Vehicles. Safety Study NTSB/SS-17/01. Washington, DC.

[26] Detour to the Right Place

[27] ""

[28] (2016). 2016 Sustainability Report. Minnesota Department of Transportation.

as green infrastructure, shelters, and street trees, will improve the transportation safety and reduce threats of climate related displacement. Encouraging people to choose walking and bicycling over driving, by providing safe and comfortable facilities and educating about active transportation, will reduce pollution and further combat climate issues.

Community Engagement

Understanding past policies and programs that impacted transportation outcomes, often inequitably, is only part of the puzzle. To see the current picture of transportation disparities, it is important to also hear about people's current lived experiences. These stories can connect the dots between data and historical analysis to help to define transportation disadvantage, identify areas of safety risk, highlight barriers to access and mobility, and establish the existing conditions and context.

Historically, community engagement efforts for transportation projects have attracted people who are already comfortable interacting with government agencies and have the time and resources to participle in engagement activities. This often means people who are most impacted by a project do not get the opportunity to express their opinions, provide feedback, or assist in decision-making. Without representative participation in community involvement, cities and neighborhoods are built in ways that only people with transportation choices can navigate easily and conveniently. For example, neighborhoods without sidewalks or that are divided by major arterials are only designed for those who have access to a vehicle, which can align with income, ability, and race. More inclusive and equitable engagement can help ensure that our streets and neighborhoods are built for the needs of all residents.

Being intentional about outreach to these communities, selecting a range of strategies to reach diverse groups, and using activities that facilitate interactivity, and creating comfortable environments that empower people to give feedback will ensure that all members will have the opportunity to influence the future of Willmar.

DEMOGRAPHIC MAPPING

From the historical context, we know that transportation disparities and vulnerabilities are rooted in past policies and investments. These inequities have resulted in transportation disadvantages including increased safety risks, as shown in the initial safety analysis for the Willmar SAP. These disparities can be further examined using demographic maps to identify geographic distribution of key populations. In the demographic mapping step, populations are distinguished based on demographic factors that reflect communities who have been systemically oppressed and marginalized. Using available Census and American Community Survey (ACS) data, we can categorize and map these populations. The results will be used later in the planning process to compare outcomes in areas experiencing greatest disadvantage and to develop equitable recommendations for this SAP that do not further contribute to disparate transportation safety outcomes.

Demographic mapping helps identify demographic patterns, which can then be spatially compared to various transportation outcomes. In this case, we will compare locations across the city that have heightened sociodemographic vulnerabilities (larger populations that have been historically marginalized or are more likely to face transportation disadvantage) with the safety risk throughout the region. This allows an examination of the outcomes experienced by various populations, reveals disparities, and establishes a baseline of disparate safety impacts, which should be used to monitor how effective safety investments are in improving equity. It should be noted, however, that people frequently relocate. Therefore, demographic mapping efforts should be revisited and revised over time remain accurate.

Key Populations

As part of the planning processes, this equity analysis has identified ten 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 Willmar'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 that are unemployed, youth under 18 years old, and cost burdened households. The key populations for the Willmar SAP equity analysis are:

- People of Color, including Hispanic or Latino people
- 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
- Households with Disabilities
- People without a high school diploma

Indicators of Potential Disadvantage

The IPD methodology uses regional ACS data at the 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 5.

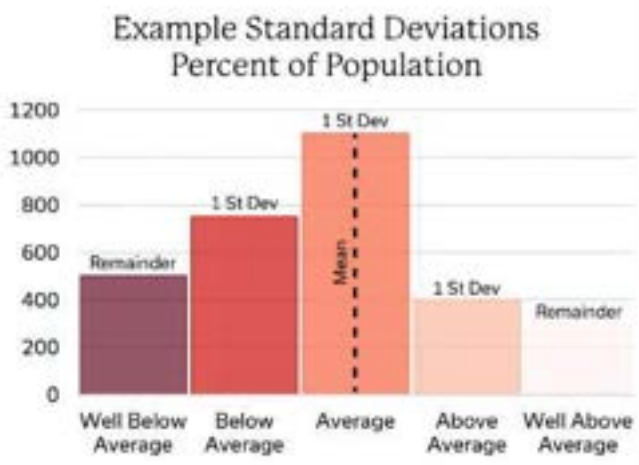
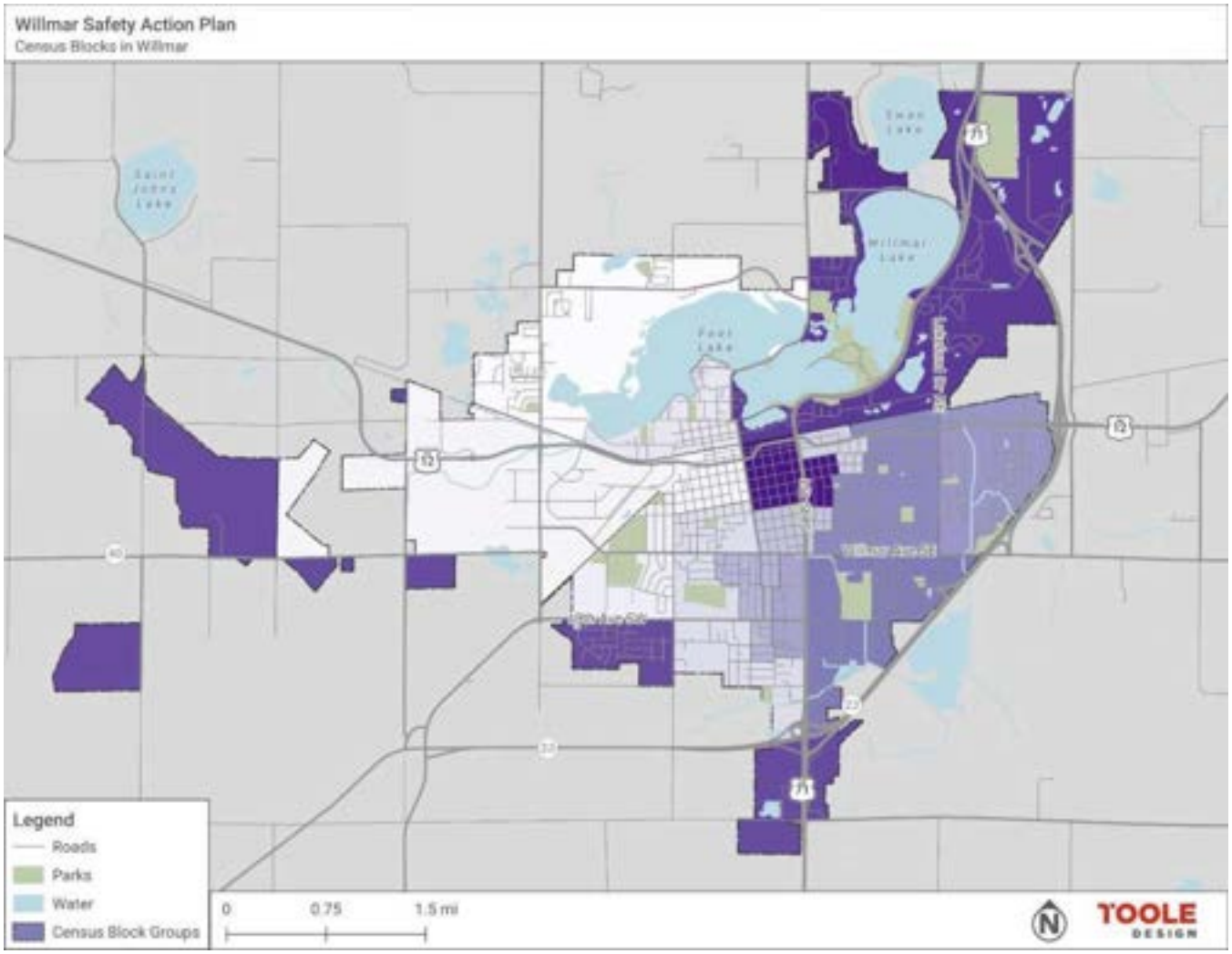


Figure 5: Breakdown of IPD Classification (Willmar SAP Equity Analysis)

The Willmar SAP made three minor adjustments to the IPD methodology:

1. As mentioned above, 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. 2022 American Community Survey (ACS), 5-year estimate data was used to determine averages for each IPD.
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.

For the purposes of the Willmar SAP, the overall IPD score was used as the basis for identifying Equity Focus Areas to guide plan engagement, recommendations, and implementation.



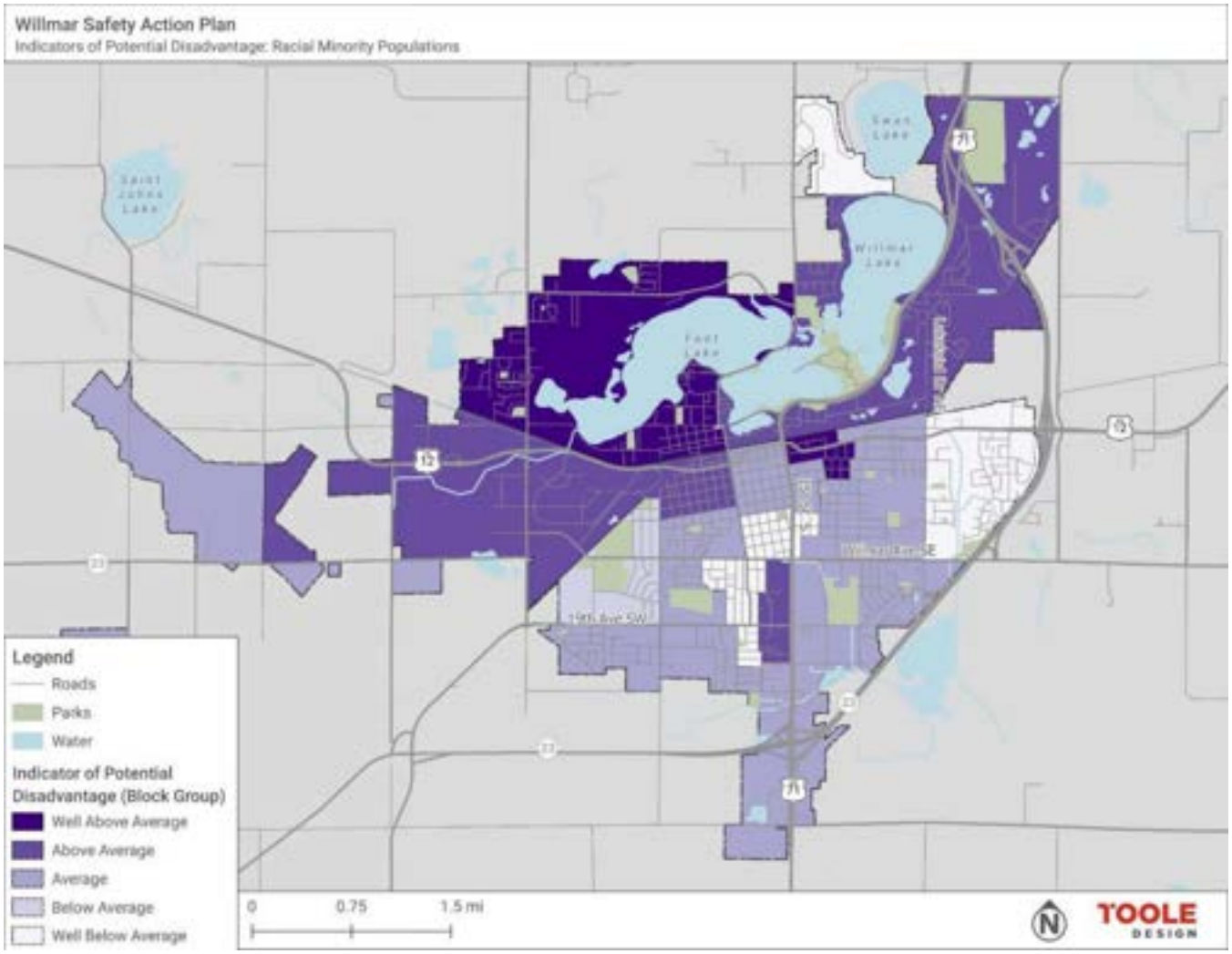
Map 1: Willmar Census Block Groups

* Note that map colors are intended to differentiate block groups only and do not represent analysis data

Focus Areas and Geographic Priorities

Race

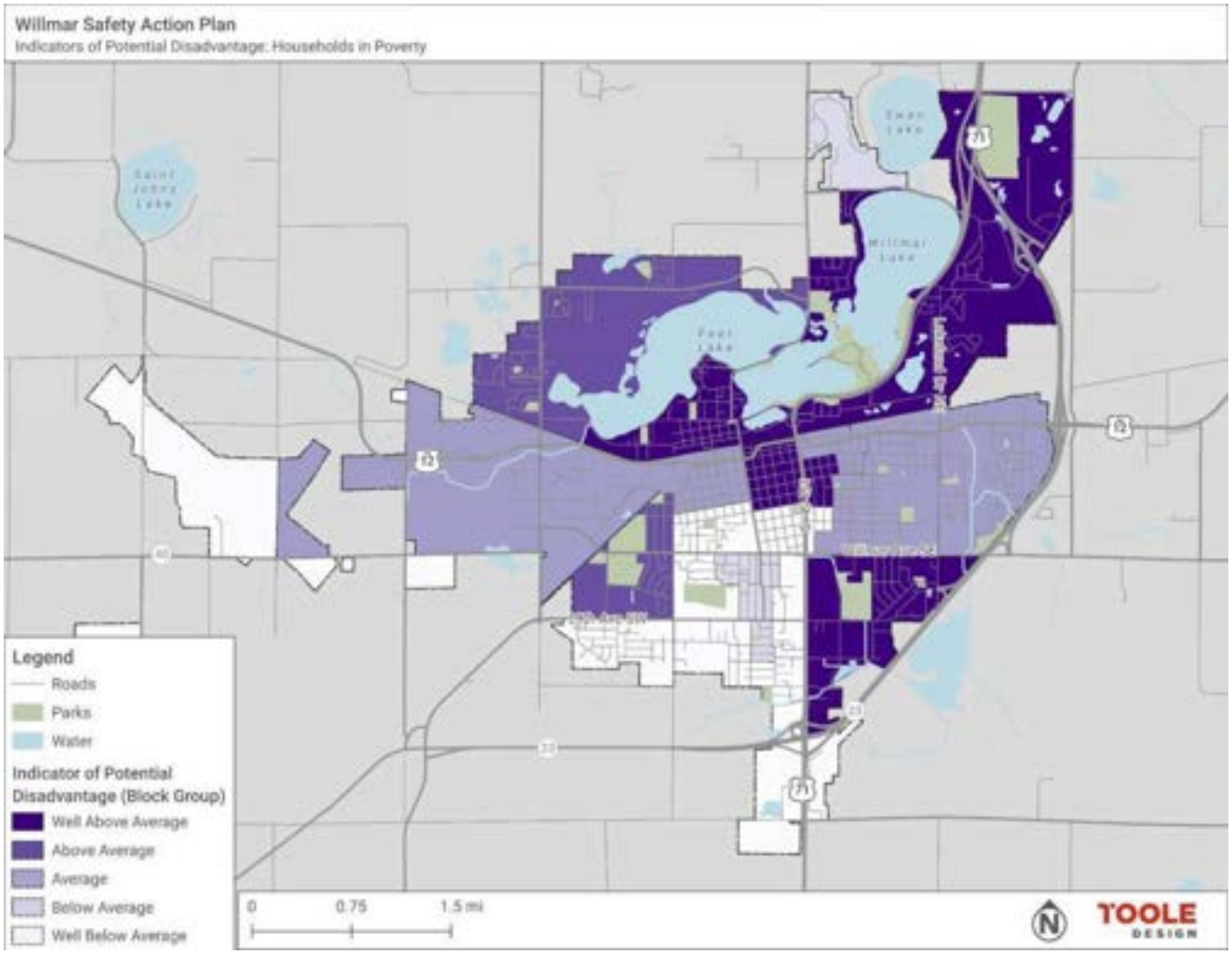
The IPD analysis for racial minorities assesses where there are prevalent populations of Black, Native American, Alaska Native, Asian, Native Hawaiian, Pacific Islander, Hispanic or Latino, and multiracial residents. Concentrations of racial minorities are primarily located north of Highway 12, near Foot Lake. There is also a census block group with above average concentrations of racial minorities around Highway 12 between 1St Street and Ferring Street, east of downtown.



Map 2: Willmar SAP Indicators of Potential Disadvantage - Racial Minority Population

Households in Poverty

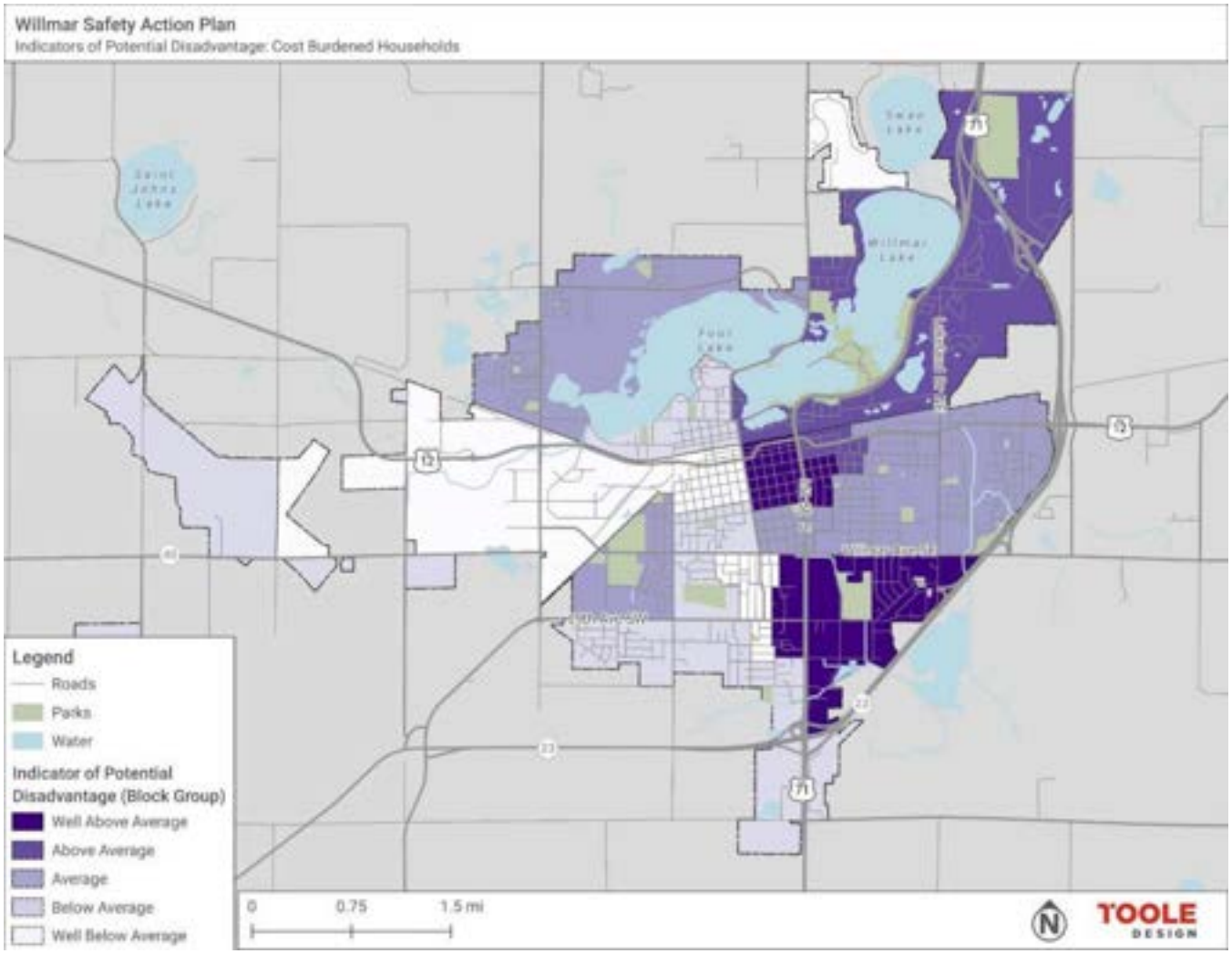
The well above average prevalence of households experiencing poverty are similar to the high racial minority areas: north of Highway 12 and east of downtown. There is an additional well above average pocket west of MN-23, between Willmar Avenue and 1st Street.



Map 3: Willmar SAP Indicators of Potential Disadvantage - Households in Poverty

Cost Burdened Households

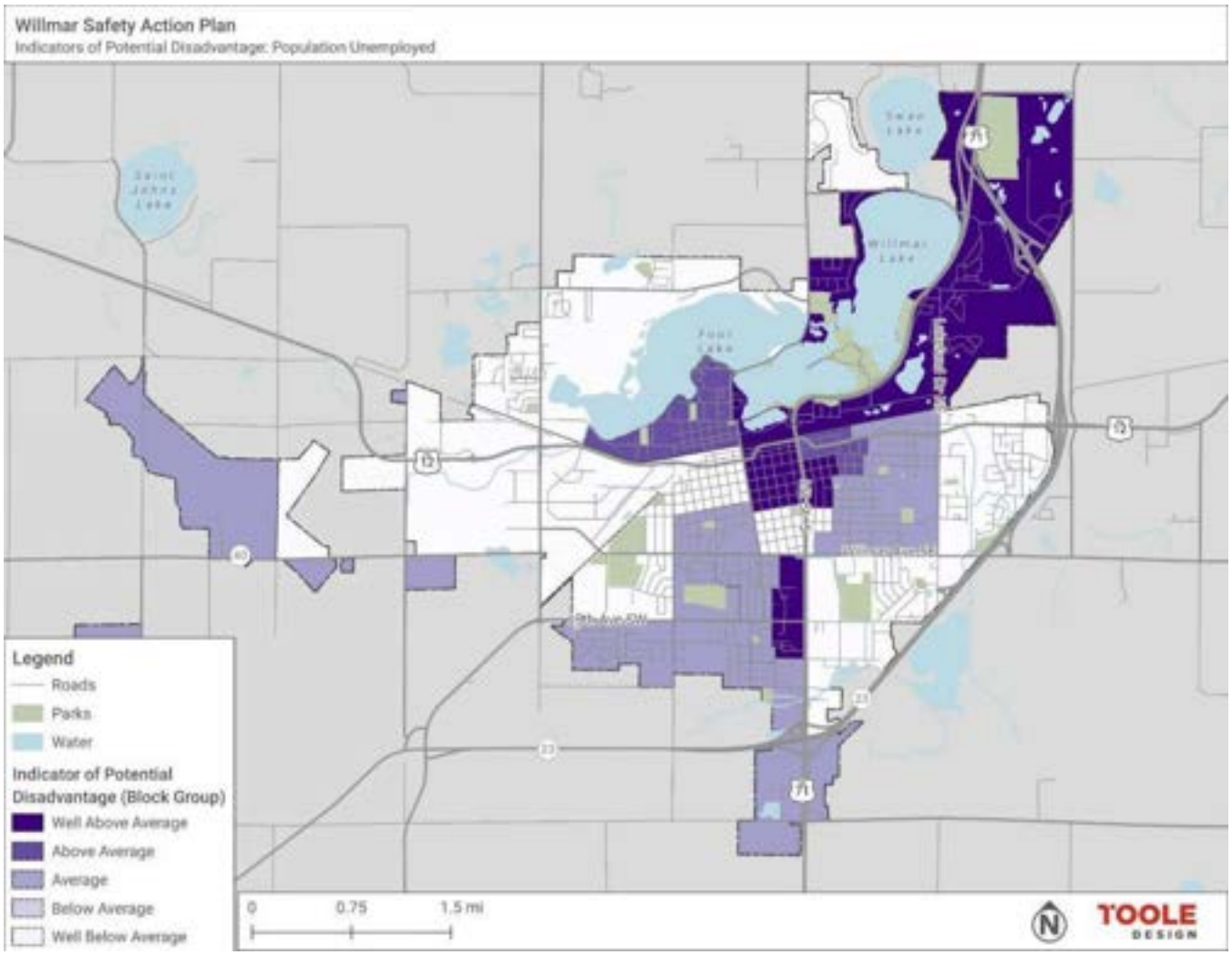
Cost Burdened Households are mostly located in in the east areas of Downtown Willmar. There is a noticeable divide along 7th Street where the block groups change from well above average number of cost burdened households, to well below average.



Map 4: Willmar SAP Indicators of Potential Disadvantage - Cost Burdened Households

Unemployed Populations

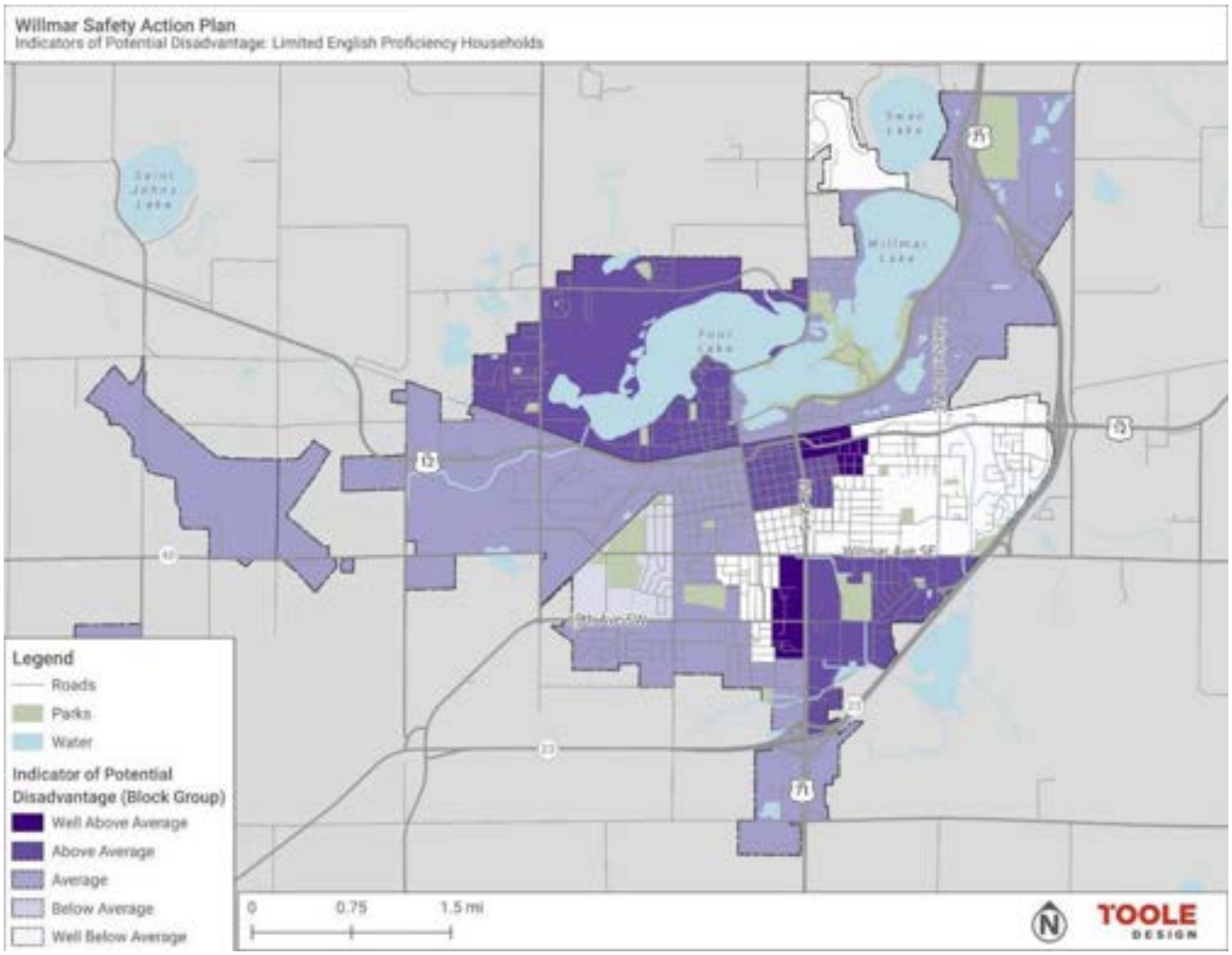
The well above average area of unemployed populations is located around Willmar Lake. Other concentrations of unemployed populations are along 1st Street, near downtown and south of Willmar Avenue.



Map 5: Willmar SAP Indicators of Potential Disadvantage - Population Unemployed

Limited English Proficiency

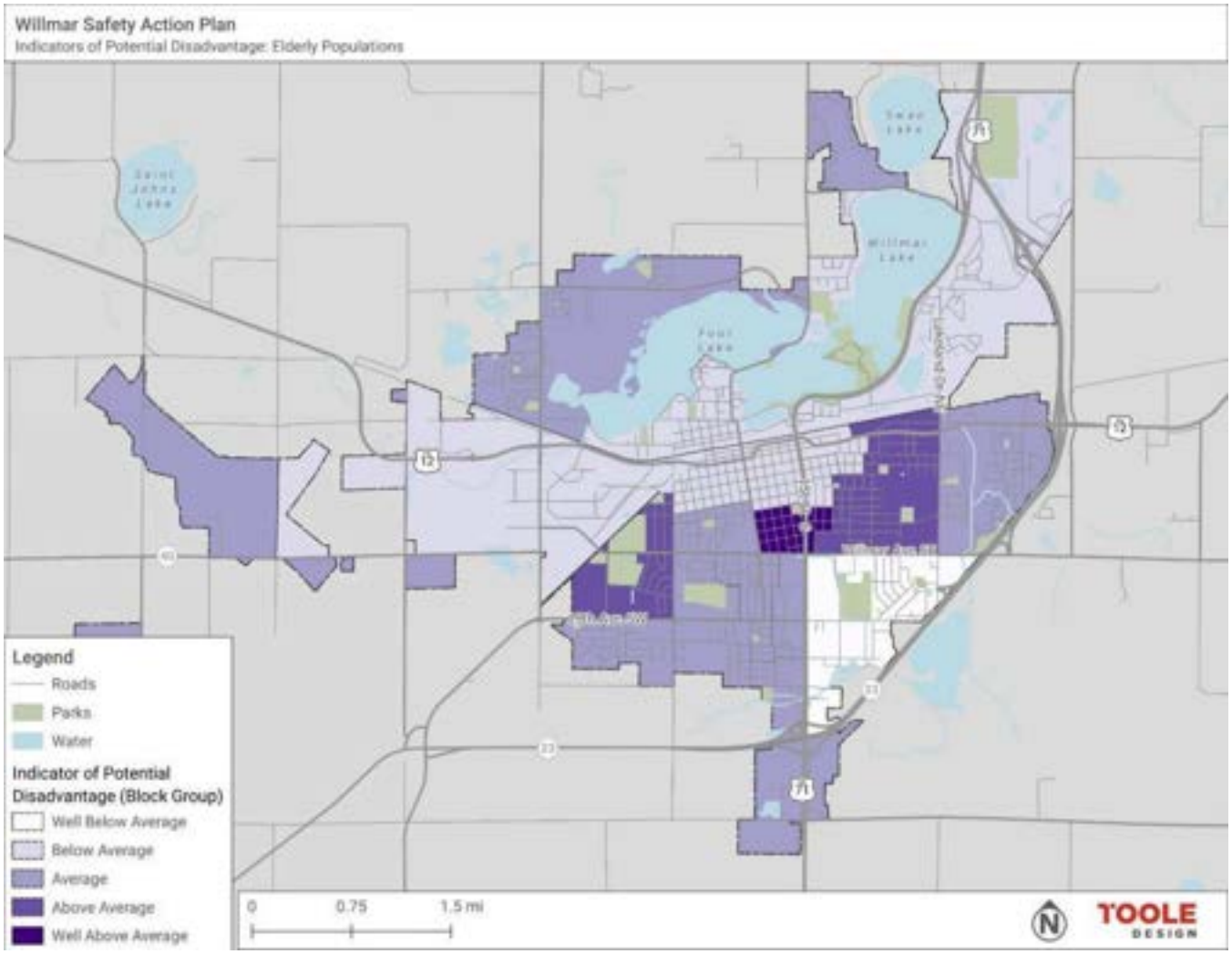
The well above average populations with limited English proficiency are primarily located east of downtown near Highway 12, and south of Willmar Ave east of 1st Street.



Map 6: Willmar SAP Indicators of Potential Disadvantage - Limited English Proficiency Households

Older Adults

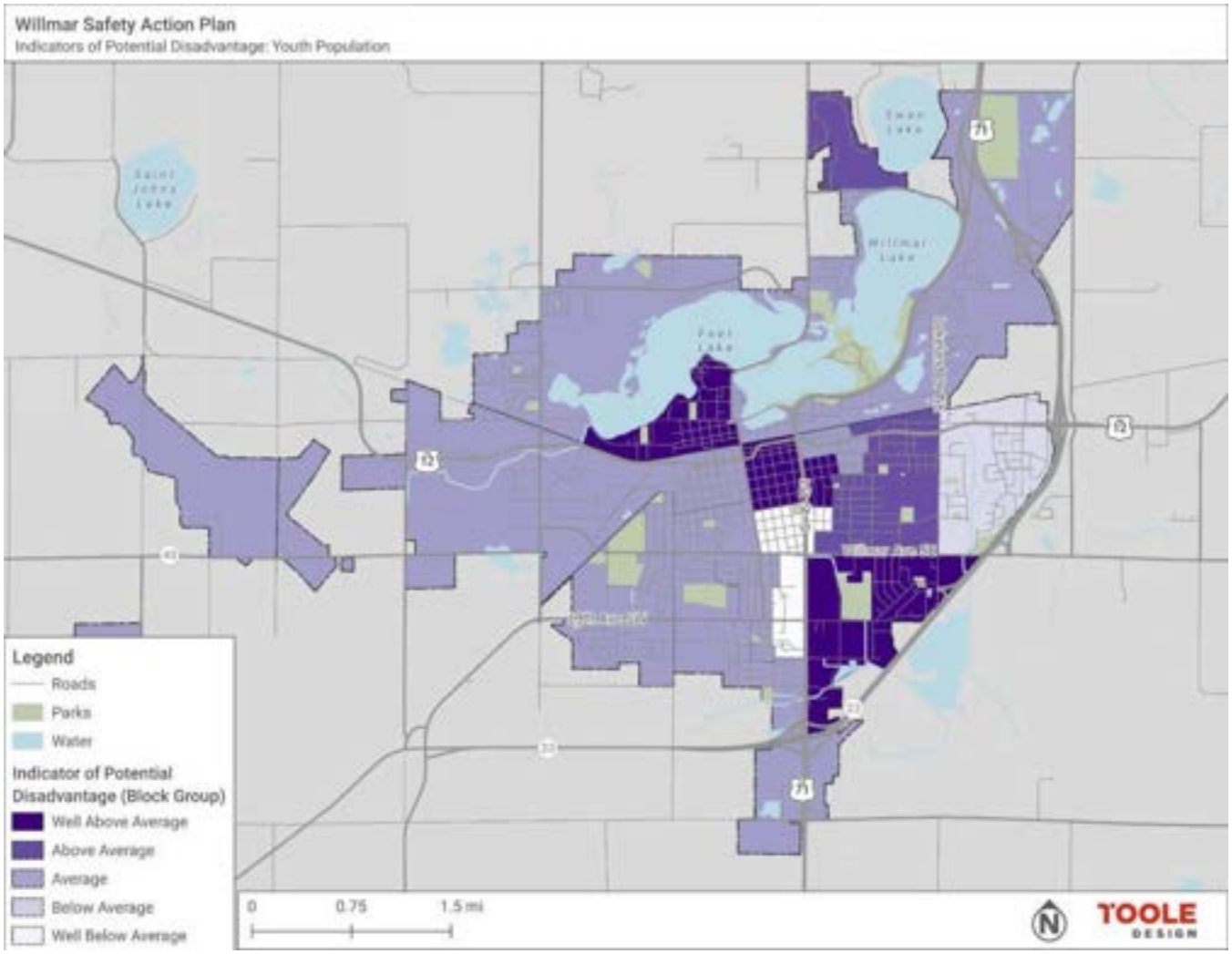
Well above average percentages of elderly populations are dispersed around the edges of Willmar, with a pocket of well above average north of Willmar Avenue near 1st Street. Notably, in central and downtown Willmar there are well below average percentages of elderly population.



