# AGENDA

## MARQUETTE CITY PLANNING COMMISSION
## Tuesday, January 06, 2026, at 6:00 p.m.
## Commission Chambers at City Hall – 300 W. Baraga Ave.

### MEETING CALLED TO ORDER

1) ROLL CALL
2) APPROVE AGENDA
3) APPROVE MINUTES: **Minutes of 12-02-25**
4) CONFLICT of INTEREST

1. PUBLIC HEARINGS
2. CITIZENS WISHING TO ADDRESS THE COMMISSION ON AGENDA ITEMS
3. OLD BUSINESS
4. NEW BUSINESS
5. CITIZENS WISHING TO ADDRESS THE COMMISSION ON NON-AGENDA ITEMS
6. CORRESPONDENCE, REPORTS, MINUTES OF OTHER BOARDS/COMMITTEES
7. TRAINING
   - **A. Article:** ***The Future is Electric and Youth Focused*****,** ***Planning*** **magazine, Spring, 2025.**
8. WORK SESSION ON REPORTS/PLANS/ORDINANCES
   - **A.** ***Active Transportation Plan*** **by Toole Design**
   - **B. Land Development Code Amendments**
9. COMMISSION AND STAFF COMMENTS
10. ADJOURNMENT

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### PUBLIC COMMENT

A member of the audience speaking during the public comment portion of the agenda shall limit his/her remarks to 3 minutes. Time does not need to be reserved for an item of business listed on the agenda, or otherwise addressed under Item #2, as time is provided for public comment for each item of business.

### PUBLIC HEARINGS

The order of presentation for a public hearing shall be as follows:

a. City Staff/Consultants
b. Applicant
c. Correspondence
d. Public Testimony
e. Commission Discussion (Commissioners must state any Ex-Parte contact or Conflicts of Interest prior to engaging in any discussions), if it occurred, prior to entering into discussion or voting on a case).

**OFFICIAL PROCEEDINGS**
**MARQUETTE CITY PLANNING COMMISSION**
**December 02, 2025**

A regular meeting of the Marquette City Planning Commission was duly called and held at 6:00p.m. on Tuesday, September 16, 2025, in the Commission Chambers at City Hall. This meeting is also available to view on video online at the City's website.

**ROLL CALL**

Planning Commission (PC) members present (8): M. Rayner, J. Guter, N. Vermaat, J. Fitkin, Chair Kevin Clegg, vice-Chair A. Wilkinson, D. Fetter, S. Lawry
PC Members absent: K. Hunter
Staff present: City Planner and Zoning Administrator D. Stensaas.

**AGENDA**

*It was moved by J. Guter, seconded by J. Fitkin, and carried 8-0 to approve the agenda as presented.*

**MINUTES**

*It was moved by N. Vermaat, seconded by M. Rayner, and carried 8-0 to approve the minutes of the November 18, 2025, meeting with a change to the date in the header*

**CITIZENS WISHING TO ADDRESS THE COMMISSION ON AGENDA ITEMS**

Nobody wished to comment.

**CITIZENS WISHING TO ADDRESS THE COMMISSION ON NON-AGENDA ITEMS**

Nobody wished to comment.

**CORRESPONDENCE, REPORTS, MINUTES OF OTHER BOARDS/COMMITTEES**
**A. Marquette County *Intent to Plan* notification**

D. Stensaas said that he didn't have any details on what this project is about, but that maybe Commissioner Vermaat does, as he works for the County's planning department.

N. Vermaat said that there is an update to the County's Master Plan getting underway.

**TRAINING**
**A. Article: *Traffic Engineers and Planners Need to Do Better* article, Michigan Planner magazine (Michigan Chapter, American Planning Assoc.), July/August 2025**

The Planning Commission and staff briefly discussed the article.

S. Lawry said that the article is true to his experience, in that he was trained as a traffic engineer in college and for many years the goal of that branch of civil engineering was to move traffic as quickly as possible, and that only in about the mid-1990s did the focus start to change a bit with the introduction of the "complete streets" concepts.

D. Stensaas said that the City adopted it's Complete Streets Policy in 2011 and it was one of the first projects that he worked on for the Planning Commission approval, and then City Commission approval.

**OFFICIAL PROCEEDINGS**
**MARQUETTE CITY PLANNING COMMISSION**
**December 02, 2025**

## WORK SESSION ON REPORTS/PLANS/ORDINANCES

### A. Preparation for 12/08 City Commission-Planning Commission joint work session

The Planning Commission and Staff discussed a range of issues they wanted to present to the City Commission at the December 8th joint work session, and decided on a list of specific items to address.

### B. Land Development Code amendments

D. Stensaas handed out a one-sheet, two-sided draft of amendments he had prepared for recommended updates to the definitions article and for some other portions of the Land Development Code (LDC). The Planning Commission discussed these and found each item acceptable. All draft items will be provided to the Planning Commission again when the commission reviews the final compilation of the draft LDC amendments.

## COMMISSION and STAFF COMMENTS

The Planning Commissioners each provided a brief synopsis of their work backgrounds and interests to get to know each other better.

## ADJOURNMENT

Chair K. Clegg adjourned the meeting at 7:30 pm

_____

Prepared by D. Stensaas, City Planner and Zoning Administrator, Planning Commission Staff Liaison

CITY OF MARQUETTE
**PLANNING AND ZONING**
1100 Wright Street
MARQUETTE, MI 49855
(906) 228-0425
www.marquettemi.gov

# MEMORANDUM

**TO:** Planning Commission
**FROM:** Dave Stensaas, City Planner and Zoning Administrator
**DATE:** December 23, 2025
**SUBJECT:** **Article:** ***The Future is Electric and Youth Focused*, *Planning* magazine, Spring, 2025.**

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The brief article provides insights from a young planning professional about the future of transportation, and although it isn't a groundbreaking insight, it points out that we tend to forget that the facilities we are planning now may be used for generations by young people.

MOBILITY

# THE FUTURE IS ELECTRIC AND YOUTH FOCUSED

## Sustainable transportation solutions for users of all ages.

By JOSEPH DEANGELIS, AICP

BENEETTA MARY JOSE ISN'T afraid to think big. The transportation planner at Fehr & Peers, who also serves on APA's Student Representatives Executive Council and is the liaison to the AICP Commission, is passionate about youth in planning. As part of the *Trend Talks* series, Jose describes building sustainable systems for all ages, the benefits and challenges of micromobility, and more.

She spoke on an APA Podcast episode with Joseph DeAngelis, AICP, research manager at APA. Their conversation was included in the *2025 Trend Report for Planners*, released in January. The interview has been edited for length and clarity.

**JOSEPH DEANGELIS: What do you see as major emerging trends in transportation?**

**BENEETA MARY JOSE:** One of the most exciting trends right now is micromobility. E-scooters, bike sharing, cargo bikes—you name it, they are making waves, especially in urban areas. Cities are putting real effort into integrating these options into traditional transit networks, making it easier to switch from a train or a bus to a bike or scooter to get that first mile to last mile connectivity. It's a major step toward flexible, user-centered transportation that's efficient and sustainable.

Listen to the conversation with Beneetta Mary Jose, who was named Student Planner of the Year by APA Florida in 2023, at planning.org/podcast or by scanning the QR code below.

But there's a flip side to it, as well. The reality is, without safe and accessible infrastructure, these options are inequitable. Rising traffic deaths and a lack of protective infrastructure highlight how essential it is for planners to focus on designing safer streets and bridging that gap between underserved populations and infrastructure.

Another fascinating thing is electrification. Electric vehicles are taking center stage across all modes of transportation, from cars to buses to delivery trucks, and even planes. We're seeing policies shift to accommodate the infrastructure change and a potential rethinking of gas taxation as mileage taxation.

I believe this movement is bigger than just transportation. It's about public health, clean air, and creating cities where people can thrive. These trends reflect a future where transportation is not just about moving people—it's about fostering community, equity, and resilience in every journey we take.

**DEANGELIS: From your perspective, what are emerging transportation planners' interests and priorities?**

**JOSE:** As young professionals, we're focused on creating cities that are connected and accessible for everyone. For us, transportation is not just about getting from point A to point B—it's about building the communities and creating systems that serve people better and more equitably, with the smallest footprints on our planet.

What excites me most is how collaborative and innovative this field is right now. Young planners have a real commitment to listen, engage, and make things happen in partnership with the communities we serve. We are not afraid to think big and make bold decisions. Even if we get pushback about certain proposals or improvements, we're not afraid to take on that challenge. There's a lot of work ahead, but we can do it.

**DEANGELIS: Today's young people will be living in a future world we're planning for them. How are transportation planners incorporating the viewpoints of children and youth?**

**JOSE:** This is a topic I can talk about for hours and hours and never get bored. Traditionally, planning transportation systems are designed with adults in mind. But, as planners, we recognize the importance of having a safer, more accessible, and more inclusive environment for all age groups, from small kids to working professionals to older adults.

Recently, I held a community meeting where we had different alternatives for a particular road, and then we did public outreach. Kids from 8 to 12 years of age would come in and put so many sticky notes on certain alternatives they preferred. I asked them, "Why do you think this alternative is better than the other one?" And they said, "We need proper bike lanes. We need sidewalks."

Youth today are also very digitally active. Planners are finding ways to integrate tech solutions within transportation, so children have the tools to get from one place to another, and their parents feel safe sending them out alone. Another hot topic right now is reducing vehicle size. We've seen so many cases where drivers are hitting small children because they simply can't see them, and we're starting to see policy changes to address this.

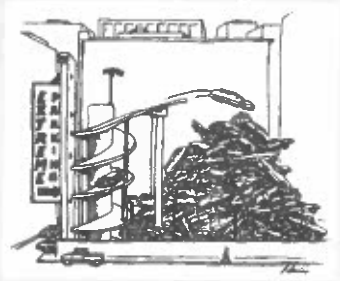
In short, transportation planning today is increasingly incorporating the voices and needs of young people. Planners are recognizing that the systems we build now will shape their futures. By prioritizing safety, accessibility, and inclusion, we are creating a future transportation network that meets the needs of all users.

**DEANGELIS: As an emerging professional, what is your vision for transportation 20 years from now?**

**JOSE:** I see a future transportation system that's much more seamlessly integrated, highly affordable, more sustainable, and highly reliable. I love streets that are taken over by people. Everything is accessible by foot or by biking or other transportation modes. Everything is within 15 minutes of your house. I see that our future is bright, and I'm eager to help shape it.

*Joseph DeAngelis, AICP, is a planner and research manager at APA.*

## FROM THE ARCHIVE: TRANSPORTATION



**JUNE 1997**

### Don't Even Think of Parking Here

"Parking is the unstudied link between transportation and land use," says Donald Shoup, AICP, director of the Institute of Transportation Studies at the University of California, Los Angeles. He calls minimum parking requirements in zoning ordinances "a fertility drug for cars."

**NOVEMBER 1995**

### Gridlock Games? Atlanta Hopes Not

Transportation planning for next summer's games is proving to be a task of Olympic proportions.

**DECEMBER 1981**

### Interstates: Nearing the End of the Road

It is a familiar sight in many American cities. A strip of concrete hangs in mid air or dead ends at an embankment, signifying an uncompleted section of a 42,500-mile interstate highway system.

**FEBRUARY 1940**

### Highways, Transportation, and City Rebuilding

It isn't possible to develop a highway or mass transportation plan and program in any large American city without considering the relationships between the two. In a number of cities, attempts have been made to treat these matters individually or piecemeal, and in practically every case failure has been the result.

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# MEMORANDUM

**TO:** Planning Commission
**FROM:** Dave Stensaas, City Planner and Zoning Administrator
**DATE:** December 23, 2025
**SUBJECT:** **Work Session – Draft *Active Transportation Plan* review**

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Staff and the Planning Commission will discuss the Draft *Active Transportation Plan* that was recently delivered to City Staff by consultants Toole Design, after months of preparation. The Draft *Active Transportation Plan* follows.

# CITY OF MARQUETTE
# ACTIVE TRANSPORTATION PLAN

November 2025 | Draft

# ACKNOWLEDGEMENTS

*City Commission*
Jessica Hanley, Mayor
Paul Schloegel, Mayor ProTem
Sally Davis, Commissioner
Cody Mayer, Commissioner
Jermey Ottaway, Commissioner
Michael Larson, Commissioner
Cary Gottlieb, Commissioner

*City Administration*
Karen Kovacs, City Manager
Sean Hobbins, Deputy City Manager

*City Staff*
Dennis Stachewicz, Community Development Director
David Stensaas, City Planning and Zoning Administrator
Mikael Kilpela, City Engineer
Ryan Grim, Chief of Police
Scott Cambensy, Director of Public Works

*Project Consultants*

TOOLE DESIGN



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

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# EXECUTIVE SUMMARY

[placeholder text for executive summary – to be written after final city review]

# CHAPTER 1: EXISTING CONDITIONS

# BACKGROUND

The City of Marquette is the county seat of Marquette County and the largest city in the Upper Peninsula of Michigan with a population of 21,079.[1] The city has a total land area of 19.45 square miles, of which 8.06 square miles is water. The city is located on the shores of Lake Superior and is one of the snowiest cities in the U.S., with 196.8 inches of average annual snowfall between 1990 and 2020[2]. As a result, the city is a great tourist destination for its winter recreation options (e.g., winter sports, skiing, and snowboarding) and summer recreation options (e.g., hiking, mountain biking, swimming, fishing, kayaking, canoeing, and other water sports). The city has built and continues to expand their extensive network of walking and bicycling paths to support walkability and recreation for residents and tourists throughout the city. Currently, major multi-use paths include the Lakeshore Boulevard Multi-use Pathway traveling north-south, a central north-south multi-use path providing connection from Tourist Park/Kaufman Sports Complex to the Noquemanon Trail Network (NTN) South Trails, and the Iron Ore Heritage Trail, traveling east-west.

## EXISTING WALKING AND BIKING TRENDS

The City of Marquette's size lends itself well to walking and biking, with most areas located no more than three miles from downtown. In urban planning it is typical to assume that most people are willing to walk up to a half mile, and bike up to three miles to reach destinations. These travel behaviors, combined with the size of Marquette, help explain the 2023 Census Means of Transportation to Work survey results, which show that 11 percent of workers age 16 and older walked to work in 2023 (Figure 1), a value which is much higher than the statewide average (2 percent) and comparable to Michigan cities with the highest walk mode shares, such as East Lansing (18 percent), Mount Pleasant (17 percent), and Ann Arbor (13 percent), all of which also have state universities. Additionally, using mobile location data from Replica to understand the characteristics of all types of trips, the Fall 2023 Mobility Model (Figure 2 shows that on an average weekday in Marquette, 16 percent of trips taken are estimated to be walking trips and two percent are estimated to be biking trips. Furthermore, according to estimates from Replica, 53 percent of all trips starting in the City of Marquette are two miles long or less (Figure 3) – a distance that can easily be covered by walking and especially by biking.



[1] United States Census Bureau. QuickFacts Marquette city, Michigan. *United States Census Bureau,* www.census.gov/quickfacts/fact/table/marquettecitymichigan/LND110210. Accessed March 10, 2025.
[2] "These Are America's Snowiest Cities and Towns." *The Weather Channel*. https://weather.com/storms/winter/news/2024-12-04-americas-snowiest-cities. Accessed March 12, 2025