Map 7: Willmar SAP Indicators of Potential Disadvantage - Older Adults

Youth Population

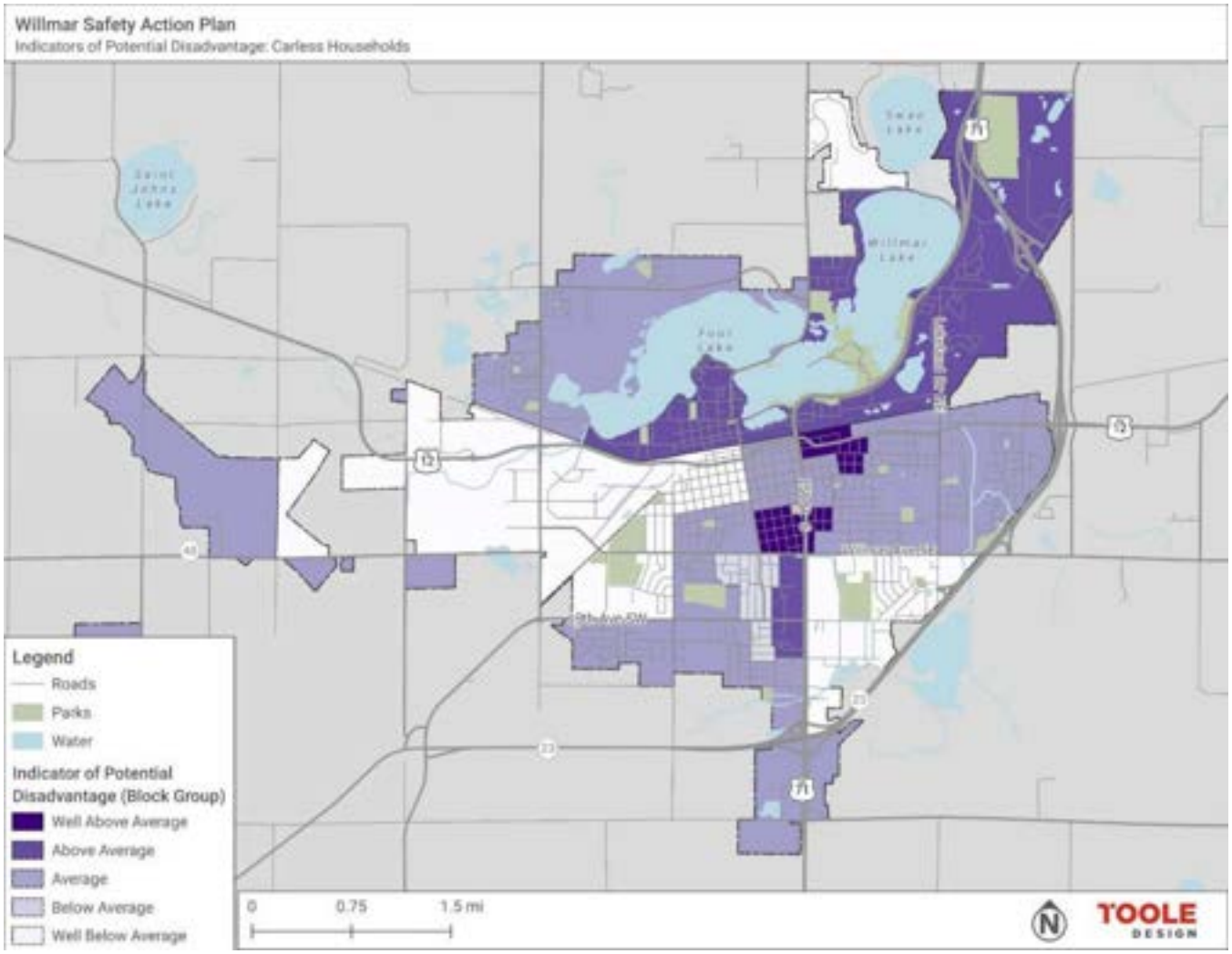
The highest concentrations of youth populations are located in in central Willmar, with another pocket in southeast area of the city west of MN-23. Above average concentrations of youth are located throughout Willmar, with most block groups having above average concentrations.



Map 8: Willmar SAP Indicators of Potential Disadvantage - Youth Population

Carless Households

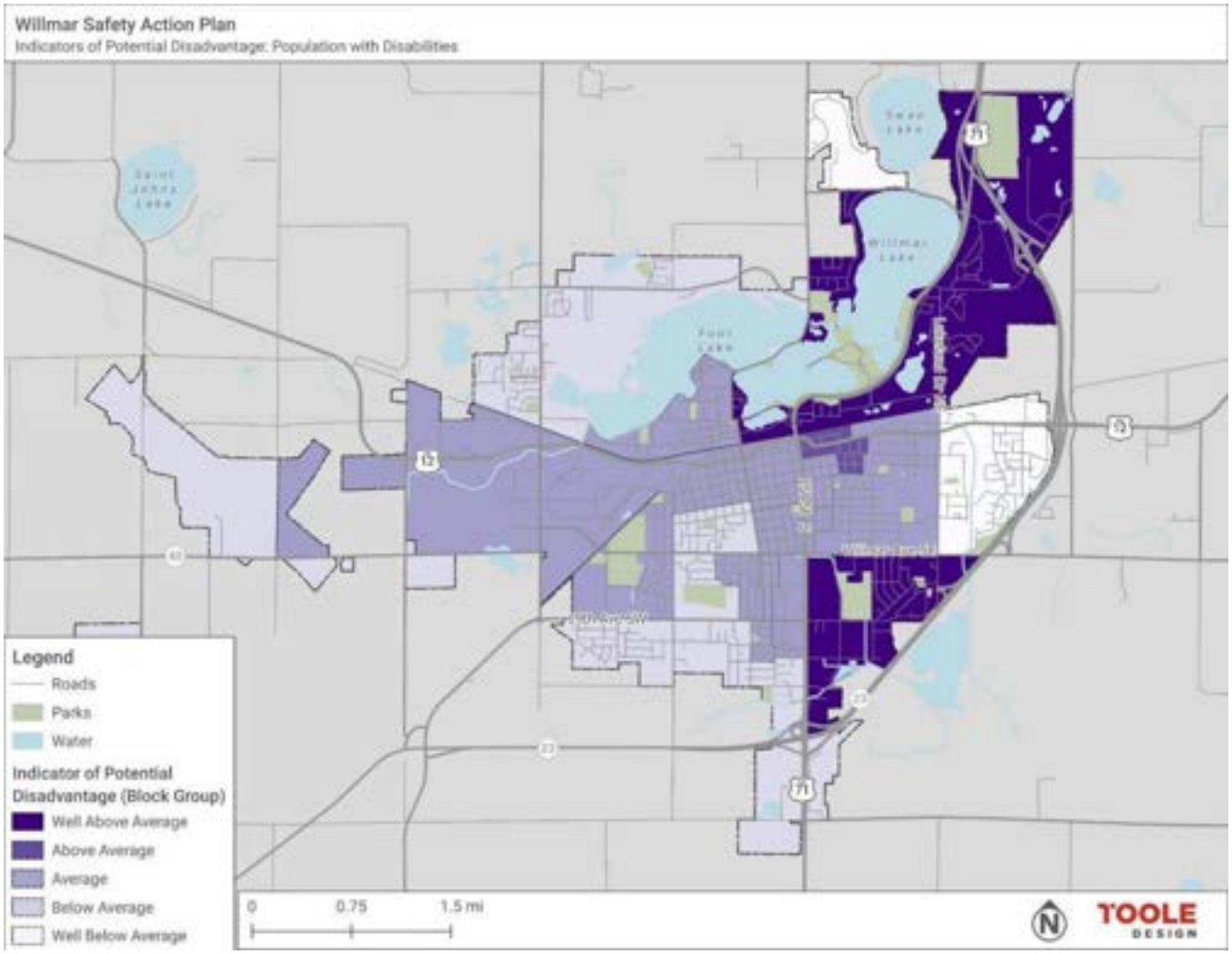
High percentage carless households are located around the lake area, with concentrations of above average percentages of carless households along Highway 71/1st Street through central Willmar.



Map 9: Willmar SAP Indicators of Potential Disadvantage - Carless Households

Population with Disabilities

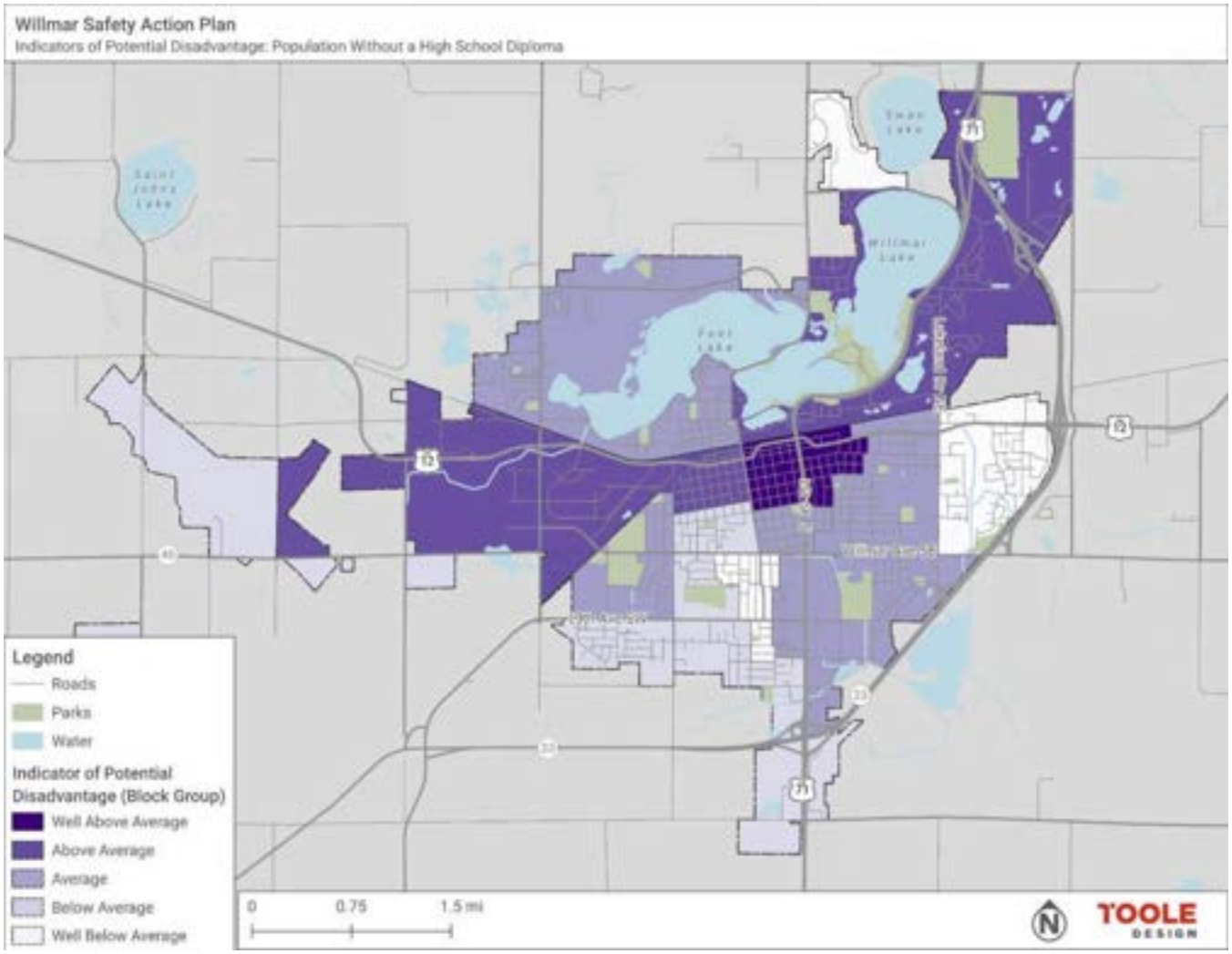
High percentages of the population with disabilities are concentrated in eastern Willmar, near the lakes area and along Highway 71.



Map 10: Willmar SAP Indicators of Potential Disadvantage - Households with Disabilities

Population Without a High School Diploma

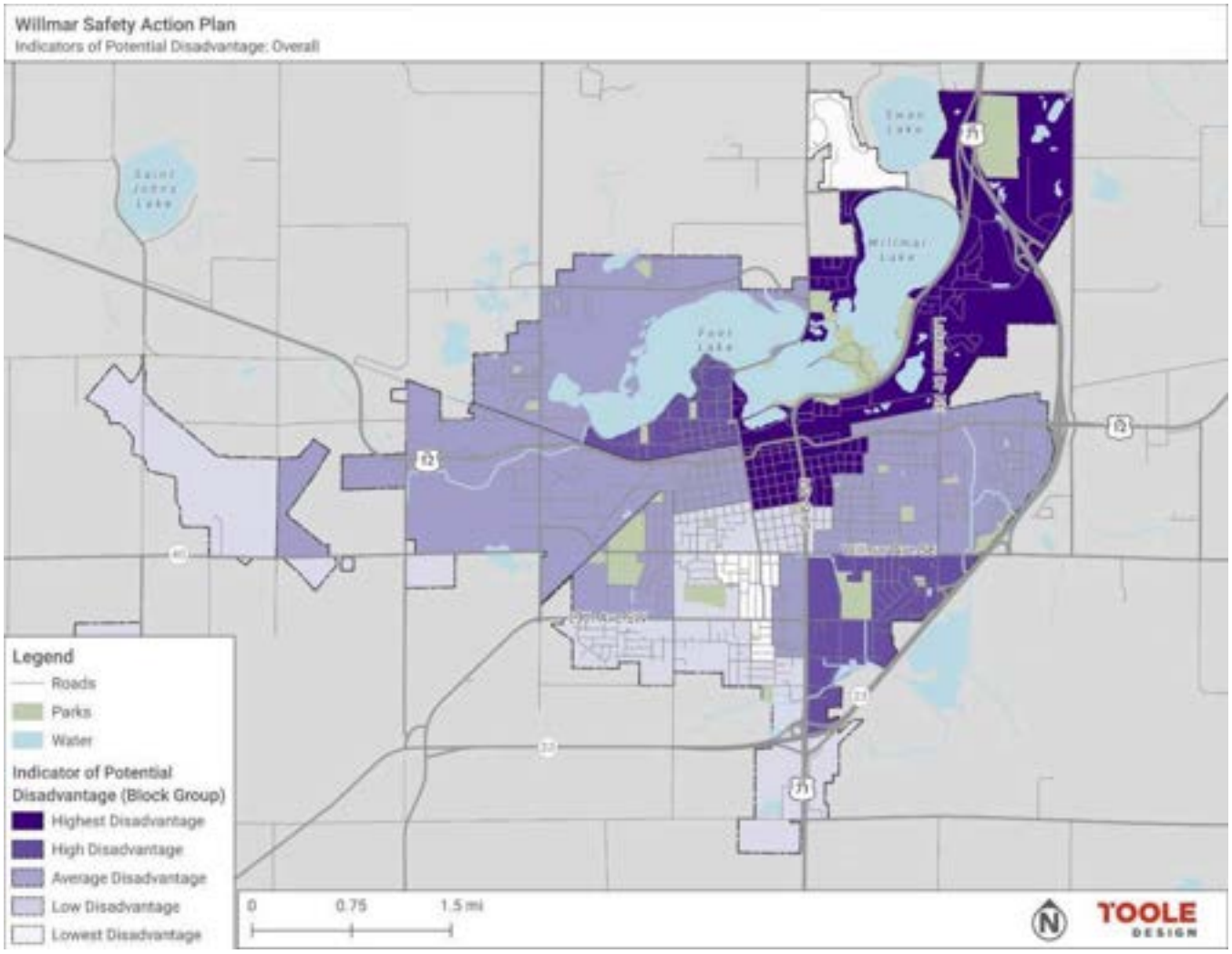
Areas of Willmar with a proportionately higher concentration of the population without a high school diploma is located in the downtown. Areas with above average concentrations are located along Highway 12 and around the lake area.



Map 11: Willmar SAP Indicators of Potential Disadvantage - Population Without a High School Diploma

Equity Focus Areas for Safety Action Plan

To determine the priority Equity Focus Areas for the Willmar SAP, the project team weighted the 10 IPD scores and categorized census block groups into the same structure ranging from well below average to well above average. Primary Equity Focus Areas for the plan include the census block groups identified as well above average, located downtown and around the Willmar Lake area. Secondary Equity Focus areas are identified as above average, which are the census blocks around the Foot Lake, and west of MN-23, south of Willmar Avenue. Focus Areas show high concentrations of IPD and should therefore be prioritized during community engagement, analysis, recommendations development, and implementation of the Willmar SAP.



Map 12: Willmar SAP Indicators of Potential Disadvantage – Equity Focus Areas

SAFETY ANALYSIS INTEGRATION

Strategies to Advance Equity

The equity analysis is a component of the SAP with the purpose of influencing the decision making as a result of this project. Recognizing that traffic violence (and other negative outcomes of the transportation system) has disproportionate impacts on BIPOC, low-income households, and other communities that have been marginalized, focusing interventions and improvements to serve these communities advances equity. This section describes the strategies through which findings from this equity plan can and should impact the planning and implementation of transportation safety projects in Willmar.

Continued Assessment

The equity analysis reveals populations and areas that should remain in the forefront when deciding how to address planning issues, such as transportation safety. By assessing the distribution of impacts in the Equity Focus Areas and for BIPOC communities and low-income households over time, Willmar can monitor the impact investment decisions are having. In this way, investments can be prioritized to address performance while prioritizing disproportionate impacts and underinvestment among historically marginalized communities.

Data Types

The safety analysis in this plan provides only part of the puzzle in the form of qualitative data through equity mapping and the high injury network (HIN). To understand transportation disparities, we need to have a qualitative data analysis in the form of historical context and understanding people's lived experience. This equity analysis includes historical context, but the best data to understand people's live experiences comes from community engagement. This data helps define transportation disadvantage, identify areas of safety risk, highlight barriers to access and mobility, understand how gaps and barriers impact people, establish the existing conditions and context, and begin to understand how safety issues can be addressed. Feedback from engagement can also be used to adjust the analysis to include new or different communities or assess different impacts.

It is important to remember that inequities are a result of past discrimination, disinvestment, and disenfranchisement. Understanding the history of the region relative to racialized communities and other key communities can highlight what harms should be redressed. These may not be limited to transportation although they will affect one's mobility. Advancing equity is a continual process; the equity analysis is one step in a multidisciplinary, multi-sectoral endeavor.

Storytelling

Willmar can influence equity outcomes through storytelling using the high-level issues and patterns identified in the equity mapping analyses with an overlay of the historical context. The story crafted by this analysis can and should be modified based on the results of regional engagement. An equity analysis groups people into broad demographic-based populations, but there are nuances in how people within a population experience the same impact. Furthermore, populations based on demographic data are different than communities that are considered a group based on shared experiences and interests. Demographic data also has geographic bounds (defined by the US Census) that may not align with neighborhood boundaries. As a result, equity analyses present rough estimations of communities and impacts they may experience. These broad analyses will not describe the lived experience of individuals or how overlapping and intersecting identities compound mobility impacts.

To facilitate storytelling and examine more individualized outcomes, we can employ the concept of personas. Using the results of the equity and safety risk analyses and engagement, we can distill mobility challenges and contributing factors along with how an individual's identities interact with these challenges. We can use this to craft personalized examples of how individuals throughout the region experience the transportation system. These personas can help make disparate impacts more tangible and understandable to people from dominant populations in local jurisdictions.

Expanding Analysis

Equity has largely been considered in the environmental justice and Title VI context, which often creates analyses to address a requirement and mark a checkbox. The equity analysis for the SAP identifies and prioritizes locations for interventions and helps determine types of interventions informed by the analysis and the aim of achieving equitable outcomes.

Starting with the Action Plan, Willmar can continue to integrate equity analysis into decision making by using the equity analysis process to assess potential outcomes like accessibility and use the results to influence which projects are selected and prioritized. This lays the foundation for a more systemic equity framework that uses equity to make decisions throughout the agency for this and future planning projects.

Advancing Equity in the Willmar SAP

Table 1 outlines how each of these strategies will be used throughout the community engagement, analysis, recommendations development, and implementation phases of the Willmar SAP.

Table 1: Advancing Equity in the Willmar SAP

Equity Strategy	Engagement	Analysis	Recommendations and Implementation
Continued Assessment	Use mapping results to assure that focus areas are being reached through engagement efforts	Use the equity analysis as an overlay to the safety analysis	Findings from this equity analysis will inform recommendations to how the city can assess how the focus areas are being impacted
Data Types	Integrate engagement feedback into the equity analysis for a comprehensive understanding of transportations safety issues	Use qualitative analysis (mapping) as the base for understanding transportation gaps	Qualitative data will be used with quantitative to develop recommendations and prioritization
Storytelling	Use the historical context to understand how marginalized groups have or may have been impacted by past planning efforts	Rely on qualitative data to understand the gaps that the safety analysis data cannot explain	Provide recommendations on how the city can use feedback from this plan and acquire future feedback from the community to measure the success of project implementation for addressing equity issues
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 through the project	Provide recommendations on how to strengthen data collection and engagement efforts for implementation

APPENDIX C

TECHNICAL MEMORANDUM

HIGH INJURY NETWORK (HIN)

TOOLE DESIGN

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MINNEAPOLIS, MN 55401

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TOOLEDESIGN.COM

MEMORANDUM

October 30th, 2024

To: Christopher Frank
Organization: City of Willmar
From: Dean Chamberlain
Project: Willmar Safety Action Plan

Re: HIN Development

Contents

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High Injury Network Development Methodology 2
Crash Data Source 2
Crash Data Limitations 2
High Injury Network Overview 3
High Injury Network Trends 7
Summary of Key Findings 11

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Federal law 23 United States Code Section 409 governs use of the data in this report. Under this law, data maintained for purposes of evaluating potential highway safety enhancements "...shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data." If you should attempt to use the information in this report in an action for damages against any jurisdiction involved in the locations mentioned in the data, these entities expressly reserve the right, under Section 409, to object to the use of the data, including any opinions drawn from the data.

Introduction

This memo summarizes the development of the High Injury Networks (HINs) and analysis of the HINs conducted for Willmar, Minnesota's Safety Action Plan. This memo provides a basis for understanding what information was considered while developing the networks for inclusion in the full safety action plan.

High Injury Network Development Methodology

High Injury Networks (HINs) are spatial representations of locations of fatal or injury crashes. These networks allow decision-makers to easily see locations of past crash history and allow analysts to find trends in the HINs that identify potential safety issues in other transportation facilities that do not have past crash history but may still have safety issues that need to be addressed.

Crash Data Source

The crash data used for the development of the HINs was downloaded from the MnCMAT2 system maintained by the Minnesota Department of Transportation on July 20, 2024 for years 2014 to 2023. At the time of development of this plan, 2024 data was not fully available and thus was excluded from the analysis. Crash data from the MnCMAT2 system is derived from police crash reports for reportable (crashes exceeding $1,000 in damages) and reported (crashes that were reported to police) crashes.

Crash Data Limitations

Historical crash data from the MnCMAT2 system represents the best data that the State of Minnesota has available for crash analysis. However, crash data is imperfect and can be erroneous in a number of ways, including:

- Crash information can be biased depending on the reporter's biases.
- Crash data for specific crashes within the MnCMAT2 system can be entered incorrectly.
- Crashes within the MnCMAT2 system can be coded to the wrong location.

Despite these potential for errors, analysts' previous experience has found data within the MnCMAT2 system to be generally reliable for the high-level type of analysis that is being performed within this safety action plan. Further analysis of specific crash locations should include downloading the crash reports coded to specific locations, confirming accuracy of crash data in MnCMAT2 based on the reports, and further identifying crash causation and/or contributing factors.

No crash data was corrected for use in this analysis.

Additionally, changes in the roadway network may render previous crash history as irrelevant if improvements have addressed underlying issues contributing to crash problems. The City of Willmar has indicated that such changes within the study period are likely minimal. However, the analysis team is aware of the following improvements within the 2014-2023 analysis period:

- Realignment of US 12 west of 28th Street SW by MnDOT sometime after 2019, including construction of roundabouts at CSAH 5 and 40th Street SW and new traditional intersection with CSAH 55
- Reconfiguration of J-turn intersection at Business 71/CSAH 24/23rd Street NE intersection
- Repaving or reconstruction of various city streets, potentially including modifications of intersection traffic control and/or crosswalk striping

In regards to the US 12 realignment, crash data on the former alignment of US 12 was not included in development of the High Injury Networks as that facility is no longer continuous and traffic patterns have substantially changed in that location over time.

High Injury Network Overview

The development of the HINs is based on the locations of fatal and injury crash locations on the transportation system within the City of Willmar, regardless of the owning or maintaining jurisdiction. Crash data within Minnesota and elsewhere in the United States typically uses the "KABCO scale" (also defined as KABCN scale) to define various levels of severity of traffic crashes. The Minnesota Law Enforcement Accident Report Instruction Manual defines each level of the KABCO scale as follows:

- K – Killed: A crash involving one or more fatal injuries.
- A – Incapacitating Injury: An incapacitating injury is 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. Exclusions: momentary unconsciousness.
- B – Non-incapacitating Injury: A non-incapacitating injury is 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. Exclusions: limping (the injury cannot be seen)
- C – Possible Injury: 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, hysteria
- N/O – No apparent injury

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 KABC crashes): Any crash assigned a "K", "A", "B", or "C" value in the KABCO scale.

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

Crash data was analyzed for roadways with all jurisdictions within the City of Willmar's borders, including on roadways maintained by the Minnesota Department of Transportation (MnDOT) and Kandiyohi County. Although the City of Willmar 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.

Figure 1 shows the location of all fatal and injury crashes within the City of Willmar within the study period by mode of travel (vehicle-only, vehicle-bicycle, or vehicle-pedestrian).

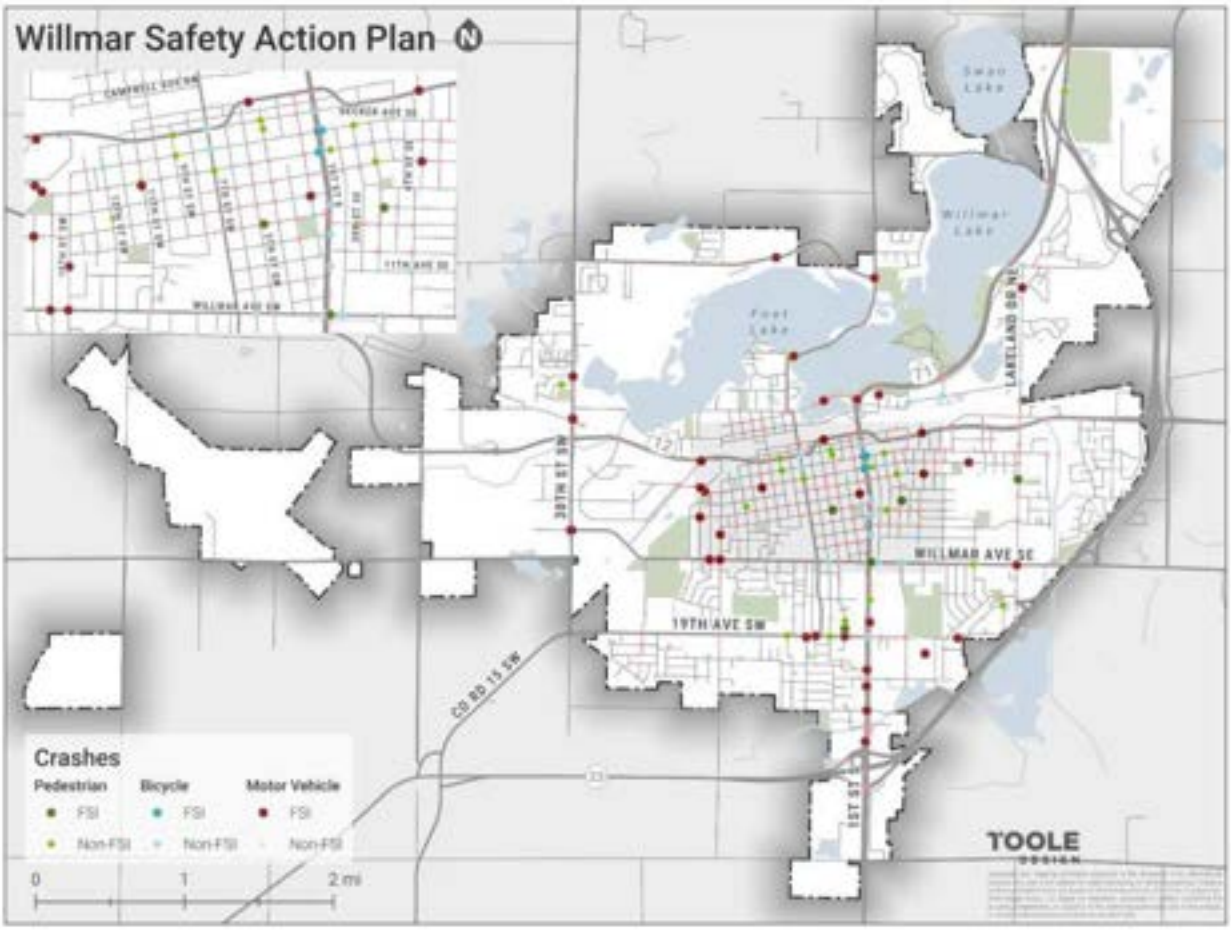

Figure 1*:* Fatal and Injury Crashes By Mode, 2014-2023

Using the fatal and injury crash locations, two separate HINs were developed: one for crashes only involving vehicles ("vehicle-only") and one for crashes involving a vulnerable road user ("VRU"). A vulnerable road user is defined as someone who is walking, biking, or using a personal mobility device. Per FHWA guidance, motorcyclists are considered vehicles and not considered vulnerable road users. Due to a relatively low amount of motorcycle-related crashes in the City of Willmar, a separate motorcycle HIN was not developed with this analysis.

Vehicle-Only High Injury Network

The vehicle-only High Injury Network was developed using fatal and injury crashes that involved only vehicles (i.e., vehicle-vehicle or single vehicle only) and did not involve a vulnerable road user. The vehicle-only HIN was developed using corridors with multiple fatal or injury crashes along the corridor within relatively close proximity (within about one city block) and includes the location of all FSI crashes (including isolated FSI crash locations). Locations with isolated non-severe injury crashes were generally excluded from the HIN.

Figure 2 shows the vehicle-only HIN. The vehicle-only HIN accounts for approximately 20% of the total roadway system mileage within the City of Willmar's borders.

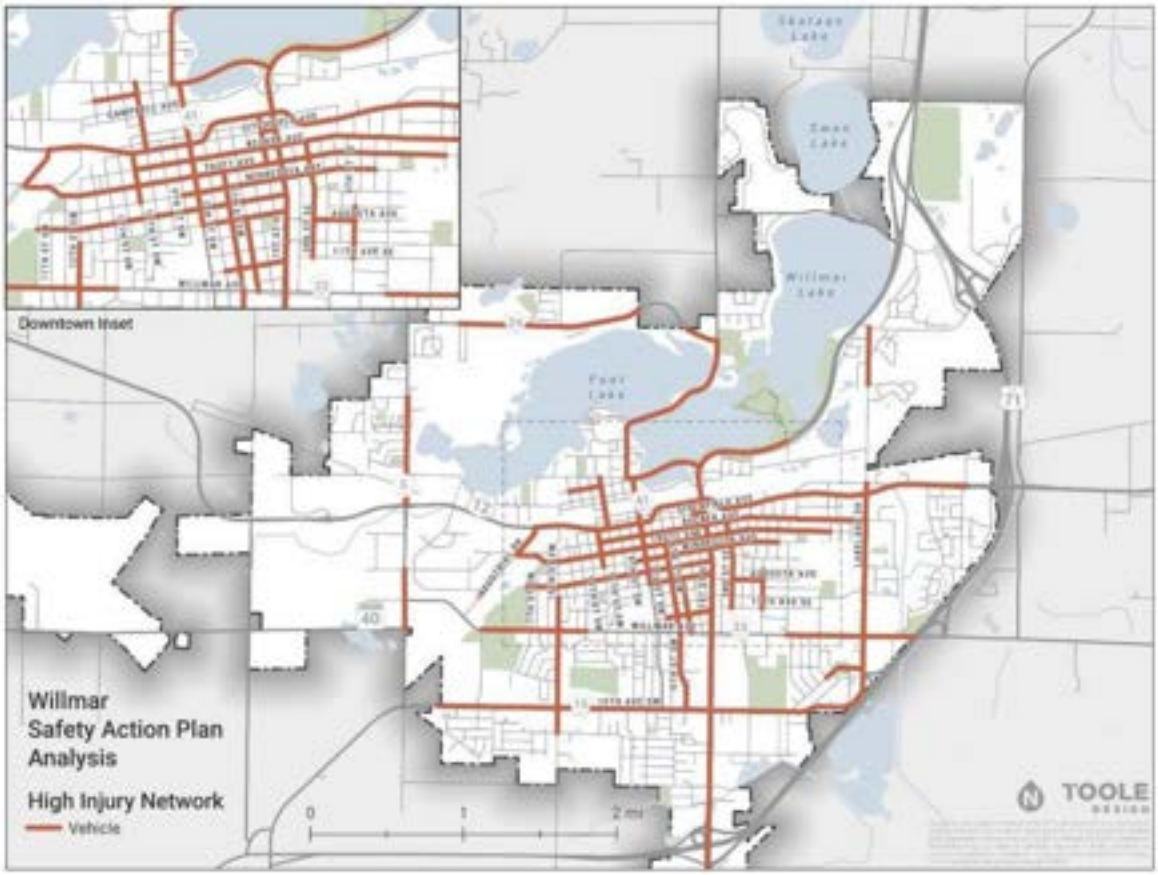

Figure *2:* Vehicle-Only High Injury Network

The vehicle-only High Injury Network includes many MnDOT or Kandiyohi County-owned facilities within the City of Willmar's borders as well as many Municipal State Aid Streets (MSAS) and other local streets. Compared with the total mileage of each system within the City of Willmar, roadways on the MnDOT trunk highway, County State Aid Highways (CSAH), and MSAS systems were overrepresented, and roadways on the county road and local non-state aid systems were underrepresented. Much of the vehicle-only HIN is located within the downtown core of the City of Willmar, but many other minor arterial and collector streets outside the downtown area are also included on the vehicle-only HIN.

VRU High Injury Network

The VRU High Injury Network was developed using fatal and injury crashes that involved a vulnerable road user. In theory, crashes could include bicycle-bicycle or bicycle-pedestrian crashes, but none of those types of crashes were found in the crash data. Thus, all VRU crashes in the City of Willmar involved a vehicle colliding with a person walking or biking. The VRU HIN was developed including the location of all FI crashes (including isolated FI crash locations). All FI VRU crash locations were included since there were relatively few VRU crashes and since crashes involving VRUs more easily lead to more severe injuries when they occur.

Figure 3 shows the VRU HIN. The VRU HIN accounts for approximately 6.4% of the total roadway system mileage within the City of Willmar's borders.

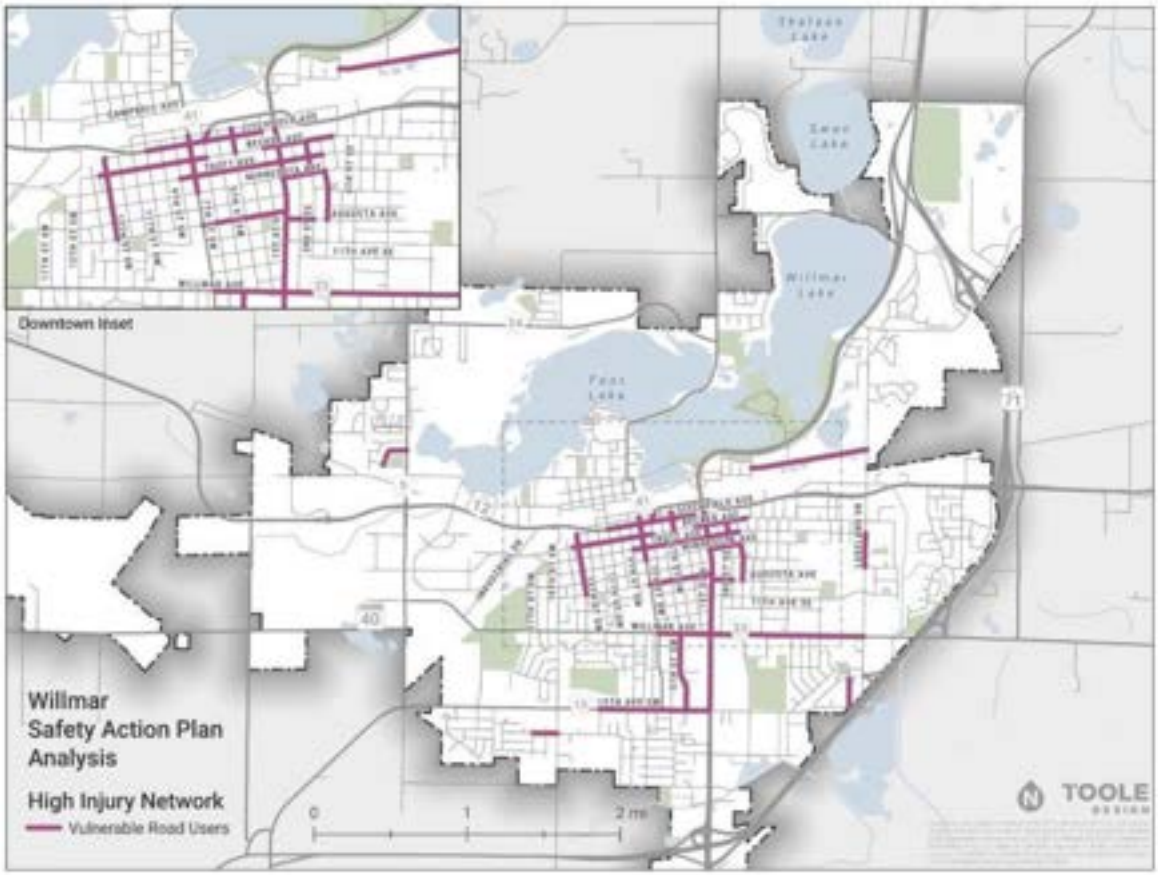

Figure 3*:* Vulnerable Road User High Injury Network

The VRU High Injury Network also includes many MnDOT or Kandiyohi County-owned facilities within the City of Willmar's borders as well as many MSAS and other local streets. Compared with the total mileage of each system within the City of Willmar, roadways on the CSAH and MSAS systems were overrepresented, and roadways on the MnDOT trunk highway, county road, and local non-state aid systems were underrepresented. Much of the VRU HIN is located within the downtown core of the City of Willmar, but other streets outside the downtown area are also included on the VRU HIN.

Combined High Injury Network

Adding together both the vehicle-only and VRU HINs gives a combined HIN, shown in Figure 4. Roadways shown in the darker gray color are present on both HINs, while roadways shown in the lighter peach color are present on one of the two HINs. Other roadways not shown on either color are not included on either HIN.

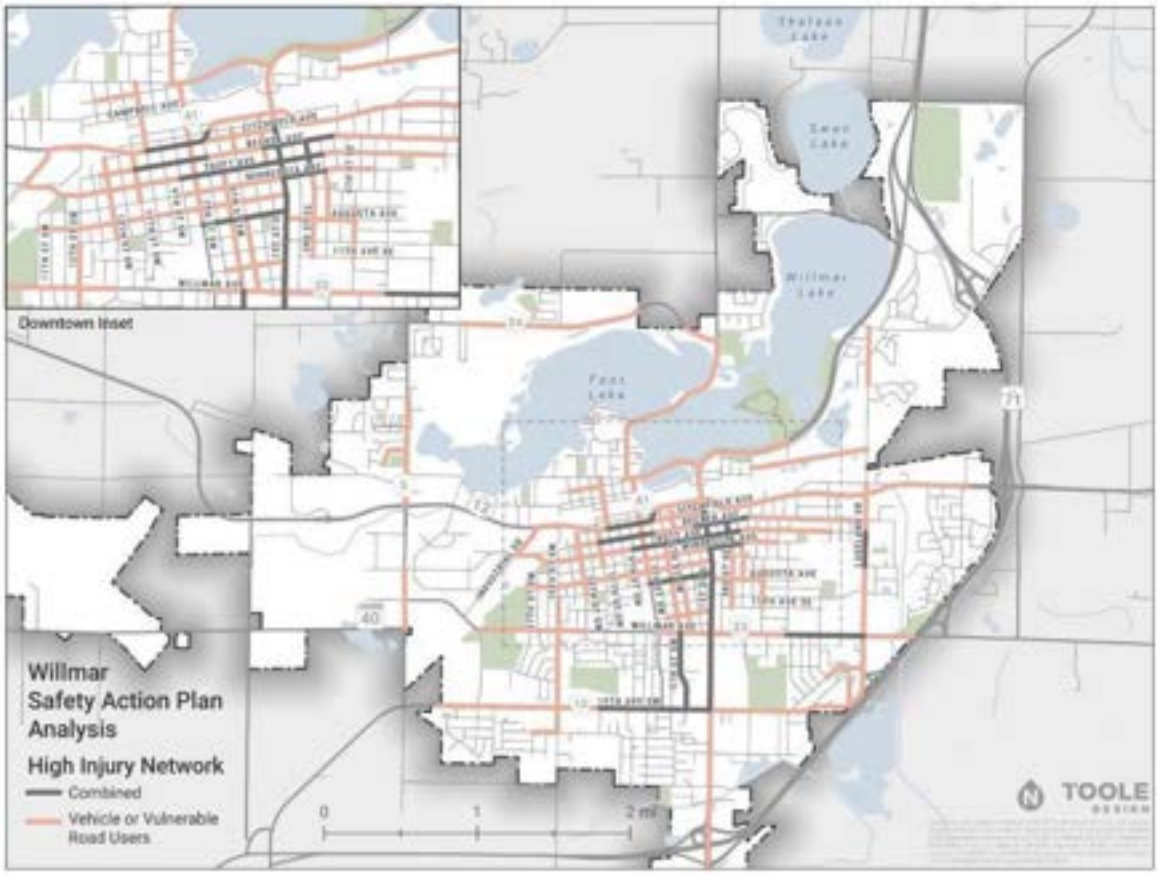

Figure 4*:* Combined High Injury Networks

High Injury Network Trends

Following development of the HINs, different trends were identified which are intended to prompt further research and analysis into potential causal or correlated risk factors.

As previously noted, certain roadway systems are overrepresented when analyzing the HINs as shown in Figure 5. The blue bar represents the percentage of each system on the total roadway network within the City of Willmar, and the gray and maroon bars represent the percentage of each system on the VRU and vehicle-only HINs, respectively. Where the gray or maroon bars exceed the blue bar represents and overrepresentation of that roadway system on the HIN.

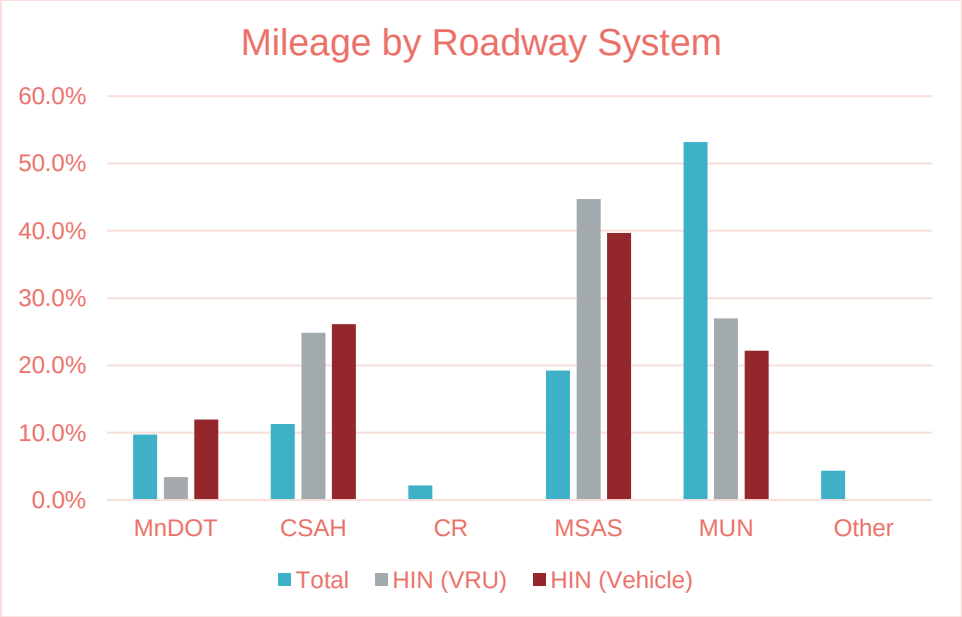

Figure 5*:* HIN Mileage by Roadway System

As previously noted, CSAH and MSAS system roadways are overrepresented in both HINs while MnDOT facilities are overrepresented in the vehicle-only HIN. While it is unlikely that roadway ownership by a certain jurisdiction directly contributes to safety concerns, different roadway design standards by the various jurisdictions may affect the safety of a roadway.

Similarly, mileage by functional classification can be analyzed to determine whether various types of arterials, collectors, or local roadways are overrepresented on the HINs, as shown in Figure 6.

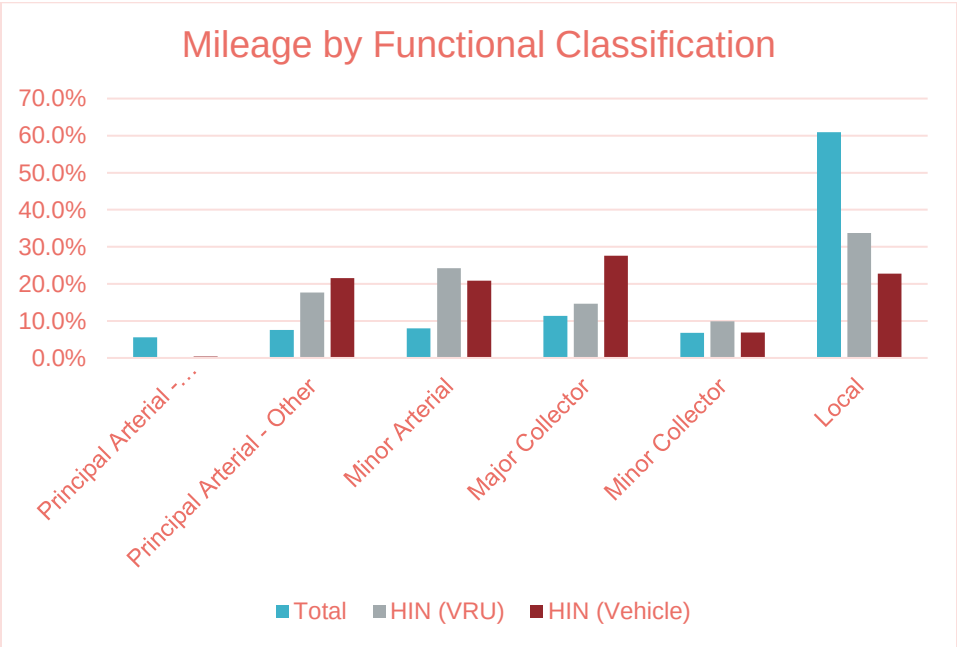

Figure 6*:* HIN Mileage by Functional Classification

Principal arterials (other than freeways or expressways), minor arterials, and major collectors were overrepresented on both HINs, while minor collectors were overrepresented on the VRU HIN. Local roadways were underrepresented on both HINs, and no principal arterial freeways or expressways (US 71/MN 23 bypass) were included on either HIN. Functional classification often is correlated to vehicle traffic volumes and affects certain characteristics of a street, such as access control, traffic signal or stop sign spacing (or lack thereof), lane widths, and parking availability. “Greater” functional classification tends to reduce access and increase speed, while “lower” functional classification tends to increase access and reduce speed.

The HINs were also analyzed for speed limits as shown in Figure 7.

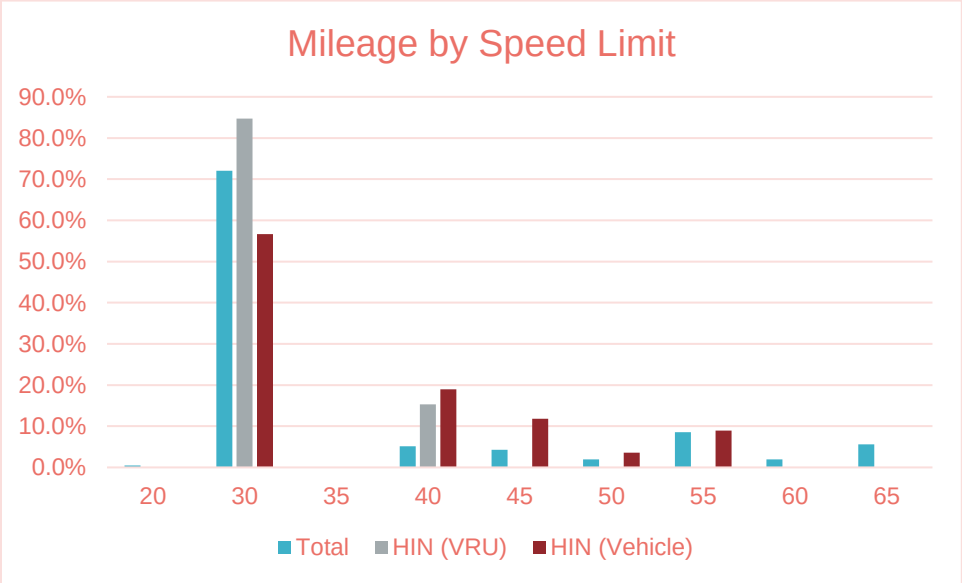

Figure 7*:* HIN Mileage by Speed Limit

Speed limits of 40 mph and above were overrepresented on the vehicle-only HIN, while speed limits of 30 and 40 mph were overrepresented on the VRU HIN. Speed limits tend to correlate with operating speed, especially where speed limits have historically been set by 85th percentile speed. Where vehicle speeds increase, more kinetic energy is present within the system leading to potential for more severe crashes. Vulnerable road users may not feel safe operating along or across roadways with operating speeds in excess of 40 mph, and most destinations for people walking or biking are within areas of lower speed limits.

Figure 8 shows each HIN compared to the percentage of mileage with various amounts of through and continuous two-way left turn lanes (TWLTLs).

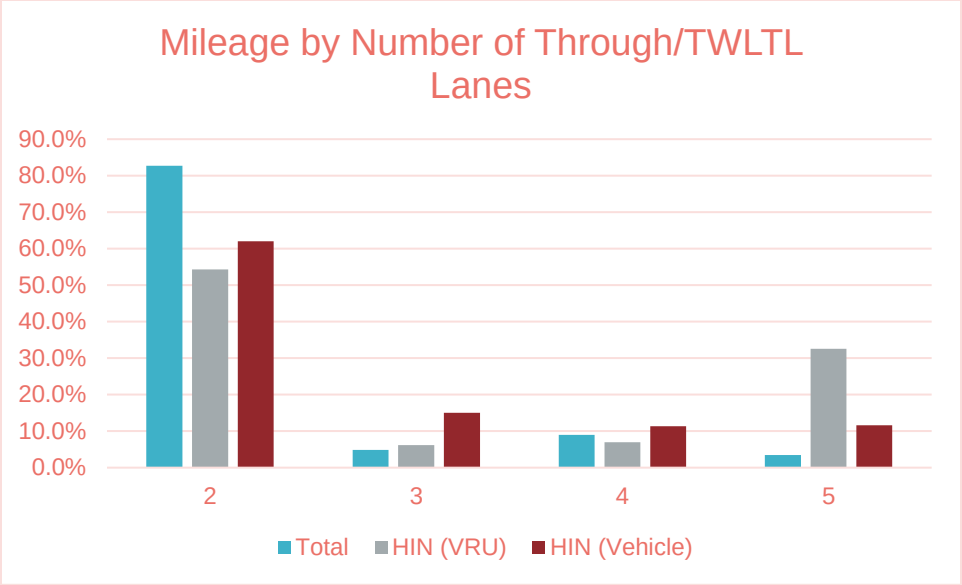

Figure 8*:* HIN Mileage by Number of Through and TWLTL Lanes

Roadways with three lanes (typically one through lane in each direction plus one TWLTL) and five lanes (typically two through lanes plus one TWLTL) are overrepresented in both HINs, while roadways with four lanes (typically two through lanes in each direction) are overrepresented in the vehicle-only HIN. Roadways with only two lanes are underrepresented in both HINs. Number of through and TWLTL lanes approximates the amount of potential conflict points for those intending to access or cross the roadway, with more conflict points generally leading to more potential for crashes.

Finally, each HIN was compared to the total roadway network by vehicle average daily traffic (ADT) volume, with ranges as specified in Figure 9. Please note that roadways without volumes provided in MnDOT traffic volume maps were assumed to have less than 1000 vehicles per day based on previous experience in other communities.

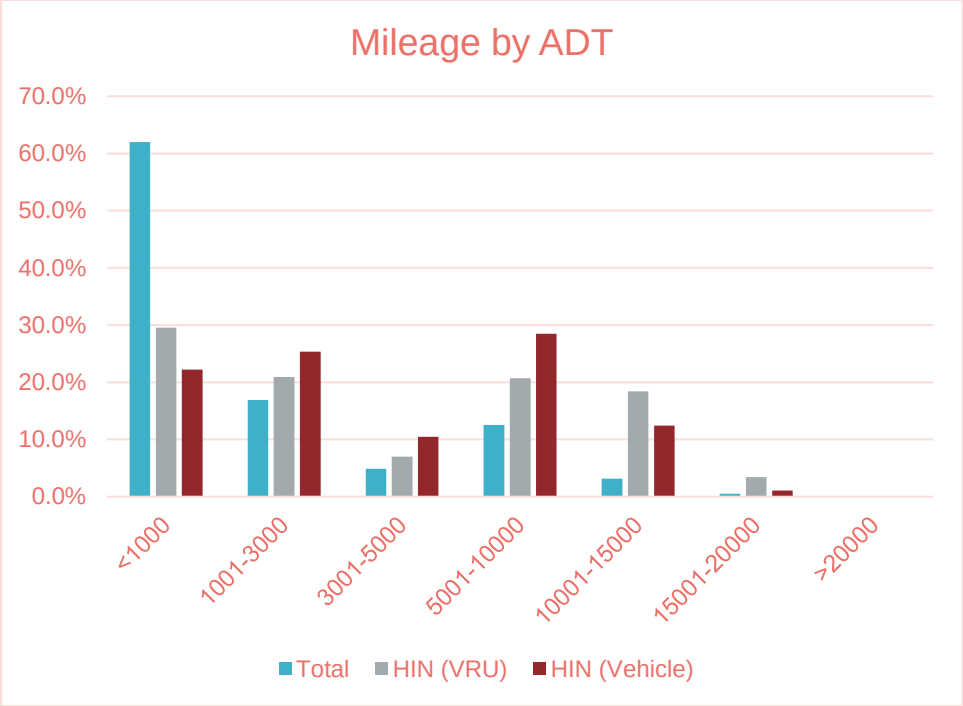

Figure 9*:* HIN Mileage by Vehicle ADT

Generally, as a roadway increases in traffic volume it also becomes more overrepresented in both HINs. Vehicle ADT volume can be considered as potential exposure to risk for crashes with more vehicles providing more opportunities for crashes.

Summary of Key Findings

Analysis of crash data from 2014-2023 for the City of Willmar led to the development of two High Injury Networks: vehicle-only and vulnerable road users. These HINs were intended to capture the corridors containing most of the fatal and injury crashes occurring within the City of Willmar. Following development of these HINs, basic data trends were analyzed to provide a start on identifying potential risk factors causing crashes to occur within the City which will assist the City in identifying potential solutions for implementation.

APPENDIX D

TECHNICAL MEMORANDUM

RISK FACTORS ANALYSIS

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MEMORANDUM

November 21st, 2024

To: Christopher Frank
Organization: City of Willmar
From: Dean Chamberlain
Project: Willmar Safety Action Plan

Re: Task 6 Safety Analysis

Risk Factors Analysis

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Federal law 23 United States Code Section 409 governs use of the data in this report. Under this law, data maintained for purposes of evaluating potential highway safety enhancements "...shall not be subject to discovery or admitted into evidence in a federal or state court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data." If you should attempt to use the information in this report in an action for damages against any jurisdiction involved in the locations mentioned in the data, these entities expressly reserve the right, under Section 409, to object to the use of the data, including any opinions drawn from the data.

Introduction

This memo summarizes the results of the risk factors analysis conducted for Willmar, Minnesota's Safety Action Plan. This memo provides a basis for understanding what risk factors may be present analyzing the High Injury Networks in order to identify other potential problem locations that do not have history of injury crashes within the last 10 years.

Summary of Key Findings

Analysis of the high injury networks shows certain risk factors related to increased fatal and injury crash likelihood. These risk factors are explained in greater detail in this report but are listed below.

For vehicle-only crashes:

- 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

For crashes involving vulnerable road users:

- 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
- 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
- Incomplete Adjacent Sidewalk Network and/or Missing Crossings

Risk Factors Analysis Methodology

The risk factors analysis methodology consisted of reviewing the High Injury Networks (vehicle-only and vulnerable road user) for different risk factors that may be associated with an increased likelihood of fatal and

severe injury crashes. These potential risk factors include horizontal and vertical geometry, traffic control devices, environmental factors, exposure/conflict points, and transportation network features. These factors were analyzed based on experience with similar analyses in other communities as well as reviewing FHWA safety information.

Analysis of risk factors is based upon analysis of the High Injury Networks (HINs) developed for the City of Willmar's Safety Action Plan. The HINs were developed based on mapping of fatal and injury crashes from years 2014 to 2023 onto the roadway system within the City of Willmar, inclusive of all jurisdictional systems (e.g., MnDOT, Kandiyohi County, City of Willmar, private, etc.), functional classifications (e.g., arterials, collectors, local streets), and other roadway network features.

The vehicle-only HIN is shown in Figure 1, while the vulnerable road user (VRU) HIN is shown in Figure 2. The combined HIN network is shown in Figure 3.

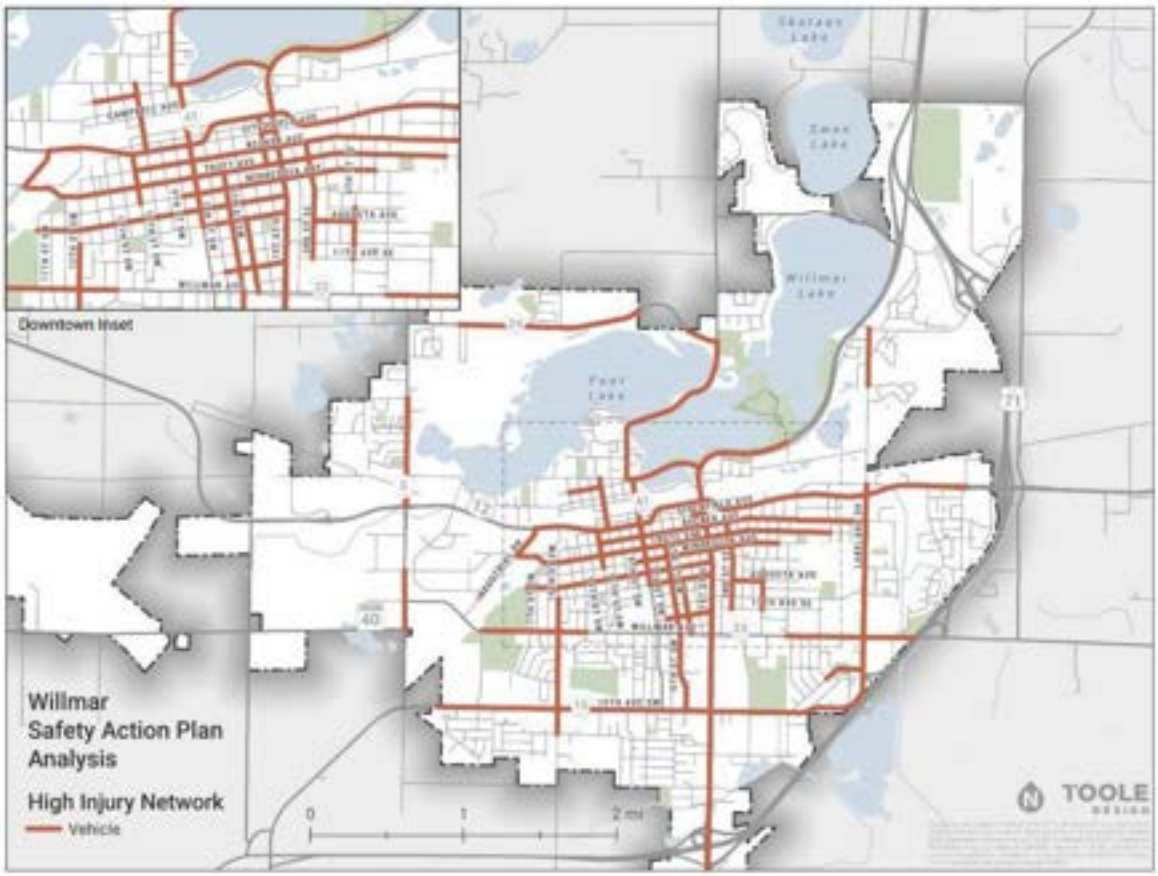

Figure 1*:* Vehicle-Only High Injury Network

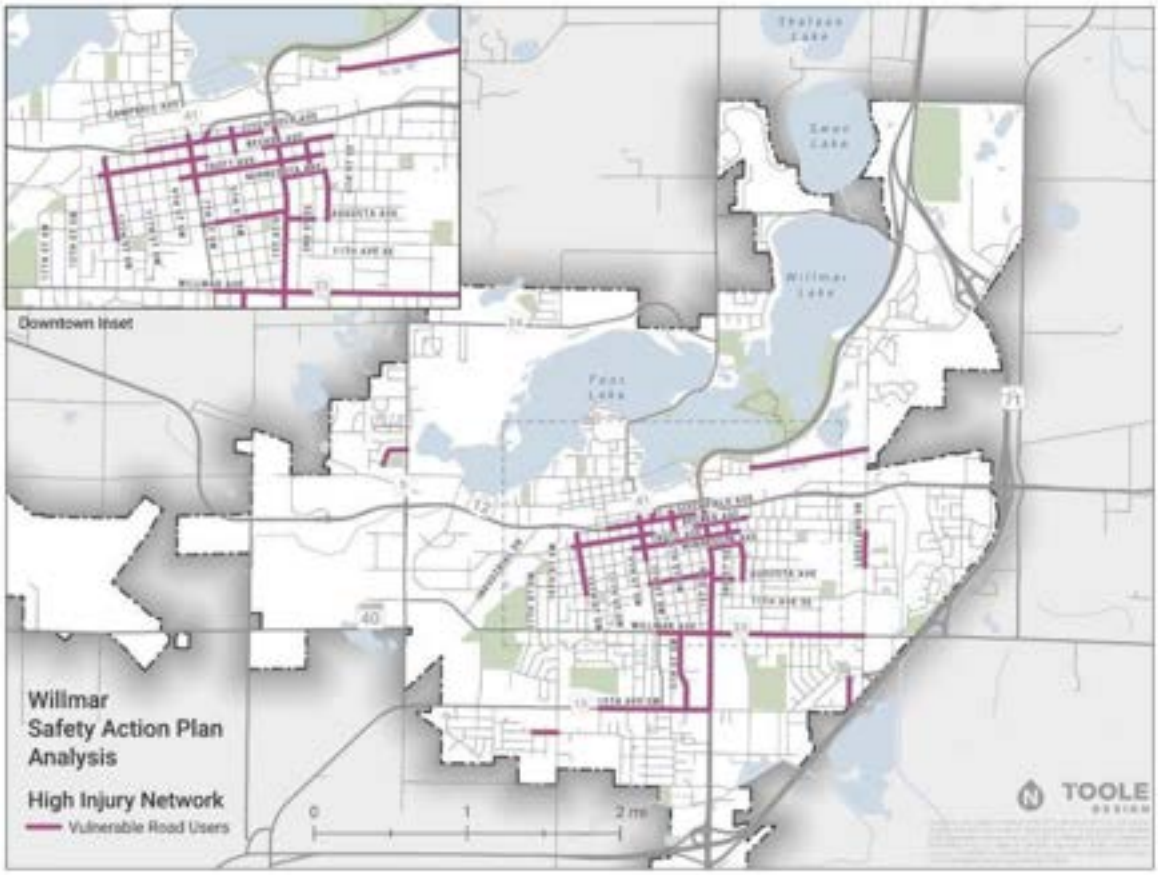

Figure 2*:* Vulnerable Road User High Injury Network

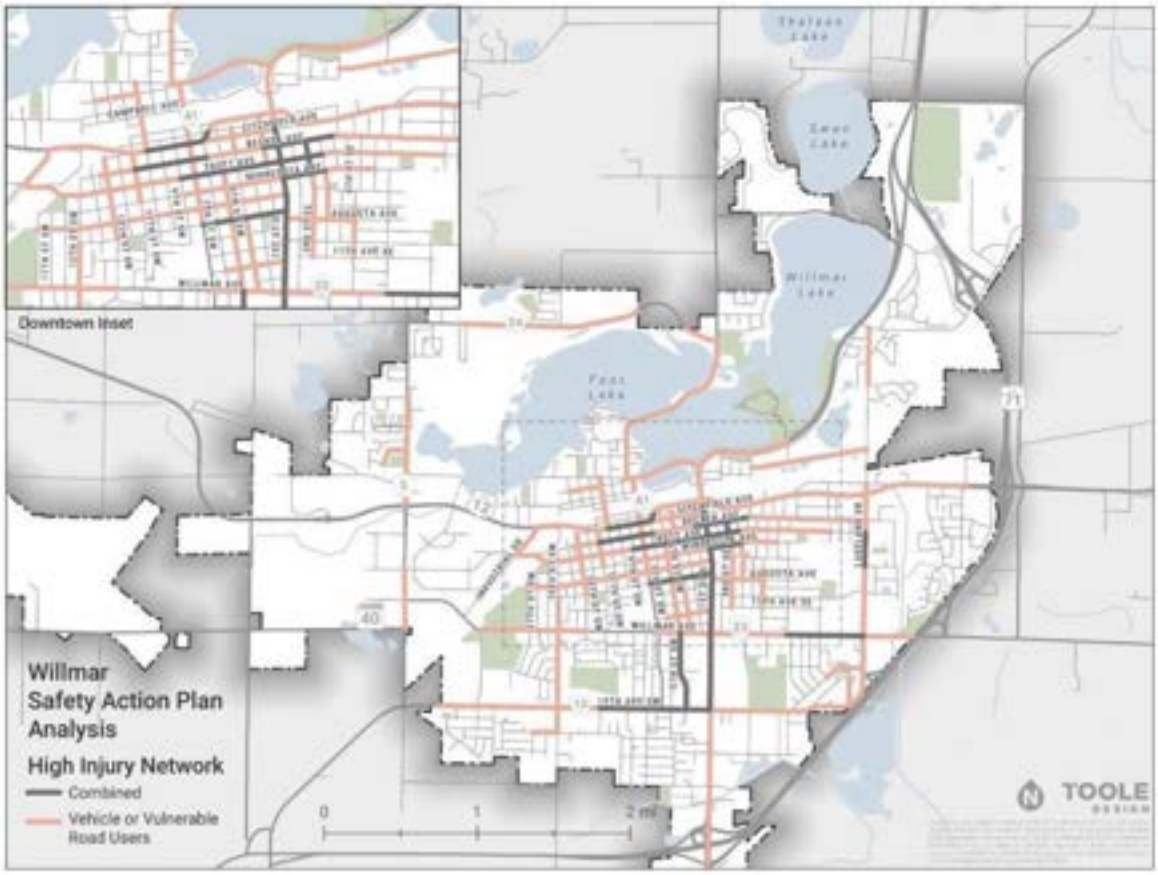

Figure 3*:* Combined High Injury Networks

Study Limitations

Limited Feature Data

The City of Willmar does not have a robust set of roadway feature data for use in this analysis. For the purposes of this analysis, Google Earth and Google Streetview data was measured and analyzed to provide approximate data for use in this analysis. Further safety analysis should include collection of additional roadway feature data. As a part of this effort, the analysis team has quantified various risk factors for intersections within the City of Willmar so that the City has a more robust amount of data for use in future analyses and projects; this data set will be provided to the City upon completion of the Safety Action Plan

Some risk factors being analyzed in this report are based on qualitative rather than quantitative analysis due to lack of quantitative data.