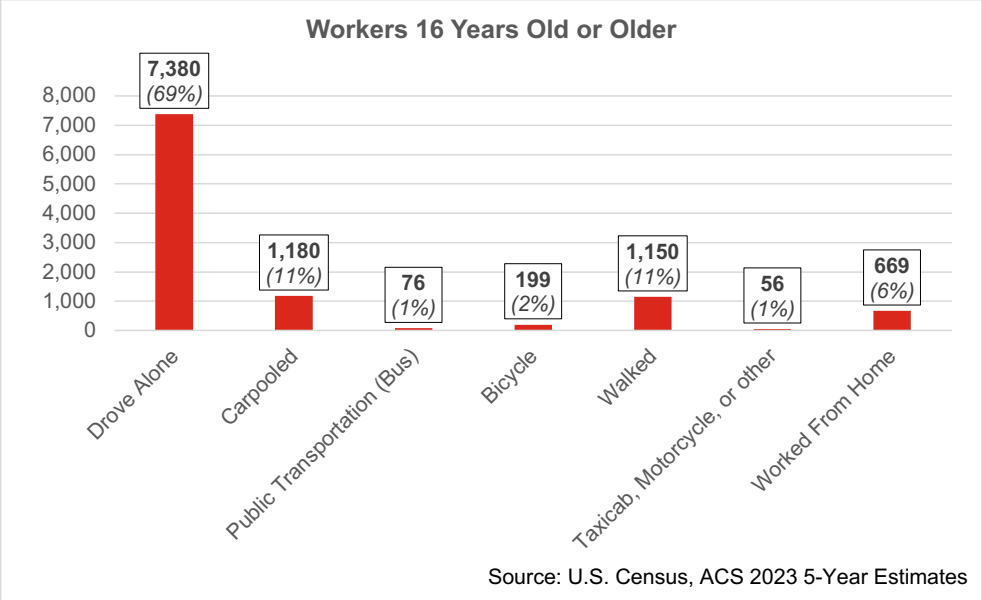



**Figure 1. Workers 16 Years or Older, Means of Transportation to Work, 2023**

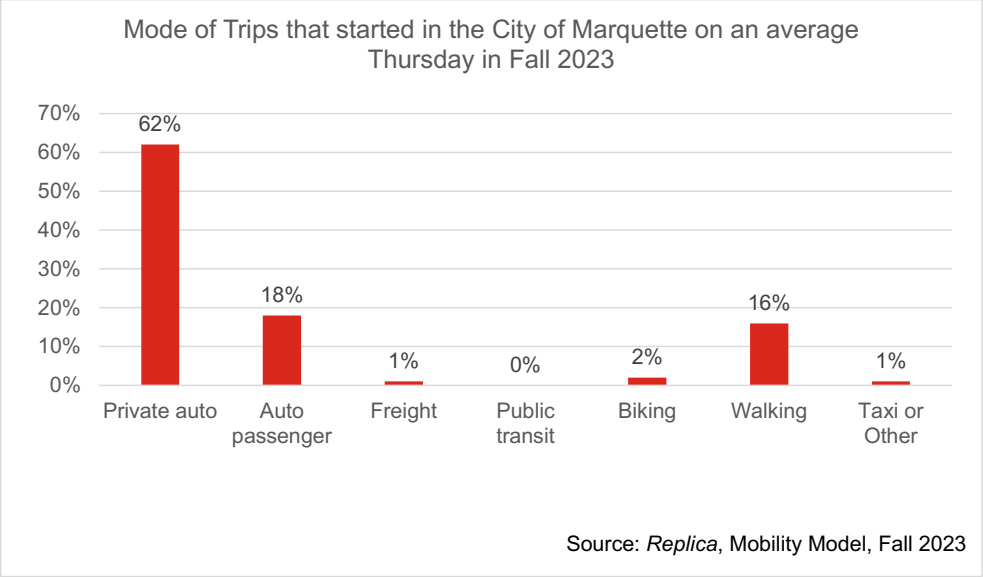



**Figure 2. Modeled trip mode for all trips that started in the City of Marquette on an average Thursday in Fall 2023**

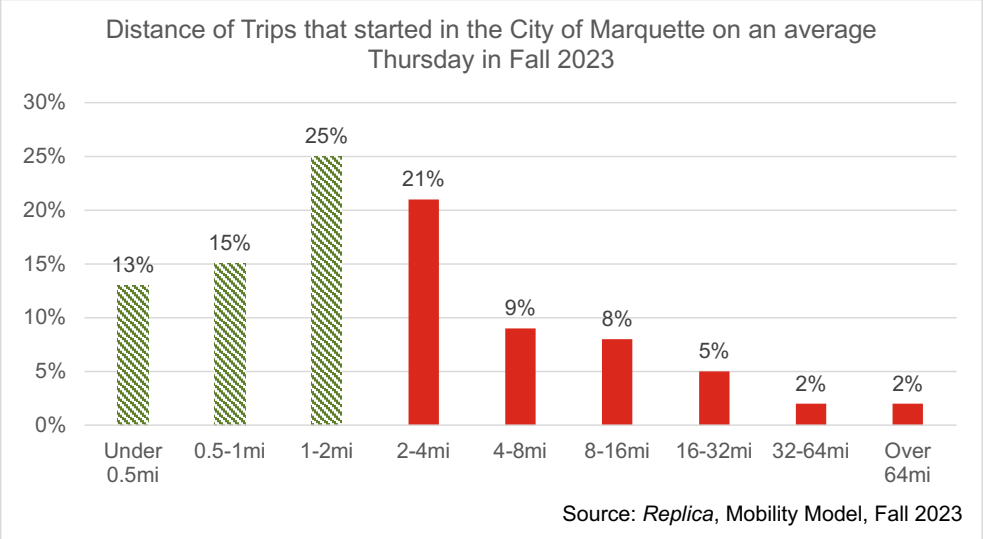



**Figure 3. Modeled trip distance for all trips that started in the City of Marquette on an average Thursday in Fall 2023**

# EXISTING ACTIVE TRANSPORTATION NETWORK

As described in the background section, the city has developed a wide range of pedestrian and bicycle infrastructure, including sidewalks, multi-use paths, bike lanes, shared routes, and mountain biking trails. Figure 5 illustrates the existing pedestrian network, displaying multi-use paths and sidewalks, while Figure 6 presents the broader bicycle network, highlighting Marquette's existing multi-use paths, bike lanes, shared routes, and mountain biking trails.

**Figure 4. Existing City Multi-Use Path**

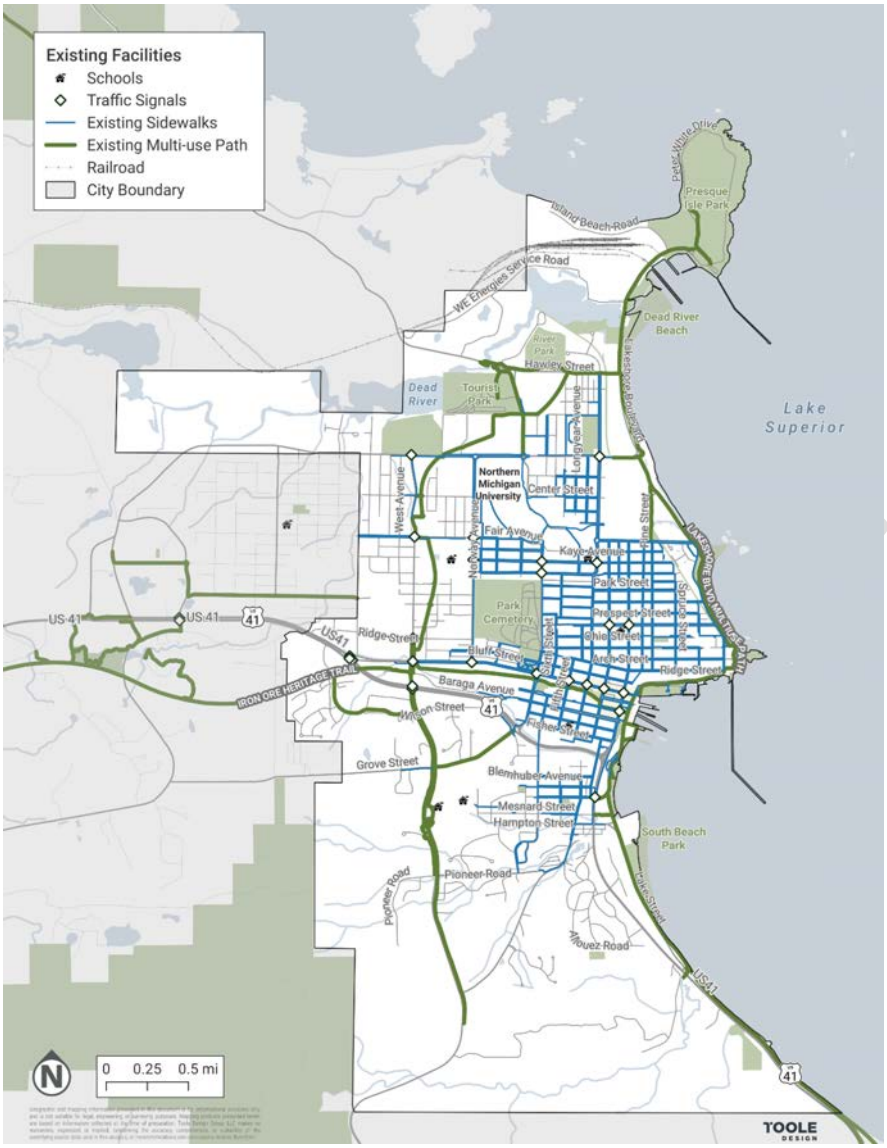



**Figure 5. Existing Pedestrian Facilities**


**Figure 6. Existing Bicycle Facilities**

# EXISTING PLANS, POLICIES, AND PROGRAMS

The project team analyzed existing plans, policies, and programs to understand the structure and existence of these items in the city of Marquette. The reviewed plans, policies, and programs are below along with a bulleted summarization.

### City of Marquette Community Master Plan Update – Winter 2023 Engagement Report (2023)

- The City of Marquette hosted a series of listening activities while developing the City of Marquette's Community Master Plan. The Winter 2023 Engagement Report provides a summary of feedback and themes.
- Engagement included two public surveys, small group listening sessions (58 stakeholders), and an open house (500+ attendees)
- Survey summary relating to transportation:
    - In the survey when asked about goals and priorities, 37 percent of respondents selected "Invest in all types of transportation", resulting in a ranking of six out of the twelve options.
    - When asked about winter activities and if they were positive, neutral, negative, or not sure respondents rated snow removal (sidewalk and driveway), walking conditions, and public transportation negatively.
    - When reviewing comments around how the city can make the winter season more livable, several clear themes emerged including snow removal on sidewalks and roads, recreational facilities and programming, and public transportation.
- Engagement participants stated they generally dislike walking along Wright Street, Washington Street west of Lincoln Avenue, 4th Street, and Altamont Street. When walking in the winter, participants stated they dislike walking in neighborhoods north of downtown, along US-41 south of the traffic circle, and streets bordering NMU campus.
- Engagement participants stated they generally dislike bicycling on Wright Street, 3rd Street, 4th Street, Washington Street, and Spring Street. When bicycling in the winter, participants stated they dislike bicycling on Wright Street, Center Street, 4th and 3rd Street, Washington Street, and CO-553.
- Two of the three emerging themes around winter livability were around pedestrian safety:
    - *Clear sidewalks and walking/biking paths of snow to allow for recreation and nonmotorized transportation year-round*
    - *Clear snow banks at intersections to create better visibility and safety*
- Nearly 90 percent of respondents strongly/agreed with the transportation Guiding Principles:
    - *Encourage quality housing at multiple price points in locations with access to nonmotorized and public transportation.*
    - *Create safe and enjoyable transportation and recreation options year-round.*
    - *Maintain and connect our neighborhoods.*

### City of Marquette Community Master Plan – Vision for Marquette (2024)

- Published in September 2024, the City of Marquette's Community Master Plan – Vision for Marquette provides a plan for the future land use of the city with a number of recommendations and action items.
- The Plan identifies six guiding principles, with many of them relating to active transportation in some way.
- *Guiding Principle B: Encourage quality housing, at multiple price points, and in locations with access to nonmotorized and public transportation.* -- The principle recommends encouraging quality housing that is easily accessed by foot, bike, or bus.
- *Guiding Principle E: Create safe and enjoyable transportation and recreation options year-round.* -- The principle recommends that transportation policies should promote safe, convenient, and enjoyable

connections for all modes of transportation and recreation year-round, including via sidewalk, trail, bus, or car.

» *Guiding Principle F: Maintain and connect our neighborhoods.* -- The principle recommends that there should be easy access to goods, services, and amenities in the city year-round

### City of Marquette Community Master Plan - Supplemental Report (2024)

» The Supplemental Report to the Community Master Plan provides further information and recommendations for the City of Marquette's environmental resiliency, community facilities, transportation and mobility, housing and neighborhoods, economic development, land use, and community input.

» The Transportation and Mobility chapter discusses active transportation and recognizes that walkability and trails are an asset to Marquette. For pedestrians, the older parts of town have more connected pedestrian facilities due to the street grid. In newer parts of town the street network is defined by curvilinear streets with occasional cul de sac dead ends, decreasing walkability or efficient walkability/travel times.

» Current challenges to walking and bicycling identified in the Transportation and Mobility chapter include crossing US-41/M-28 and M-553, a reduction in walkability due to winter conditions, and inadequate snow removal methods.

» Additionally, Marq-Tran's bus ridership decreased by 87% after the COVID-19 pandemic and has not rebounded as quickly as other countywide transit agencies.

### City of Marquette Community Master Plan - City of Marquette Bike Routes (2024)

» The Bike Routes Map is included in the City of Marquette's Community Master Plan Supplemental Report.

» Building off existing bicycle facilities, the Bike Route Map recommends a variety of bicycle facilities to improve and expand bicycle access and connectivity.

» Recommended bicycle facilities include multi-use paths, shared routes, bike lanes, on street bikeways, and bicycle and pedestrian tunnels and bridges.

» See Map 1 for recommended facilities.

### City of Marquette Trails Master Plan (2017)

» Published in 2017, the Marquette Trails Master Plan provides a plan for the future of Marquette's trail systems. Input from stakeholders, trail users, and city departments shaped the planning process.

» The Plan identified a need for City policy development to guide trail decision-making. City policy recommendations should define and strengthen relationships and partnerships with trail interests and groups.

» Specific recommendations for trails are identified into broad categories including new trail connections, trailheads, system-wide improvements and enhancements, and motorized trails access improvement considerations.

» The final chapter of the plan provides recommendations for implementation with a list of actions, projects, prioritization, and potential funding opportunities.

### City of Marquette Complete Streets Policy (2011)

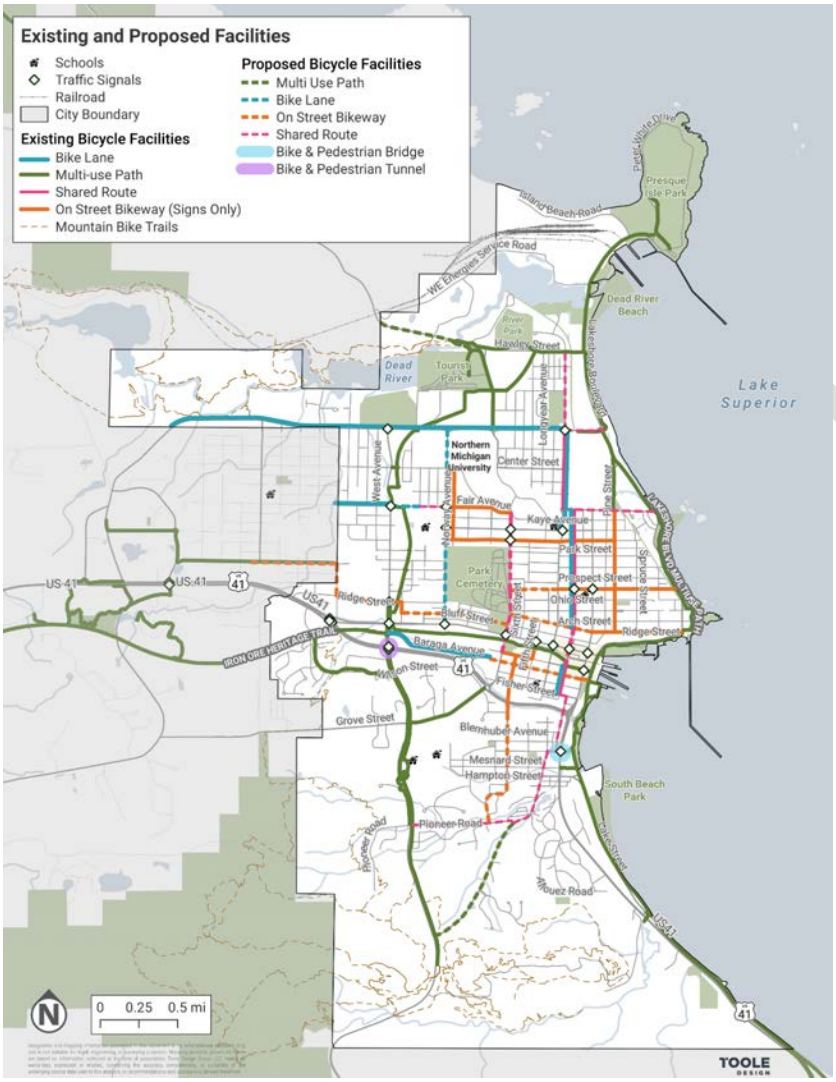
» The City adopted a Complete Streets policy May 9, 2011

» The purpose of the policy is "to help ensure that every public right-of-way shall be planned, designed, constructed, and maintained such that each resident of the City of Marquette will have transportation options to safely and conveniently travel to their destinations."

» The policy includes a list of city policies and strategies that support the overall purpose of the policy.

# RECOMMENDATIONS FROM PREVIOUS PLANS

The map below shows the most recent proposed bicycle facilities from the 2024 City of Marquette Community Master Plan.




**Map 1: Previously Recommended Active Transportation Facilities**

# ACTIVE TRANSPORTATION SAFETY ANALYSIS

## CRASH DATA OVERVIEW

Crash data used in this analysis were retrieved from the Michigan Traffic Crash Analysis Tool (Mi-CAT), accessed on March 6, 2025. The data include all crashes within the City of Marquette from January 1, 2020, to December 31, 2024. However, this memo and analysis focus on crashes involving pedestrians or bicyclists, also known as vulnerable road users (VRU), with an emphasis on fatal and serious injury (FSI) crashes.

## EXPOSURE DATA

The analyses reported in this memo do not adjust for motor vehicles, 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, in some communities, 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, and in fact it could be the case that the exposure rate during dark conditions is higher because there are significantly fewer people out walking and bicycling at night.

## OVERALL TRENDS

Between 2020 and 2024, there were a total of 27 crashes involving a motor vehicle and a person walking and 43 crashes involving a motor vehicle and a person bicycling. Of those crashes, one pedestrian crash was fatal, and five pedestrian and three bicyclist crashes resulted in serious incapacitating injuries. No bicyclist crashes resulted in a fatality (see

Table 1). When looking closer at crashes that resulted in an injury versus crashes that resulted in no injury, the disparity is clear that pedestrians and bicyclists are more likely than motorists to suffer some type of injury during a crash. 72 percent of bicycle crashes and 89 percent of pedestrian crashes within the past five years resulted in some level of injury, compared to 10 percent of motor vehicle-only crashes. Only 28 percent of bicycle crashes and 11 percent of pedestrian crashes resulted in no injury. It is also important to note that not all crashes are necessarily accounted for in crash data. In one FHWA study examining one year of statewide crash data and emergency department data in New York, California, and North Carolina, researchers found that **anywhere from 40 to 60 percent of bicycle-motor vehicle crashes and 35 to 55 percent of pedestrian-motor vehicle crashes were not included in official crash databases** due to a variety of reasons including underreporting, crash locations, crashes not involving a motor vehicle, or crashes not resulting in property damage greater than $1,000.[3]

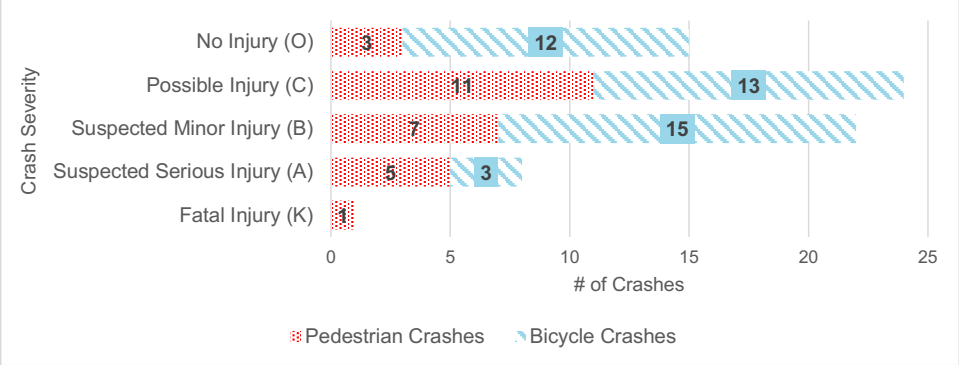


[3] Federal Highway Administration. *Injuries to Pedestrians and Bicyclists: An Analysis Based on Hospital Emergency Department Data*. 1999. Accessed November 7, 2024. https://highways.dot.gov/sites/fhwa.dot.gov/files/FHWA-RD-99-078.pdf

**Table 1: Bicycle and Pedestrian (VRU) Crashes, 2020-2024**

| Crash Severity | Pedestrian Crashes | Bicycle Crashes | Total VRU Crashes |
|---|---|---|---|
| Fatal Injury (K) | 1 | 0 | 1 |
| Suspected Serious Injury (A) | 5 | 3 | 8 |
| Suspected Minor Injury (B) | 7 | 15 | 22 |
| Possible Injury (C) | 11 | 13 | 24 |
| No Injury (O) | 3 | 12 | 15 |
| **Total** | **27** | **43** | **70** |

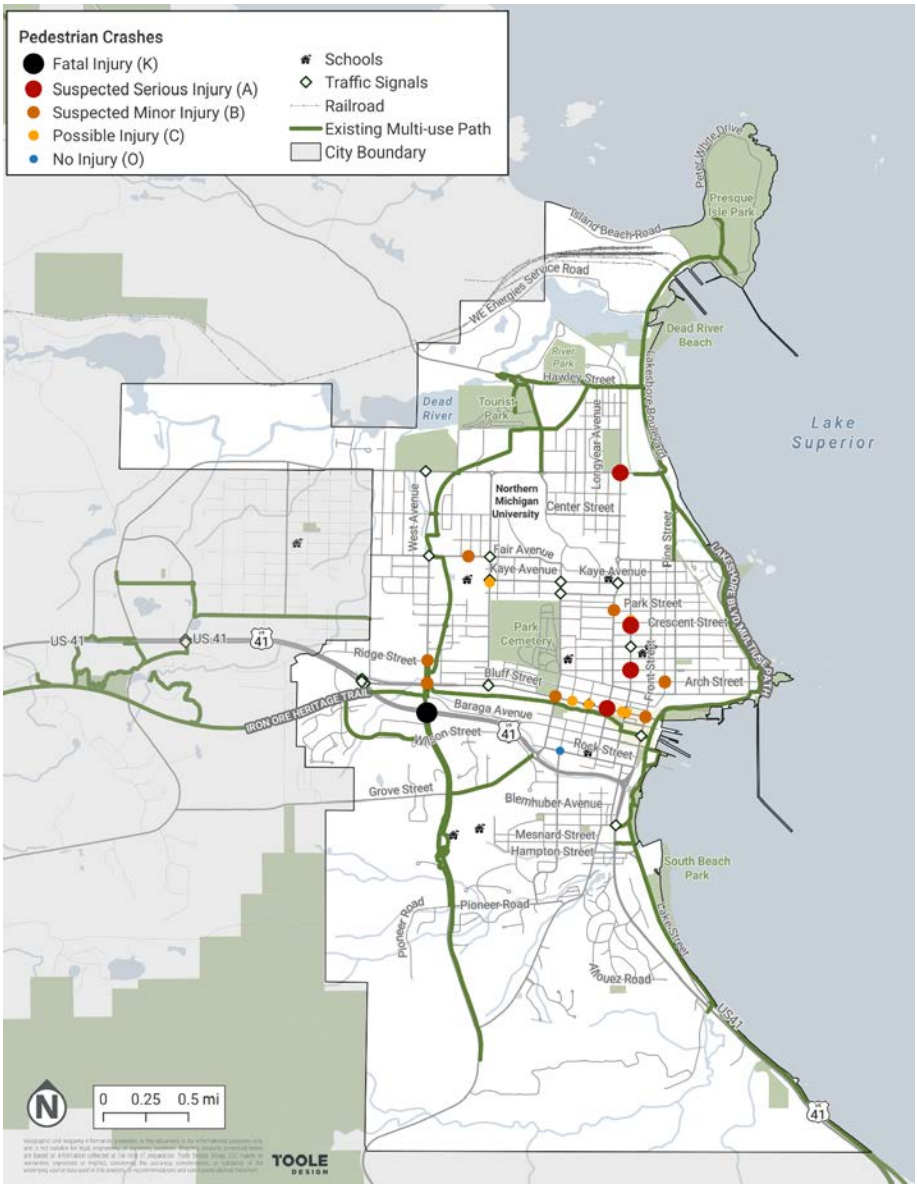
**Table 2: Bicycle and Pedestrian Crashes by Crash Severity, 2020-2024**



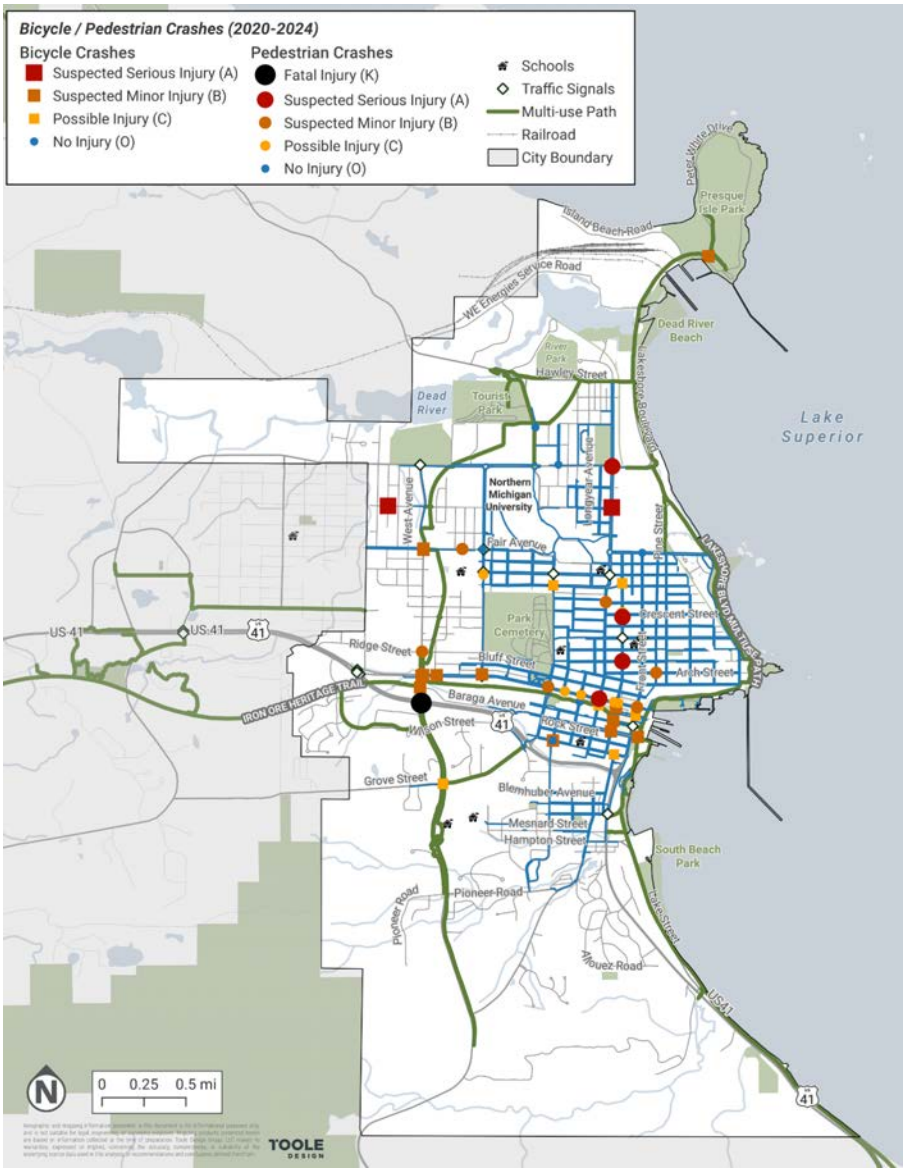
**Concentrations of bicycle and pedestrian crashes occurred on a variety of streets, locations, and intersections (see Table 3). See Map 2, Map 3, and Map 4 for a visual representation of where bicycle and pedestrian crashes occurred from 2020 to 2024.Table 3: Concentrations of Bicyclist and Pedestrian Crashes**

| Mode | Concentrations of crashes occurred along streets or within the following areas: | Concentrations of crashes occured at the following intersections: |
|---|---|---|
| **Bicyclists** | » Within/just outside downtown Marquette<br>» 3rd Street<br>» McClellan Avenue | » Baraga Avenue/McClellan Avenue (also the intersection of the north-south trail and Iron Ore Heritage Trail)<br>» Washington Street/McClellan Avenue (also the intersection of the north-south trail and Iron Ore Heritage Trail)<br>» Fair Avenue/McClellan Avenue<br>» **Serious injury bicycle crashes occurred at:**<br>» Center Street/Kimber Avenue<br>» Presque Isle Avenue/Center Street |
| **Pedestrians** | » Within/just outside downtown Marquette<br>» Washington Street (mainly between 7th Street and Front Street)<br>» McClellan Avenue between Ridge Street and US 41 (mainly at the north-south trail intersections) | » **Serious injury pedestrian crashes occurred at:**<br>» Wright Street/Presque Isle Avenue<br>» 4th Street/Washington Street Michigan Street/3rd Street<br>» Just south of the Crescent Street/3rd Street intersection<br>» **Fatal pedestrian crash occurred at US 41/McClellan Avenue** |


**Map 2: Crashes Involving People Biking**




**Map 3: Crashes Involving People Walking**




**Map 4: Crashes Involving People Walking and Biking**

## SPECIFIC CRASH CHARACTERISTICS

### Crashes by Year

Figure 7 shows the number of crashes involving a pedestrian or bicyclist by year in the city of Marquette from 2015 to 2024. Figure 8 shows the number of fatal or serious injury crashes involving a pedestrian or bicyclist by year. There is no apparent trend when reviewing ten years of bicycle and pedestrian crash data. However, crashes involving a bicyclist or pedestrian significantly decreased during the COVID-19 pandemic, from 2019 to 2020. After 2020, crashes involving a bicyclist or pedestrian have trended upward. Fatal and Serious Injury crashes involving a pedestrian or bicyclist are relatively rare, though in total they trended slightly upwards in the last five years, seeming to return to pre-COVID-19 trends.

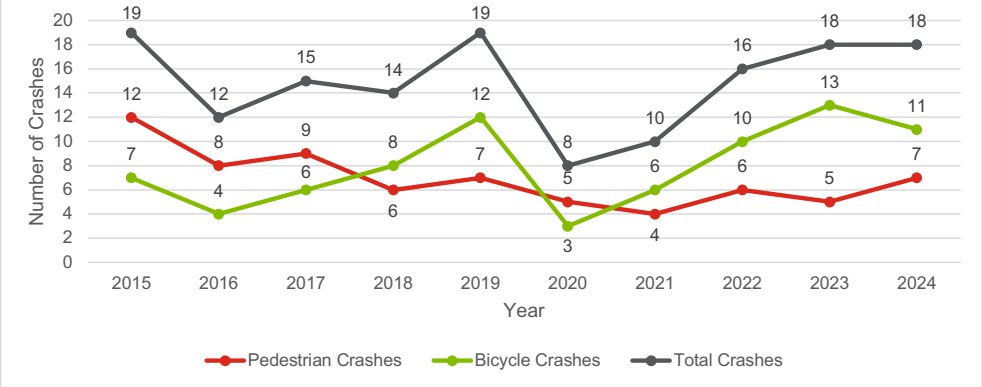



**Figure 7: Total Crashes Involving a Pedestrian or Bicyclist by Year, 2020-2024**

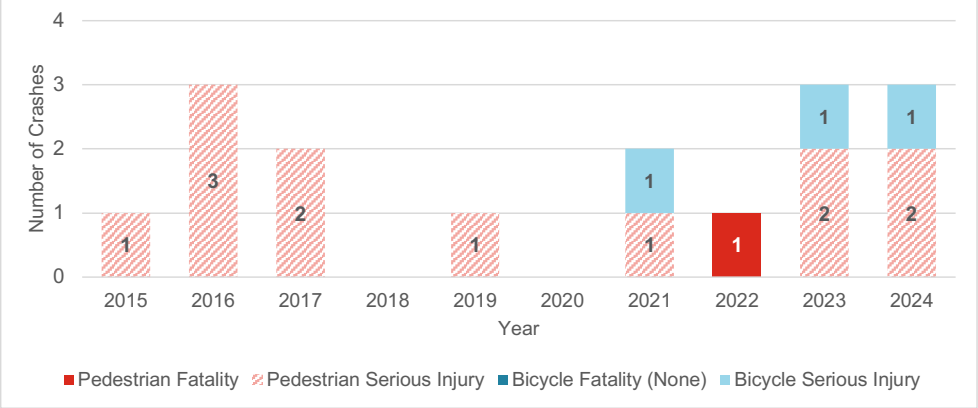



**Figure 8: Fatal or Serious Injury Crashes Involving a Pedestrian or Bicyclist by Year, 2020-2024**

## Crashes by Month

Figure 9 shows the number of crashes involving a pedestrian or bicyclist by month. Overall, crashes involving either a pedestrian or bicyclist are higher in the warmer months — especially bicyclist crashes. Crashes involving a pedestrian are fairly consistent throughout the year, while crashes involving a bicyclist peak between July and September, which is likely the time of year when the highest number of bicyclists are out riding.

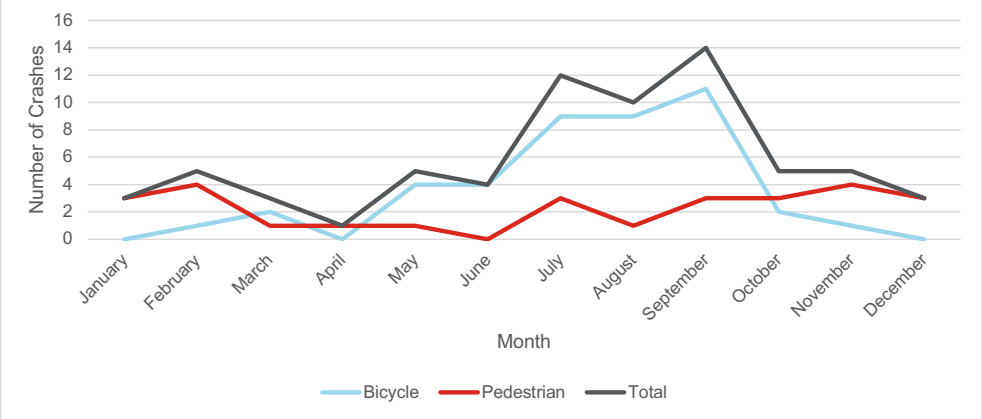



**Figure 9: VRU Crashes by Month, 2020-2024**

## Crashes by Time of Day

Figure 10 shows the number of crashes involving a pedestrian or bicyclist that occurred at different times of the day. Crashes involving a pedestrian or bicyclist tend to be at their highest during the morning commute around 7am, the lunch rush around noon, and the afternoon/evening commute from 3pm-6pm.

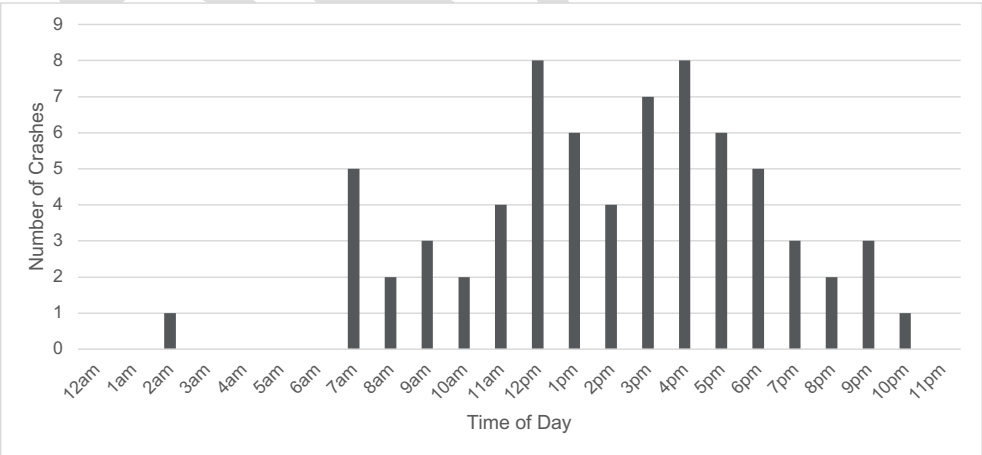



**Figure 10: VRU Crashes by Time of Day, 2020-2024**

## Crash Characteristics

Figure 11 shows the number of crashes involving a pedestrian or bicyclist by the top contributing factor(s) or crash characteristics listed in the crash report. When looking at a variety of contributing factors such as whether alcohol or drugs were involved, speeding, red light running, age, and distracted driving, the top four contributing characteristics for crashes involving a pedestrian or bicyclist were older drivers, younger drivers, hit and run crashes, and red light running.

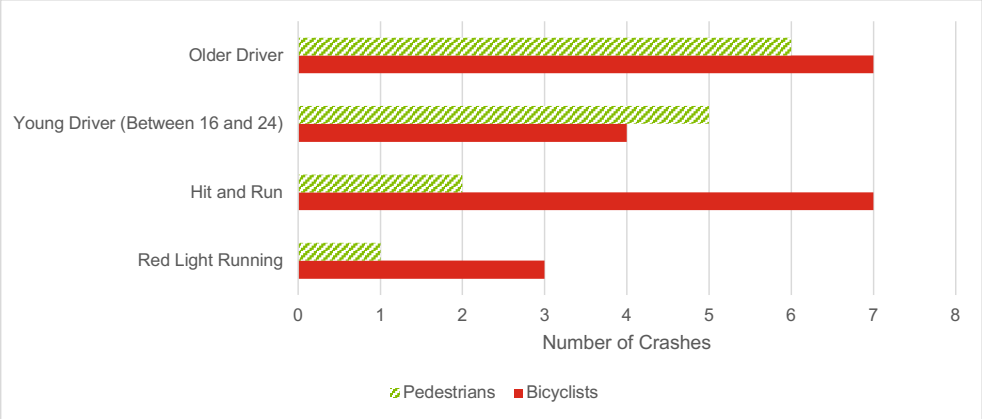



**Figure 11: Crashes Involving a Pedestrian or Bicyclist by Contributing Factors and Characteristics, 2020-2024**

Figure 12 through Figure 15 show the ages of the people involved in those crashes involving a pedestrian or a bicyclist. The age of bicyclists involved in crashes trends younger than for drivers or pedestrians. There were 12 crashes involving a bicyclist aged 15-19, representing 16 percent of all crashes involving a bicyclist. There were 16 crashes involving pedestrians aged 20-29, representing 46 percent of all crashes involving pedestrians.