Risk Factors Analysis

Sight Distance

Sight distance is defined by the American Association of State Highway and Transportation Officials (AASHTO) as the length of roadway that a driver can see clearly. For the purposes of this analysis, that definition is

expanded from “driver” to include all transportation system users, including people walking, biking, and using personal mobility devices (sometimes referred to as “rolling”). There are various types of sight distance; this analysis focuses on the two types of sight distance most commonly applicable to urban environments: stopping sight distance and intersection sight distance.

Stopping Sight Distance (Vehicle-Only and VRU)

The Federal Highway Administration (FHWA) defines stopping sight distance as the distance needed for drivers to see an object on the roadway ahead and bring their vehicles to a safe stop before colliding with the object. Stopping sight distance includes two separate components: perception-reaction and deceleration. Both components of stopping sight distance are directly affected by vehicle operating speed.

Table 1 shows the stopping sight distance necessary for various vehicle speeds for level and dry conditions.

Table 1: Necessary Stopping Sight Distances for Level and Dry Conditions

Vehicle Speed (mph)	Stopping Sight Distance (SSD) (ft) - Level/Dry
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730

Most of the City-owned transportation network has 30 mph speed limits and vehicles are assumed to operate at approximately 30 mph, equating to a necessary 200 feet of stopping sight distance. This amount of stopping sight distance is approximately 2/3 of a typical City block. When vehicle operating speeds increase, the amount of needed stopping sight distance increases. At 40 mph operating speeds, the required stopping sight distance approaches an entire typical City block. It is very important, especially in complex urban environments, to keep vehicle operating speeds low to minimize required stopping sight distance to fit within the context of the community.

Stopping sight distance is not only important for reacting to a vehicle, pedestrian, or bicyclist operating within a street or turning onto a street but is also important for reacting to important regulatory signing, such as stop and yield signs. One such example is shown below in Exhibit 1 on 7th Street SW approaching XXXXXXX Street. Drivers, particularly ones not familiar with the area, may not be able to see the stop sign in time to come to a full stop at the intersection. Users of intersections rely on other users to obey all “rules of the road” such as stopping and yielding compliance to safely traverse the transportation system; when users fail to operate according to the “rules of the road”, safety issues leading to injury crashes may arise.

Exhibit 1: CSAH 41 (7th Street SW) Approaching Trott Avenue SW (looking south) with Approaching Stop Sign Circled – Google Streetview Imagery

In some cases, stopping sight distance is either increased from the amounts shown in Table 1 or conditions do not allow for adequate sight distance. These conditions are explained below.

Downgrades Exceeding 3%

In locations where running grades exceed 3%, additional stopping sight distance is needed to provide adequate space for perception-reaction and deceleration. In most of the City of Willmar, grades above 3% are not common due to relatively flat topography; however, some locations with grade separations (such as overpasses or interchanges) may have slopes exceeding 3%.

Horizontal Curvature

In general, the City of Willmar has a traditional grid-type street network consisting of relatively straight, square or rectangular blocks with roadways meeting at right angles. However, in some locations along the High Injury Network, roadways contain horizontal curves within or approaching intersections. This can lead to the amount of available sight distance being less than the necessary stopping sight distance, particularly when vehicle operating speeds are relatively high. This is of particular concern for roadway approaches on the “inside” of a horizontal curve.

Exhibit 2 shows an example of horizontal curvature within an intersection at the intersection of US Highway (US) 58 and 11th Street SW. Vehicles on US 12 approaching from the east generally do not have adequate stopping sight distance to react to obstacles within the approaching intersection.

Exhibit 2: US 12 & 11th Street SW Street Intersection (Looking East) – Google Streetview Imagery

Intersection Sight Distance (Vehicle-Only and VRU)

Intersection sight distance is defined by FHWA as the distance a motorist can see approaching vehicles before their line of sight is blocked by an obstruction near the intersection. The minimum amount of intersection sight distance needed allows vehicles (and other users) on a minor leg of the intersection to adequately judge gaps in traffic to cross a non-stop controlled street. Exhibit 3 shows an example of the line of sight quantified by intersection sight distance.

Exhibit 3: Intersection Sight Distance Sight Triangle Example (6th Street SW at Trott Avenue SW) – Google Earth Aerial

Intersection sight distance is directly related to the speed of the approaching vehicle on the non-stop controlled street and the time gap needed for the stopped user to clear the intersection. The needed time gap varies based on the size of the vehicle and the maneuver being performed. Left turns require the greatest amount of time gap (7.5 seconds for a passenger vehicle), while right turns require the least amount of time gap (6.5 seconds for a passenger vehicle). Larger vehicles require greater amounts of time gap due to slower vehicle acceleration.

Table 2 shows the necessary intersection sight distance needed for left turns for different types of vehicles for varying major street vehicle operating speeds per AASHTO design guidance.

Table 2: Necessary Intersection Sight Distances for Passenger Vehicles, Single Unit Trucks, and Combination Trucks

Vehicle Speed (mph)	Intersection Sight Distance (ISD) (ft) - Left Turn, Passenger Vehicle	Intersection Sight Distance (ISD) (ft) - Left Turn, Single Unit Truck	Intersection Sight Distance (ISD) (ft) - Left Turn, Combination Truck
15	170	210	255
20	225	280	340
25	280	350	425
30	335	420	510
35	390	490	595
40	445	560	680
45	500	630	765
50	555	700	850
55	610	770	930
60	665	840	1015
65	720	910	1100
70	775	980	1185

Most of the City-owned transportation network has 30 mph speed limits and vehicles are assumed to operate at approximately 30 mph, equating to a necessary 335 feet of intersection sight distance for passenger vehicles, 420 feet for single unit trucks (such as garbage trucks or school buses), and 510 feet for combination trucks (such as semi-trucks with trailers). This amount of stopping sight distance is about a full typical City block for passenger vehicles and approaching two city blocks for combination trucks. When vehicle operating speeds increase, the amount of needed intersection sight distance increases. At 40 mph operating speeds, the required intersection sight distance approaches 1 1/2 typical City blocks for passenger vehicles and over two City blocks for combination trucks. It is very important, especially in complex urban environments, to keep vehicle operating speeds low to minimize required intersection sight distance to fit within the context of the community.

In some cases, intersection sight distance is either increased from the amounts shown in Table 2 or conditions do not allow for adequate sight distance. These conditions are explained below.

<u>Intersection Skew</u>

Intersection skew is defined as two roadways meeting at angles less than 90 degrees. Intersection skew presents problems for roadway users on the side street to adequately see the users on the major street, particularly as skews exceed 60 degrees. Users with limited neck mobility are particularly susceptible to problems at skewed intersections as their limited range of mobility does not allow for them to see the entire necessary sight distance triangle. Exhibit 4 shows an example of a skewed intersection.

Exhibit 4: Skewed Intersection Example (US 12 at Benson Avenue SW) – Google Earth Aerial

Skewed intersections also increase exposure to other vehicles due to the increased time it takes to navigate the intersection. Some State Departments of Transportation quantify this by adding 0.5 seconds to the time gap used in the intersection sight distance calculation.

Due to Willmar's grid-type street network and lack of significant topographical features, most of Willmar's transportation system is not affected by skewed intersection geometry. However, where the traditional City grid meets CSAH 23 (Willmar Avenue) there are a number of skewed intersections.

Obstacles in the Line of Sight

Where obstacles are present in the line of sight, roadway users may take risks when trying to cross or turn onto a major street. Examples of obstacles that may be in the line of sight are parked cars, utility poles and boxes, boulevard trees, light poles, retaining walls, signs, and tall landscaping items (bushes, other features). Exhibit 5 shows an example of a line of sight obstructed by many of these examples that does not allow for the side street user to see a vehicle (or on-street bike rider) approaching.

Exhibit 5: Example of Obstructions in the Line of Sight (2nd Street SE at Olena Avenue SE) – Google Streetview Image

Additional Travel Lanes

The time gaps in Table 2 assume a two-lane roadway is being crossed by the stopped vehicle. When roadways include additional lanes, additional time gap is needed and thus the necessary intersection sight distance is increased. Some State Departments of Transportation quantify this additional time gap as 0.5 seconds per additional lane for passenger vehicles and more for larger vehicles.

Speed Limits

Speed Limits and Operating Speeds (Vehicle-Only and VRU)

Until recently, roadway speed limits in Minnesota for local roadways were set by commissioner's orders based on the 85th-percentile speed found in a traffic study, except where statutory speed limits of 30 mph in urban areas were utilized. In the past few years, cities have been given additional flexibility in setting speed limits by allowing reduction of speed limits to 20 or 25 mph citywide if a city chooses to adopt an ordinance to do so. County and state highways currently are not allowed to reduce speed limits to less than 30 mph except in limited circumstances.

Roadways in Willmar with speed limits exceeding 30 mph are overrepresented on the Vehicle-Only and VRU High Injury Networks to varying extents as shown in Figures 4 and 5. VRU traffic is unlikely to attempt to cross roadways with speed limits exceeding 40 mph due to perceived or actual safety concerns. Speed limits are generally (but not always) correlated to vehicle operating speeds and to design speeds of the roadways.

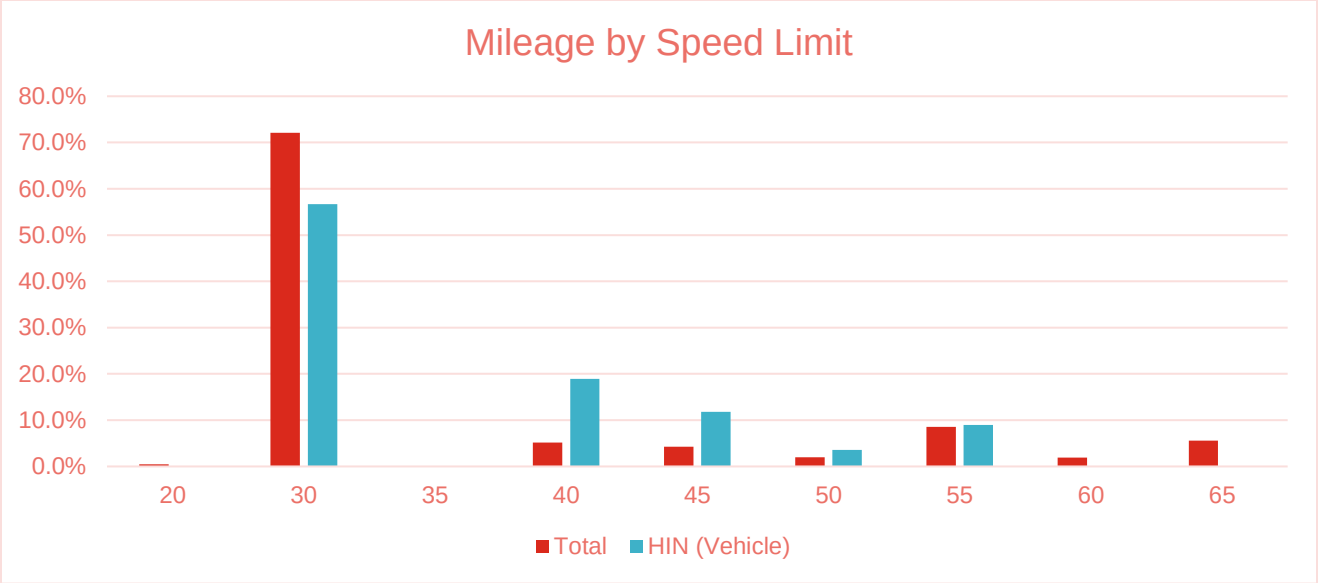

Figure 4: Total Roadway Network vs. Vehicle-Only High Injury Network by Speed Limit

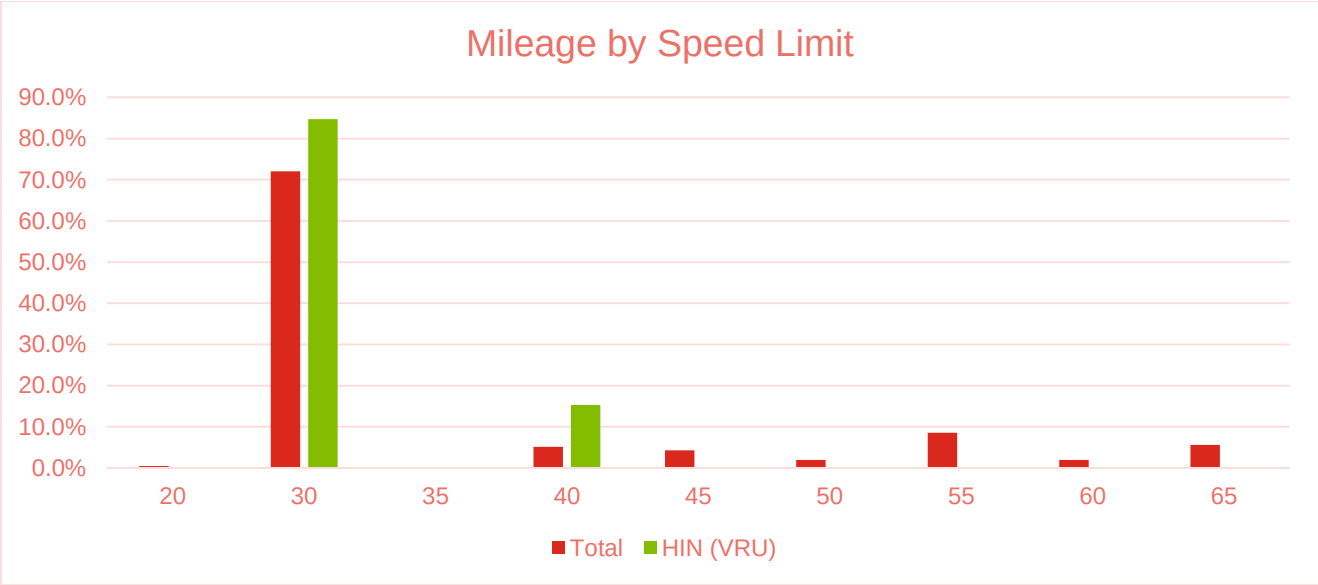

Figure 5: Total Roadway Network vs. Vulnerable Road User High Injury Network by Speed Limit

Operating speeds were checked using Flowlabs data.

Exposure

Average Daily Traffic Volumes (Vehicle-Only and VRU)

Roadways with greater traffic volumes provide increased opportunities for crashes to occur. Roadways with average daily traffic volumes of over 1,000 vehicles per day were overrepresented in the High Injury Networks, with greater volumes (particularly those with other 5,000 vehicles per day or greater) increasingly overrepresented on the High Injury Networks as shown in Figures 6 and 7.

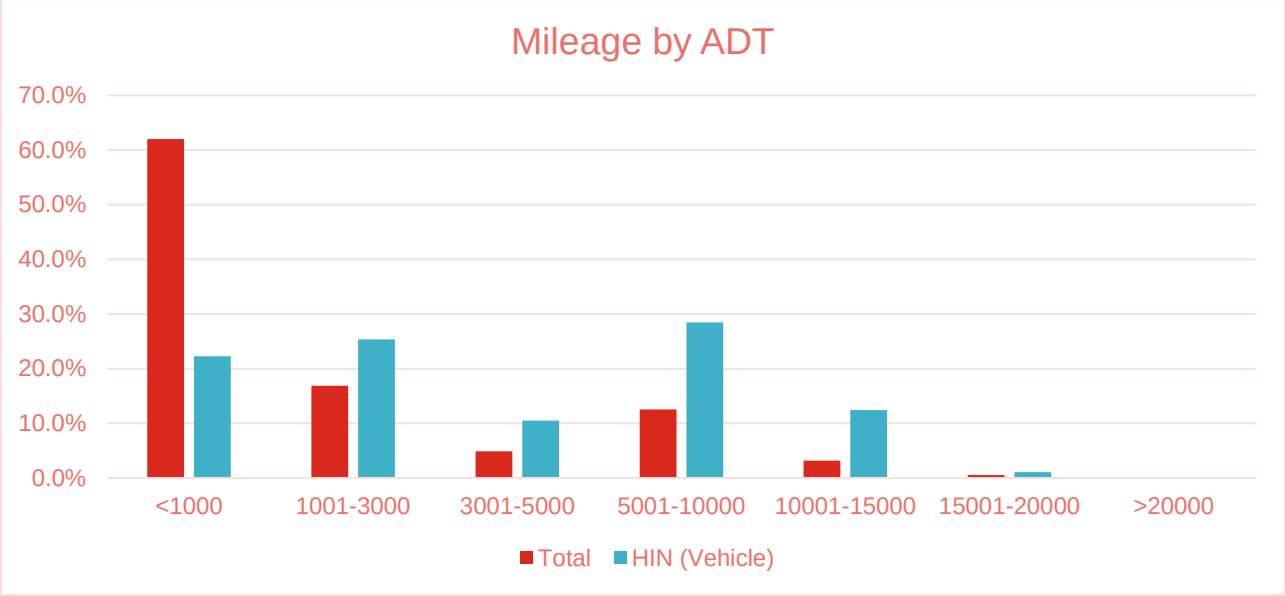

Figure 6: Total Roadway Network vs. Vehicle-Only High Injury Network by Average Daily Traffic (ADT) Volumes

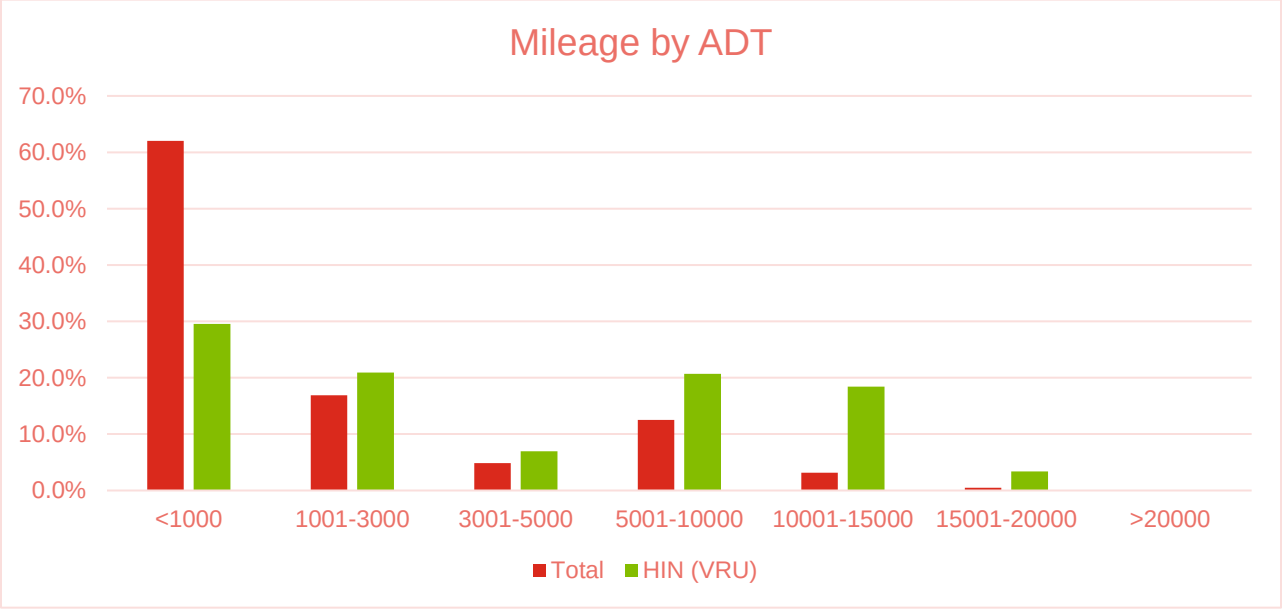

Figure 7: Total Roadway Network vs. Vulnerable Road User High Injury Network by Average Daily Traffic (ADT) Volumes

*Note: Roadway ADTs taken from MnDOT Traffic Data. Roadways without ADTs reported in MnDOT's system are assumed to be below 1000 ADT based on engineering judgment and previous experience.

Street Width/Crossing Distance (Vehicle-Only and VRU)

Increased street widths lead to a number of issues related to exposure and vehicle operating speed.

Between intersections, streets with underutilized parking lead to effective lane widths being increased, tending to lead to vehicle operating speed increasing. As described in the sight distance section of this report, vehicle operating speeds need to be relatively low in complex urban environments.

At intersections, increased street widths (in particular, increased amounts of travel lanes) lead to increased conflict points when crossing or accessing a major street from a minor street or taking a left turn from a major street to a minor street.

Pedestrian crossing distance is also used to quantify exposure risk for those crossing a street outside of a vehicle. Pedestrian crossing distances include not only the width of the travel lanes being crossed but also increased distance caused by intersection corner radii needed to accommodate turns for larger vehicles.

Figure 8 shows pedestrian crossing distances for the Vehicle-Only HIN, while Figure 9 shows pedestrian crossing distances for the VRU HIN. Crossing distances on the Vehicle-Only HIN can be considered as a close proxy to roadway widths, although crossing distances can vary based on corner radii.

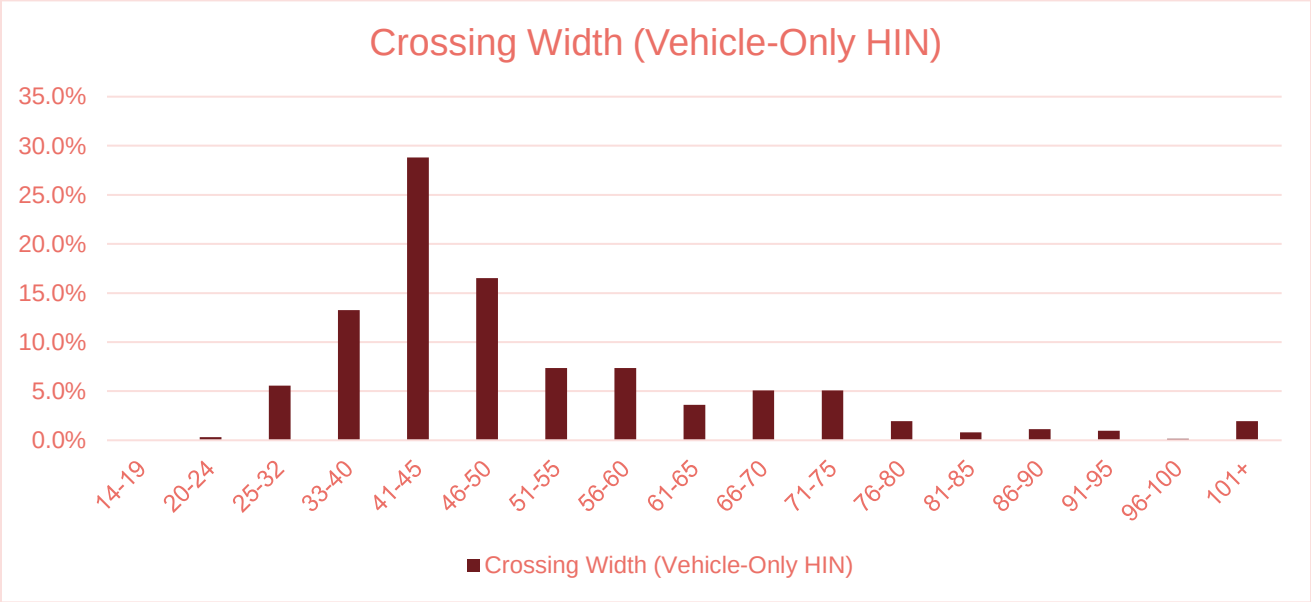

Figure 8: Crossing Width Percentages (Vehicle-Only HIN)

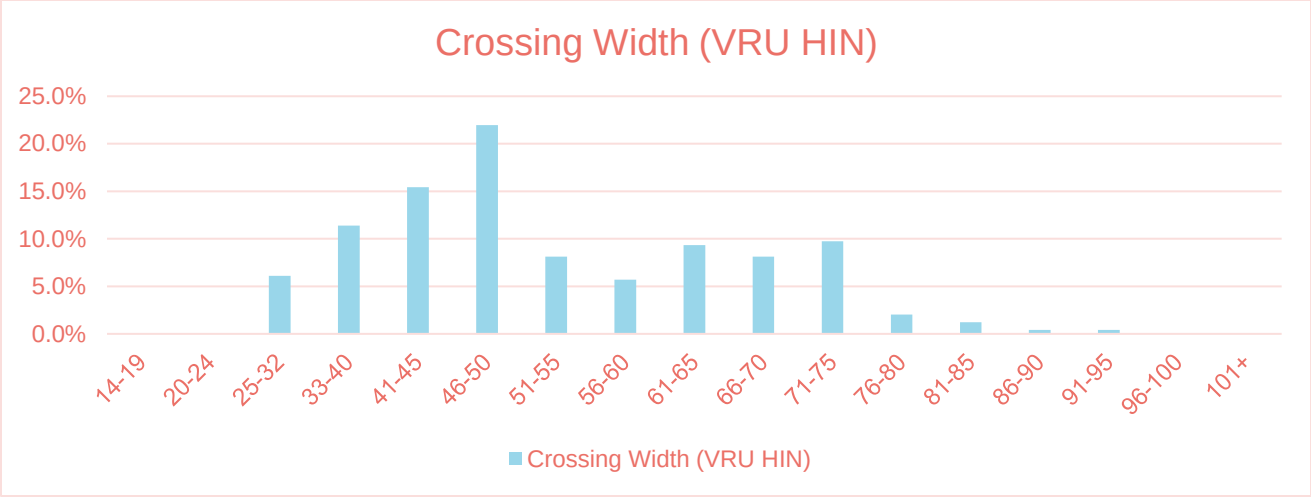

Figure 9: Crossing Width Percentages (VRU HIN)

Street widths of approximately 40 to 50 feet are highly represented on both the Vehicle-Only and VRU HINs, with greater crossing distances more represented on the VRU HIN.

Driveway and Intersection Quantity and Spacing (Vehicle-Only)

Greater amounts of driveways leading onto roadways with greater traffic volumes increase not only the overall complexity of the transportation system but also the potential for exposure by creating additional conflict points. As vehicle quantity and speed increase, driveway accesses should decrease to limit the amount of additional exposure. Excessive quantity and minimal spacing of driveways and intersections is most prevalent along 1st Street S and other roadways within suburban-style commercial areas, such as the example shown in Exhibit 6.

Exhibit 6: Example of Closely Spaced Driveways and Intersections (1st Street S between 19th Avenue SE and 24th Avenue SE) – Google Streetview Image

Driveways and intersections spaced close together can contribute to lack of intersection sight distance for those accessing major streets on the side streets and at the driveways. Although this analysis does not establish a recommended minimum spacing distance, driveways and intersections should be spaced such that vehicles do not impede the needed lines of sight for each intersection or driveway.

Closure of excess driveways should be considered as opportunities arise to reduce conflict points and potential exposure on the transportation system.

Intersection Offset (Vehicle-Only)

Intersection offset refers to locations where two approaches to an intersection are not lined up directly across from each other. This leads to confusion as to when and where vehicles are turning, particularly on the minor street approaches. Due to Willmar's grid system, there are not many of these locations within the City, but one example location is shown in Exhibit 7.

Exhibit 7: Example of Offset Intersection (CSAH 23/Willmar Avenue at 5th Street SW) – Google Streetview Image

Railroad Crossings (Vehicle-Only)

The City of Willmar has a relatively high amount of at-grade railroad crossings compared to other communities of its size within the State of Minnesota. Railroad tracks within the City limits are also relatively highly used due to nearby agricultural operations. At grade railroad crossings are located at the following locations (locations along either HIN as noted):

- Lakeland Drive NE between Litchfield Avenue NE and High Avenue NE
- CSAH 41 (7th Street NW) between Pacific Avenue SW and Campbell Avenue NW (on Vehicle-Only HIN)
- 10th Street NW between Pacific Avenue SW and Campbell Avenue NW (on Vehicle-Only HIN)
- 19th Street NW between US 12 and Gorton Avenue NW
- CSAH 5 between 1st Avenue W and Gorton Avenue NW (on Vehicle-Only HIN)
- Trott Avenue SW between Trott Service Drive and 16th Street SW (on Vehicle-Only HIN)
- CSAH 23 (Willmar Avenue SW) between Industrial Drive SW and 22nd Avenue SW

Of particular concern, some of these crossings are either intersecting at non-perpendicular angles or are intersecting immediately following one or more horizontal curves in the roadway. This has a similar effect to roadway intersections at skewed angles or immediately following horizontal curves.

Environmental Factors

Lighting (Vehicle-Only and VRU)

In many locations in Willmar, lighting is provided but may not provide adequate illumination in dark conditions to provide needed visibility for all roadway users. This is of particular importance at intersections, which is where the majority of potential conflicts between roadway users occur.

At many residential intersections, a single light is provided intending to illuminate the intersection, as shown in Exhibit 8. Although this study did not analyze lighting patterns at each intersection, it is likely based on experience in the community that these lights have not been installed such that the entire intersection, including all crosswalks, are illuminated by the light. Care must also be taken not to over-illuminate the intersection as well and thus illuminate items that should not be, such as adjacent houses.

At many commercial intersections or those with increased roadway widths, additional lighting units are often provided. In some of these locations, the side street and crosswalks may still not be adequately illuminated as is the case in the example shown in Exhibit 9.

Exhibit 8: Example of Single Residential Intersection Light (Trott Avenue SW at 12th Street SW) – Google Streetview Image

Exhibit 9: Example of Commercial Area Lighting (CSAH 23/Willmar Avenue at Lakeland Drive) – Google Streetview Image

Incomplete Adjacent Sidewalk/Bikeway Network and/or Missing Crossings (VRU)

Significant portions of the City of Willmar, particularly outside of the historic core downtown are and surrounding neighborhoods, lack complete sidewalk, trail, and/or bikeway networks. Where these networks are lacking, pedestrians typically will walk in the street, increasing exposure risk to vehicle traffic. Similarly, in areas lacking crosswalks (ramps and/or striping), visibility of pedestrians by vehicle drivers is reduced leading to increased safety concern.

APPENDIX E

TECHNICAL MEMORANDUM

DESCRIPTIVE CRASH AND PEER COMMUNITY ANALYSIS

TOOLE DESIGN

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MEMORANDUM

December 17th, 2024

To: Aaron Bartling
Organization: Bolton & Menk
From: Dean Chamberlain
Project: Willmar Safety Action Plan

Re: Task 6 Safety Analysis

Descriptive Crash and Peer Community Analysis

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Environmental Characteristics 13

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Introduction

This memo summarizes the results of the descriptive crash and peer community analysis conducted for Willmar, Minnesota's Safety Action Plan. This memo provides a basis for understanding what trends may be present analyzing the historical crash data as well as that of other peer communities.

Summary of Key Findings

Analysis of the historical 10-year (2014-2023) crash data for the City of Willmar and other peer communities shows trends in crash characteristics.

For vehicle-only crashes:

- 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

For crashes involving vulnerable road users:

- 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
- 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
- Incomplete Adjacent Sidewalk Network and/or Missing Crossings

Descriptive Crash and Peer Community Analysis Methodology

The analysis methodology consisted of reviewing the 10-year crash data for the City of Willmar and other peer communities for different crash characteristics. Crash data was accessed through MnCMAT2 for years 2014 through 2023. Crashes were analyzed including all crashes (all modes), vulnerable road users (VRUs) (crashes

involving people walking, biking, and using personal mobility devices), and crashes only involving vehicles (multiple vehicles or single vehicle).

The following crash characteristics are easily accessible for analysis and comparison through MnCMAT2 data:

- Roadway where crash was located (including reference point)
- Roadway system
- Month, Day, Day of Week, Year, Time of Day
- Crash severity
- Relation to Intersection
- Light condition
- Weather condition
- Roadway surface condition
- Crash type
- Vehicle type
- Contributing factors for each vehicle
- Traffic control device
- Grade
- User age, sex, and physical condition

Not all of these characteristics were analyzed for inclusion in this report.

Peer communities that were identified for comparison were included due to similar size and/or demographic characteristics. All communities were located in Greater Minnesota. No communities outside of Minnesota were included since crash data in other states may not include similar information. The peer communities analyzed for this project include:

- Alexandria
- Austin
- Bemidji
- Brainerd (does not include Baxter)
- Faribault
- Hutchinson
- Marshall

Study Limitations

Crash Data

Historical crash data from the MnCMAT2 system represents the best data that the State of Minnesota has available for crash analysis. However, crash data is imperfect and can be erroneous in a number of ways, including:

- Crash information can be biased depending on the reporter's biases.
- Crash data for specific crashes within the MnCMAT2 system can be entered incorrectly.
- Crashes within the MnCMAT2 system can be coded to the wrong location.