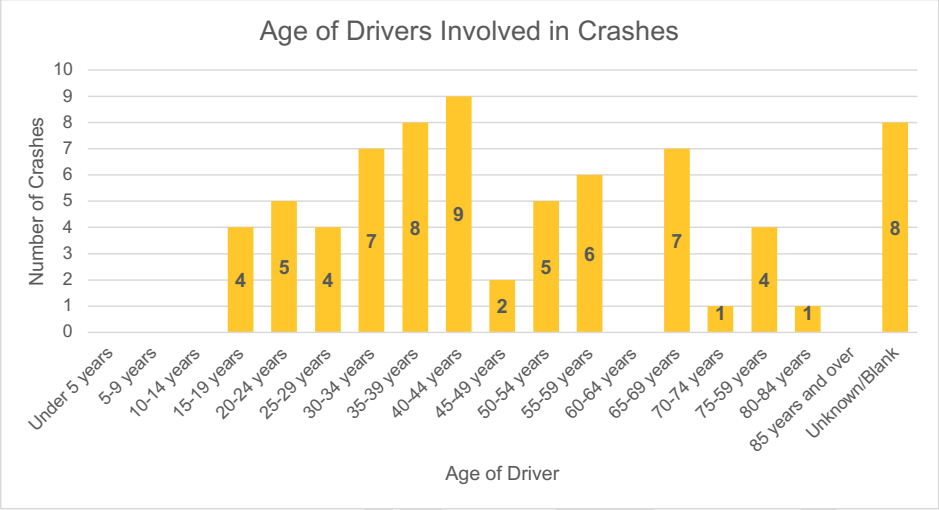



**Figure 12. Age of Drivers Involved in Crashes with a Pedestrian or Bicyclist, 2020-2024**

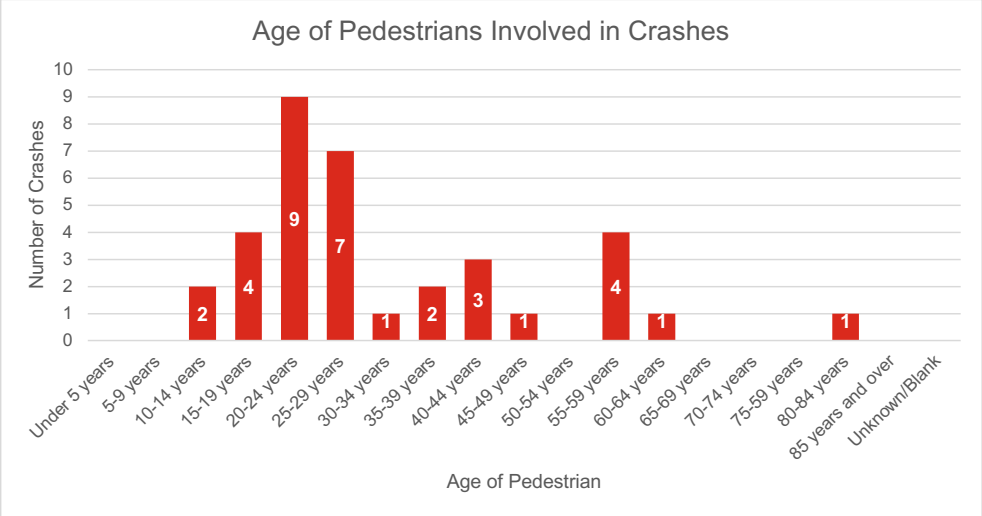



**Figure 13. Age of Pedestrians Involved in Crashes, 2020-2024**

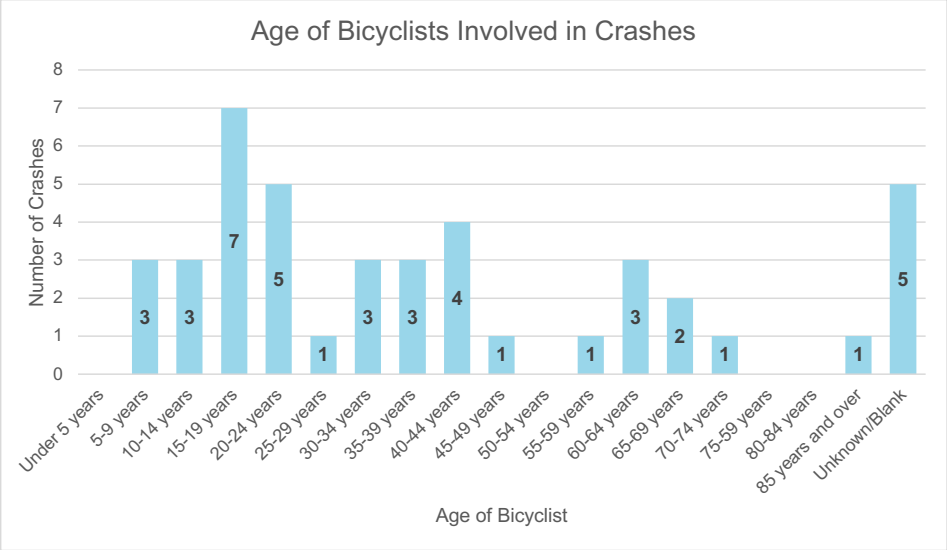



**Figure 14. Age of Bicyclists Involved in Crashes, 2020-2024**

## Weather Conditions (Environmental Characteristics)

Figure 15 shows the number of crashes involving a pedestrian or bicyclist that occurred during different weather conditions. Crashes involving a pedestrian or bicyclist occurred most often during clear conditions. Cloudy and rainy conditions are the second and third most common weather conditions. The one fatal crash involving a pedestrian occurred when the weather conditions were rainy.

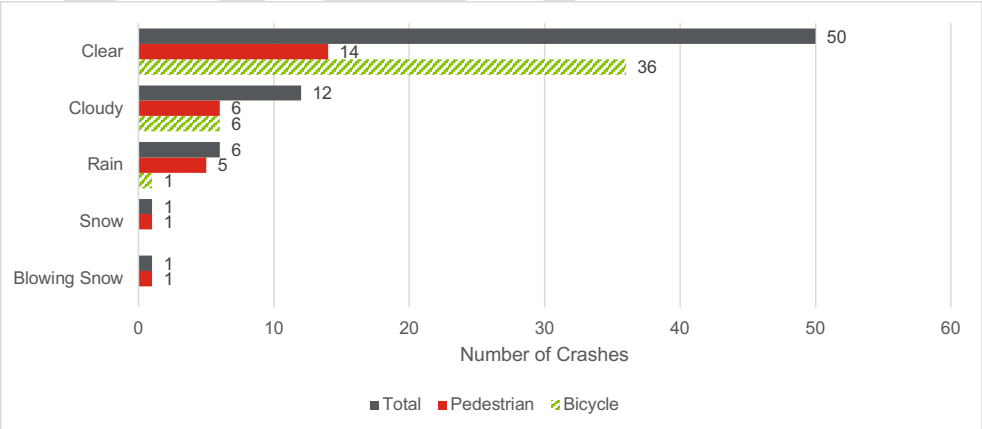



**Figure 15: VRU Crashes by Weather Conditions, 2020-2024**

## Lighting Conditions (Environmental Characteristics)

Figure 16 shows the number of crashes involving a pedestrian or bicyclist occurring during different lighting conditions. Crashes involving a pedestrian or bicyclist occurred most often during daylight and dark but lighted conditions. All crashes involving bicyclists occurred during daylight hours. The one fatal crash involving a pedestrian occurred during dark hours in a lighted area. It is important to note that though a crash may be reported as occurring in a lighted area, this does not necessarily mean there is pedestrian-scale lighting to illuminate sidewalks and pedestrian crosswalks.

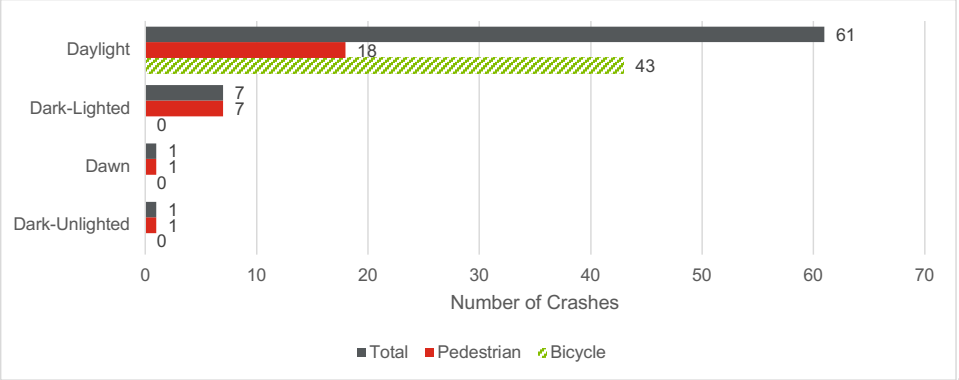



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**Figure 16: VRU Crashes by Lighting Conditions, 2020-2024**

## Pavement Surface Conditions (Environmental Characteristics)

Figure 17 shows the number of crashes involving a pedestrian or bicyclist that occurred during different pavement surface conditions. Crashes involving a pedestrian or bicyclist occurred most often during dry conditions, while wet and snowy conditions are the second and third most common pavement surface condition reported. The one fatal crash involving a pedestrian occurred when the pavement surface conditions were icy.

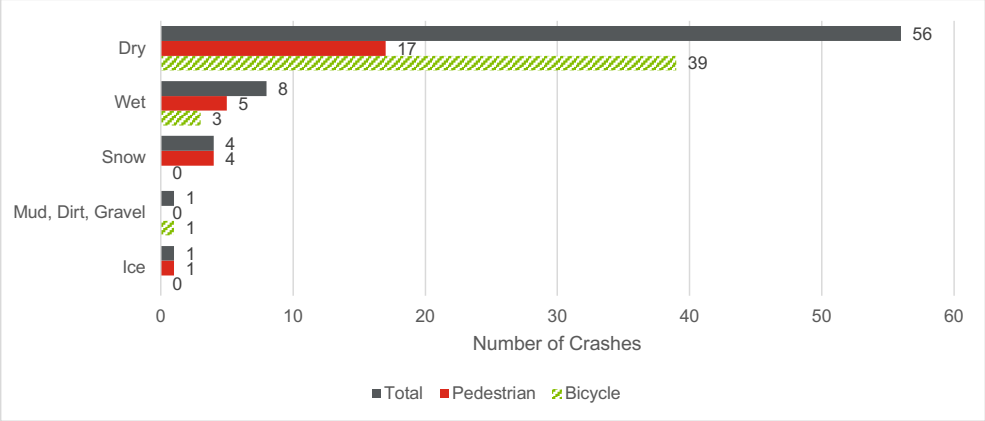


**Figure 17: VRU Crashes by Pavement Surface Conditions, 2020-2024**

# E-BIKE AND E-SCOOTER TRENDS

## USAGE

Starting in 2018, e-bike sales and ridership in the United States skyrocketed. According to the US Department of Energy, nationwide e-bike sales increased from 325,000 in 2018 to 1,100,000 in 2022.[4] In a study from the Physical Activity Council, researchers found that in 2023, 19.4 percent of people in the U.S. who ride a bike reported using a e-bike, which was an increase from 7.8 percent reported in 2021.[5] This means **on average one in five people biking in the United States are now riding an e-bike**. This rise in e-bikes also means there has been a rapid rise in the total number of people biking in many cities.

**Figure 18. E-bikes at Bothwell Middle School**

## E-BIKE AND E-SCOOTER CRASHES

According to a study performed by the U.S. Consumer Product Safety Commission (CPSC), injuries associated with e-bikes and e-scooters devices have seen an increase of nearly 21 percent in 2022 from 2021. Data, collected from a nationally representative sample of U.S. hospitals, shows that e-bike and e-scooter-related injuries have been increasing approximately 23 percent annually since 2017, and 46 percent of e-bike injuries that occurred from 2017 to 2022 occurred in 2022 alone. E-scooter-related injuries have also seen an increase annually, increasing 22 percent in 2022 from 2021. It is also important to note that both race and age play a role in overrepresentation of e-bike and e-scooter-related injuries. Children aged 14 and younger are overrepresented in e-bike and e-scooter-related injuries, accounting for 36 percent of e-bike and e-scooter-related injuries from 2017 to 2022, even though they only account for 18 percent of the U.S. population. Additionally, non-Hispanic Black consumers account for 29 percent of e-bike and e-scooter-related injuries even though they only make up 13 percent of the U.S. population.[6]

Crash trends showed that the largest percentages of e-bike and e-scooter-related injuries occurred from May through October, and fractures and contusions/abrasions were two of the most common injuries, with the upper and lower limbs, and head and neck being the most common injured body areas.[6]

## CONCLUSION

E-bikes are booming in popularity and this is overall a great trend for communities looking to make bicycling more accessible to a wider group of people that may not be able to bike as far or up steep slopes on a conventional bicycle. This increasing popularity has led to some initial growing pains that can be managed through planning efforts like this Active Transportation Plan. Recommendations for how to address this growth while still encouraging e-bike use are listed in the Program and Policy Recommendations section.

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[4] U.S. Department of Energy. (2023). "FOTW #1321, December 18, 2023: E-Bike Sales in the United States Exceeded One Million in 2022." https://www.energy.gov/eere/vehicles/articles/fotw-1321-december-18-2023-e-bike-sales-united-states-exceeded-one-million

[5] PeopleForBikes. (2024). "Electric Bicycle Market Insights From Industry Experts." https://www.peopleforbikes.org/news/electric-bicycle-market-insights-2024

[6] U.S. Consumer Product Safety Commission. (2023). "E-Scooter and E-Bike Injuries Soar: 2022 Injuries Increased Nearly 21%." https://www.cpsc.gov/Newsroom/News-Releases/2024/E-Scooter-and-E-Bike-Injuries-Soar-2022-Injuries-Increased-Nearly-21

# CHAPTER 2: COMMUNITY ENGAGEMENT

The project team carried out a variety of public engagement methods to gather meaningful input from residents and better understand their priorities, needs, and preferences related to walking and bicycling within Marquette. The project team implemented three public engagement methods:

- **Active Transportation Palooza** – Over the course of two days, the project team hosted small pop-ups events throughout the City and two larger public workshops in the evenings to engage a broad spectrum of residents and visitors.
- **Public Input Webmap** – An interactive online map which allowed community members to provide feedback on existing and proposed bicycle routes, as well as suggest new routes and crossings.
- **Public Survey** – An online survey which collected broader feedback on perceptions of safety, barriers, and experiences with walking and bicycling within the city.

**Figure 19: Active Transportation Palooza Pop-up Event at The Commons**

**The project team engaged with:**

**273 people in-person across all Active Transportation Palooza events**

**300 people via the online survey**

The three public engagement methods, results, and key takeaways are described in the following sections.

## ACTIVE TRANSPORTATION PALOOZA

The Active Transportation Palooza occurred on Wednesday, May 28, and Thursday, May 29, 2025. The Palooza used both quick pop-up activities and more in-depth evening workshops to engage residents and visitors at a variety of locations throughout town (see Table 4 for the Palooza schedule). On Wednesday, pop-up events were held at Marquette Commons along the trail and Bothwell Middle School in front of the school at school dismissal time. Wednesday concluded with an evening workshop at Marquette Commons, once again held along the trail in order to engage people walking and bicycling.

On Thursday, the team hosted three pop-ups throughout the day at Velodrome Coffee, the NTN South Trails Trailhead, and McCarty's Cove. The Thursday evening workshop event was at Blackrocks Brewery.

These events were designed to be fun, easy to participate in, and create a low-barrier way for people to give feedback around walking and bicycling in the City, without them thinking they needed "expertise." The project team also carefully selected locations for the pop-up and evening workshop events to reach people who walk and bicycle for recreation and transportation, as well as a demographically representative group, especially families. Summaries of the events and overall input gathered from the public are below.

**Table 4: Marquette ATP Palooza Schedule**

| Wednesday, May 28 | | |
|---|---|---|
| ***Time*** | ***Location*** | ***Event Type*** |
| 9:00am-11:00am | Marquette Commons (Plaza Area) | Pop-Up |
| 2:00pm-3:30pm | Bothwell Middle School | Pop-Up |
| 5:00pm - 7:00pm | Marquette Commons | Evening Workshop |

| Thursday, May 29 | | |
|---|---|---|
| ***Time*** | ***Location*** | ***Event Type*** |
| 8:30am-10:30am | Velodrome Coffee | Pop-Up |
| 11:30am-1:30pm | NTN South Trails Trailhead | Pop-Up |
| 2:00pm-4:00pm | McCarty's Cove | Pop-Up |
| 5:00pm - 7:00pm | Blackrocks Brewery | Evening Workshop |

## POP-UP EVENTS

Over the course of the two-day event, the project team interacted with just over 200 participants at five pop-up events across the City.

Pop-up events provided a space for the public to give input in a flexible, easy way and accommodated those with limited time as well as those interested in longer conversations. The pop-up format was intentionally informal and accessible, aiming to lower perceived participation barriers and bring engagement directly to where people live, work, and recreate. Each pop-up event included two activities: a barrier identification activity and a map activity.

**Figure 20: Pop-up event at Bothwell Middle School**

### Map Activity

The map activity invited participants to provide feedback on the existing and recommended walking and bicycling networks. Participants were specifically asked whether there were any other locations or segments that should be added, or if there were specific places where they felt unsafe when walking or bicycling. They were able to add sticker dots to the map or write a more detailed explanation on sticky notes. Many of the sticky note comments on the map were about e-bike use and etiquette. Participants largely agreed with the existing and recommended network with the addition of a few key network connections and numerous crossing improvement requests. See the recommendations chapter for more detail on the network.

## Barrier Identification Activity

Participants were asked to vote on the following question by adding pom poms to mason jars.

**Question**: *"What are the top three things that prevent you from walking or bicycling on streets in Marquette?"*

The top three factors that prevented participants from walking and bicycling on streets in Marquette included weather (56 percent of participants), lack of infrastructure (sidewalks, bicycle lanes, trails, etc.) (37 percent of participants), and high motor vehicle speeds/volumes (36 percent of participants). Notably, nearly 20 percent of participants put a pom-pom in the "other" jar and then told a table staffer an additional concern. Many of these "other" concerns were one again about e-bike use (especially teenagers on e-bikes). Figure 21 shows a full breakdown of responses from this activity.

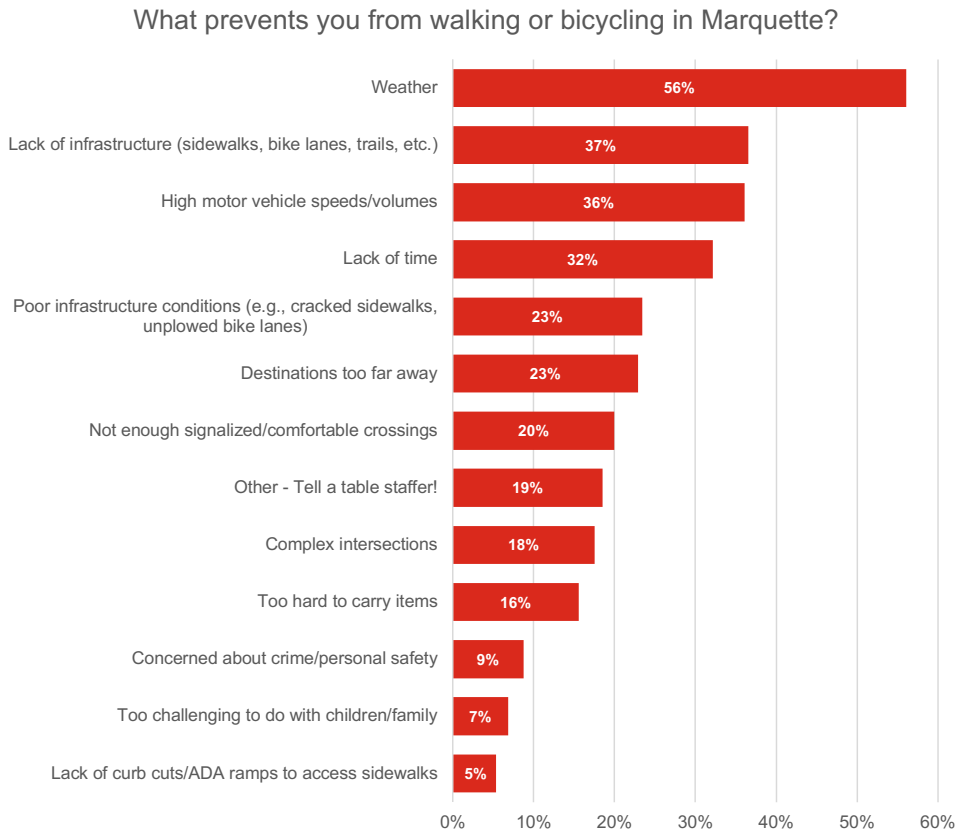


**Figure 21: Barriers to walking and bicycling – Pop-ups**

## WORKSHOP EVENTS

Two public evening workshops were held during the Active Transportation Palooza, one at Marquette Commons along the trail and one at Blackrocks Brewery. Each workshop lasted two hours and featured an open-house format with five interactive stations and a project overview station.

Just under 70 participants attended the evening workshops. For the event at Marquette Commons, most of the participants were trail users, although some had heard about the event through friends, local media, or social media. The participants at the Blackrocks Brewery event were mostly people that were just at the brewery that evening, along with a few individuals that participated in a pop-up during the day and came back (sometimes with friends or family) to give additional feedback.

The event stations and results are summarized below:

### Station 1. Project Overview Board

This station provided a high-level overview of the project and how the evening event worked.

### Station 2. Mapping Activities

The workshops had two mapping activities. Participants were asked the same questions as the pop-up, to provide feedback on the vision network, intersections, and crossings. Participants placed red stickers on locations they felt were uncomfortable or disagreed with proposed routes, and green stickers to show agreement. Sticky notes were also provided so participants could leave additional details or suggestions. In general, participants were pleased with the proposed network but still added a few key network connections and numerous crossing improvements. See the recommendations chapter for more detail on the network.

**Figure 22: Mapping activities at Blackrocks Brewery**

## Station 3. Your Vision for Marquette

Station three asked participants to complete the following sentences:

- "Walking in Marquette should be…"
- "Biking in Marquette should be…"

Major themes of these responses focused on walking and bicycling being safe, fun, and easy. Participants also responded that walking and bicycling in Marquette should be accessible, convenient, possible all times of year, courteous, prioritized above any mode of transit, and well maintained.

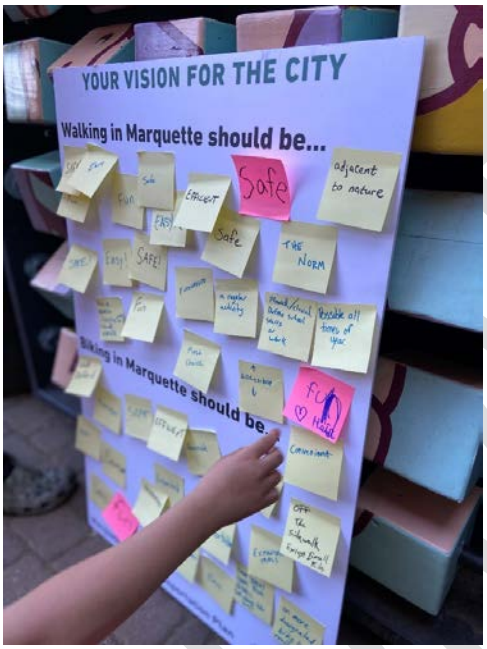



**Figure 23: Visioning activities at Blackrocks Brewery and The Commons**

## Station 4. What type of bicyclist are you?

Station four asked participants to place a Lego piece to describe their comfort level as a bicyclist. The choices included strong and fearless (24 percent of participants), enthusiastic and confident (64 percent of participants), interested but concerned (11 percent of participants), or no way, no how (1 percent of participants) (see Figure 24).

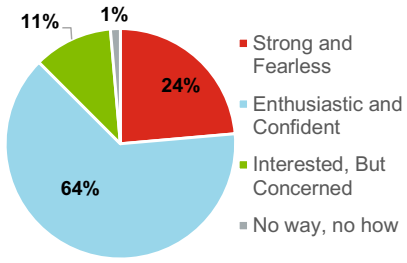


**Figure 24: What type of bicyclist are you?**

**Figure 25: Bicyclists Lego Activity at Blackrocks Brewery Workshop**

## Station 5. Bicycle Facility Tradeoffs

Building different types of bicycle facilities takes different amounts of space, costs different amounts, and sometimes requires trade-offs. At station five, participants were asked to think about these factors to show their preferences for separated bicycle lanes versus multi-use paths (see Figure 28), desire for a citywide network of conventional bicycle lanes or a few strategic separated bicycle lanes or multi-use paths (see Figure 29); and whether they would support converting on-street parking to bicycle lanes (see Figure 30). Overall, participants were in favor of separated bicycle lanes or multi-use paths in strategic locations that replaced parking. As for their preference for multi-use paths or separated bicycle lanes, it was fairly even across the board.

**Figure 26: Bicycle Facility Tradeoffs Activity at The Commons Workshop**


**Figure 27: Bicycle Facility Tradeoffs Activity at The Commons Workshop**

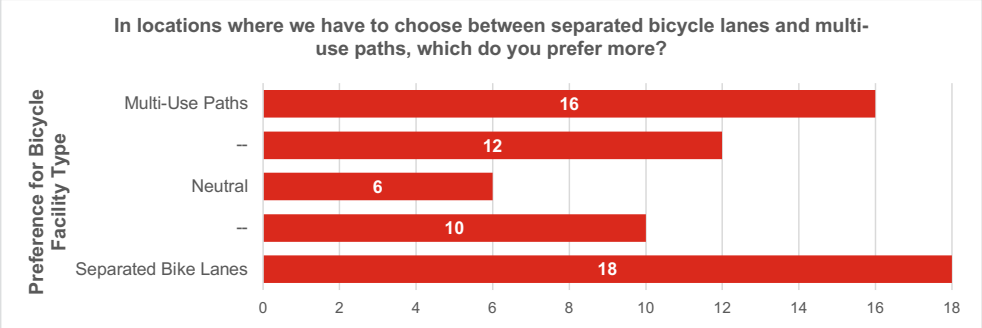


**Figure 28: Separated bicycle lanes vs. multi-use paths**

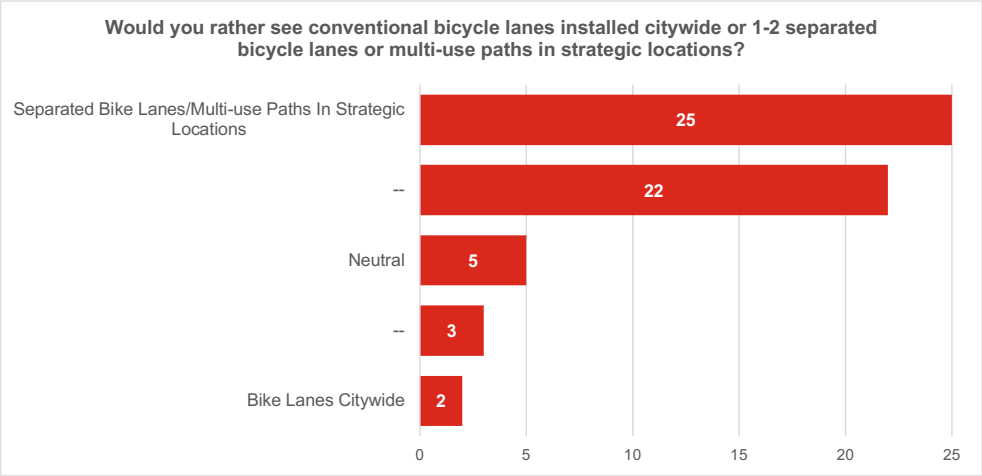


**Figure 29: Conventional bicycle lanes citywide vs. separated bicycle lanes/multi-use paths in strategic locations**

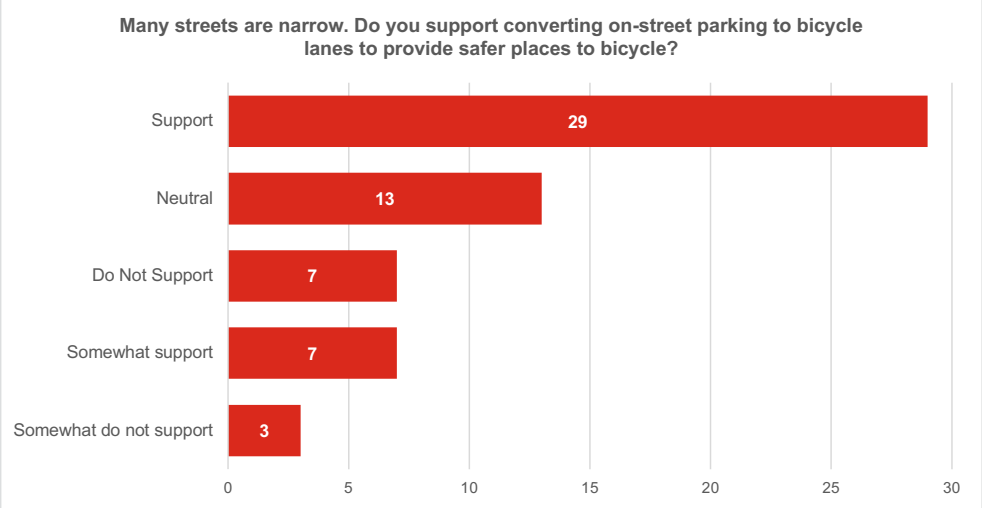


**Figure 30: Support for converting on-street parking to bicycle lanes**

## Station 6. Top Barriers to Walking and Bicycling

The activity at station six was identical to the pop-up activity that the project team did throughout the day. Participants were asked to place pom poms to vote for their top three barriers that prevent them from walking and

bicycling in Marquette (see Figure 32). The top responses were lack of infrastructure, high motor vehicle speeds/volume, and weather, which was similar to the top barriers voted on during the pop-up events.


**Figure 31: Barriers activity at the Blackrocks Brewery Workshop**

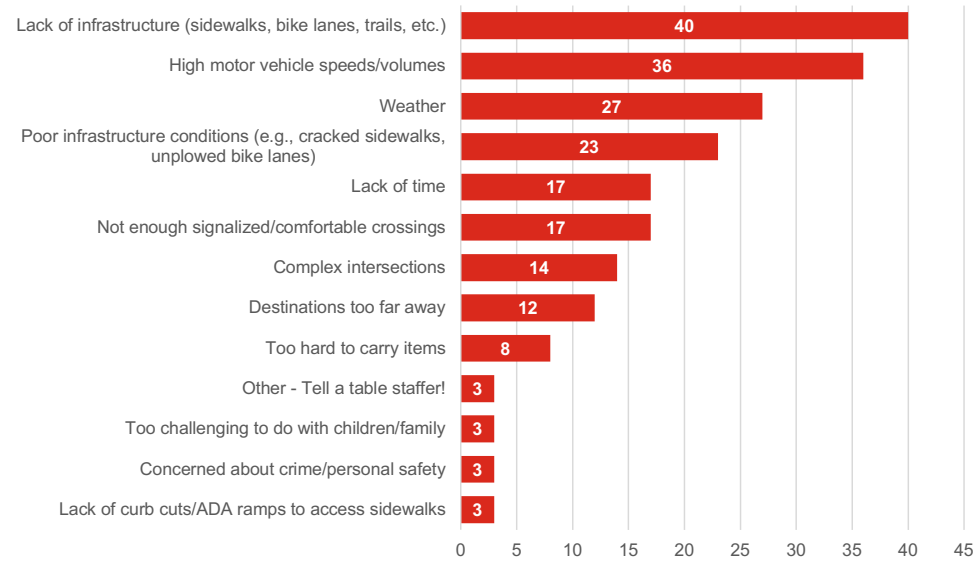


**Figure 32: Barriers to walking and bicycling – Workshops**

# PUBLIC INPUT WEBMAP AND SURVEY

To supplement the in-person engagement, an interactive public input webmap and online survey were developed to gather additional community feedback. The webmap allowed users to review and comment on existing and proposed bicycling routes and crossing improvements and suggest new connections and crossing improvements. The survey collected broader input on perceived safety and barriers to walking and bicycling in Marquette, helping to capture perspectives from residents who maybe couldn't attend the in-person events. The interactive public input webmap and online survey remained open from May 21, 2025 to July 3, 2025. Just under 300 people participated in the survey, while the map received just under # comments. Results from the survey and webmap are summarized below.

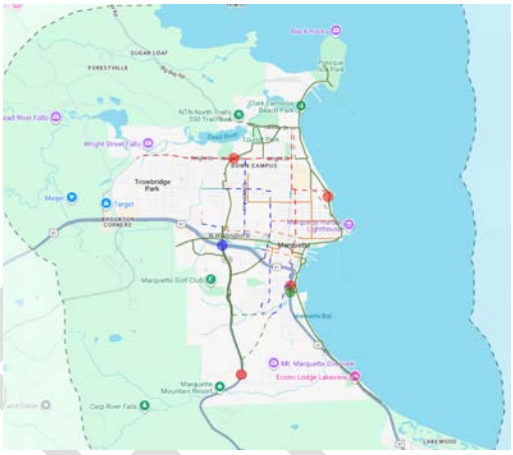

**Figure 33: Webmap screenshot**

**Commented [DP1]:** Sean - We're still working on getting this info from our data science team

## SURVEY SUMMARY

**Question 1 –** *How often do you do the following in Marquette? (Choices - daily, 2-3 times/week, weekly, monthly, rarely, never).* The majority of respondents reported walking/rolling daily and bicycling two to three times per week. Most respondents never use an e-bicycle, scooter, e-scooter, or mobility device (see Table 5).

**Table 5: Activity**

| Activity | Daily | 2-3 Times a Week | Weekly | Monthly | Rarely | Never | Did not answer |
|---|---|---|---|---|---|---|---|
| **Walking/Rolling** | 131 | 77 | 40 | 12 | 4 | 0 | 33 |
| **Bicycle (non-electric)** | 48 | 80 | 41 | 25 | 22 | 43 | 38 |
| **Electric Bicycle (e-bicycle)** | 15 | 38 | 18 | 13 | 18 | 156 | 39 |
| **Non-electric skate or scooter** | 5 | 3 | 3 | 8 | 20 | 215 | 43 |
| **Electric skate or scooter** | 5 | 2 | 2 | 4 | 2 | 233 | 49 |
| **Use a mobility device (wheelchair, motorized chair)** | 4 | 2 | 0 | 1 | 5 | 244 | 41 |

**Question 2** – *Do you bicycle in the winter?* A quarter of respondents are not interested in bicycling in the winter and over a quarter of respondents bicycle recreationally in the winter. Few respondents bicycle for transportation in the winter (see Figure 34).