Despite these potential for errors, analysts' previous experience has found data within the MnCMAT2 system to be generally reliable for the high-level type of analysis that is being performed within this safety action plan. Further analysis of specific crash locations should include downloading the crash reports coded to specific

locations, confirming accuracy of crash data in MnCMAT2 based on the reports, and further identifying crash causation and/or contributing factors.

No crash data was corrected for use in this analysis.

Additionally, changes in the roadway network may render previous crash history as irrelevant if improvements have addressed underlying issues contributing to crash problems. The City of Willmar has indicated that such changes within the study period are likely minimal. However, the analysis team is aware of the following improvements within the 2014-2023 analysis period:

- Realignment of US 12 west of 28th Street SW by MnDOT sometime after 2019, including construction of roundabouts at CSAH 5 and 40th Street SW and new traditional intersection with CSAH 55
- Reconfiguration of J-turn intersection at Business 71/CSAH 24/23rd Street NE intersection
- Repaving or reconstruction of various city streets, potentially including modifications of intersection traffic control and/or crosswalk striping

Exposure data

The analyses reported in this memo do not adjust for motor vehicle, pedestrian, or bicyclist exposure rates based on volumes for these modes. Therefore, results show crash events but not frequency of crashes normalized by level of traffic or pedestrian and bicycle volumes, which is also referred to as exposure.

As an example, pedestrian crashes are more common in daylight than in dark conditions. This does not mean that daylight conditions are inherently more dangerous than dark conditions. Rather, it indicates that people are more likely to walk in light conditions than in dark conditions.

Peer Community Data

Comparison of peer communities to the City of Willmar is desired by the City to compare how the City is doing on transportation safety compared to other cities in Minnesota. However, each City is unique to some extent and may have differences in community characteristics that influence transportation safety, such as:

- Presence or absence of roadways controlled by other jurisdictions (such as counties and MnDOT), particularly communities with or without an interstate or other controlled access highway.
- Topographical and other geographical features, such as significant grades, hills, water bodies and streams, etc.
- Quantity of regional destination and/or pass-through traffic

Because of differences in characteristics in each community, comparison to peer communities is of limited value. Presence of fatal and serious injuries, regardless of rates compared to other communities, indicates that there are crash issues that need to be solved in the City of Willmar and in other communities.

Descriptive Crash Analysis

General Crash Trends

Figure 1 shows the number of FSI crashes by year in the City of Willmar from 2014 to 2023, while Figure 2 shows the number of FI crashes for the same period and Figure 3 shows VRU-related crashes for the same period. FI crashes include fatal, serious injury, and minor injury crashes and exclude possible injury and property damage-only crashes. Each graph also shows the linear trendline for the 10-year period. FI and FSI crashes are trending upward in the City of Willmar over the 10-year period, while VRU crashes are trending downward over the period.

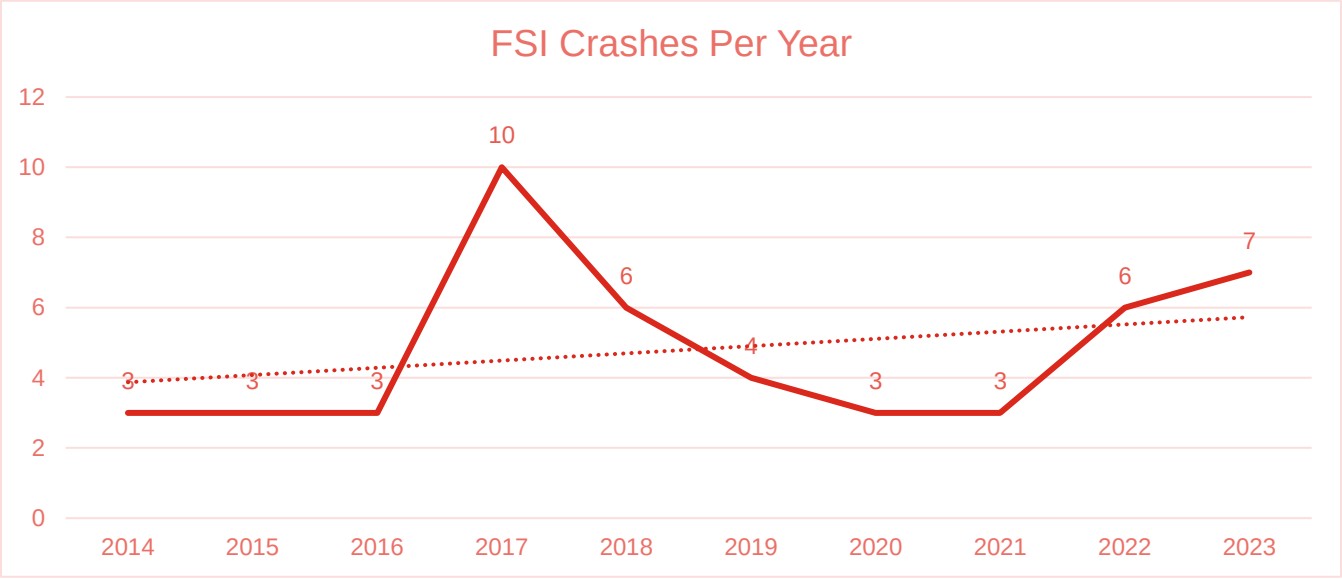


Figure 1*:* FSI Crashes by Year, 2014-2023

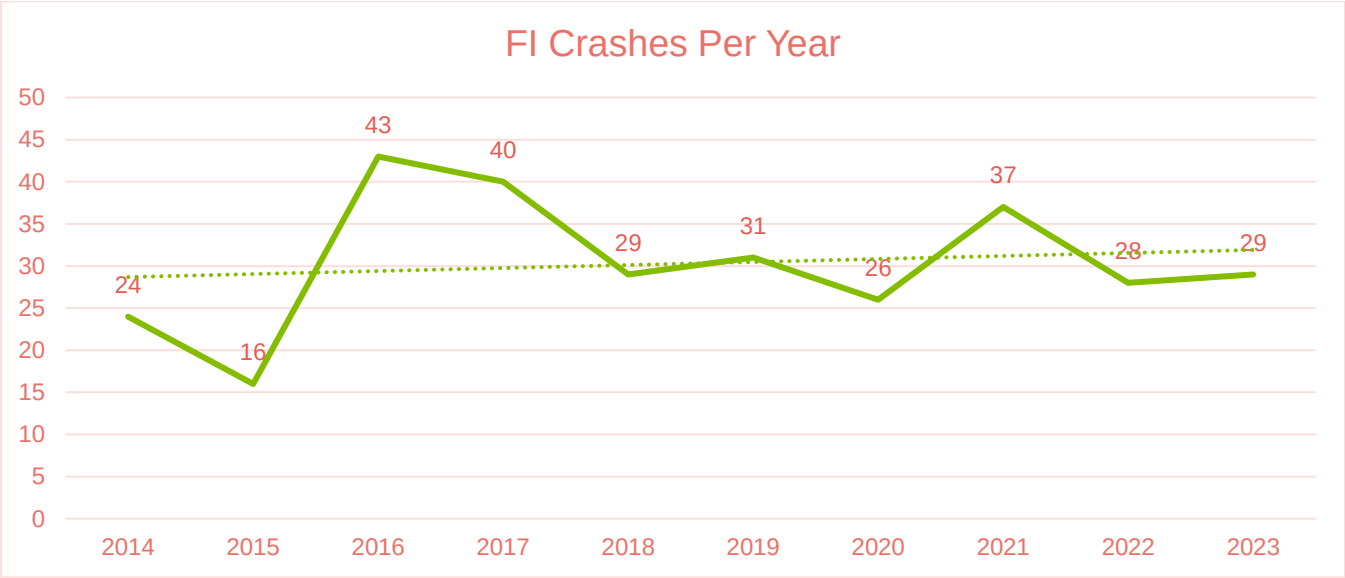


Figure 2: FI Crashes by Year, 2014-2023

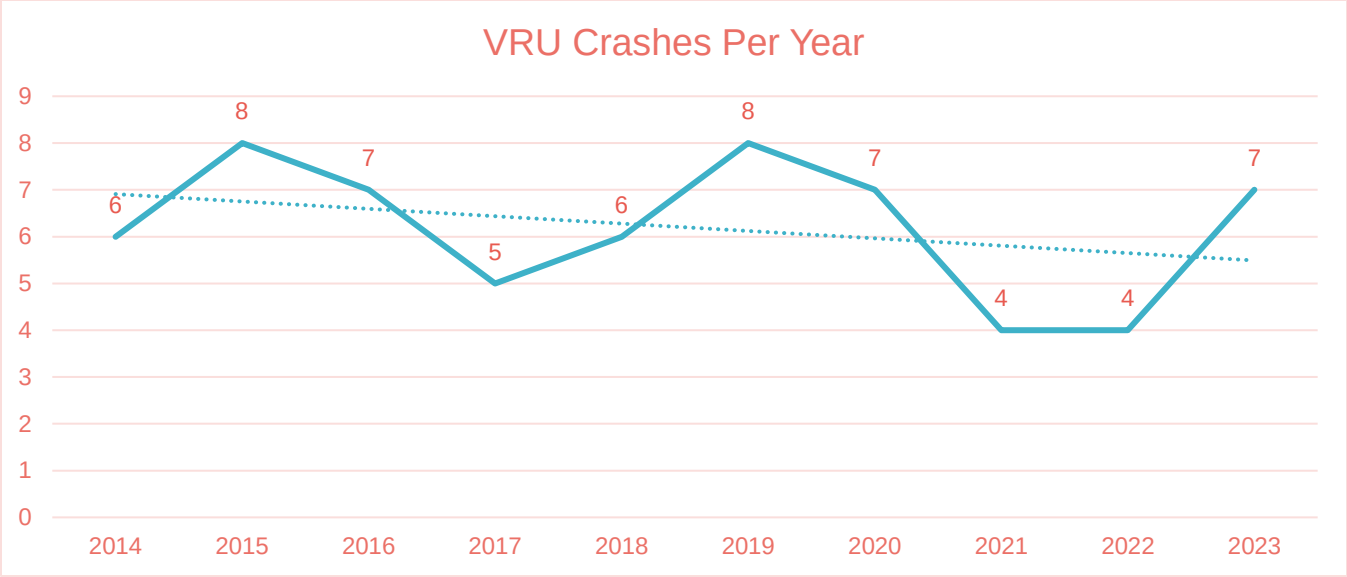


Figure 3: VRU Crashes by Year, 2014-2023

Crashes by Month

Figure 4 shows the number of crashes by month across all years analyzed. Generally, higher amounts of FI and FSI crashes occurred in later summer and fall compared to winter and spring with the exception of a FSI spike in December.

VRU crashes are higher in March through September compared to the rest of the year. The increase in VRU crashes in August and September may be due in part to the beginning of school activities.

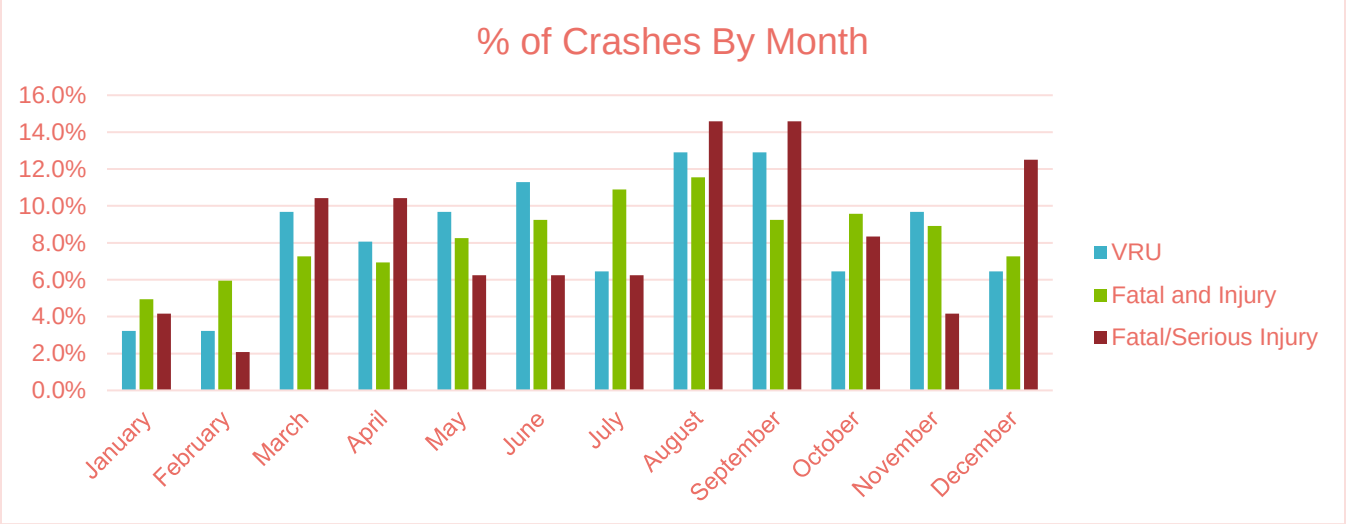


Figure 4: Crashes by Month (FSI, FI, and VRU), 2014-2023

Additionally, % crashes by month were compared between all crashes (including non-injury crashes) and FSI, FI, and VRU crashes (see Figures 5, 6, and 7). FSI crash trends were less consistent across the year, likely due to relatively fewer FSI crashes compared to FI crashes. FI and VRU crashes tend to occur more frequently than all crashes from the months of March to October and less frequently during colder weather months.

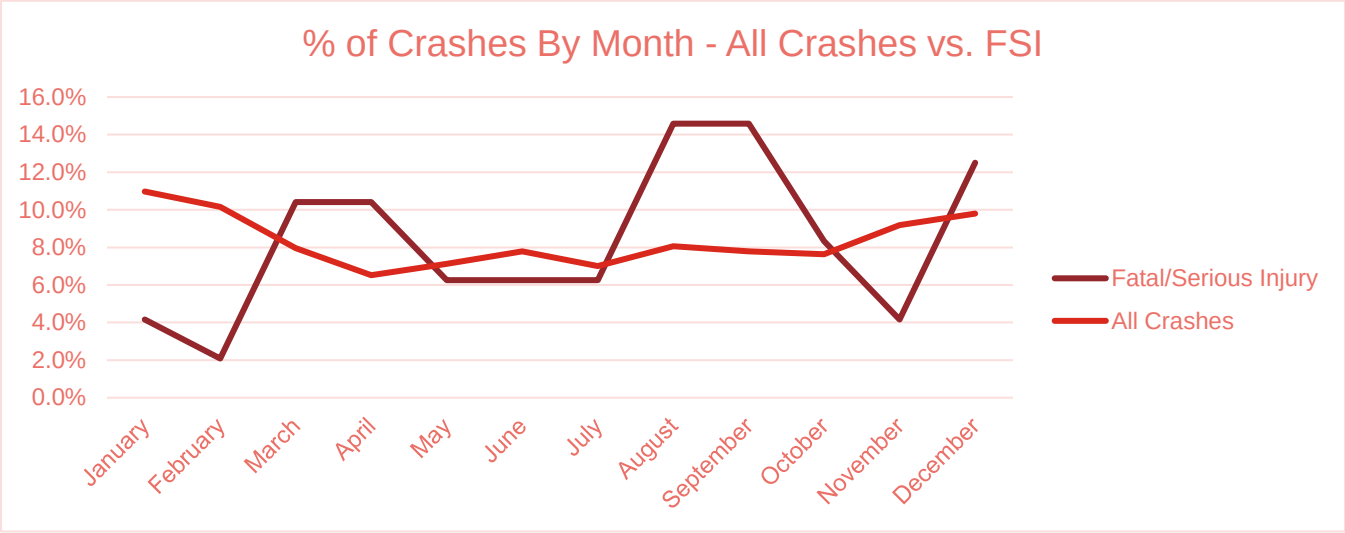


Figure 5: % Crashes by Month (All Crashes vs. FSI Crashes), 2014-2023

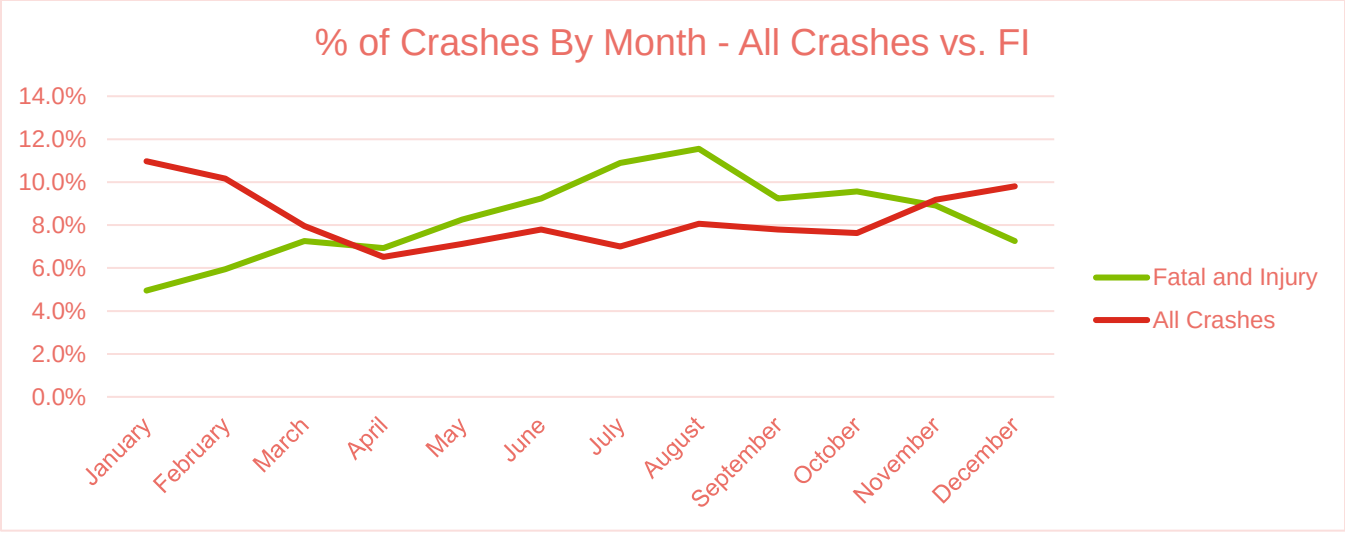


Figure 6: % Crashes by Month (All Crashes vs. FI Crashes), 2014-2023

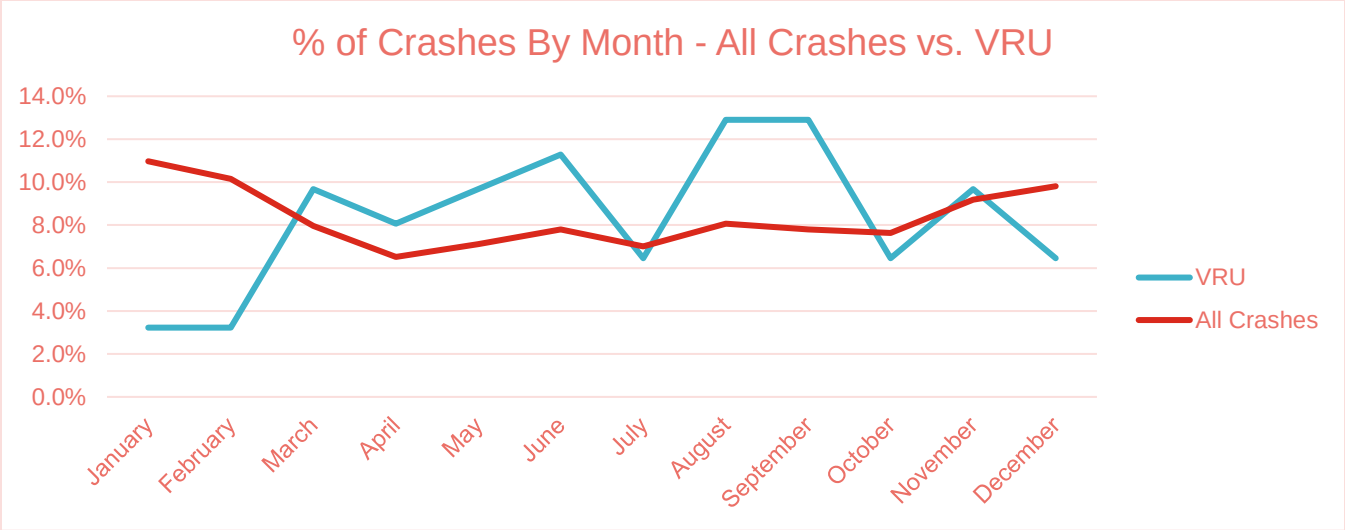


Figure 7: % Crashes by Month (All Crashes vs. VRU Crashes), 2014-2023

Crashes by Time of Day

Figure 8 shows the total amount of crashes occurring at different times of day, and Figures 9-11 show % crashes by time of day for FSI, FI, and VRU crashes, respectively, to show what times of day are overrepresented in various times of the day. The times of each crash were sorted into 3-hour increments related to the amounts and types of activities typically occurring at those times:

- 12:00AM-3:00AM: Overnight (includes bar closing time)
- 3:00AM-6:00AM: Early morning (very little activity apart from some early commuting)
- 6:00AM-9:00AM: Morning commute (includes typical work and school start times, large stores opening)
- 9:00AM-12:00PM: Late morning (includes small shops opening, early lunch)
- 12:00PM-3:00PM: Lunch “rush”
- 3:00PM-6:00PM: Afternoon commute (includes dinner time)
- 6:00PM-9:00PM: Early evening (includes most after-school and recreational activities, small shops closing)
- 9:00PM-12:00AM: Late evening (includes large stores closing)

Generally, FSI and FI closely follow the same time of day trends as all crashes. VRU crashes are overrepresented in the later afternoon/early evening hours and underrepresented in the earlier afternoon hours.

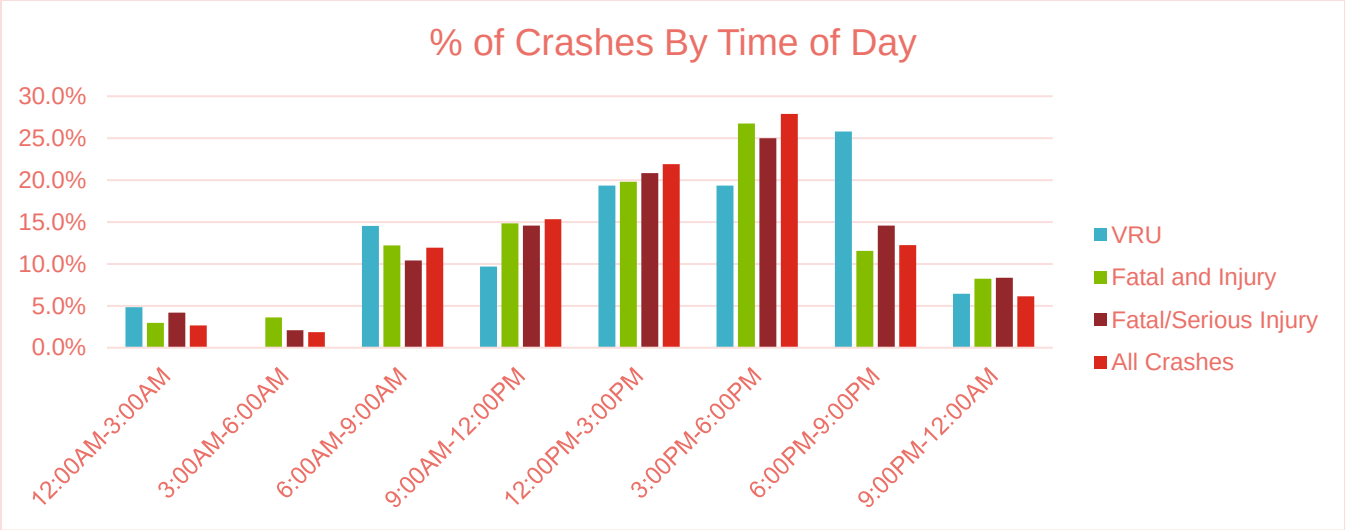


Figure 8: Total Crashes by Time of Day, 2014-2023

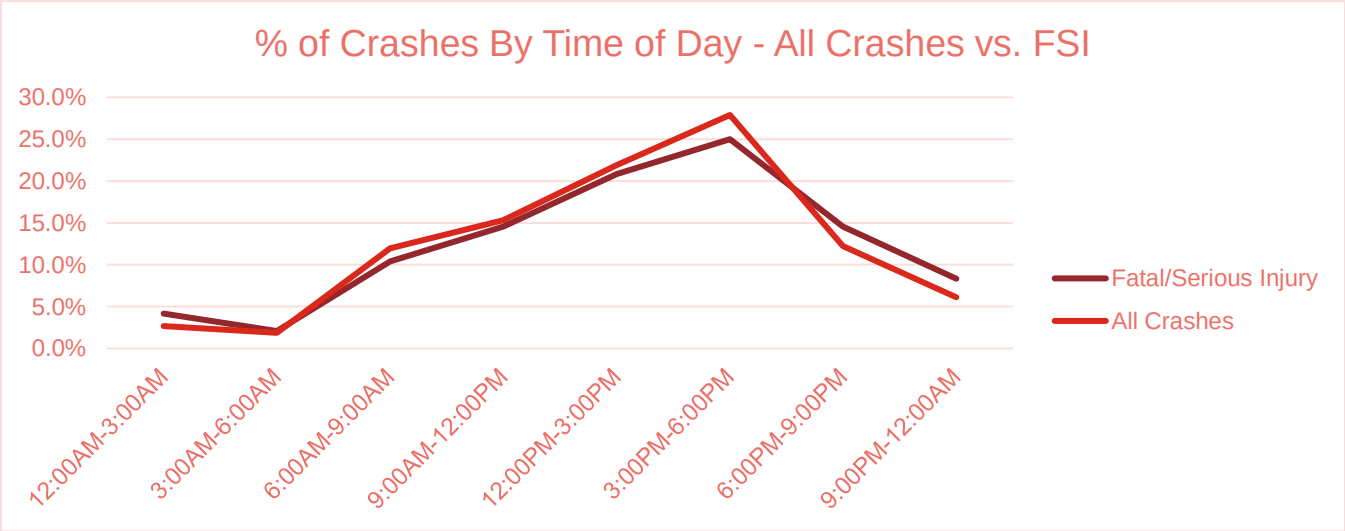


Figure 9: % Crashes by Time of Day (All Crashes vs. FSI Crashes), 2014-2023

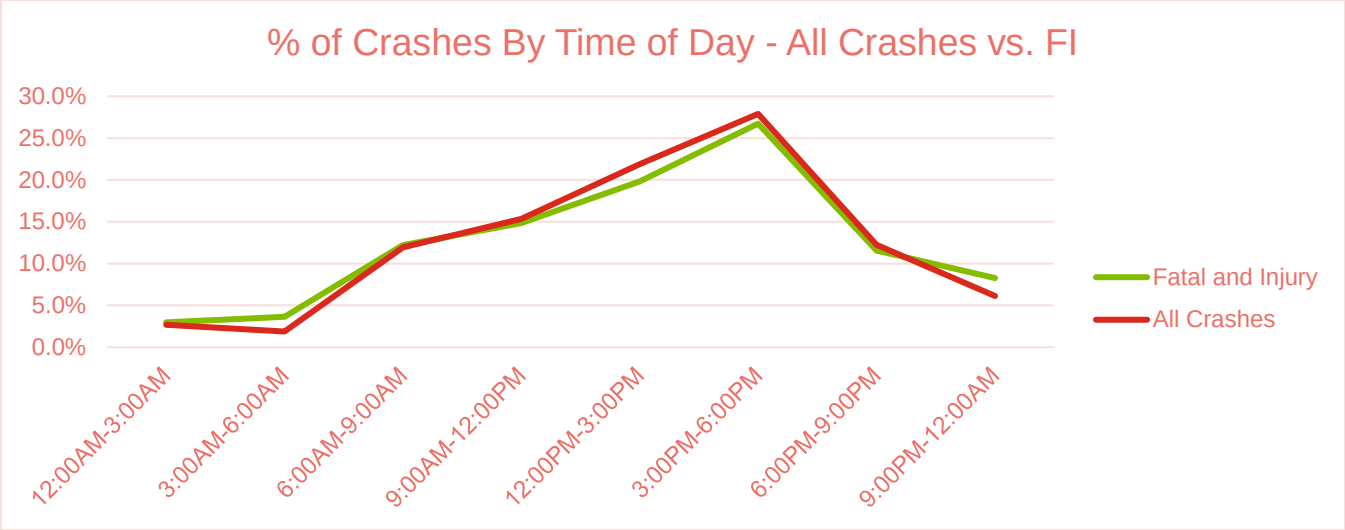


Figure 10: % Crashes by Time of Day (All Crashes vs. FI Crashes), 2014-2023

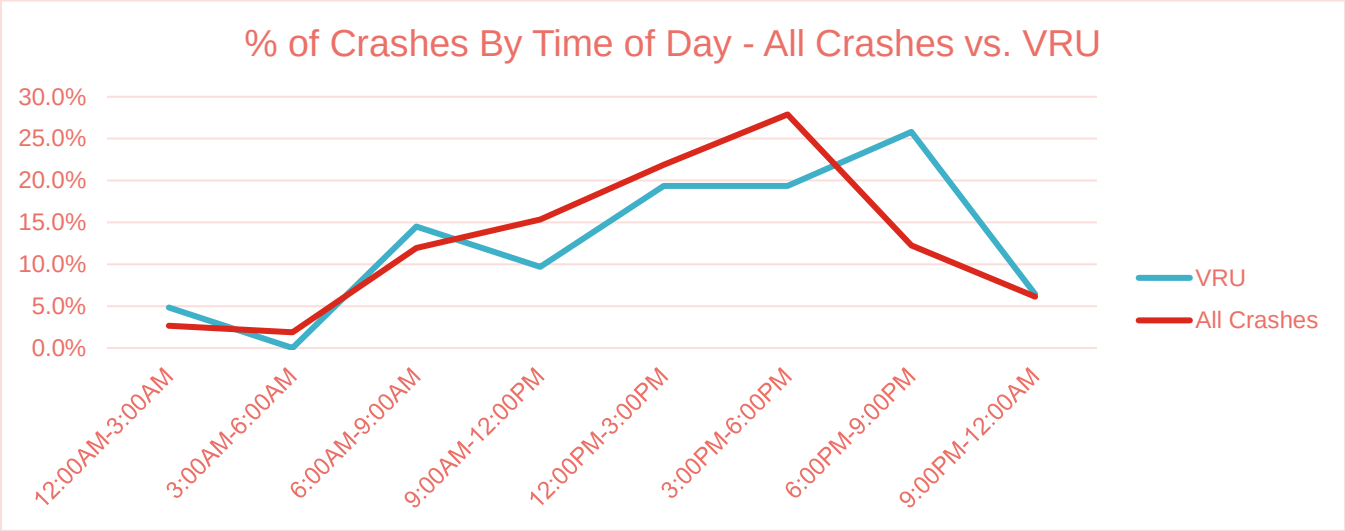


Figure 11: % Crashes by Time of Day (All Crashes vs. VRU Crashes), 2014-2023

Crashes by Mode

Error! Reference source not found. shows crashes by mode of travel and severity level in Willmar.

Overall, vehicle crashes occur the most frequently but have the lowest severity level. Still, there were 41 FSI and 262 FI vehicle-only crashes in Willmar, amounting to 1.3% and 8.2% of all vehicle-only crashes, respectively.

We also see that pedestrian- and bicyclist-involved crashes are more likely to be severe in the City. 16.6% of pedestrian-involved crashes resulted in a serious injury or fatality, whereas 6.3% of bike-related crashes resulted in a serious injury or fatality. Both of these FSI crash rates are over 5 times more prevalent than vehicle-only crashes. These numbers increase to 69.9% and 62.6% for pedestrian-related and bike-related crashes, respectively, when including minor injuries, compared to 8.2% of vehicle-only crashes.

Severity	Total Number					Percent of Total				
	All Crashes	Vehicle-Only	Bike	Pedestrian	All VRU	All Crashes	Vehicle-Only	Bike	Pedestrian	All VRU
Fatal	3	2	0	1	1	0.1%	0.1%	0.0%	3.3%	1.6%
Serious Injury	45	39	2	4	6	1.2%	1.1%	6.3%	13.3%	9.7%
Minor Injury	255	221	18	16	34	6.9%	6.1%	56.3%	53.3%	54.8%
Possible Injury	492	473	11	8	19	13.4%	13.1%	34.4%	26.7%	30.6%
Property Damage Only	2887	2885	1	1	2	78.4%	79.7%	3.1%	3.3%	3.2%
Total	3682	3620	32	30	62					

Table 1: Crashes by Mode and Severity, 2014-2023

Crash Causation

Crash Types

Figure 12 shows the total number of all crashes (including non-injury crashes), and Figure 13 shows the total number of FSI and FI crashes by type. Figure 14 shows the percentage of all crashes, FSI crashes, and FI crashes showing which types of crashes are overrepresented in FI and FSI crashes compared to all crashes.

The top three types of crashes for all crashes (including non-injury crashes) are angle, rear end, and single vehicle run off road crashes. The top three types for FSI crashes are angle, single vehicle run off road, and pedestrian crashes. The top three types for FI crashes are angle, single vehicle run off road, and rear end.

By percentage, single vehicle crashes (run off road and other), pedestrian, bicycle, left turn, and head on crashes are overrepresented in FSI and FI crashes when compared to all crashes. Rear end and sideswipe crashes (opposing and same direction) are underrepresented in FSI and FI crashes compared to all crashes. Angle crashes were roughly equally represented in FSI and FI crashes compared to all crashes.

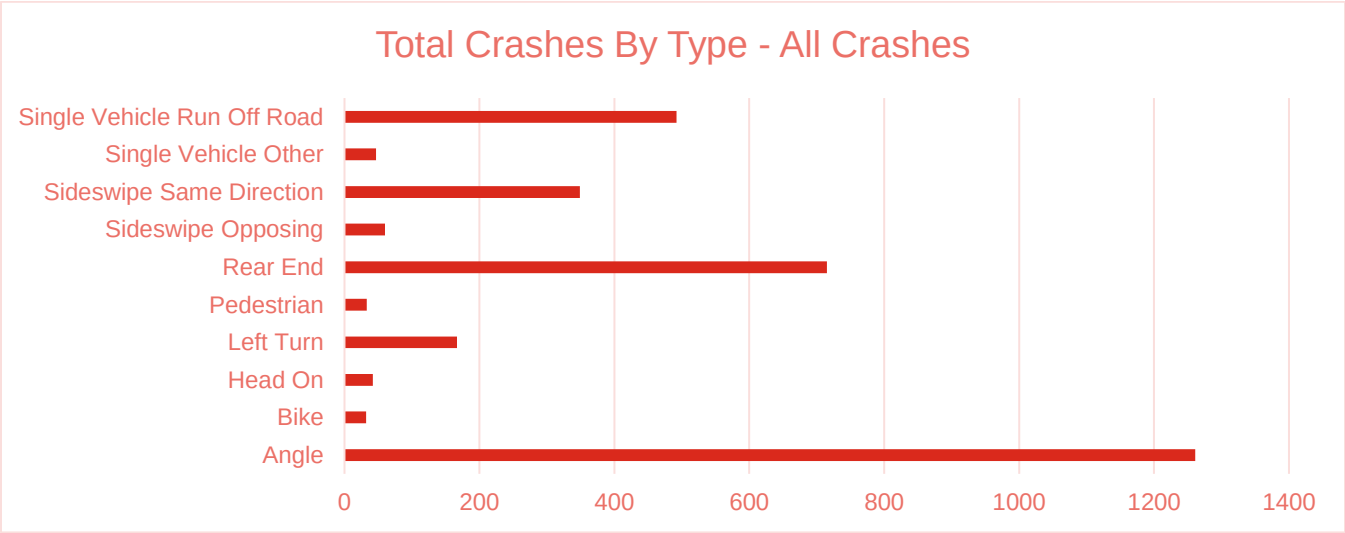


Figure 12: Total Amount of All Crashes (includes non-injury crashes) by collision type, 2014-2023

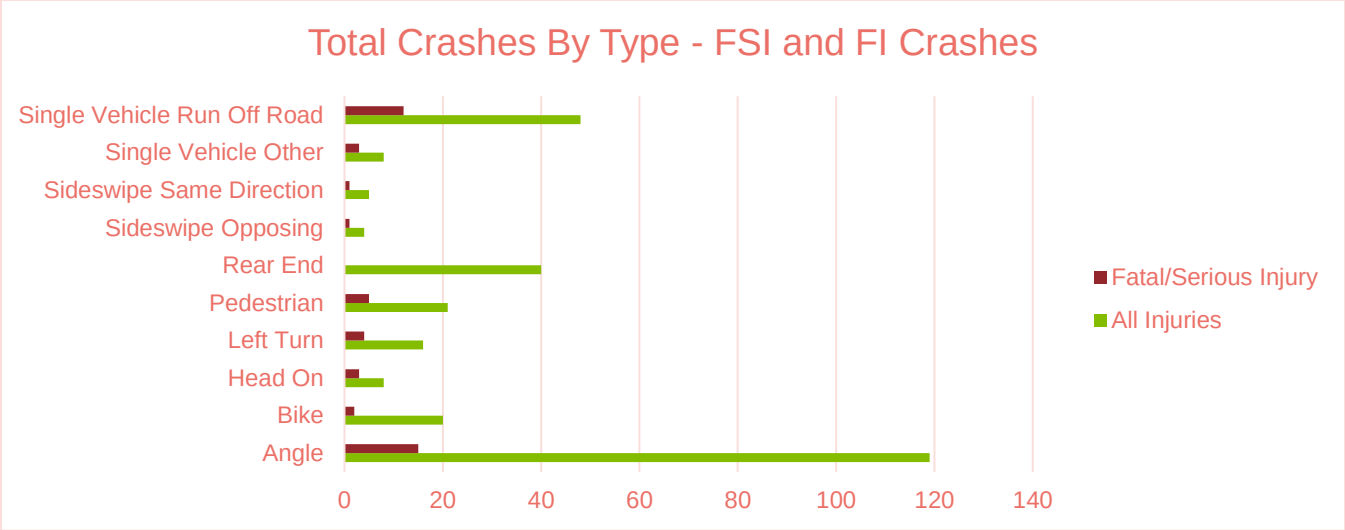


Figure 13: Total Amount of FSI and FI Crashes by collision type, 2014-2023

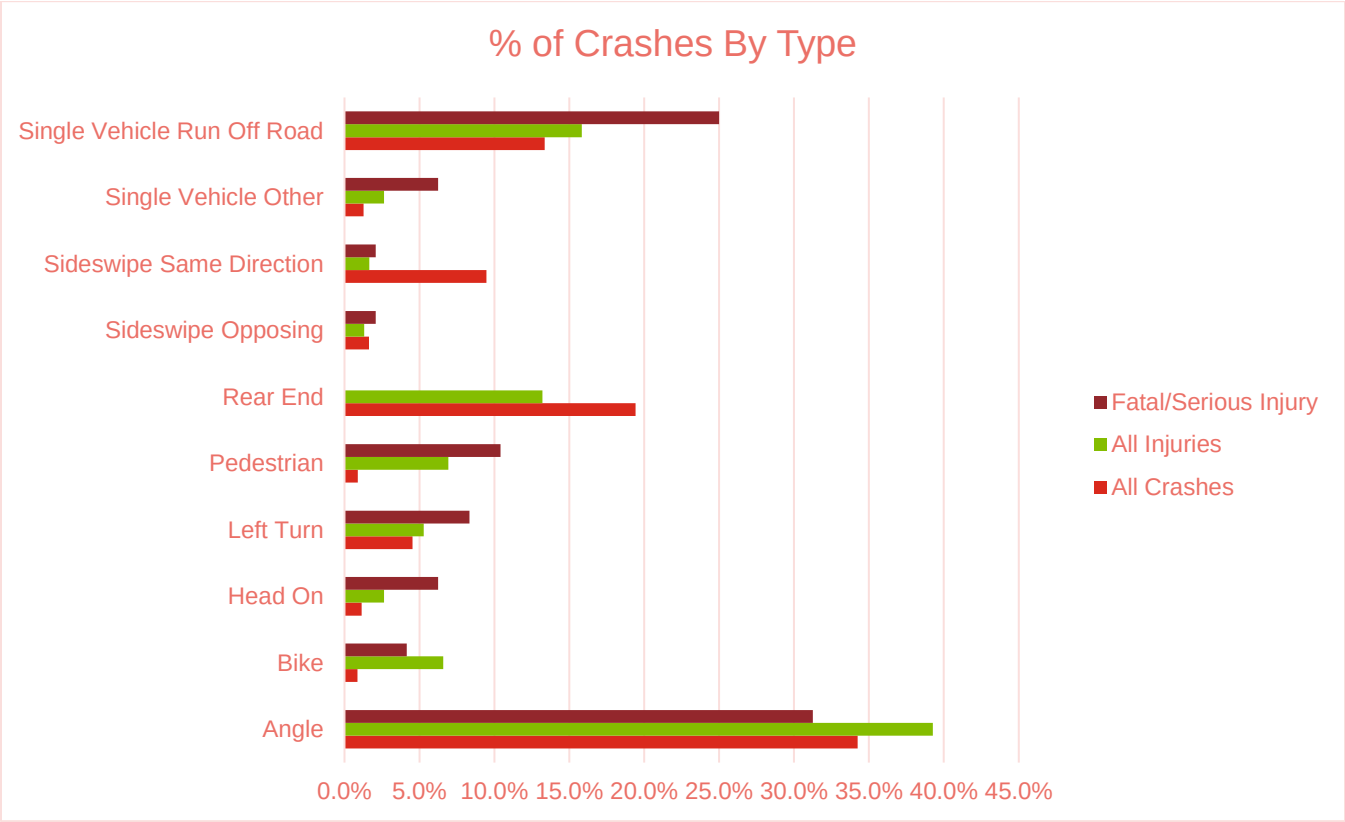


Figure 14: Percentage of FI, FSI, and All Crashes by collision type, 2014-2023

Environmental Characteristics

Weather Conditions

The majority of all crashes, FI crashes, FSI crashes, and VRU crashes in Willmar occurred when the weather was clear or cloudy, not during winter weather or rain (Figure 15). FSI, FI, and VRU crashes occurred more frequently in clear and cloudy conditions compared to all crashes (including non-injury crashes). While the cause of this trend is somewhat unclear, some theories include:

- Drivers are generally more cautious and driving more slowly during rainy and snowy weather
- People walking and biking do so less often during rainy or snowy weather compared to clear and cloudy weather

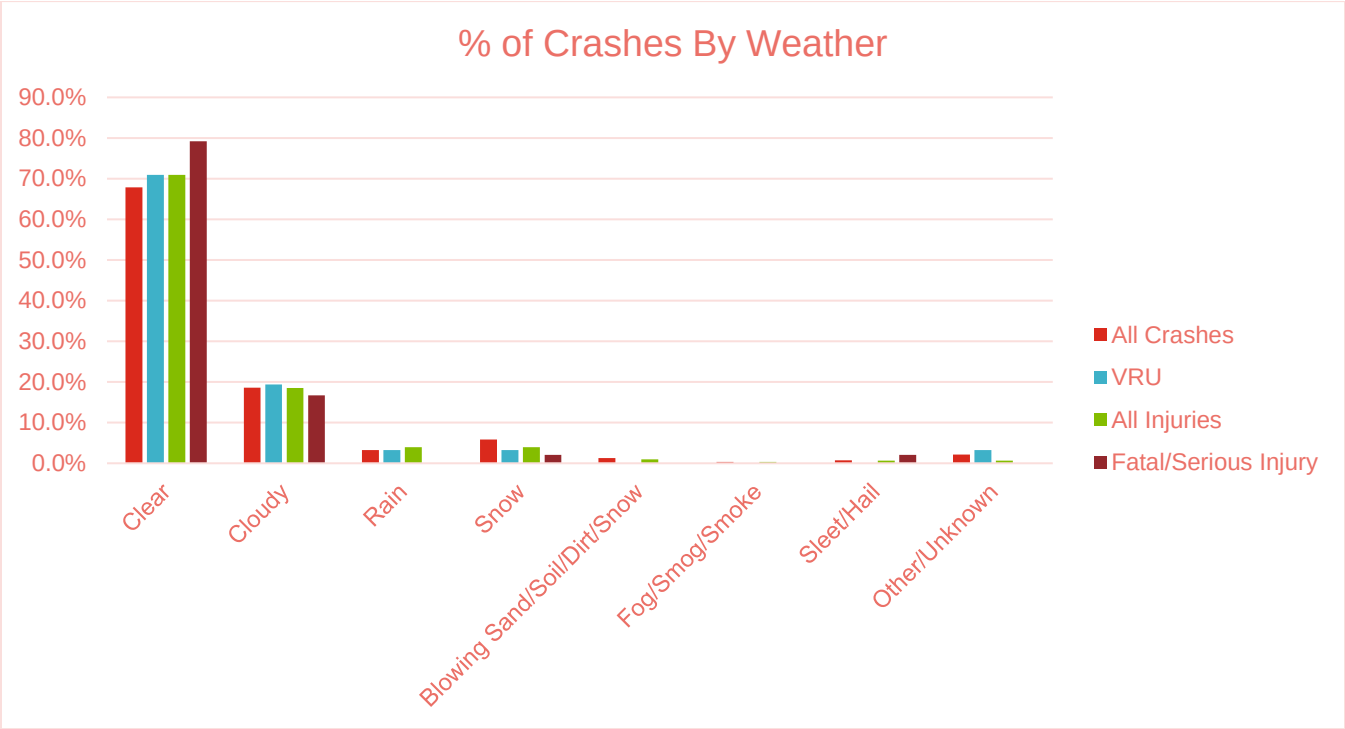


Figure 15: Percentage of All Crashes, FSI, FI, and VRU Crashes by Weather Condition, 2014-2023

Lighting Conditions

The majority of FI and FSI crashes in Willmar occurred during daylight conditions. Comparing all crashes (including non-injury crashes) to FI, FSI, and VRU crashes, a greater amount of FSI and VRU crashes occur in dark, lighted conditions. This could indicate that existing lighting is not illuminating enough of the roadways and intersections to provide adequate visibility outside of daylight hours. Dark, unlit conditions were also overrepresented in FSI, FI, and VRU crashes compared to all crashes. Figure 16 shows all crashes compared to FSI, FI, and VRU crashes for each lighting condition.

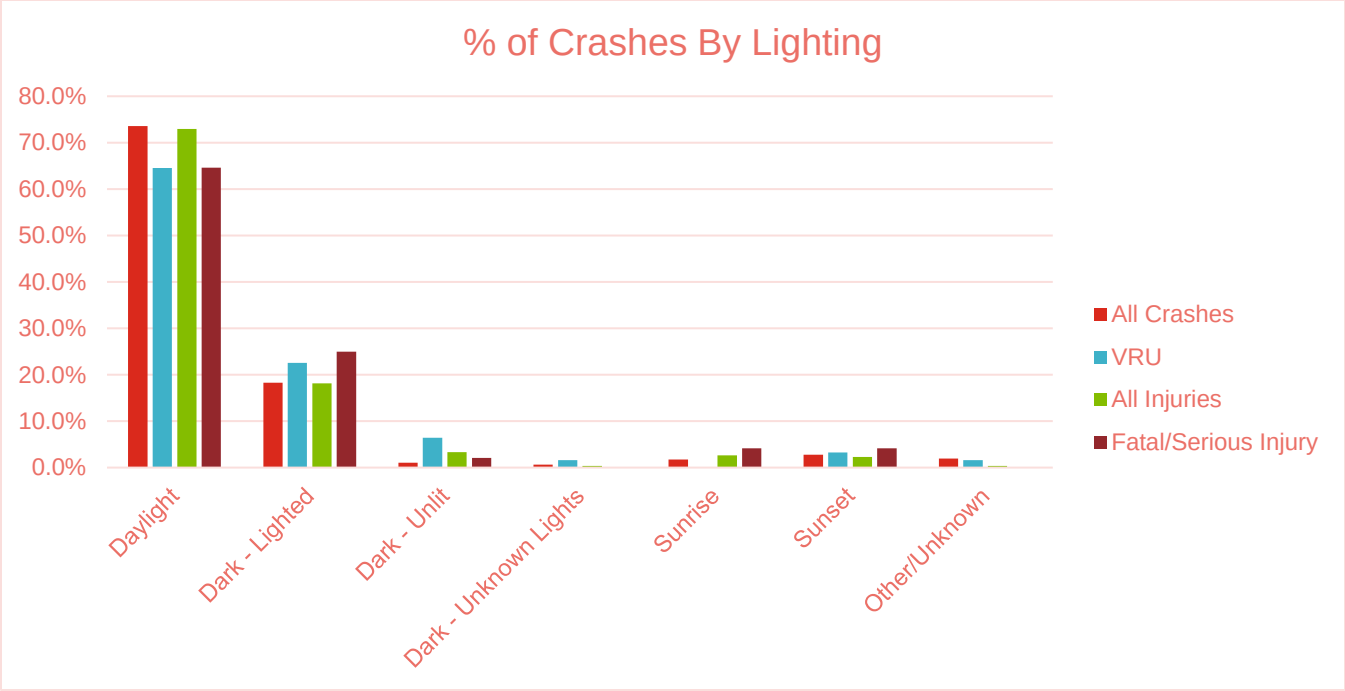


Figure 16: Percentage of All Crashes, FSI, FI, and VRU Crashes by Lighting Condition, 2014-2023

Pavement Surface Conditions

The majority of all crashes, FI crashes, FSI crashes, and VRU crashes in Willmar occurred when the weather was dry or wet, not during snowy or icy conditions (Figure 17). FSI, FI, and VRU crashes occurred more frequently in dry conditions compared to all crashes (including non-injury crashes) and less often during wet, snowy, and icy pavement conditions. While the cause of this trend is somewhat unclear, some theories include:

- Drivers are generally more cautious and driving more slowly with wet, snowy, and icy pavement
- People walking and biking do so less often when pavement is wet, snowy, or icy compared to dry pavement

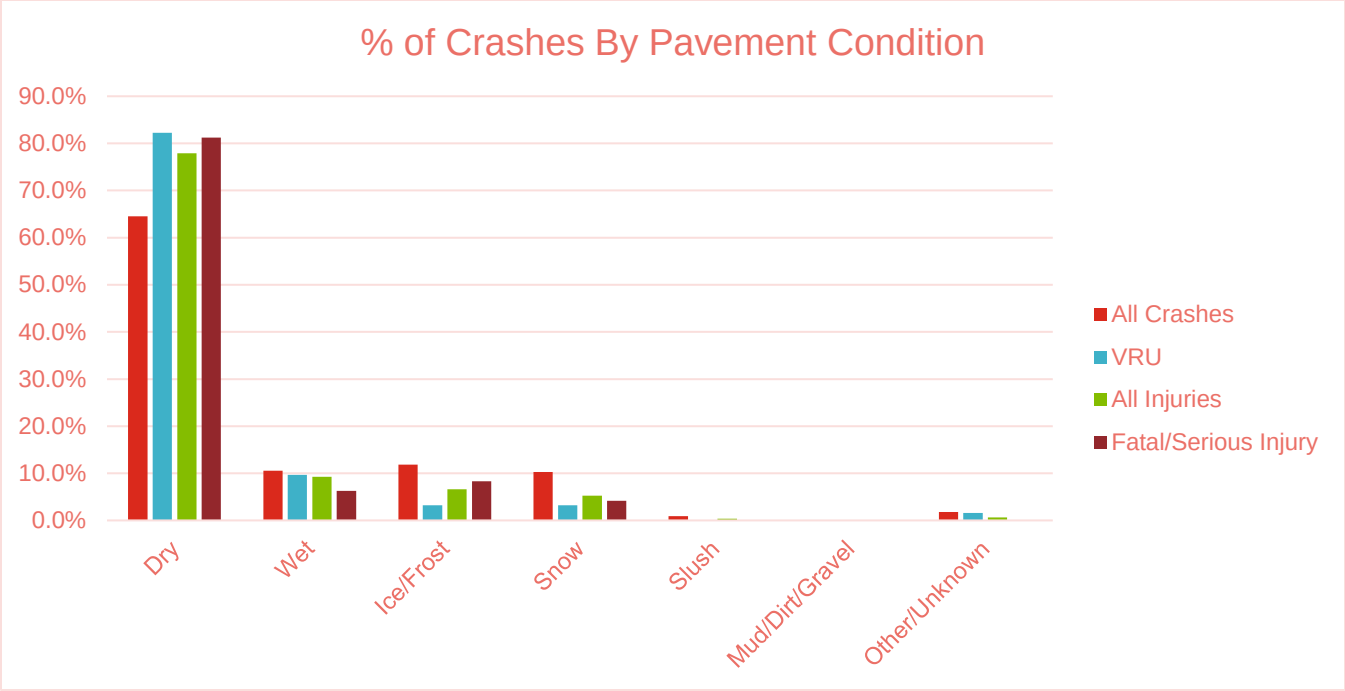


Figure 17: Percentage of All Crashes, FSI, FI, and VRU Crashes by Pavement Surface Condition, 2014-2023

Peer Community Analysis

Crash data in Willmar was compared to crash data from the same period in a handful of other peer communities in the state of Minnesota. Those communities included the following and were selected due to similar populations and/or similar demographics:

- Alexandria
- Austin
- Bemidji
- Brainerd (does not include Baxter)
- Faribault
- Hutchinson
- Marshall

Total Crashes

Crashes for each community were totaled for the 2014 to 2023 time period and reported in Figures 18-21 below.

Willmar enjoys a relatively low amount of fatal crashes compared to peer communities but also experiences higher rates of serious injury and minor injury crashes than most other peer communities.

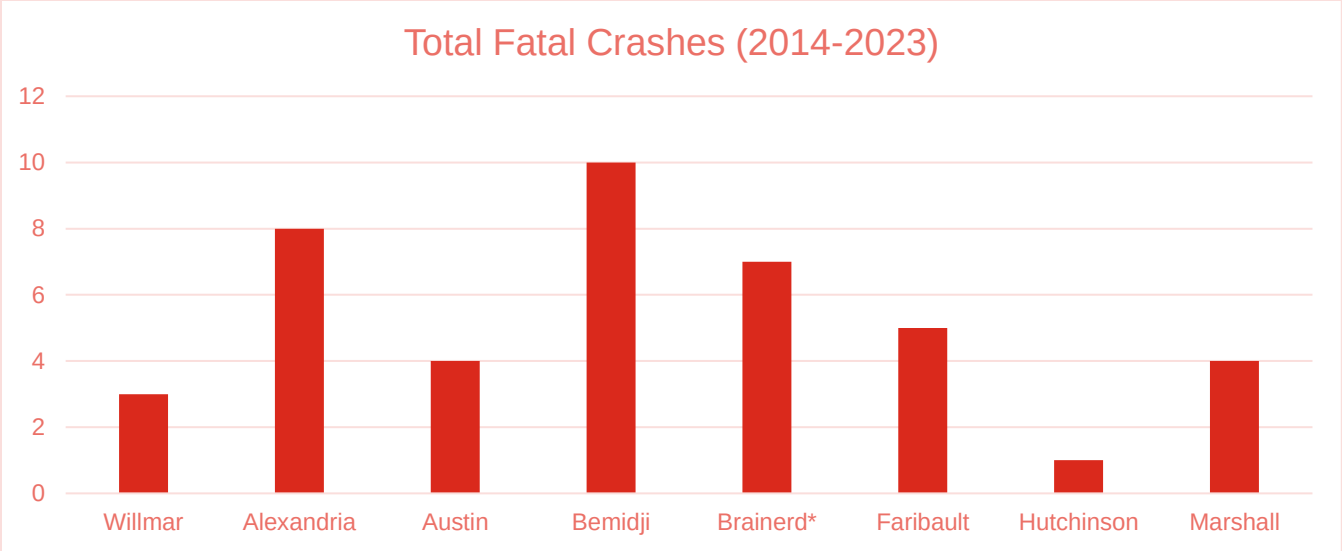


Figure 18: Total Fatal Crashes for Willmar and Peer Communities, 2014-2023

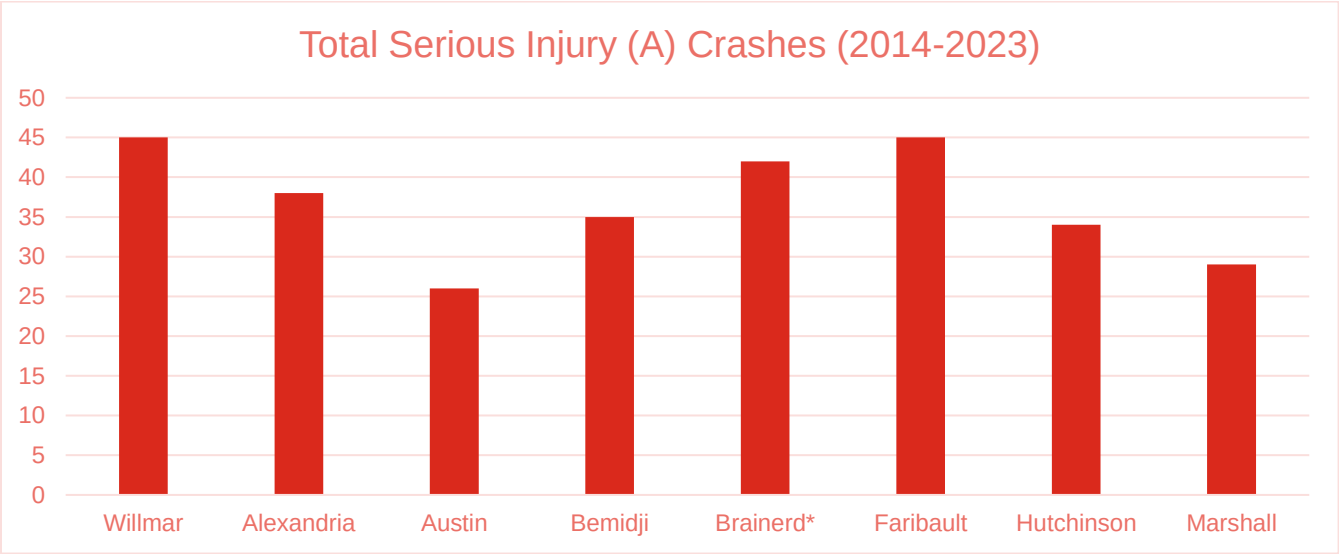


Figure 19: Total Serious Injury Crashes for Willmar and Peer Communities, 2014-2023

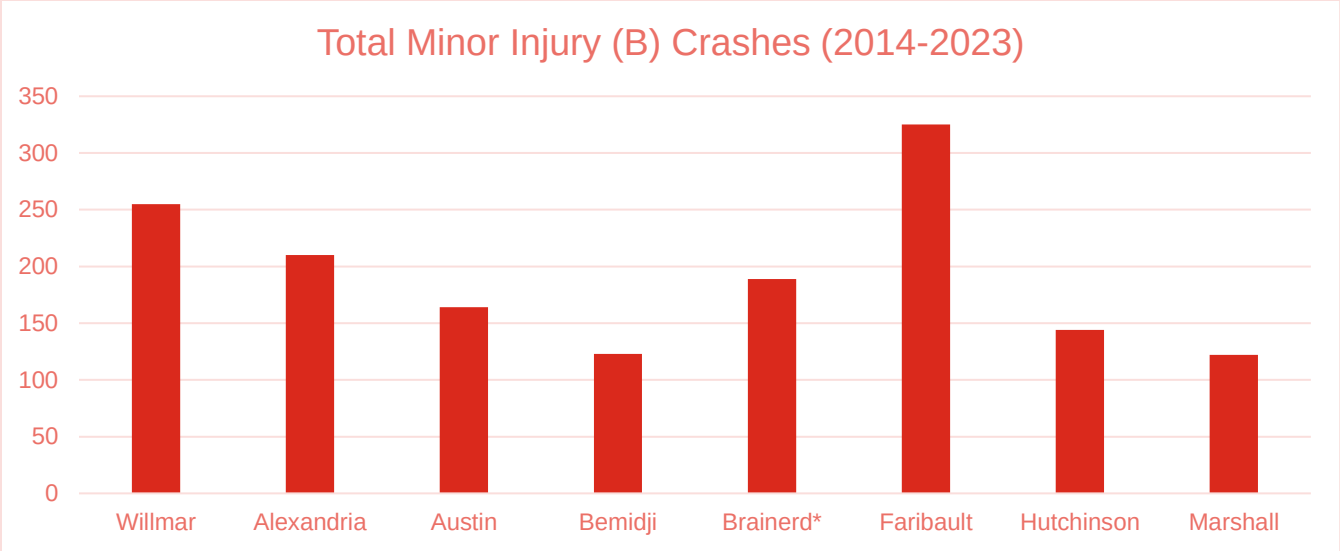


Figure 20: Total Minor Injury Crashes for Willmar and Peer Communities, 2014-2023

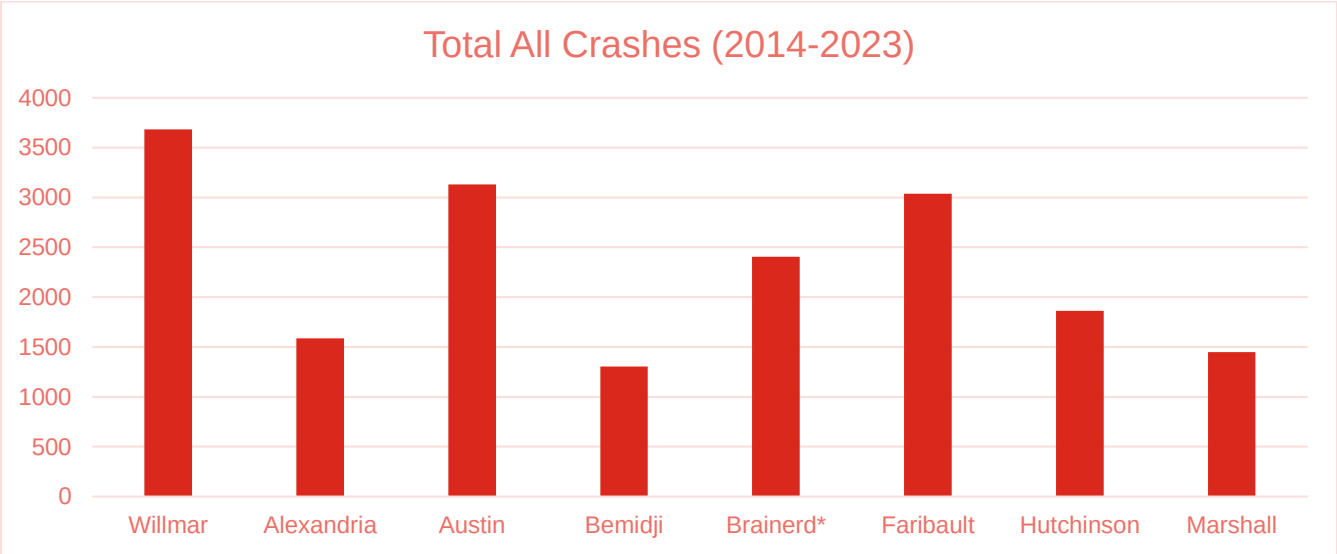


Figure 21: Total All Crashes (Including Property Damage Only Crashes) for Willmar and Peer Communities, 2014-2023

Crashes Per 1,000 Residents

Crash rates per 1,000 residents for each community were totaled for the 2014 to 2023 time period and reported in Figures 22-25 below. Crash rates per 1,000 residents helps to adjust the total number of crashes into a more true even comparison, but it does not account for the amount of commercial activity or pass-through trips that may be present in each community drawing people from other communities.

Willmar enjoys a relatively low amount of fatal crashes per 1,000 residents compared to peer communities. Serious injury and minor injury crashes per 1,000 residents are close to the average within the peer communities studied. Willmar had the highest rate when including all crashes (including non-injury crashes) due to a high amount of non-injury crashes.