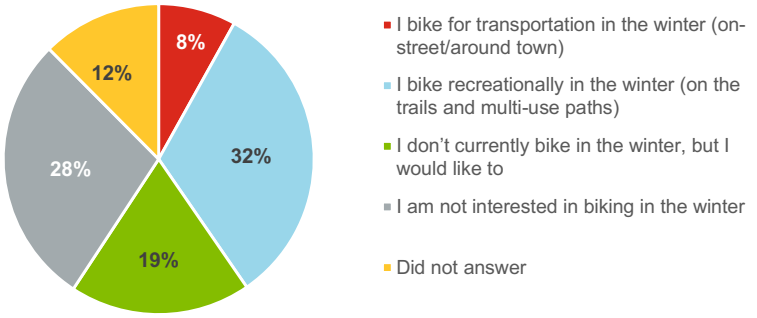


**Figure 34: Winter activity**

**Question 3** – *What is your relationship to Marquette? (select all that apply)* The majority of respondents live in Marquette and over a third of respondents work in Marquette (see Figure 35).

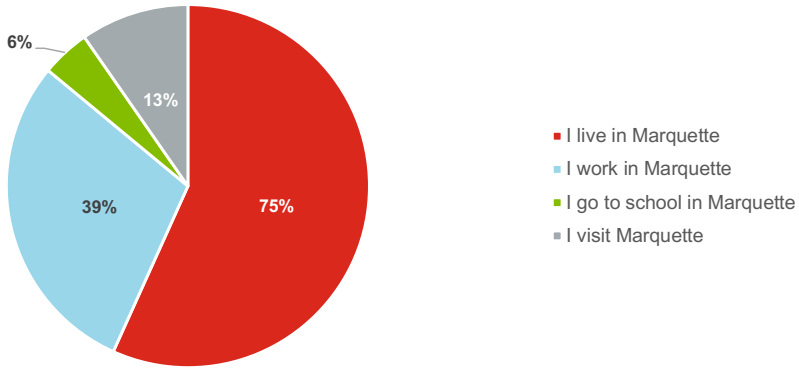


**Figure 35: Relationship to Marquette**

**Demographic Questions** *(see Figure 36 through Figure 39)* – The most common groups of respondents were females, people between the ages of 25 and 44, and white people. Most survey respondents identified as not having a physical disability; however, there were approximately six percent who identified as hard of hearing/deaf or having another type of physical limitation.

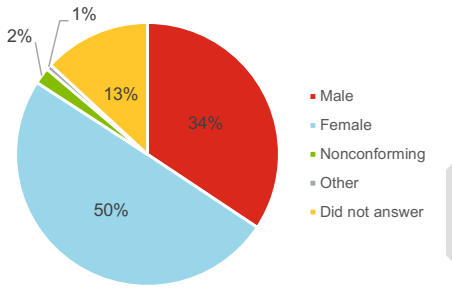


**Figure 36: Gender (n=297)**

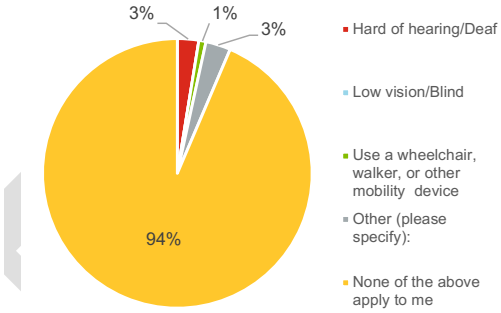


**Figure 37: Physical limitations (n=234)**

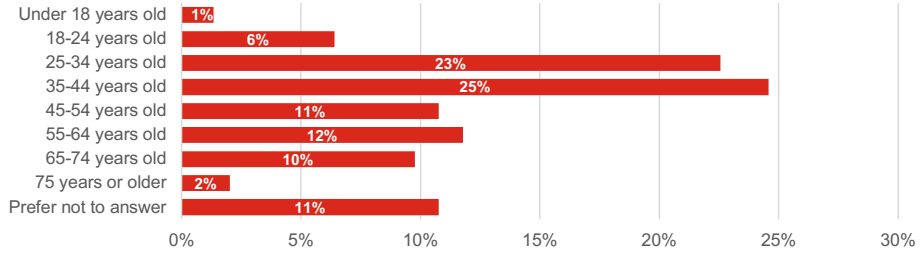


**Figure 38: Age (n=297)**

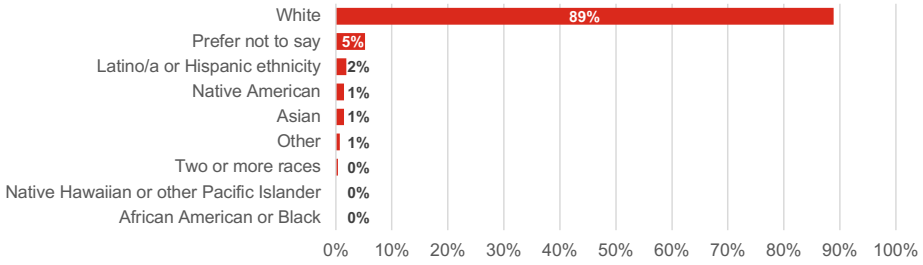


**Figure 39:Race/ethnicity (n=271)**

## WEBMAP SUMMARY

The webmap allowed users to view and provide feedback on the existing and proposed bicycle network, crossing improvements, as well as suggesting new connections and enhancements. Users could also vote to express their support for or disagreement with proposed projects, helping to prioritize community preferences and identify areas of consensus or concern. There were X comments made on the webmap. Overall, many users who participated in the voting process supported the network, with fewer than ten percent expressing disagreement with specific segments.

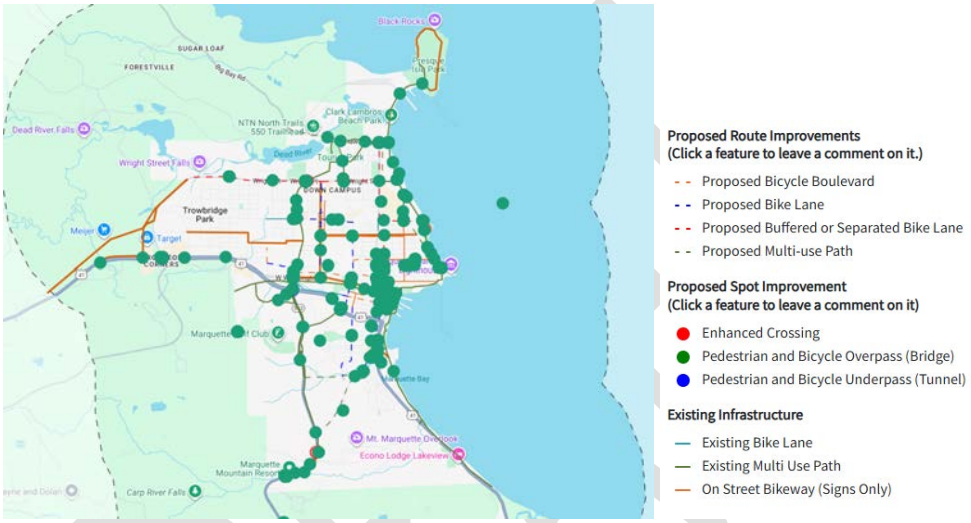


**Figure 40: Online webmap screenshot**

### Top Supported Projects

- **Third Street** – Proposed Buffered or Separated Bicycle Lane (46 respondents liked the project)
- **Wright Street** – Proposed Buffered or Separated Bicycle Lane (38 respondents liked the project)
- **Seventh Street** – Proposed Bicycle Lane (29 respondents liked the project)

### Projects with Disagreeing Opinions

- **Third Street** – Proposed Buffered or Separated Bicycle Lane (46 respondents liked the project and 4 respondents did not like the project) Respondents expressing disagreement with this project felt like this separation wasn't needed and Third Street is fine the way it is. Additional concerns that were brought up were the loss of parking, high traffic volume, and narrow right-of-way.
- **Lincoln Avenue** – Proposed Bicycle Lane (17 respondents liked the project and 3 respondents did not like the project) Concerns mentioned by respondents included not enough room in the right-of-way and maintenance concerns.
- **Presque Isle Avenue** – Proposed Buffered or Separated Bicycle Lane (19 respondents liked the project and 3 respondents did not like the project) Respondents expressing disagreement with the project felt like this project wasn't really necessary for numerous reasons. Respondents mentioned that there is a multi-use trail on Lakeshore and the overall street on Presque Isle Avenue is already a low stress street that feels comfortable for both cars and bicyclists.

## Crossing Improvements

Users were also able to vote on proposed crossing improvements, suggest new enhancements, and leave comments about crossings they found unsafe or uncomfortable, as well as general feedback. Figure 41 displays a heatmap illustrating where the highest concentration of comments occurred. It is important to note that users often used this comment feature to leave broader suggestions (e.g., the need for additional wayfinding signage, vegetation trimming for visibility, or general praise for the project). As a result, not all comments were specifically related to crossing safety, making this dataset slightly imperfect for that purpose. However, the project team reviewed all comments, and most were able to be addressed through infrastructure, policy, or program recommendations.

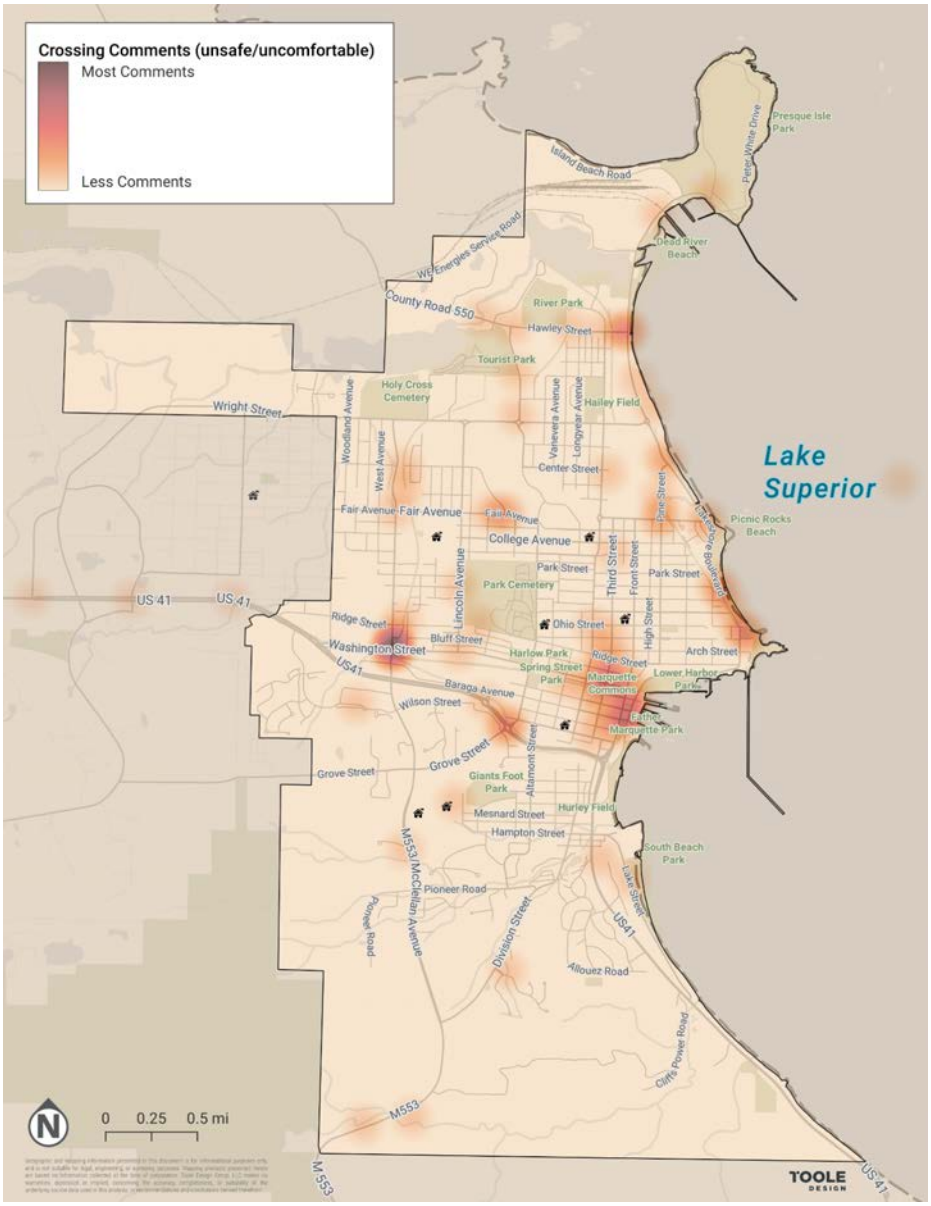


**Figure 41: Heatmap showing comments made by participants about unsafe or uncomfortable crossings**

# MOVING FROM ENGAGEMENT TO RECOMMENDATIONS

The project team reviewed all comments from participants who attended the Active Transportation Palooza, completed the survey, or contributed to the webmap; the proposed pedestrian and bicycle networks were updated based on this feedback. In addition, the team developed a set of policy and program recommendations to support walking and bicycling in Marquette.

**Figure 42. Lakefront Multi-Use Path**

# CHAPTER 3: RECOMMENDATIONS

This plan makes recommendations that promote and support active transportation through a combination of infrastructure projects, policies, and programs. Infrastructure recommendations refer to trail or multi-use path projects and street projects that will change how roadways are configured to provide space for all users. Policy and program recommendations aim to re-prioritize walking and bicycling and to change the culture around active transportation and help increase its use through engagement, education, encouragement, and evaluation.

# INFRASTRUCTURE PROJECTS

The final proposed network is based on the existing conditions analysis and public input. The goals of these infrastructure recommendations are to address safety and accessibility issues of the existing network, provide connections to important destinations, fill sidewalk and trail gaps, and create a connected, comprehensive active transportation network.

The proposed bicycle network features a mix of facilities, with the greatest mileage dedicated to multi-use paths (about eight miles). The plan also recommends just under six miles of buffered or separated bike lanes, a similar mileage of conventional bike lanes, and nearly four miles of bicycle boulevards. Smaller segments are identified for further study or innovative treatments, including a future transportation study along Washington Street, a corridor with high multimodal activity. Additional elements include just under a mile of soft surface trail and roughly a tenth of a mile of open streets, where vehicular traffic would be periodically restricted to prioritize people walking and biking.

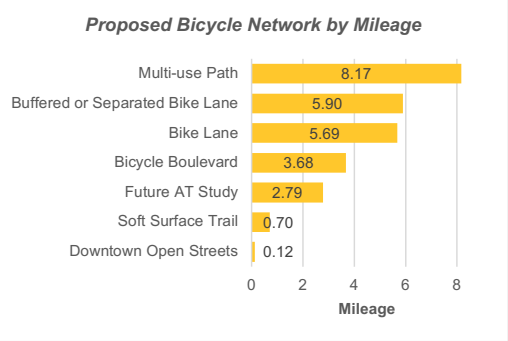


Table 6 provides detailed information on all proposed bicycle facilities, including facility type, street name, project extents, lengths, and any applicable notes. Figure 44 maps the proposed bicycle network, with each map ID corresponding directly to the project IDs listed in Table 6.

**Figure 43. Existing Two-Way Cycle Track on Spring Street**

**Table 6: Proposed Bicycle Network**

| ID | Facility Type | Street Name | Start | End | Length (mi) |
|---|---|---|---|---|---|
| 1 | Proposed Future AT Study | Peter White Drive | Existing Multi-use Path | Existing Multi-use Path | 1.41 |
| 2 | Proposed Multi-use Path | County Road 550 | City Boundary | Existing Multi-use Path | 0.51 |
| 3 | Proposed Multi-use Path | County Road 492 | City Boundary/Wright Street | US 41 | 1.19 |
| 4 | Proposed Buffered or Separated Bike Lane | Wright Street | City Boundary | Presque Isle Avenue | 2.55 |
| 5 | Proposed Buffered or Separated Bike Lane | Presque Isle Avenue | Hawley Street | Fair Avenue | 1.01 |
| 6 | Proposed Buffered or Separated Bike Lane | Fair Avenue | Presque Isle Avenue | Lakeshore Boulevard | 0.58 |
| 7 | Proposed Multi-use Path | Proposed Multi-use Path | Hawley Street | Wright Street | 0.53 |
| 8 | Proposed Bike Lane | Lincoln Avenue | Wright Street | Washington Street | 1.26 |
| 9 | Proposed Bike Lane | Fair Avenue | McClellan Avenue | Seventh Street | 0.79 |
| 10 | Proposed Multi-use Path | Seventh Street | Fair Avenue | Magnetic Street | 0.18 |
| 11 | Proposed Bike Lane | Seventh Street | Magnetic Street | Fisher Street | 0.93 |
| 12 | Proposed Bicycle Boulevard | Magnetic Street | Lincoln Avenue | Seventh Street | 0.42 |
| 13 | Proposed Bike Lane | Magnetic Street | Seventh Street | Third Street | 0.41 |
| 14 | Proposed Bicycle Boulevard | Magnetic Street | Third Street | Proposed Multi-use Path | 0.49 |
| 15 | Proposed Trail (soft surface) | Proposed Trail | Fair Avenue | Lakeshore Boulevard | 0.70 |
| 16 | Proposed Buffered or Separated Bike Lane | Third Street | Fair Avenue | Fisher Street | 1.20 |
| 17 | Proposed Bike Lane | Champion Street | Third Street | Division Street | 0.42 |
| 18 | Proposed Bike Lane | Fisher Street | Seventh Street | Champion Street | 0.47 |
| 19 | Proposed Buffered or Separated Bike Lane | Division Street | Genesee Street | Pioneer Road | 0.55 |
| 20 | Proposed Multi-use Path | Division Street | Pioneer Road | M553 | 0.92 |
| 21 | Proposed Multi-use Path | M553 | Division Street | City Boundary | 1.17 |
| 22 | Proposed Multi-use Path | Pioneer Road | M553 | Division Street | 0.67 |
| 23 | Proposed Bike Lane | Altamont Street | Fisher Street | Pioneer Road | 1.00 |
| 24 | Proposed Bicycle Boulevard | Baraga Avenue | Seventh Street | Lakeshore Boulevard | 0.58 |
| 25 | Proposed Bike Lane | Baraga Avenue | Existing Bike Lane | Seventh Street | 0.07 |
| 26 | Proposed Future AT Study | Washington Street | McClellan Avenue | Third Street | 1.38 |
| 27 | Proposed Downtown (Open Streets) | Washington Street | Third Street | Front Street | 0.12 |
| 28 | Proposed Bicycle Boulevard | Fifth Street | Spring Street | Trail | 0.07 |
| 29 | Proposed Bicycle Boulevard | Ridge Street | Seventh Street | Front Street | 0.54 |

| ID | Facility Type | Street Name | Start | End | Length (mi) |
|---|---|---|---|---|---|
| 30 | Proposed Bicycle Boulevard | Rublein Street | Bluff Street | Ridge Street | 0.07 |
| 30 | Proposed Bicycle Boulevard | Bluff Street | Rublein Street | Seventh Street | 0.70 |
| 30 | Proposed Bicycle Boulevard | Ridge Street | McClellan Avenue | Rublein Street | 0.08 |
| 31 | Proposed Bike Lane | Ridge Street | Meeske Avenue | McClellan Avenue | 0.34 |
| 32 | Proposed Bicycle Boulevard | Meeske Avenue | Proposed Multi-use Path | Ridge Street | 0.21 |
| 33 | Proposed Multi-use Path | Werner Street/ Proposed Multi-use Path | Meeske Avenue | Cleveland Avenue | 0.26 |
| 34 | Proposed Bicycle Boulevard | Cleveland Avenue | Proposed Multi-use Path | Existing Multi-use Path | 0.20 |
| 35 | Proposed Bicycle Boulevard | Hewitt Avenue | Seventh Street | Fourth Street | 0.31 |
| 36 | Proposed Multi-use Path | Wilson Street | Iron Ore Heritage Trail | Existing Multi-use Path | 0.61 |
| 37 | Proposed Multi-use Path | Grove Street | City Boundary | M553 | 0.56 |
| 38 | Proposed Multi-use Path | US41 | Genesee Street | State Prison Entrance | 1.57 |