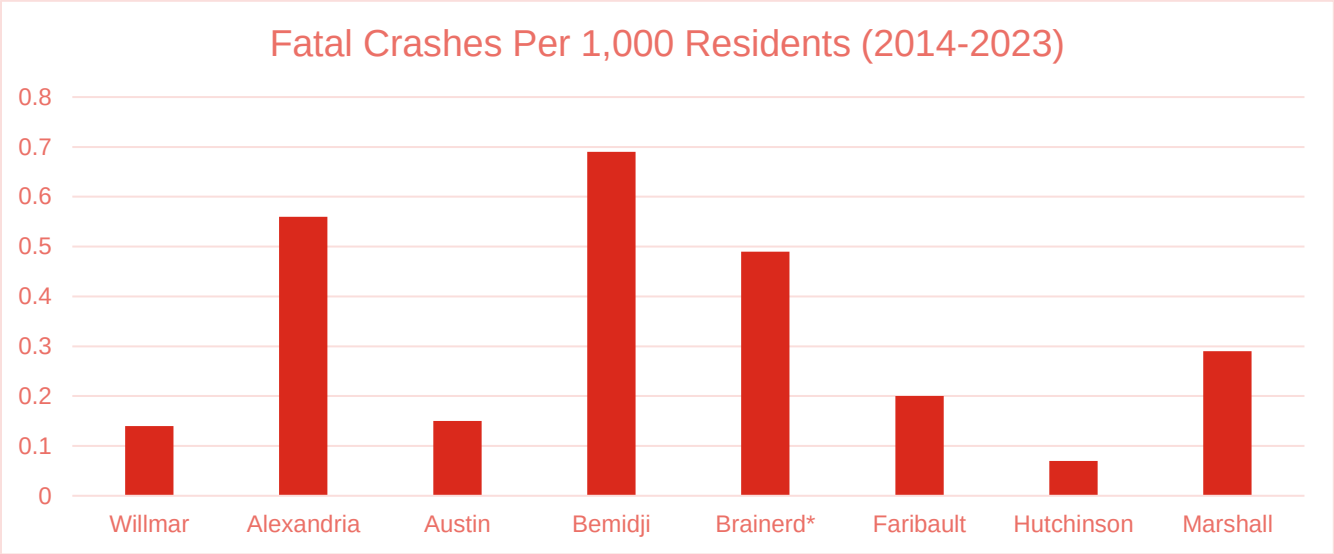


Figure 22: Fatal Crashes per 1,000 Residents for Willmar and Peer Communities, 2014-2023

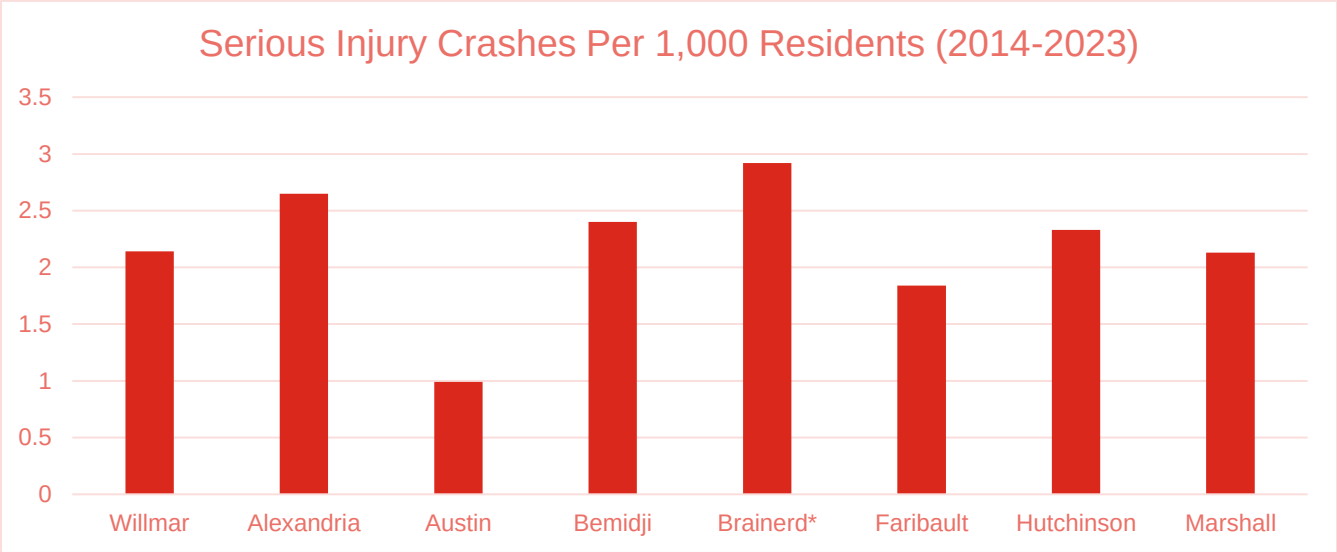


Figure 23: Serious Injury Crashes per 1,000 Residents for Willmar and Peer Communities, 2014-2023

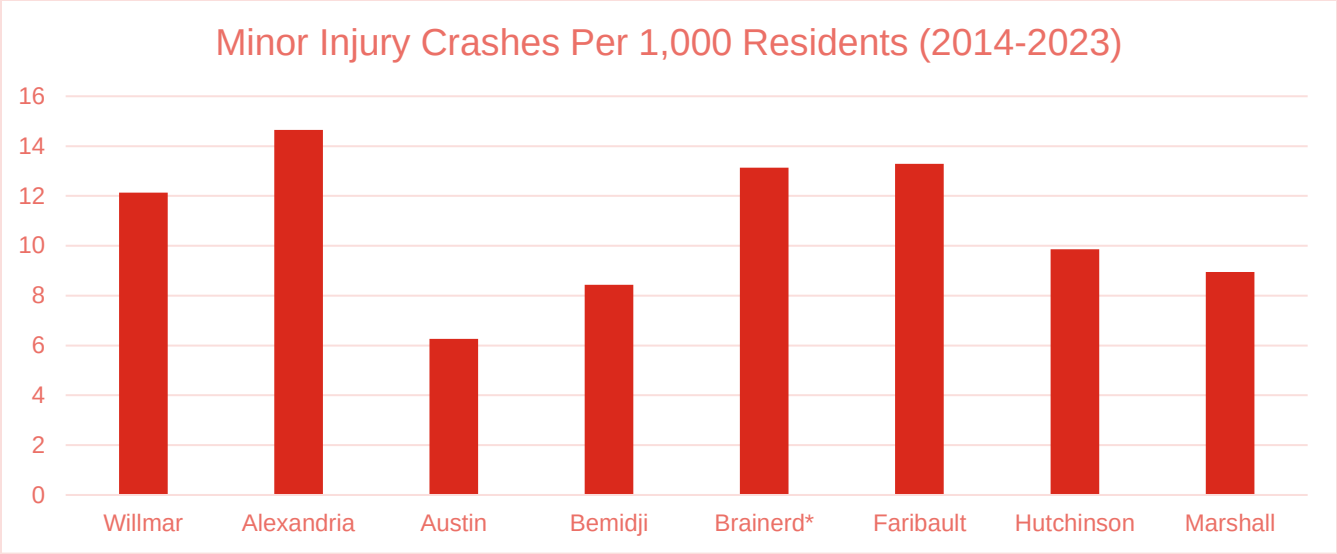


Figure 24: Minor Injury Crashes per 1,000 Residents for Willmar and Peer Communities, 2014-2023

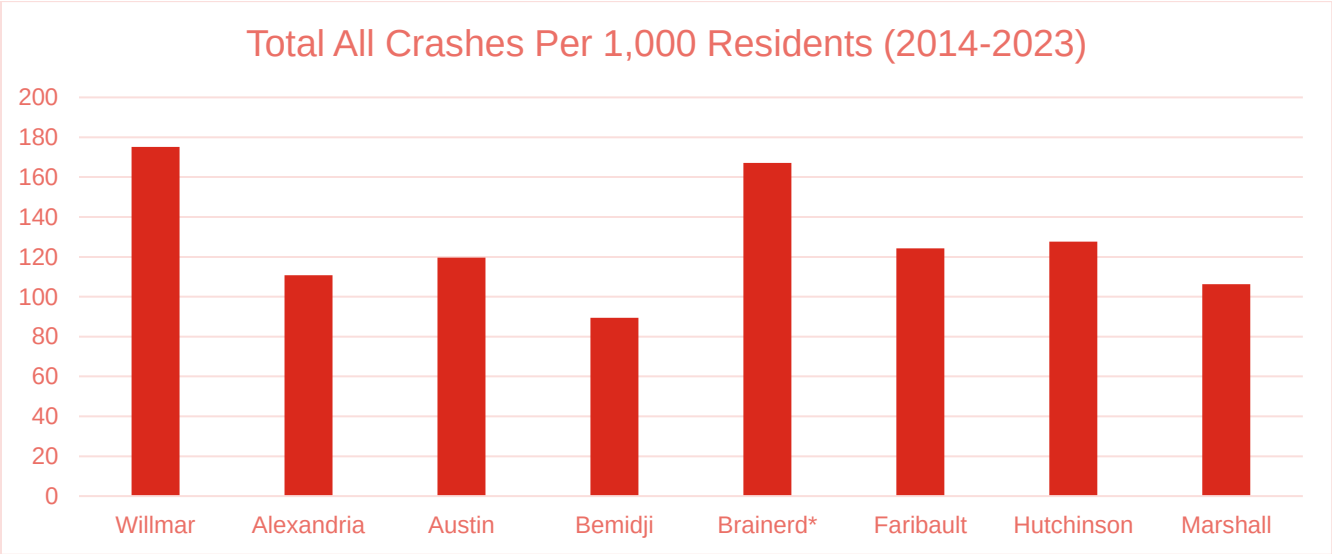


Figure 25: All Crashes (Including Property Damage Only Crashes) per 1,000 Residents for Willmar and Peer Communities, 2014-2023

Crashes By Type

Crash types for fatal and injury crashes in each community were compared to show which crash types Willmar is experiencing more or less of compared to other communities. This analysis is expressed in raw totals of crashes and as a percentage of overall fatal and injury crashes. Figures 26 and 27 show the crash types for each community with Willmar shown on the bottom of each crash type.

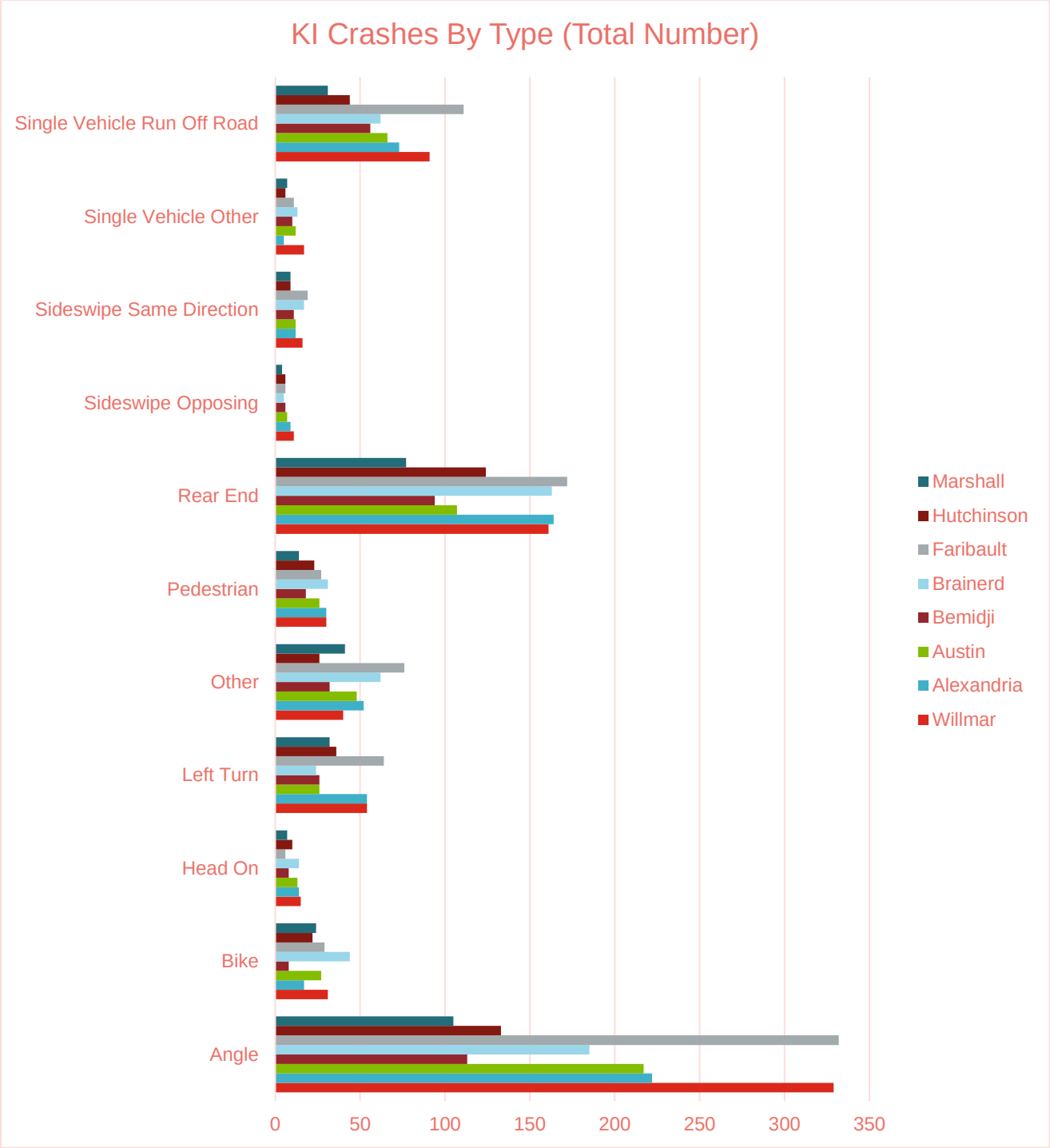


Figure 26: Total Amount of Fatal and Injury Crashes by Type for Willmar and Peer Communities, 2014-2023

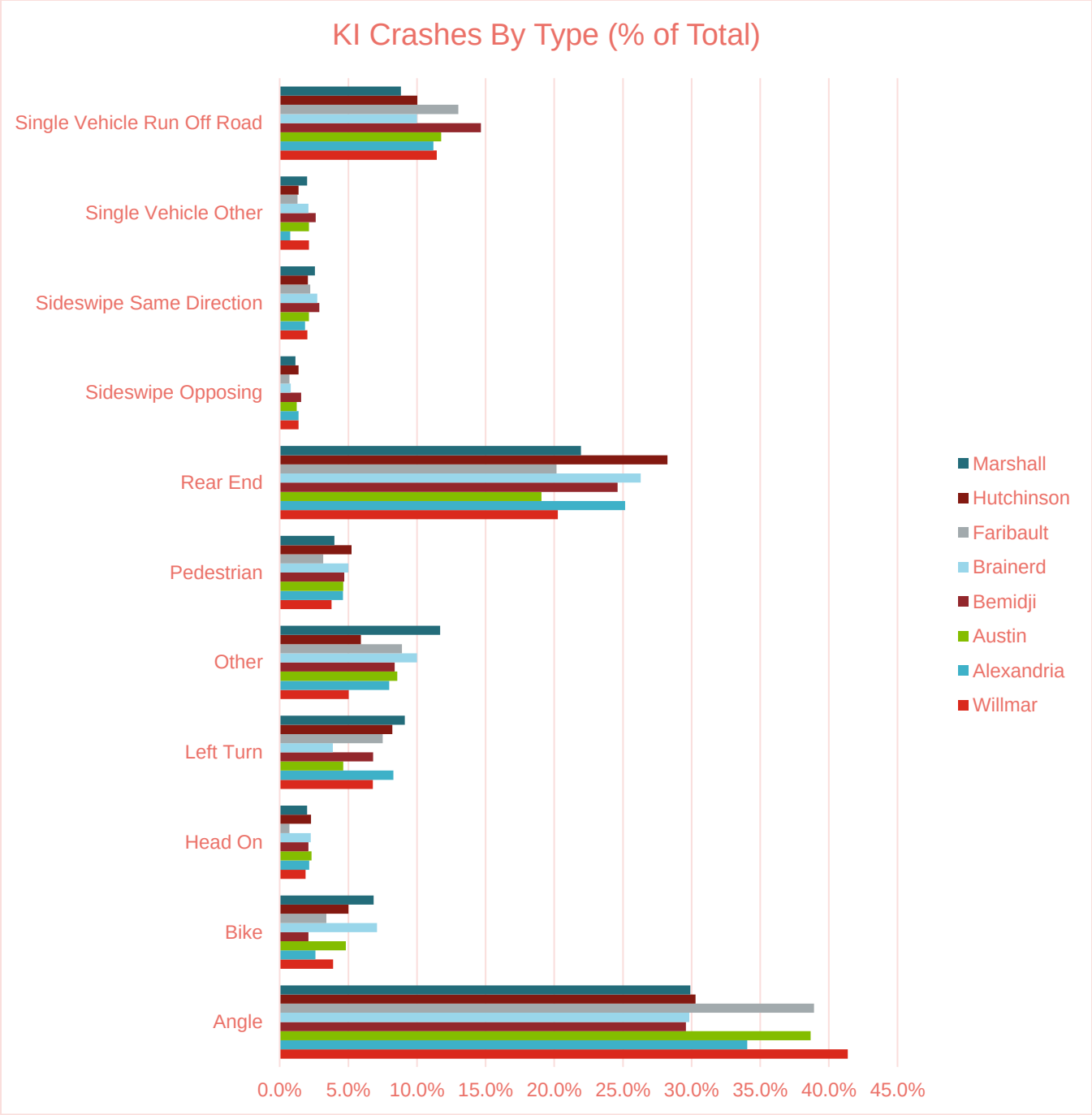
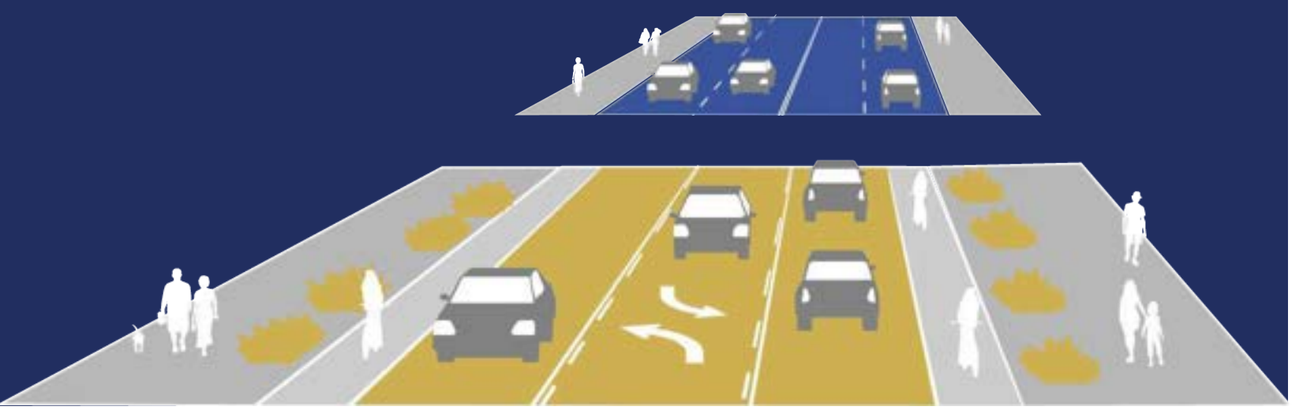


Figure 27: Fatal and Injury Crashes by Percent of Total by Type for Willmar and Peer Communities, 2014-2023

Compared to its peer communities, Willmar has a high amount of angle ("t-bone") crashes both by total number and, especially, by percentage of total fatal and injury crashes. The total number of rear end fatal and injury crashes in Willmar was relatively high but when adjusted for percentage of total fatal and injury crashes the rear end crashes were relatively low compared to peer communities. For other crash types, Willmar was either near the average or below average in both total number of crashes per type and in percentage of total crashes per type.

COUNTERMEASURES TOOLBOX

4-TO-3 LANE CONVERSIONS



Purpose:

Reduce the speed of traffic, reduce crossing distances and optimizes available roadway space to improve levels of safety and comfort for pedestrians and bicyclists.

Description:

Reduce the number of lanes (road diets), the width of lanes (lane width reductions), or both. The additional space created is typically combined with other elements such as bike lanes, transit lanes, widened sidewalks, pedestrian refuge islands, and/or curb extensions. Typically, road diets are utilized on undivided, four-lane roadways, which in turn are converted into two through lanes and a center turn lane or painted median.

Estimated Cost:

$$$ per mile (no additional cost with paving work)

Applicable Locations

- Multi-lane roads are eligible for lane reconfiguration.
- Emphasis should be placed on roads with priority pedestrian and bicyclist routes.
- Lane reconfiguration can be done in urban, suburban, and rural areas.

Applicable Street Types

- Collector Street
- Minor Arterial Street

Safety Benefits

- Increase available space for additional safety infrastructure for pedestrians or bicyclists
- May reduce the number of potential conflict points.
- May slow motor vehicle operating speeds on average, but will reduce "high-end" speeders (10 mph +) up to 90% per Seattle DOT.
- May reduce crossing distances by eliminating a lane or through provision of a pedestrian median island.
- Removed possibility of "double-threat" crashes from vehicles passing stopped vehicles.
- Improves sight distance for turning vehicles.
- Reduce emergency vehicle response timers per FHWA. (https://safety.fhwa.dot.gov/road_diets/resources/pdf/fhwasa17020.pdf)

Expected Crash Reduction

- 47% reduction in total crashes in suburban areas (Pawlovich, et al., 2006)
- 19% in urban areas (FHWA, 2008)

Design Guidance

- Eliminating a travel through lane can make room for a bicycle lane, turn lanes, wider sidewalks, median island, curb extensions, on-street parking, transit lane, landscaping, or other uses.
- Road diets are most successful on roadways with daily volumes of 8,000 to 20,000 motor vehicles.
- Road diets can be supplemented with painted textured, or raised center islands or green infrastructure to reduce storm runoff.
- A conversion to a three-lane road can be compatible with a single-lane roundabout.

Considerations

- Eliminating a travel through lane may increase congestion and vehicle queuing and blocking during peak travel hours.
- Evaluate impact of a road diet on all road users, not just vehicles. Consideration should be given to Level of Traffic Stress.
- Consider implementing a road diet in conjunction with pavement overlay.
- Outreach should be conducted to determine if a candidate street is meeting the needs of the community.
- A traffic study may be necessary to determine if high-traffic streets are candidates for removing one or more parking or travel lanes.
- The FHWA recommends considering factors including:
  - Volume thresholds, such as average daily traffic
  - Vehicle speed
  - Trip generation estimates
  - Level of Service
  - Quality of Service
  - Pedestrian and bicyclist volumes
  - Transit and freight operations
  - Peak hour and peak direction traffic flow

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

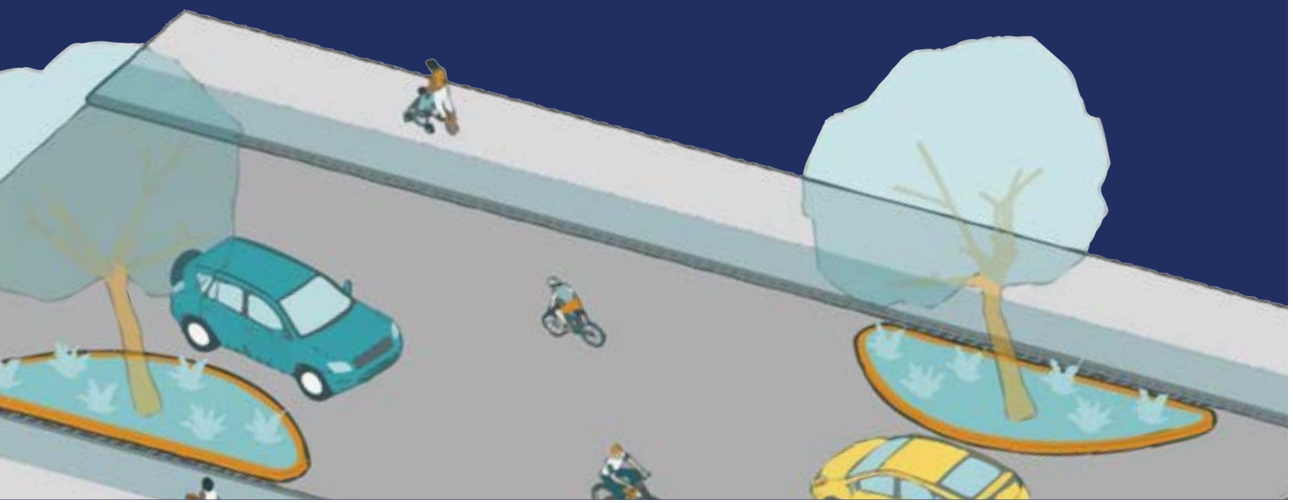
Before four to three lane conversion

After four to three lane conversion

Additional Information

- Evaluation of Lane Reduction "Road Diet" Measures on Crashes
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System
- Road Diet Informational Guide

CHICANES



Purpose:

Slow motor vehicles speeds by diverting the path of travel.

Description:

Horizontal treatments to restrict vehicle movement and reduce speeds. Chicanes are often made of curb extensions or islands that create "S" curves along a roadway.

Estimated Cost:

$$ to $$$$ (depending on design)

Applicable Locations

- Most effective at midblock locations on one-way and two-way streets

Applicable Street Types

- Local Street
- Collector Street

Safety Benefits

- Improves speed limit compliance.
- Certain designs increase the amount of sidewalk width, buffer width, or both on corridors.

Expected Crash Reduction

- 32% reduction of crashes (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Interim treatments use striping and flex posts and temporary curb materials.
- Permanent treatments use curb extensions or islands and may include vegetation.
- Maintain sight lines by landscaping chicanes with lower shrubs and plants.
- Multiple treatments may be placed on alternating sides of the roadway.
- Drainage and utility location should be considered when implementing.
- Additional signing or pavement markings may be needed to ensure drivers and maintenance vehicles are aware of the bend in the roadway.

Considerations

- Vehicles and bicyclists must carefully maneuver around fixed objects. Traffic may be slowed when vehicles attempt to pass bicyclists.
- If drainage impacts are a concern, curb extensions may be designed as edge islands with a 1-2-foot gap from the curb.
- Neighborhood traffic circles should be considered at intersections of local roads.
- May reduce on-street parking depending on the design.
- Emergency vehicle and school bus access must be maintained.

Systemic Safety Potential

Best suited as a spot treatment.

Additional Information

- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System
- NACTO Urban Street Design Guide

CURB EXTENTIONS

Purpose:

Shorten crossing distances and increase pedestrian comfort and visibility.

Description:

Also called bulb outs or neck downs, curb extensions extend a section of sidewalk into the roadway at intersections and other crossing locations. In addition to shortening crossing distances, curb extensions create more compact intersections, resulting in smaller corner radii and slower turns by people driving.

Estimated Cost:

$$ to $$$$ (depending on design)

Applicable Locations

- Curb extensions can make pedestrian, bicycle, or other crossings safer and more comfortable everywhere from a mid-block crosswalk to a large signalized intersection.
- Curb extensions can be built in all-day parking lanes or wide shoulders.
- Transitions to lower-speed areas.
- Curb extensions are particularly valuable in locations with high volumes of pedestrian traffic, near schools, bicycle/trail crossings at unsignalized pedestrian crossings, or where there are demonstrated.

Applicable Street Types

- Local Street
- Collector Street
- Minor Arterial Street

Safety Benefits

- Slow the speed of motorists making turns at intersections.
- Create additional space for directional curb ramps.
- Provide opportunity to create accessible parking spaces.
- Improve visibility between crossing pedestrians and other street users.
- Prevent people from parking too close to or on crosswalks or blocking fire hydrants.
- Create space for utilities, signs, and amenities such as bus shelters or waiting areas, bicycle and micromobility parking, public seating, street vendors, and greenscape elements.

Design Guidance

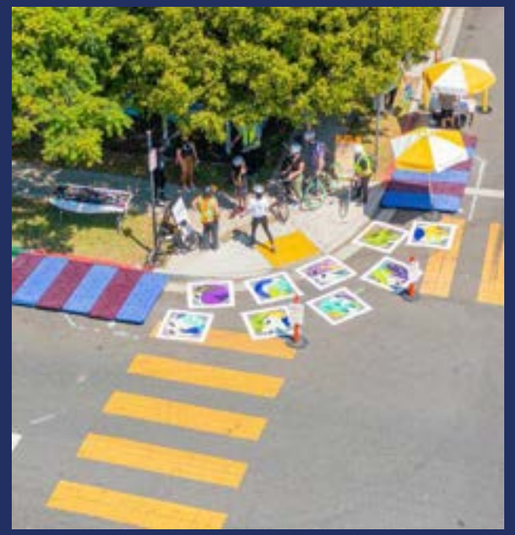
- Limit planting and street furniture height within curb extensions to preserve sight lines.
- Consider expanding curb extensions at bus stops to produce bus bulbs.
- Where curb extension installation on one side is infeasible or inappropriate (i.e., no parking lane), this should not preclude installation on the opposite side.
- A typical curb extension extends about 6 feet from the curb, or no further into the street than the parking lane.
- Protected bike lanes can go over or behind curb extensions, if present.
- The minimum width of a curb extension should match the existing NO PARKING requirements. The length of a curb extension can vary depending on the intended use (i.e., stormwater management, bus stop waiting areas, restricted parking)
- NO PARKING signs or yellow curb can be used to deter parking.

Considerations

- Curb extensions should not extend into travel lanes or bicycle lanes. Generally designed with one foot of shy distance between the face of curb and the edge of travel lane.
- When designing the corner radius on a curb extension, consider the appropriate large vehicle turning path to prevent encroachment into the pedestrian space.
- Consider the turning needs of emergency and larger vehicles in curb extension design and include mountable areas if necessary.
- Curb extensions can require modifications to or relocation of drainage structures. Consider drainage slots with solid surface plating at pedestrian crossings as an alternative.
- Temporary curb extensions may be created using paint, flexible delineators, and other temporary materials to speed installation or as a pilot project before permanent construction.

Systemic Safety Potential

Spot treatment or systemic safety improvement. Consider at all locations with on-street parking and as a gateway treatment to slow vehicle speeds.



Additional Information

- NACTO Urban Street Design Guide
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

HIGH-VISIBILITY CROSSWALK

Purpose:

Providing marked crosswalks communicates to drivers that pedestrians may be present and helps guide pedestrians to locations where it is best to cross the street.

Description:

High-visibility crosswalks are distinguishable from other crosswalk designs by use of longitudinal, ladder, or continental-style markings more readily visible to approaching motorists as opposed to parallel, or transverse, lines which are more difficult to distinguish from a distance.

Estimated Cost:

$ (per crossing)

Applicable Locations

- High-visibility crosswalks are appropriate at all signalized intersections or at high pedestrian volume or busy street intersections as noted in City of Bloomington PM-6: Standard Traffic Crosswalk Details.
- Uncontrolled intersections should meet requirements in MUTCD Section 3B.18.

Applicable Street Types

- All street types.

Safety Benefits

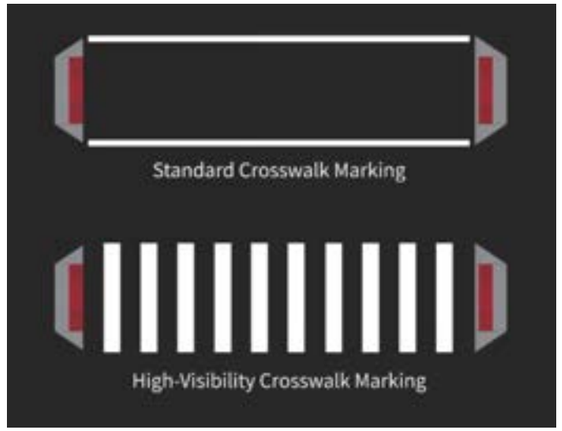
- Increase motorist awareness of crosswalk location.
- Reduce crashes between pedestrians, bicyclists, and motor vehicles.
- Designate pedestrian right-of-way, and may reduce pedestrian crossings at unmarked locations.

Express Crash Reductions

- 40% reduction for pedestrian-motor vehicle crashes. (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Marking pattern should be continental: a series of wide stripes parallel to the travel lanes for the entire length of the crossing.
- Crosswalks should be as wide as the sidewalk width plus 1-2' either side (e.g., for a 6' sidewalk, mark the crosswalk 8-10' wide).
- Install with directional ADA compliant curb ramps.
- Stop lines at stop-controlled and signalized intersections should be located at least 8 feet in advance of crosswalks. At uncontrolled crossings, yield lines may be included 8 feet in advanced of the crosswalk.
- Parking should be restricted in advance of a crosswalk to provide adequate sight distance.



Considerations

- Crosswalk location should be convenient for pedestrian access.
- Width may be wider than 10 feet at crossings with high pedestrian or bicycling demand.
- Crosswalk markings should consist of non-skid, retroreflective material.

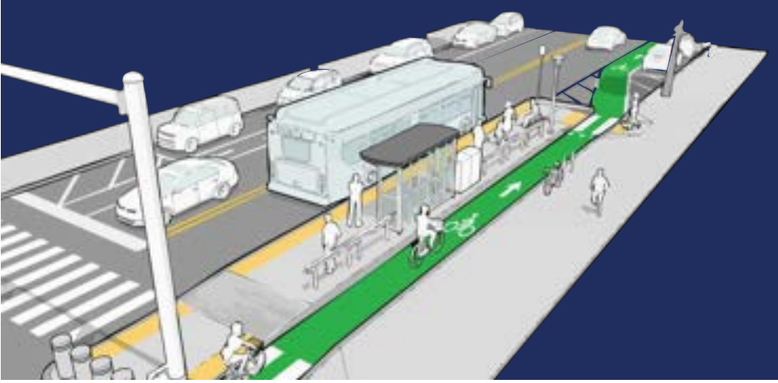
Systemic Safety Potential

Apply as a systemic countermeasure at all controlled crossings. At uncontrolled crossings, apply in accordance with FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations.

Additional Information

- Manual on Uniform Traffic Control Devices
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

FLOATING BUS STOPS



Purpose:

To eliminate the conflict between bicyclists traveling in bike lanes and transit vehicles that must pull into conventional bike lanes to load and unload passengers. Also to eliminate the conflict when buses merge back into mixed traffic.

Description:

Floating Transit Islands consist of a bus stop platform island extending into the street from the curb with a bicycle lane routed behind the stop on or adjacent to the curb, eliminating bus and bike conflicts at stations and reducing bus travel times.

Estimated Cost:

$$$ to $$$$ (depending on design)

Applicable Locations

- Where bike lanes (separated, conventional, etc.) run along a transit stop. This treatment is compatible with near-side, far-side and midblock transit stop locations.

Applicable Street Types

- Collector Street
- Minor Arterial street

Safety Benefits

- Eliminates conflict between transit vehicles and bicyclists.
- Island stops maintain continuity of bike lanes.

Design Guidance

- Provide a buffer of 6 to 12 inches between the transit shelter and the bike lane. This buffer is narrower than the shy distance normally used for vertical surfaces (2 feet), but this is okay for short distances in constrained spaces.
- Channelizing railings, planters or other treatments can be used to help direct people to the crossing location(s).
- Bus shelters should be located away from pedestrian crossings to minimize bicyclist conflicts with pedestrians.
- Multiple pedestrian crossings are recommended, but not required.
- Provide a minimum 4-foot-wide walkway between the curb and the transit shelter.
- Minimum 8 feet of clear width at the location where the bus doors will open to accommodate people in wheelchairs.

Considerations

- The space between the bike lane and the sidewalk must have a detectable edge so pedestrians with vision disabilities can distinguish between the two. The bike lane may be located at street level, intermediate level, or sidewalk level. The bike lane elevation can affect the treatment used and can itself be a treatment for creating the detectable edge. The following design treatments can help provide this tactile cue:
  - Street furniture or other vertical objects.
  - A curb.
  - Curb height changes.
  - Continuous low landscaping.
  - A directional indicator installed linearly on the sidewalk adjacent to the edge.
  - Consider transit queuing and vehicle length to determine island length and pedestrian crossing placement.
  - Ensure visibility between bicyclists and pedestrians for safety
- Consider raised pedestrian crossings between the floating transit island and the sidewalk to prioritize pedestrians and alert and slow bicyclists at the pedestrian crossing.

Systemic Safety Potential

Potential for systemic safety application at bus stops located along separated bike lanes. Best suited as a spot treatment along buffered bike lanes and conventional bike lanes.

Additional Information

- NACTO Transit Street Design Guide
- FHWA Achieving Multimodal Networks

LIGHTING

Purpose:

Increase visibility for all road users at dusk and darkness, especially at crossings.

Description:

Overhead lighting to illuminate crossings, signs, and street markings. Well-placed lighting improves visibility for all road users. Lighting can be placed overhead or in pavement, depending on the needs of each individual corridor. Pedestrian-scale lighting is often seen in commercial districts as it enhances the environment at night, while also enhancing security.

Estimated Cost:

$$ to $$$$ (depending on design)

Applicable Locations

- Controlled and uncontrolled intersections.
- On crossing approaches.
- Along sidewalks, paths, and trails.
- Beneficial at intersections in areas with high volumes of pedestrians, such as commercial or retail areas and at major bus stops.
- Near schools, parks, and recreation centers.
- On both sides of arterial streets.

Applicable Street Types

- All street types

Safety Benefits

- Improves visibility for all parties.
- May reduce crashes and injuries for all road users.
- May increase yielding and compliance with traffic control devices.
- Higher sense of personal security for pedestrians and bicyclists.

Expected Crash Reduction

- 42% for nighttime injury pedestrian crashes at intersections. (Elvik, R. and Vaa, T., 2004).
- 33-38% for nighttime crashes at rural and urban intersections. (Ye et al. 2008).
- 28% for nighttime injury crashes on rural and urban highways. (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Use 3000K shielded LED lights wherever possible.
- Lighting should be consistent and uniform.
- Consider placement of existing buildings and trees to reduce spillover.
- Install lighting to meet UDO requirements and minimize effects of light pollution.
- Lights should be placed in advance of a midblock or intersection crosswalk in both directions to illuminate the pedestrian in the front and avoid a silhouette.
- Should be co-located with traffic signs and signals to reduce clutter along or near sidewalks, paths, and trails especially at intersection corners.

Considerations

- Uniform lighting can suggest pedestrian use and create a sense of enclosure.
- Lighting should be provided on crosswalk approaches.
- If a crossing has a crossing island, additional lighting may be provided.
- Consider energy usage and environmental impacts.
- Consider quality and color of light.
- Nationwide, Black and Latino Americans have substantially higher pedestrian fatality rates at night (GHSA Pedestrian Traffic Fatalities by State), therefore pedestrian lighting should be prioritized equitably so neighborhoods that have not included pedestrian lighting in the past can be made safer.

Systemic Safety Potential

Potential for systemic safety application at all controlled and uncontrolled crossings.

Additional Information

- FHWA Lighting Handbook
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- ANSI/IES RP-8 Standard Practice for Roadway Lighting
- International DarkSky Association Outdoor Lighting Guidelines

LEADING PEDESTRIAN INTERVALS

Purpose:

Extends crossing time for pedestrians at signalized intersections. Also allows people walking to enter an intersection first to establish presence before turning drivers begin moving.

Description:

Leading pedestrian intervals (LPIs) are adjustments to traffic signals to give pedestrians a three to seven second head start before motorists enter the intersection.

Estimated Cost:

$

Applicable Locations

- Signalized intersections.
- Intersections with a significant number of turning vehicles and pedestrian volumes.
- At locations with protected bicycle lanes where people bicycling cross on the "Walk" signals.
- Locations with seniors or school children who tend to walk slower.

Applicable Street Types

- All signalized intersections with pedestrian movements allowed.

Safety Benefits

- Increase visibility of pedestrians and bicyclists.
- Increase motorist yielding when turning across a parallel pedestrian or bicycle crossing.
- Exclusive crossing time provided for pedestrians and bicyclists.
- Prioritize pedestrian safety and convenience at intersections.
- Reduce conflicts between pedestrians and motorists.
- Can further enhance safety for pedestrians who need more time to cross the intersection by adding more time to the WALK phase.

Expected Crash Reduction

- 13% for pedestrian involved crashes (Goughnour, E., D. Carter, C. Lyon, B. Persaud, B. Lan, P. Chun, I. Hamilton, and K. Signor 2018),

Design Guidance

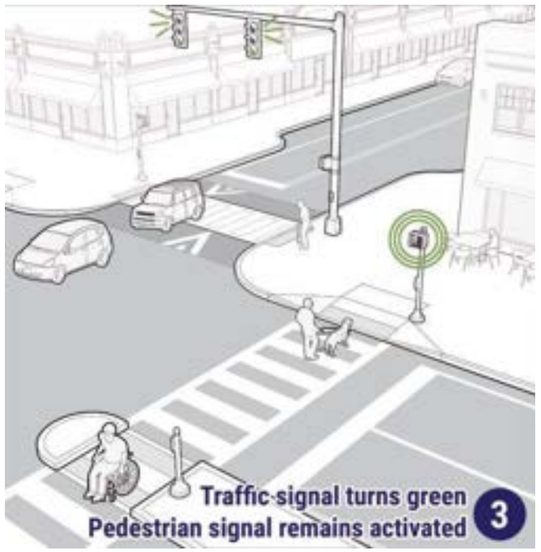
- LPIs should be installed with high-visibility crosswalk markings, curb ramps, accessible pedestrian signals, and "No Turn on Red" "(NOTR)" sign (MUTCD R10-11). NTOR should be considered, not required, unless the LPI is pedestrian actuated. Can include blankout signs that operate only during the LPIs.

Considerations

- LPIs can be provided actively or provided only when actuated. Active detection requires an accessible pushbutton.
- The length of LPIs can be increased where pedestrian or bicyclist volumes are high or pedestrian only phasing should be used to eliminate conflicts.
- LPI may be accompanied with an audible noise for visually-impaired pedestrians.
- NO TURN ON RED signs should be considered with LPIs.
- Concurrent pedestrian phasing should appropriately match the motorist signal phasing.

Systemic Safety Potential

LPIs are suited for systemic use in areas with existing or planned pedestrian signals and high pedestrian and turning volumes.



Additional Information

- Pedestrian and Bicycle Information Center – Signals and Signs
- PEDSAFE: Pedestrian Safety Guide and Countermeasure Selection System

PEDESTRIAN RUFUGE ISLAND

Purpose:

Protect pedestrians and bicyclists crossing by slowing motor vehicle speeds, increasing motor vehicle yielding, increasing pedestrian visibility, providing a pedestrian waiting area, and allowing two-stage crossings for slower pedestrians.

Description:

Pedestrian islands are raised medians placed in the middle of a street that provide a protected space for people trying to walk across the street. Median crossing islands have a cut-out area for pedestrian and bicyclist refuge and are used as a supplement to a crosswalk.

Estimated Cost:

$$ to $$$$ per mile (depending on design)

Applicable Locations

- Crossings at the midblock or at intersections.
- Most beneficial at uncontrolled crossings, multilane roads, wide signalized crossings, or complex intersections.
- On roads with two or more lanes of through traffic.
- Roads with insufficient gaps in traffic.
- Roads with high pedestrian crossing volumes.

Applicable Street Types

- All street types

Safety Benefits

- Reduces maximum distance and time pedestrians exposed to crash risk.
- Allow pedestrians to cross the street one direction of travel or fewer lanes at a time.
- Ease crossing for slower pedestrians (e.g. youth, elderly, and disabled).
- Provide space for additional lighting at the crossing.
- May slow motorist through speed.
- May slow motorists turning left.

Expected Crash Reduction

- 32 for vehicle-pedestrian crashes[1]

1 Zegeer, C., C. Lyon, R. Srinivasan, B. Persaud, B. Lan, and S. Smith. 2017. "Development of Crash Modification Factors for Uncontrolled Pedestrian Crossing Treatments." Transportation Research Record: Journal of the Transportation Research Board 2636. Transportation Research Board of the National Academies. Washington, D.C.

Design Guidance

- Median crossing islands should be a minimum of 6 feet wide. To provide bicyclist refuge or for high pedestrian volumes, crossing islands should be a minimum of 8 feet wide. The refuge is ideally 40 feet long.
- Ramps or island cut-throughs are required to meet ADA requirements. They should be the full width of the crosswalk, 6 feet minimum.
- All medians at intersections should have a "nose" which extends past the crosswalk. The nose protects people waiting on the median and slows turning drivers.
- Mark with a high-visibility crosswalk.

Considerations

- Pedestrians may get caught on the crossing island if motorists do not yield or signal timing is too short.
- Crossing islands at intersections may restrict vehicles turning left without restricting pedestrian or bicycle crossings.
- Curb extensions can be built along with crossing islands to restrict on-street parking and reduce crossing distance.
- Temporary crossing islands can be constructed with temporary curbing or flex posts.
- Pedestrian islands should be considered at locations on busy 2-lane streets and on any street with more than two lanes.
- Where possible, stormwater management techniques should be utilized on pedestrian islands with adequate space, as long as a clear path for pedestrians is maintained.

Systemic Safety Potential

Potential for systemic safety application at mid-block crossings and at intersections along corridors with poor motor vehicle yielding, operating speeds over 30 mph, or motor vehicle volumes above 9,000 vehicles per day.

Additional Information

- Chapter 8 of Designing Sidewalks and Trails for Access: Part II of II: Best Practices Design Guide
- Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

RAISED CROSSWALK

Purpose:

Reduce drivers' speeds, increase driver yielding, and improve crossing safety for people walking or bicycling.

Description:

Raised crosswalks or raised intersections are ramped speed tables spanning the entire width of the roadway or intersection usually at minor locations. Crossings are elevated at least three inches above the roadway, and up to the sidewalk level.

Estimated Cost:

$$ to $$$$ (depending on design)

Applicable Locations

- Raised crossings are a treatment option often used at the midblock. However, intersections can also have raised crosswalks or the entire intersection can be raised.
- Roadways with a posted speed of 30 mph or lower.
- Common on school campuses, at shopping centers, and in pick up/drop off zones.

Applicable Street Types

- Local Street
- Collector Street
- Minor Arterial Street

Safety Benefits

- Reduce motor vehicle speeds.
- May reduce the frequency and severity of crashes for all road users.

Expected Crash Reduction

- 45% for pedestrian crashes. (Elvik, R. and Vaa, T., 2004).
- 36% for all vehicle crash types. (Elvik, R. and Vaa, T., 2004).

Design Guidance

- Place ramps on each vehicle approaching.
- Raised crossings are often demarcated with different paving materials and additional paint markings. See MUTCD sections 3B.29 and 3B.30 for details.
- Mark the crossing with high-visibility crosswalk markings.
- Install with applicable warning sign (MUTCD W11-1, W11-2, W11-15, or S1-1). Consider advance warning signs such as SPEED TABLE or RAISED CROSSWALK (modified W17-1) and advisory speed plaques if applicable or on higher volume roadways.
- Raised crossings do not require curb ramps, though truncated domes should be included at each crossing entrance.

Considerations

- Raised crossings at sidewalk level are preferred for pedestrian accessibility and comfort, and safety.
- Raised crossings should not be used on steep curves or roadways with steep grades.
- May be used for bicyclists along crossings for shared use paths and sidepaths included protected bicycle lanes.
- Consider drainage needs.
- Further consideration is needed for roadways heavily used by trucks, buses, and emergency vehicles.

Systemic Safety Potential

Best suited as a spot treatment. Will MnDOT State Aid variance on State Aid streets.

Additional Information

- Field Guide for Selecting Countermeasures at Uncontrolled Pedestrian Crossing Locations
- FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations
- A Guide to Vertical Deflection Speed Reduction Techniques: Planning and Design of Speed Humps, Speed Tables and Other Related Measures from ITE.

RAISED INTERSECTION/ SPEED TABLE

Purpose:

Raised intersections create a safe, slow-speed crossing and public space at minor intersections. These treatments provide many benefits, especially for people with mobility impairments, because there are no vertical transitions to navigate.

Description:

Raised intersections are created by raising the street to the same level as the sidewalk.

Estimated Cost:

$$$$

Applicable Locations

- Raised crosswalks and intersections are appropriate in areas with high pedestrian activity. They should also be considered at locations where poor pedestrian visibility and low motorist yielding have been identified.
- High-visibility or textured paving materials can be used to enhance the contrast between the raised intersection and the surrounding street.
- Raised intersections require detectable warnings at the curb line for people who are blind or have low vision. Directional curb ramps are preferred, as shown in the figure to the right.
- Raised intersections can be useful in placemaking where slow traffic speeds and decorative treatments are desirable and in conjunction with curb extensions and are generally best used on narrower, two-lane roadways.

Applicable Street Types

- Local Street
- Collector Street
- Minor Arterial Street

Safety Benefits

- Improve motorists' awareness by prioritizing pedestrian crossings and helping define locations where pedestrians are expected.
- Reduce turning speeds of motorists at intersections and driveways.
- Increase visibility between drivers and pedestrians by raising pedestrians in the motorists' field of view and giving pedestrians an elevated vantage point from which to look for oncoming traffic.
- Create pedestrian crossings which are more comfortable, convenient, and accessible since transitioning between the sidewalk and roadway does not require negotiating a curb ramp.

Design Guidance

- Raised intersections and crosswalks can be used as gateway treatments to signal to drivers when there are transitions to a slower speed, pedestrian-oriented environment.
- Designs should ensure proper drainage.
- Raised intersections are flush with the sidewalk and ensure that drivers traverse the crossing slowly. Crosswalks do not need to be marked unless they are not at grade with the sidewalk. ADA-compliant ramps and detector strips are always required.
- Bollards along corners keep motorists from crossing into the pedestrian space. Bollards protect pedestrians from errant vehicles. Bollard placement and dissimilar pavement materials create space for occasional large vehicles similar to an apron.

Considerations

- Design speeds and emergency vehicle routes must be considered when designing raised crosswalks and intersections; these treatments may not be appropriate for high-speed streets without appropriate advanced markings and signing or other design changes.
- Installation of raised crosswalks and intersections may affect snow removal operations. Snow plow operators should be adequately warned and trained.

Systemic Safety Potential

Best suited as a spot treatment. Will MnDOT State Aid variance on State Aid streets.

Additional Information

- A Guide to Vertical Deflection Speed Reduction Techniques: Planning and Design of Speed Humps, Speed Tables and Other Related Measures
- PEDSAFE Countermeasures Guide
- Manual on Uniform Traffic Control Devices
- NACTO Urban Street Design Guide

TURN ON RED RESTRICTION

Purpose:

Turn on red restrictions prevent motorists from turning right (or left on intersecting one-way streets) while the traffic signal is red. Restricting this movement eliminates conflicts with pedestrians crossing in front of turning motorists.

Description:

Signs or dynamic electronic signs that prohibit motorists from making a right turn on a red signal.

Estimated Cost:

$ (for static signs)

Applicable Locations

Turn on red restrictions should be considered when one or more of the following conditions apply:

- An exclusive pedestrian phase.
- An LPI.
- High volumes of pedestrians.
- Where bicycle two-stage turn queue boxes are installed; bicycle boxes after two-stage turn queue boxes.
- Poor sight distances and visibility.
- Locations where poor intersection geometry causes unexpected conflicts; or specific cases located from intersections with 5 or more legs.
- Locations with a reported crash history.

Applicable Street Types

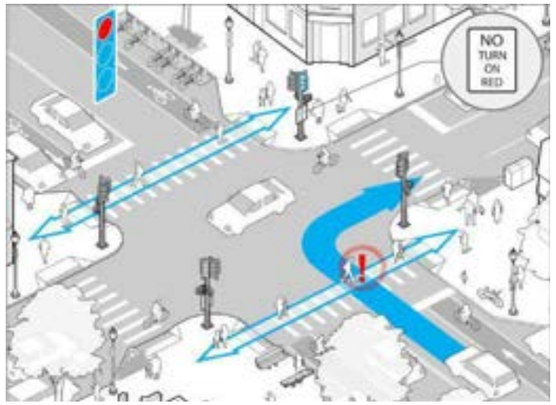
- All street types.

Safety Benefits

- Reduce conflicts between motorists and pedestrians.
- Prioritize pedestrian safety and convenience at intersections.
- Turn on red restrictions can significantly increase the portion of motorists who stop at marked stop lines and decrease the number of motorists who turn right on red without stopping.

Design Guidance

- Consider dynamic electronic signs to restrict right turns only during certain times of day or during certain signal phases.
- Consider impacts to bus operations at near-side stops change to far-side if needed.
- Intersection impacts to vehicle operations should be studied.
- When used along a corridor or area of traffic signals, vehicle intrusions into pedestrian crosswalks and aggressive driving will be reduced.



Considerations

- Should be implemented all hours of the day, but can be considered by time of day in some circumstances.
- Can be used in conjunction with LPIs or bicycle signals that allow through movements when turning vehicular traffic is stopped.

Additional Information

- Manual on Uniform Traffic Control Devices (MUTCD)

ROUNDABOUT

Purpose:

All approaches must yield to traffic already within the roundabout. After yielding, drivers are able to circulate the center island before exiting to turn or continue straight Eliminates left turning movements and intersection collisions by requiring all traffic to exit to the right of the circle.

Description:

Signs Built with a raised circular island, roundabouts take the place of a traditional intersection. Roundabouts allow for traffic to flow and merge through the roundabout without stopping, reducing conflicts and facilitating increased motor vehicle yielding to pedestrian and bicyclists.

Estimated Cost:

$$$ to $$$$ (depending on design)

Applicable Locations

- Signalized intersections
- Unsignalized intersections
- Intersections with protected bicycle lanes

Applicable Street Types

- Local Street
- Collector Street
- Minor Arterial Street

Safety Benefits

- Reduces vehicular speeds.
- Facilitates motor vehicle yielding to pedestrians and bicyclists.
- Eliminates angle collisions.

Expected Crash Reduction

- 78-82% reduction in fatal and injury crashes (AASHTO HSM, 2010)

Design Guidance

- Roundabouts should be designed for an entry speed of 15-18 mph on each leg.
- On a low speed and volume street, such as a local neighborhood street, consider installing mini- roundabouts, or neighborhood traffic circles.
- Accessible pedestrian signals are required in accordance with the Public Right-of-Way Accessibility Guidelines (PROWAG), particularly at roundabouts with more than one lane.
- Use yield rather than stop controls.
- Install signs to instruct vehicles to proceed to the right of the central shield per MUTCD Figures 2B-21 through 2B-24.
- May be used with shared lane markings, (sharrows) to indicate bicyclist usage.
- May be landscaped with low shrubs or vegetation that does not impede visibility.

Considerations

- General considerations include pedestrian and bicycle volumes, number of travel lanes, impacts on pedestrian routes, and available right-of-way.
- Where there are higher pedestrian volumes, it may be beneficial to install signal controls and wider crosswalks.
- Increasing turn radii or adding high speed slip lanes for motor vehicles can compromise pedestrian and bicyclist safety.
- Chicanes or other traffic-calming treatments can be installed on adjacent roadways.
- Consider restricting large vehicles from mini-roundabouts.
- Large vehicles, such as emergency response vehicles or school buses, may need to make left turns at intersections preceding the mini-roundabout.
- Implement parking restrictions on the approach to the traffic circle or create mountable curbs on the outside of the mini-roundabout to allow for emergency-response vehicle access.
- Modern roundabouts need to consider the needs of oversize and overweight (OSOW) vehicles. Consult the statewide OSOW routing as well as local businesses to determine appropriateness of installation.

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

Additional Information

- Manual on Uniform Traffic Control Devices
- BIKESAFE Bicycle Safety Guide and Countermeasure Selection System
- PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System
- NACTO Urban Street Design Guide
- FHWA Proven Safety Countermeasures

RECTANGULAR RAPID FLASHING BEACON (RRFB)

Purpose:

Used in combination with warning signage, Rectangular Rapid Flashing Beacons (RRFBs) provide a high-visibility warning to drivers when pedestrians are using a marked crosswalk.

Description:

Bright, irregularly flashing LEDs, mounted with pedestrian crossing signs, which increase pedestrian visibility to drivers at uncontrolled marked crossings. RRFBs consists of two rectangular-shaped yellow indicators with an LED light source that flashes with high frequency when activated, typically by pedestrian pushbuttons. RRFBs are often placed at locations with significant pedestrian safety issues but may also be located at a school or trail crossing.

Estimated Cost:

$$

Applicable Locations

- RRFBs are a treatment option at many types of unsignalized pedestrian crossings, including at standard pedestrian, school, or trail crossings.

Applicable Street Types

- All streets with pedestrian crossings provided or history of pedestrians crossing midblock without crossing provided.

Safety Benefits

- Increases driver yielding.
- May increase effectiveness of other safety treatments, such as advance yield markings with YIELD HERE FOR PEDESTRIAN (R1-5) signs.
- More effective than traditional overhead or post-mounted circular beacons.

Expected Crash Reduction

- 47% reduction for all pedestrian-motor vehicle crashes. (NCHRP Report 841, 2017).

Design Guidance

- Place on both sides of an uncontrolled crosswalk.
- If pole-mounted, place below a pedestrian, school, or trail crossing warning sign and above a diagonal downward arrow plaque.
- May also be used with an overhead-mounted crossing warning sign, located at or immediately adjacent to an uncontrolled marked crosswalk.
- If sight distance approaching the crosswalk is limited, an additional RRFB may be installed on the approach with a post-mounted W11-2, S1-1, or W11-15 sign wit an AHEAD or distance plaque. Consider other treatments in these locations.
- Pedestrian detection, typically pushbuttons, must meet the requirements for PROWAG. Flashing time should confirm to MUTCD, part 4L.

Considerations

- RRFBs should not be used in conjunction with "Yield," "Stop," or traffic signal control (except at roundabouts).
- An RRFB should not be used without a pedestrian crossing sign.
- RRFBs should only be used at locations with significant pedestrian safety issues. The overuse of RRFBs can diminish their effectiveness.
- Other treatments may be more appropriate in locations with sight distance constraints.
- Solar-power panels may eliminate the need for a power source.
- On high speed or multi-lane roadways, a Pedestrian Hybrid Beacon may be more appropriate (see Section 4U of the MUTCD).

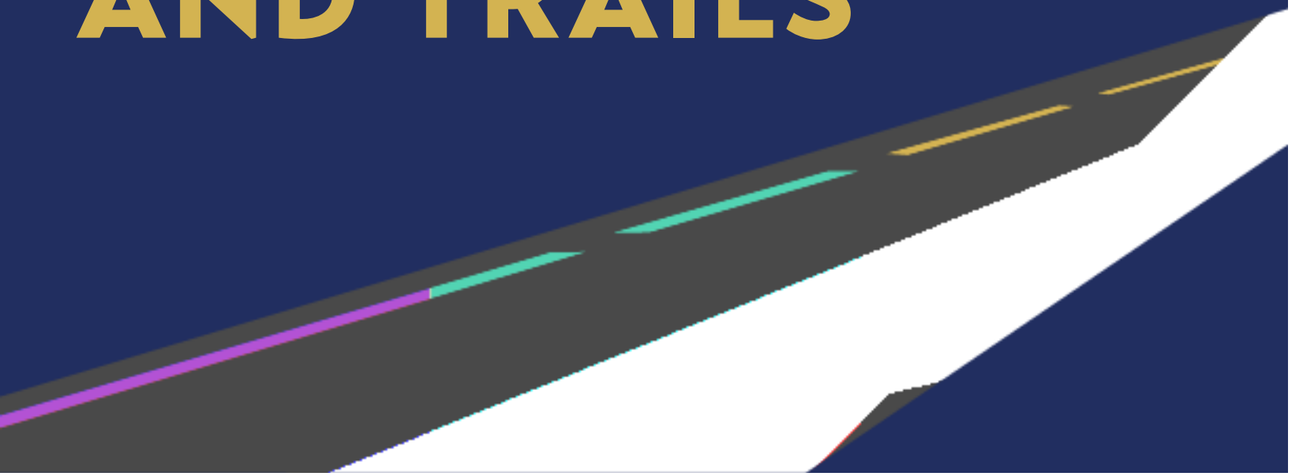
Systemic Safety Potential

Spot treatment or targeted systemic locations, such as trail or school crossings are appropriate. Broad application suggests other treatments such as speed reduction or roadway redesign may be necessary.

Additional Information

- Manual on Uniform Traffic Control Devices
- FHWA Proven Safety Countermeasures
- PEDSAFE Pedestrian Safety Guide and Countermeasure Selection System

MULTIUSE PATHS AND TRAILS



Purpose:

Separates bicycle and pedestrian traffic from motor vehicles in a dedicated space outside the curb of the street.

Description:

Paths that accommodate two-way traffic for bicyclists and pedestrians. While separated from traffic, sidepaths are located inside and parallel to the road right-of-way. Trails can be located along railway or utility corridors, land dedicated for planned but unbuilt streets, and through public land.

Estimated Cost:

$$$$

Applicable Locations

- Sidepaths may be preferable to separated bike lanes if low pedestrian volumes are anticipated in order to minimize right-of-way impacts.
- Most useful on wide, multi-lane streets with speeds above 30 mph, or significant motor vehicle volume.
- Applicable on streets with three or more lanes, speeds of 30 mph or greater, or 6,000 vehicles or more.
- Suited for truck or bus routes, or streets where on street bike lane obstruction is likely to be frequent.
- Locations with limited right-of-way where combining walking and bicycling facilities to save space may be the only feasible option.

Applicable Street Types

- All street types.

Safety Benefits

- Fewer conflicts with motor vehicles than on-road bike lanes.
- Accommodates two-way pedestrian and bicyclist flow.

Expected Crash Reduction

- 25% reduction for all bicyclist-motor vehicle crashes. (Alluri et al, 2017)

Design Guidance

- Minimum 2-foot graded area with clearance from lateral obstructions, such as bushes, large rocks, bridge piers, abutments, and poles.
- A minimum 1-foot clearance from “smooth” features, such as bicycle railings or fences with appropriate flaring and treatments.
- Ideally, a graded shoulder area of 3 to 5 feet, with a 5-foot minimum buffer from traffic for user comfort and snow storage.
- Separation of modes in areas with existing or anticipated higher levels of activity, including a 10-foot (minimum width) bikeway and a 5-foot (minimum width) walkway.
- Adequate widths to enable side-by-side travel and passing and occasional maintenance vehicles typically at least 11 feet wide.
- Wider sidepaths may be needed when adjacent to retail or commercial development to accommodate street furniture, swinging doors, etc, on steep up grade segments, or tight corners.
- PROWAG requirements for slopes must be followed.
- Lighting should be provided at path/roadway intersections at a minimum and at other locations where personal security may be an issue or where nighttime use is likely to be high.

Considerations

- To maintain year-round use, sidepaths should be swept and plowed of snow, which may require additional maintenance equipment.
- High-quality construction and maintenance that avoids pavement cracking and buckling.
- Asphalt preferably as the surface material. If concrete is used, use longer sections with small joints for a smoother riding experience.
- Intuitive and safe intersection crossings.
- Straight alignments to allow direct and higher speed travel.
- Removal or relocation of poles, traffic signs, trees, or other obstructions that are present in many existing sidepath locations.
- Adequate lighting for nighttime use.

Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

Additional Information

- ODOT Multimodal Design Guide
- FHWA Bikeway Selection Guide
- BIKESAFE Bicycle Safety Guide and Countermeasure Selection System
- FHWA Shared Use Path Level of Service Calculator

SIDEWALKS

Purpose:

Sidewalks provide space along a street for pedestrian travel.

Description:

For sidewalks to function, they must be kept clear of any obstacles and be wide enough to comfortably accommodate expected pedestrian volumes (as anticipated by density and adjacent land use), and different types of pedestrians, including those using mobility assistance devices, pushing strollers, or pulling carts.

Estimated Cost:

$$ to $$$$ (depending on design and length)

Applicable Locations

- Sidewalks should be installed on both sides of the street unless otherwise inconsistent with the City's Transportation Plan.

Applicable Street Types

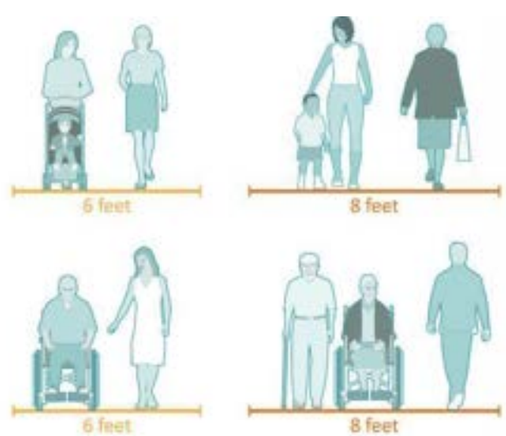
- All street types

Benefits

- Sidewalks make walking an easy choice between destinations since they create a network for pedestrian travel throughout the city.
- Sidewalks and their buffers provide space for utilities, signs, and amenities such as bus shelters or waiting areas, bicycle parking, public seating, public art, newspaper stands, trash and recycling receptacles, and greenscape elements.
- Sidewalks are not only used for transportation, but for social walking, exercise, lingering, commerce, recreation, and as public social space–all activities that contribute to a vibrant and lively street.
- Sidewalks make access to transit possible since the majority of transit users walk between their destination and transit stops.

Expected Crash Reduction

- 65-89% reduction for pedestrian-motor vehicle crashes (Gan et al, 2005).



Design Guidance

- The widths of sidewalks will vary based on context and expected pedestrian volumes. Widths may range from 5 feet along residential and industrial streets to 12 feet or wider downtown and in areas of high use. Width can be lost due to grass on both sides and occasional large trees of up to 1 foot.
- Sidewalks must include an accessible pathway that is free of obstructions, such as light poles, traffic signals, trees, utilities, and furniture. ADA guidelines allow a minimum accessible pathway of 4 feet where there are major constraints. Bloomington uses a minimum width of 5 feet for the accessible pathway.

Considerations

- Sidewalks that are replaced for maintenance reasons should not be narrower than the sidewalk being replaced (e.g. a 6-foot wide sidewalk should not be replaced with a 5-foot wide sidewalk).
- All new sidewalks and curb ramps shall comply with ADA regulations, including running slope and cross slope.
- Sidewalks should be clear of any obstructions including utilities, traffic control devices, trees, and furniture and large surface defects or heaved sections.
- The width and design of sidewalks will vary depending on street type, demand, and available right-of-way.
- Sidewalks should, as much as possible, follow the natural path of pedestrian travel parallel to the street. Crosswalks should be aligned with sidewalks to maintain the most direct path of travel.

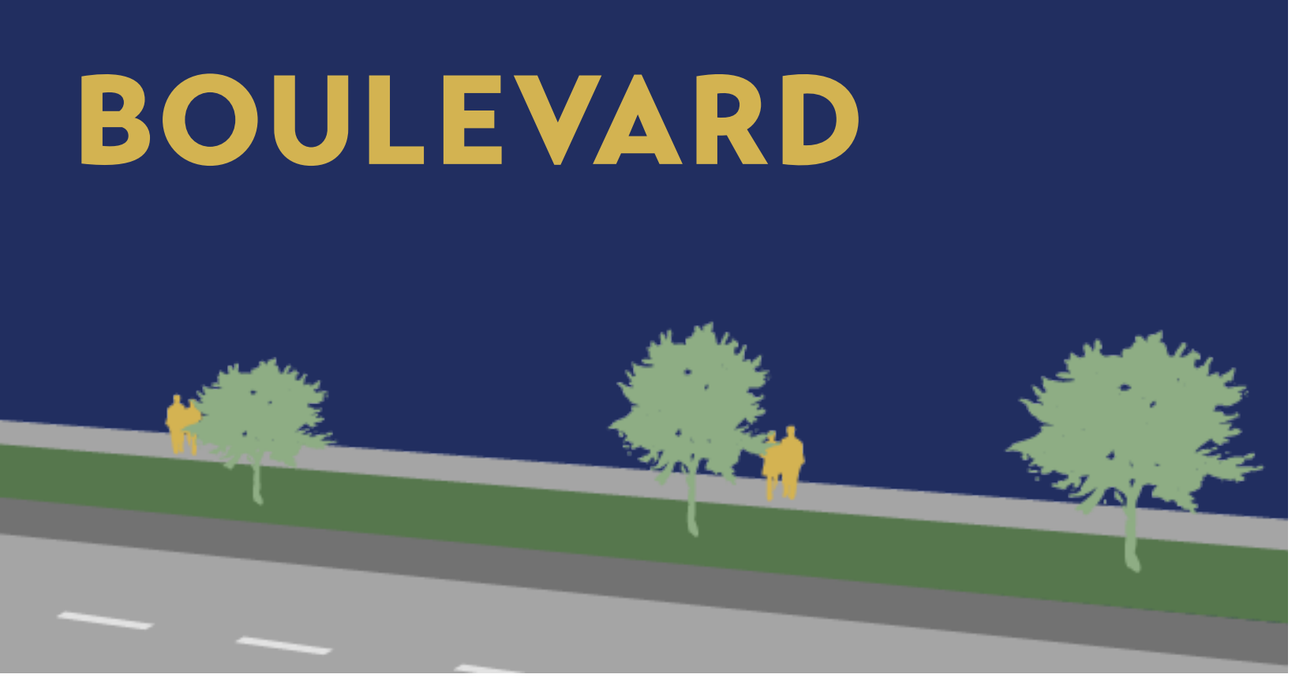
Systemic Safety Potential

This is a systemic corridor recommendation that improves road conditions for all roadway users.

Additional Information

- NACTO Urban Street Design Guide
- PROWAG
- FHWA Guide for Maintaining Pedestrain Facilities for Enhanced Safety

BOULEVARD



Purpose:

Separate sidewalk from the roadway, narrow motorists' field of vision. Add shade, comfort, and beauty to the street.

Description:

Trees or other appropriate plantings in raised medians or on the edge of streets.

Estimated Cost:

$$ to $$$$ (depending on design and length)

Applicable Locations

- Residential neighborhoods.
- Downtown commercial areas.
- Rural roads.
- Areas near schools.

Applicable Street Types

- All street types

Safety Benefits

- Large, mature trees can provide a physical barrier between the road and pedestrian pathways.
- May reduce vehicle speeds due to increased perceived friction and sense of enclosure.
- Lower vehicle speeds can result in improved safety outcomes for all road users.

Design Guidance

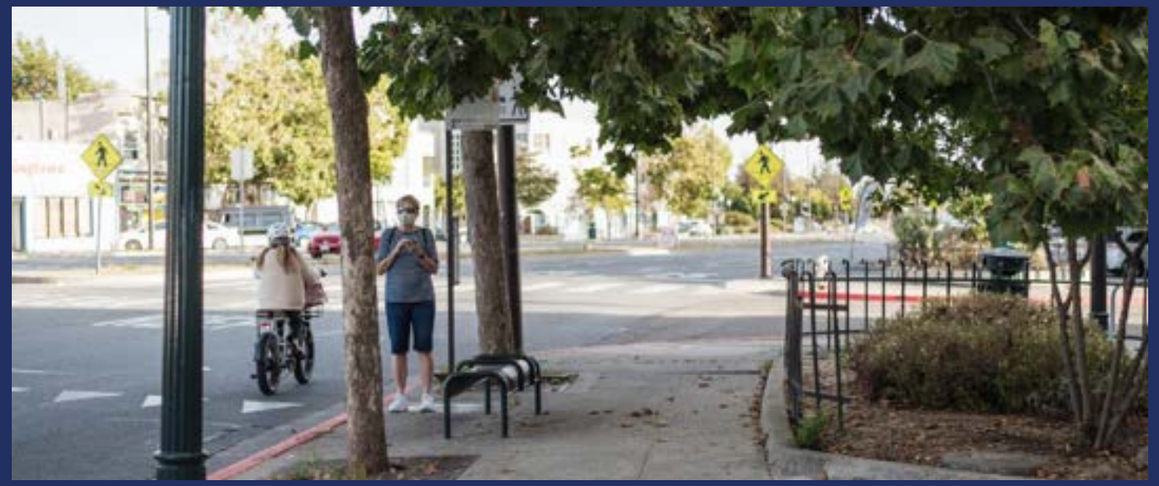
- Select the right tree species for a space to provide canopy and minimize maintenance costs. Avoid tree species with shallow root systems that may heave sidewalks and pathways.
- Provide access to 800 cubic feet or more of unrestricted and unshared soil space.
- Provide soil depth of 36 inches or more.
- Street trees are healthier in areas with greater permeable surface access.
- Provide minimum 5-foot-wide tree pit or raised planter area in urban contexts, and continuous vegetation in the planting strip in non-urban contexts where possible.
- Coordinate placement of street trees with streetlights, overhead utilities, street furniture, traffic signals and signs (especially stop signs).
- Tree pits or raised planter areas may accommodate trees when additional sidewalk is needed to accommodate pedestrian volumes.
- Make sure to minimize construction impacts including trenching and soil compaction in root areas.

Considerations

- Width of planting zone should be considered so trees do not damage the sidewalk as they grow.
- Street trees can improve vibrancy of the street scape.
- Street trees help to create a sense of enclosure.
- Consider allocation of space to optimize tree health and maintenance.
- Sight distance (and the maintenance needed to maintain a safe sight distance) must be considered for street trees near intersections or on roadway curves.
- Mature trees and other plantings by the City require ongoing maintenance, including regular trimming, pruning, and street sweeping.

Systemic Safety Potential

Street trees can be included for traffic calming on all street types. Sight lines should be maintained on all street types and clear zones as applicable.



Additional Information

- Bloomington Urban Forestry Plan
- Bloomington Tree Care Manual