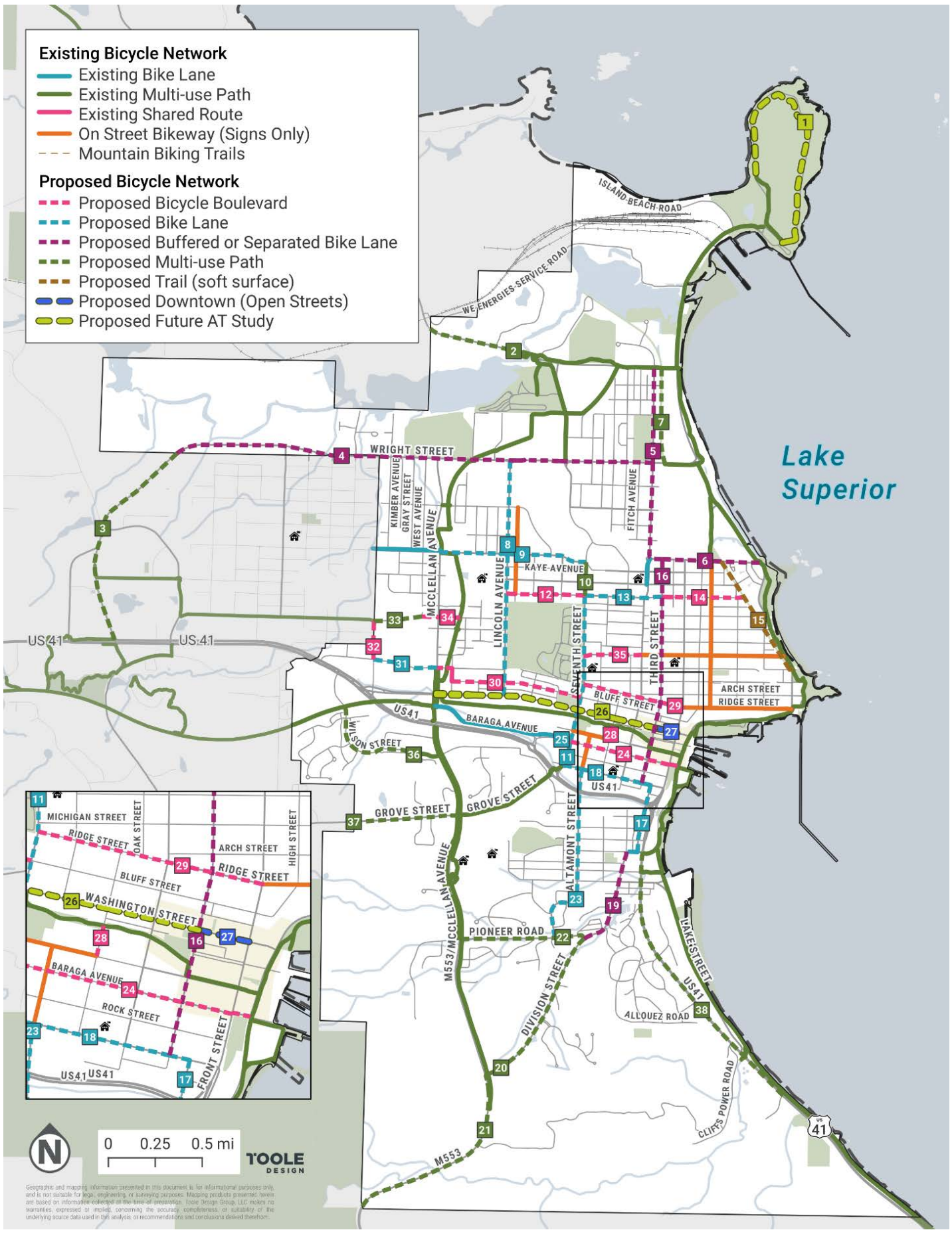


**Figure 44: Proposed Bicycle Network**

# BICYCLE FACILITIES

The recommended bicycle facility type for each project listed in this Active Transportation Plan is based on the National Association of City Transportation Officials (NACTO) Designing for All Ages and Abilities Guidance. This guidance recommends motor vehicle speed, volume, number of lanes, and operational considerations to determine which bicycle facility type is most appropriate for a candidate street. As these projects move to implementation, the specific facility type may change, but the ultimate goal of the bicycle network will remain to design for all ages and abilities.

<table>
<tr><th colspan="4">Roadway Context</th><th rowspan="2">All Ages & Abilities Bicycle Facility</th></tr>
<tr><th>Target Motor Vehicle Speed*</th><th>Target Max Motor Vehicle Volume (ADT)</th><th>Motor Vehicle Lanes</th><th>Key Operational Considerations</th></tr>
<tr><td colspan="2">Any</td><td>Any</td><td>Any of the following: high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts‡</td><td>Separated Bicycle Lane</td></tr>
<tr><td>< 10 mph</td><td>Less relevant</td><td rowspan="2">No centerline, or single lane one-way</td><td>Pedestrians share the roadway</td><td>Shared Street</td></tr>
<tr><td>≤ 20 mph</td><td>≤ 1,000 – 2,000</td><td rowspan="2">< 50 motor vehicles per hour in the peak direction at peak hour</td><td rowspan="2">Bicycle Boulevard</td></tr>
<tr><td rowspan="4">≤ 25 mph</td><td>≤ 500 – 1,500</td></tr>
<tr><td>≤ 1,500 – 3,000</td><td rowspan="3">Single lane each direction, or single lane one-way</td><td rowspan="3">Low curbside activity, or low congestion pressure</td><td>Conventional or Buffered Bicycle Lane, or Separated Bicycle Lane</td></tr>
<tr><td>≤ 3,000 – 6,000</td><td>Buffered or Separated Bicycle Lane</td></tr>
<tr><td>Greater than 6,000</td><td rowspan="2">Separated Bicycle Lane</td></tr>
<tr><td rowspan="3">Greater than 26 mph†</td><td>Any</td><td>Multiple lanes per direction</td></tr>
<tr><td rowspan="2">≤ 6,000</td><td>Single lane each direction</td><td rowspan="2">Low curbside activity, or low congestion pressure</td><td>Separated Bicycle Lane, or Reduce Speed</td></tr>
<tr><td>Multiple lanes per direction</td><td>Separated Bicycle Lane, or Reduce to Single Lane & Reduce Speed</td></tr>
<tr><td>Greater than 6,000</td><td>Any</td><td>Any</td><td>Separated Bicycle Lane, or Bicycle Path</td></tr>
<tr><td colspan="2" rowspan="2">High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts</td><td rowspan="2">Any</td><td>High Pedestrian Volume</td><td>Bike Path with Separated Walkway or Separated Bicycle Lane</td></tr>
<tr><td>High Pedestrian Volume</td><td>Shared-Use Path or Separated Bicycle Lane</td></tr>
<tr><td colspan="5"><u>NOTES:</u></td></tr>
</table>

* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.
† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30-mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.
‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

## BICYCLE BOULEVARD

Bicycle boulevards are local streets re-designed to give bicyclists priority. Local streets are already the lowest volume and lowest speed streets in any city. Bicycle boulevards take advantage of this and take local streets one step further by calming traffic if necessary and providing low-stress crossings at major streets. They are used on low-traffic side streets (fewer than 2,000 vehicles per day), usually with traffic calming to reduce travel speeds to between 10 and 25 mph. Traffic calming may include speed humps, traffic circles, chicanes, or neckdowns. Bicycle boulevards typically connect residential neighborhoods to higher volume streets. At existing two-way stop intersections with other local streets, the stop signs may be "flipped" to stop cross-street traffic, allowing bicyclists to stop less frequently. At major street crossings more significant infrastructure is required such as medians and/or traffic signals or beacons.

**Figure 45. Traffic Circle at the intersection of two local streets along a bike boulevard in La Crosse, WI**

## CONVENTIONAL BIKE LANE

Conventional bike lanes (not buffered or protected/separated) are an on-street bicycle facility designated by striping, signing, and pavement markings. Bike lanes are separated from travel lanes by solid white lines. Bike lanes reduce the need for people riding bicycles and people driving cars to negotiate for space on the roadway. Bike lanes are typically used on streets with moderate traffic volumes (1,500 to 3,000 vehicles per day) and low speeds (20 to 30 mph typical speeds).

**Figure 46. Conventional Bike Lane in Traverse City, MI**

## BUFFERED BIKE LANE

Buffered bike lanes are a conventional bike lane with an additional striped buffer area between the bike lane and motor vehicle travel lane that is typically 2-4 feet wide. The painted buffer area increases lateral separation between bicyclists and passing motor vehicles and parked car doors. Buffered bike lanes are typically used on streets with moderate traffic volumes (1,500 to 6,000 vehicles per day) and low speeds (20 to 30 mph typical speeds). Buffered bike lanes are typically used on streets with excess width but without high enough vehicle speeds or volumes to warrant physical separation.

**Figure 47. Buffered Bike Lane in Seattle, WA**

## SEPARATED BIKE LANE

A separated bike lane, protected bike lane or cycle track is an exclusive bikeway that has elements of a separated path and on-road bike lane. A separate sidewalk is provided for pedestrians. Protected bike lanes may be one-way or two-way configuration. Separated bike lanes can provide a low-stress bicycling environment along busier corridors (greater than 6,000 vehicles per day or speeds above 30 mph).

**Figure 48. Separated Bike Lane with Flex Posts in Denver, CO**

**Figure 49. Two-Way Separated Bike Lane in Ann Arbor, MI**

## MULTI-USE PATH

Multi-use paths or trails are bicycle facilities physically separated from traffic but intended for shared use by a variety of users, including pedestrians, bicyclists, and joggers. Major street crossings may have signals, crossing beacons, refuge islands, or bridges and underpasses. Multi-use paths can provide a low-stress bicycling environment along busier corridors (greater than 6,000 vehicles per day or speeds above 30 mph).


**Figure 50. Multi-use path in Marquette, MI**

## SIDEWALKS AND CURB RAMPS

To make walking a comfortable, convenient, and safe travel option for people of all ages and abilities, the City of Marquette seeks to provide a comprehensive and accessible sidewalk network with accessible curb ramps at all crossing locations. Most streets in the city currently have sidewalks but some neighborhoods further from downtown do not have sidewalks. As funds permit, the city will continue to build out the sidewalk network.

**Figure 51. Typical Sidewalk along 3rd Street**

Curb ramps provide smooth transitions from sidewalks to streets at intersections and crossings which serve people using wheelchairs. Curb ramps also make it easier for older people and people using strollers to cross the street. Most locations that have sidewalks in the city also have curb ramps at intersections. A curb ramp inventory was completed in 2022. The inventory helps the city determine where to install additional curb ramps.

**Figure 52. Curb ramps at an intersection corner**

# CROSSING TREATMENTS

A critical component to creating a safe, accessible, and comprehensive pedestrian and bicycle network for people of all ages and abilities is improving street crossings. This plan includes a suite of "spot improvements" primarily at intersections, designed to make it safer and more comfortable for people walking and biking to cross busy streets. Most of these are recommended as "enhanced crossings" with two additional recommendations for grade-separated crossings (tunnels or bridges). In total, 29 spot improvements are proposed and described in detail in **Error! Not a valid bookmark self-reference.**, which outlines the type of improvement, intersecting streets, and details about the potential enhancement. Figure 53 maps these proposed improvements, with each map ID corresponding directly to the project IDs listed in **Error! Not a valid bookmark self-reference.**.

**Table 7: Proposed Spot Improvements**

| ID | Type | Street 1 | Street 2 | Street 3 | Potential Enhancement |
|---|---|---|---|---|---|
| 1 | Enhanced Crossing | Presque Isle Avenue | Hawley Street | | Crossing treatment + design elements |
| 2 | Enhanced Crossing | Hawley Street | Lakeshore Boulevard | | Crossing treatment + design elements |
| 3 | Enhanced Crossing | Wright Street | Trail | | Crossing treatment + design elements |
| 4 | Enhanced Crossing | Norwood Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study |
| 5 | Enhanced Crossing | Center Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study |
| 6 | Enhanced Crossing | Summit Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study |
| 7 | Enhanced Crossing | Waldo Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study |
| 8 | Enhanced Crossing | Fair Avenue | Elizabeth Harden Drive | | Crossing treatment + design elements |
| 9 | Enhanced Crossing | Fair Avenue | Pine Street | | Protected intersection, trail signage |
| 10 | Enhanced Crossing | Fair Avenue | Lakeshore Boulevard | | Crossing treatment + design elements |
| 11 | Enhanced Crossing | Third Street | Magnetic Street | | Crossing treatment + design elements |
| 12 | Enhanced Crossing | Lakeshore Boulevard | Picnic Rocks | | Crossing treatment + design elements |
| 13 | Enhanced Crossing | Crescent Street | Lakeshore Boulevard | | Crossing treatment + design elements |
| 14 | Enhanced Crossing | Hewitt Avenue | Lakeshore Boulevard | | Crossing treatment + design elements |
| 15 | Enhanced Crossing | Washington Street | McClellan Avenue | | Protected intersection and wayfinding signage |
| 16 | Pedestrian and Bicyclist Underpass (Tunnel) | US41 | M553/McClellan Avenue | | Planned pedestrian and bicyclist underpass tunnel |

| ID | Type | Street 1 | Street 2 | Street 3 | Potential Enhancement |
|---|---|---|---|---|---|
| 17 | Enhanced Crossing | US41 | Grove Street/Seventh Street | Roundabout | Crossing study to improve pedestrian and bicycle safety (potential improvements could include RRFBs, potentially advanced RRFBs, dual roundabouts) |
| 18 | Enhanced Crossing | Iron Ore Trail | Fifth Street | | Crossing treatment + design elements |
| 19 | Enhanced Crossing | Washington Street | Third Street | | Leading Pedestrian Interval |
| 20 | Enhanced Crossing | Washington Street | Front Street | | Leading Pedestrian Interval + design elements |
| 21 | Enhanced Crossing | Washington Street | Lakeshore Boulevard | | Crossing treatment + design elements |
| 22 | Enhanced Crossing | Spring Street | Lakeshore Boulevard | | Crossing treatment, design elements, signage, and narrowing along Spring Street |
| 23 | Enhanced Crossing | Baraga Avenue | Spring Street | | Median refugee island, crossing treatment, + design elements |
| 24 | Enhanced Crossing | Baraga Avenue | Third Street | | Crossing treatment + design elements |
| 25 | Enhanced Crossing | Genesee Street | Lakeshore Boulevard | | Planned pedestrian and bicycle overpass bridge |
| 26 | Pedestrian and Bicyclist Overpass (Bridge) | Craig Street | Trail | | Planned pedestrian and bicyclist overpass bridge |
| 27 | Enhanced Crossing | M553 | MTB Trail | | Crossing treatment + design elements for MTB Trail crossing |
| 28 | Enhanced Crossing | M553 | Marquette Mountain Resort/Parking | | Crossing treatment + design elements for Marquette Mountain Resort |
| 29 | Enhanced Crossing | Rock Street | Front Street | | Crossing treatment + design elements |

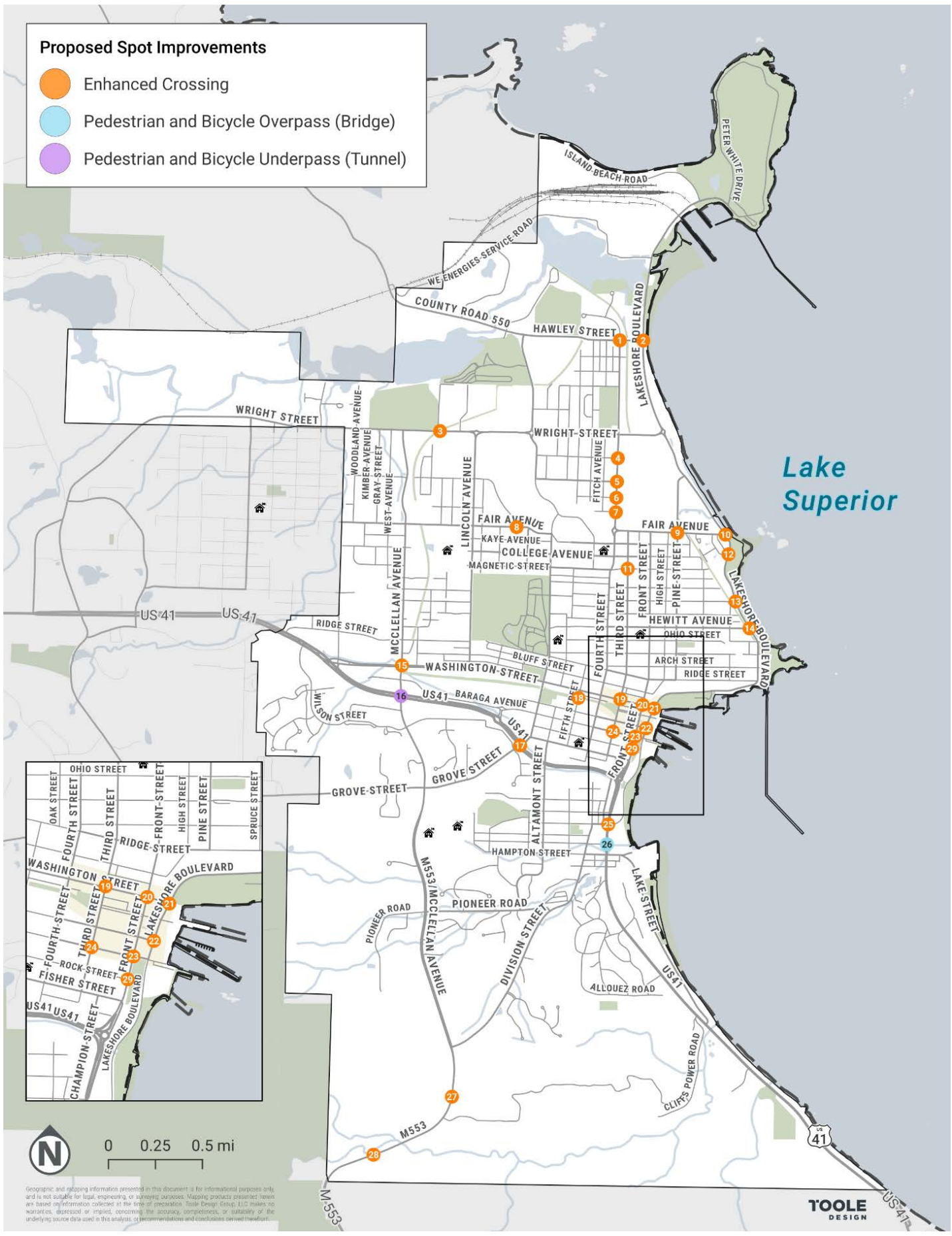


**Figure 53: Proposed Spot Improvements**

Specific treatments for each enhanced crossing recommendation should follow guidance from the U.S. Department of Transportation *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations.* This guidance recommends a specific set of countermeasures depending on the existing street characteristics, as shown in the figure below.

| Roadway Configuration | Posted Speed Limit and AADT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Vehicle AADT <9,000 | | | Vehicle AADT 9,000–15,000 | | | Vehicle AADT >15,000 | | |
| | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph | ≤30 mph | 35 mph | ≥40 mph |
| **2 lanes** (1 lane in each direction) | ❶ 2 4 5 6 | ❶ 5 6 7 9 | ① 5 6 ❼ ❾ | ❶ 4 5 6 | ❶ 5 6 7 9 | ① 5 6 ❼ ❾ | ❶ 4 5 6 7 9 | ① 5 6 7 9 | ① 5 6 ❾ |
| **3 lanes with raised median** (1 lane in each direction) | ❶ 2 3 4 5 7 9 | ❶ ❸ 5 7 9 | ① ❸ 5 ❼ ❾ | ① 3 4 5 7 9 | ① ❸ 5 ❼ ❾ | ① ❸ 5 ❼ ❾ | ① ❸ 4 5 7 9 | ① ❸ 5 ❼ ❾ | ① ❸ 5 ❾ |
| **3 lanes w/o raised median** (1 lane in each direction with a two-way left-turn lane) | ❶ 2 3 4 5 6 7 9 | ❶ ❸ 5 6 7 9 | ① ❸ 5 6 ❾ | ① 3 4 5 6 7 9 | ① ❸ 5 6 ❼ ❾ | ① ❸ 5 6 ❾ | ① ❸ 4 5 6 7 9 | ① ❸ 5 6 ❾ | ① ❸ 5 6 ❾ |
| **4+ lanes with raised median** (2 or more lanes in each direction) | ❶ ❸ 5 7 8 9 | ❶ ❸ 5 7 8 9 | ① ❸ 5 8 ❾ | ① ❸ 5 7 8 9 | ① ❸ 5 ❼ 8 9 | ① ❸ 5 8 ❾ | ① ❸ 5 ❼ 8 9 | ① ❸ 5 8 ❾ | ① ❸ 5 8 ❾ |
| **4+ lanes w/o raised median** (2 or more lanes in each direction) | ❶ ❸ 5 6 7 8 9 | ① ❸ 5 ❻ 7 8 9 | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ 7 8 9 | ① ❸ 5 ❻ ❼ 8 ❾ | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ ❼ 8 ❾ | ① ❸ 5 ❻ 8 ❾ | ① ❸ 5 ❻ 8 ❾ |

Given the set of conditions in a cell,

\# Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.

● Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.

○ Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
2 Raised crosswalk
3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
4 In-Street Pedestrian Crossing sign
5 Curb extension
6 Pedestrian refuge island
7 Rectangular Rapid-Flashing Beacon (RRFB)**
8 Road Diet
9 Pedestrian Hybrid Beacon (PHB)**

**Figure 54. Guidelines for pedestrian crossing treatments at uncontrolled crossing locations. Source: USDOT *Guide for Improving Safety at Uncontrolled Crossing Locations***

This plan identifies nine potential treatments to improve pedestrian safety and comfort: standard crosswalk design, raised crosswalks, advance yield here to pedestrians signs, in-street pedestrian crossing signs, curb extensions, pedestrian refuge islands, rectangular rapid-flashing beacons, road diets, and pedestrian hybrid beacons. Each of these treatments is described in greater detail below.

## STANDARD CROSSWALK DESIGN

- **High visibility crosswalk markings** include ladder, continental-style, or bar-pair striping designs.
- **Parking restrictions on the crosswalk approach** refer to restricting parking within 20 feet of the driver's approach to the crosswalk to improve sightlines between people driving and pedestrians on the sidewalk waiting to cross.
- **Adequate nighttime lighting levels** refer to lighting that specifically covers the crosswalk and 10 to 15 feet of space in advance of the crosswalk on both sides of the street.
- **Crossing warning signs** refer to MUTCD W11-2 Pedestrian Crossing Warning sign or S1-1 School Advance Crossing sign.

**Figure 55. Marked Continental-style Crosswalk, 3rd Street**

## RAISED CROSSWALK

Raised crossings are designed in a similar manner to speed humps/tables but provide a crossing along a wider flat top. The crossing can be either at sidewalk level or modified to be three to five inches high to address drainage challenges. Raised crossings improve driver yielding compliance.

**Figure 56. Example Raised Crossing**

## ADVANCE YIELD HERE TO PEDESTRIANS SIGN AND YIELD LINE

Advance Yield Here To Pedestrians signs and yield lines can be provided in advance of crosswalks to remind drivers where to stop to yield to a crossing pedestrian. The MUTCD provides more guidance on this topic in section 2B.19 *Yield Here To Pedestrians Signs and Stop Here For Pedestrians Signs (R1-5 Series)*.


**Figure 57. Example Stop Here for Pedestrians Sign and Advance Stop Line, Ann Arbor, MI**

## IN-STREET PEDESTRIAN CROSSING SIGN

In-street pedestrian crossing signs are small signs placed along centerlines or lane lines at marked crosswalks. More information is available in MUTCD Section 2B.20 *In-Street and Overhead Pedestrian and Trail Crossing Signs (R1-6 and R1-9 Series).*


**Figure 58. Example in-street pedestrian crossing sign**

## CURB EXTENSION

A curb extension or bumpout is an extension of the sidewalk area into the street, typically using the full width of an on-street parking lane. Curb extensions shorten the pedestrian crossing distance and improve sightlines between people driving and people walking waiting to cross the street.

**Figure 59. Example curb extension**

## PEDESTRIAN REFUGE ISLAND

A pedestrian refuge island is a median that has a cut-through for pedestrians or bicyclists at a crossing location. This allows people walking and biking to cross in two stages, only needing to negotiate one direction of car traffic at a time, with a refuge in between. The minimum width for an accessible refuge island is six feet, though 10 feet is needed to accommodate a bicycle with a trailer. Typically refuge islands can be installed where there is already a center turn lane, which provides enough space to include a full 10-foot-wide refuge.

**Figure 60. Example pedestrian median refuge island**

## RECTANGULAR RAPID-FLASHING BEACON (RRFB)

RRFBs are pedestrian or bicyclist-activated bright, irregularly flashing LEDs mounted with pedestrian crossing signs at uncontrolled crossings. RRFBs make a crosswalk more visible to people driving and alert drivers that a person is trying to cross. They can be solar powered or hard-wired. RRFBs can increase driver yielding to pedestrians at uncontrolled crossings by up to 98%[7] compared to locations without RRFBs.

**Figure 61. Example RRFBs, Ann Arbor, MI**

[7] USDOT Federal Highway Administration, Proven Safety Countermeasures: Rectangular Rapid Flashing Beacons. https://highways.dot.gov/safety/proven-safety-countermeasures/rectangular-rapid-flashing-beacons-rrfb

## ROAD DIET

A road diet reconfigures the roadway to replace motor vehicle travel lanes. Most commonly, road diets change an existing 4-lane roadway where there are two through lanes in each direction to a three-lane roadway where there is one through lane in each direction and a center turn lane. This type of treatment can generally be installed on streets with traffic volumes of up to 25,000 motor vehicles per day. Road diets can be accomplished through re-striping alone, and provide the benefits of shortened pedestrian crossings, in some cases the addition of new bike lanes, and better organized motor vehicle turning movements which typically have safety benefits.

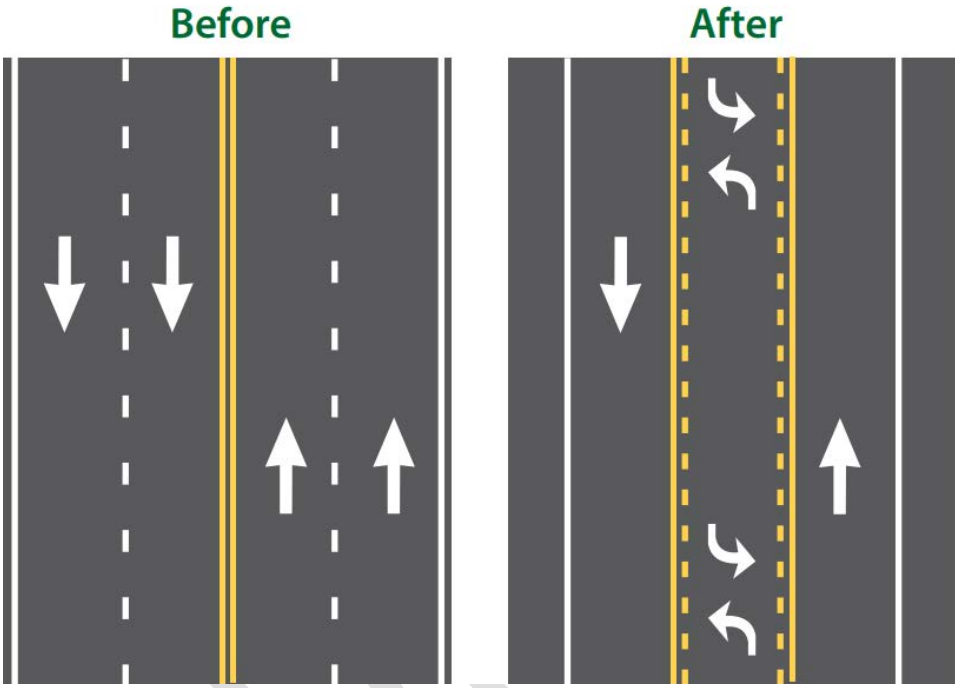


**Figure 62. Typical "4-to-3" road diet. Source: USDOT Road Diet Informational Guide**

## PEDESTRIAN HYBRID BEACON (PHB)

PHBs are pushbutton activated beacon-controlled crossings that provide a protected walk phase for pedestrians and/or bicyclists. They are like a traffic signal but have a different layout and flashing pattern. The beacons remain dark until a pedestrian or bicyclist activates them via a pushbutton. When a pedestrian presses the push button, the beacon turns yellow and then red to give people walking, rolling, and biking the right-of-way. They are sometimes also called High Intensity Activated Crosswalks (HAWKs).

**Figure 63. Example Pedestrian Hybrid Beacon**

# PROGRAM AND POLICY RECOMMENDATIONS

Establishing safe and convenient active transportation infrastructure is critical to improving walking and bicycling conditions. But without programs and policies in place to support active transportation, infrastructure projects can only go so far. A variety of non-infrastructure tools can increase pedestrians' and bicyclists' safety by establishing a culture of walking and biking and creating a friendly regulatory and political environment for active transportation.

Programs and policies can typically be implemented relatively quickly and inexpensively. Programs can be easily scaled to reach a wide audience, such as elementary school students, transit riders, or business owners or tailored to specific groups, such as drivers speeding in school zones. Individual programs can increase walking and bicycling in specific circumstances and locations but should be coordinated with policy development to ensure lasting change.

The following tables describe specific recommended programs and policies, including a brief description, the responsible party, potential implementation partners, anticipated timeframe, and current status. These recommendations are organized into three categories: Infrastructure-Focused (see), Safety-Focused (see), and encouragement (see).

**Table 8: Infrastructure-Focused Programs and Policies**

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Signage** | Develop and expand existing wayfinding systems and signed routes. Signage should include wayfinding, trail etiquette and rules of the trail, including specifications for e-bikes. | City of Marquette | | Medium-term | New and Ongoing |
| **Bicycle Network and Amenities Materials** | Create materials and maps that educate, promote, and support walking and bicycling within Marquette (e.g., bike maps indicating routes, bike parking, bicycle friendly businesses). Create and update online wayfinding materials, such as the Google Maps bicycle network. | City of Marquette | Marquette County | Long-term | New |
| **Multi-Use Paths Enhancements** | Stripe and when possible, widen multi-use paths to create safer interactions between pedestrians and bicyclists and continue the encouragement of walking and bicycling. | City of Marquette | | Short-term | New |

**Commented [DP2]:** Sean - we left these as short/medium/long-term but did not define what that means. This is intended to give you flexibility. If you want us to define them with timelines such as 1-2 years/3-5 years/5+ years we can.

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Allocate extra width for e-bikes when designing bike lanes and trails** | Design bikeways wide enough for all users to ride comfortably and for faster riders to pass slower riders comfortably. Typical bikes need 4-5 feet width of riding space, while cargo bikes or large e-bikes need 6.5-7.5 feet. A typical bike needs 3 feet of additional space to pass, and an extra-large bike needs 5 feet of additional space to pass. This means typical bikes need only 7 feet of space to pass one another in the same direction ,while extra-large bikes need 12.5 feet of space to pass. This is a significant shift from how bike lanes and trails have historically been designed, with only 5-6 feet of width per direction of travel. Designing future bike lanes and trails wider to accommodate a growing number of bicyclists with different types of bicycles will ensure all people feel more comfortable. In the meantime, striping centerlines on existing multi-use paths with high volumes of people walking and biking could help organize the limited existing space. | City of Marquette | | Medium-term | New |
| **Design intersections to include safe spaces for all types of bicyclists** | Intersections should have enough space for bicyclists to wait, turn, and shift lanes. Protected intersections can separate bikeway users from drivers, promoting safety. With the rise of e-bikes and larger cargo bikes and bikes with trailers, this additional space is especially important at intersections, where most conflicts occur. | City of Marquette | | Medium-term | New |
| **Demonstration Projects** | Look for opportunities to build temporary demonstration projects to support permanent infrastructure changes and educate residents on potential infrastructure. | City of Marquette | Marquette Area Public Schools | Short-term | New |
| **Enhanced Lighting** | Identify areas with poor, broken, or missing street lighting to create safer walking and bicycling conditions. | City of Marquette | | Long-term | New |

**Commented [DP2]:** Sean - we left these as short/medium/long-term but did not define what that means. This is intended to give you flexibility. If you want us to define them with timelines such as 1-2 years/3-5 years/5+ years we can.

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Bicycle-Friendly Businesses** | Encourage businesses to become "bicycle-friendly" by providing incentives to customers who arrive by bicycle like bicycle parking, repair stations, bicycle events, or discounts to people who bicycle. Marquette's program could include a sign for businesses to display. | City of Marquette | Local businesses | Short-term | New |
| **Active Transportation Funding** | Coordinate funding for pedestrian and bicycle facilities across departments as appropriate. Pursue federal, state, and regional grants and funding. Pursuing funding appropriately will also help ensure maintenance/public works doesn't feel overwhelmed by an increase in the bicycle network. | City of Marquette | Marquette County | Short-term | Ongoing |
| **City Maintenance Practices** | Review and update city maintenance practices for walking and bicycling facilities and infrastructure (e.g., street sweeping and snow plowing bike lanes, trails, and sidewalks; public art upkeep and maintenance; signage upkeep and maintenance). Maintenance practices that could be reviewed and updated include routine maintenance and snow removal. Coordinate with regional partners for regional trails. | City of Marquette | Marquette County | Medium-term | New |
| **Bicycle Racks** | Install bike racks near destinations and along key bicycle routes. | City of Marquette | Local Businesses | Medium-term | New |
| **Infrastructure that Supports People with Disabilities** | Implement or upgrade infrastructure to be accessible and support people with disabilities (e.g., audible pedestrian signals, tactical curb cuts, bicycle racks for trikes and adaptive bicycles). | City of Marquette | | Medium-term | New |

**Commented [DP2]:** Sean - we left these as short/medium/long-term but did not define what that means. This is intended to give you flexibility. If you want us to define them with timelines such as 1-2 years/3-5 years/5+ years we can.

**Table 9: Safety-Focused Programs and Policies**

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Comprehensive Safety Action Plan** | Advocate and be a part of the development of a Comprehensive Safety Action Plan to promote safe roadway practices for all. This could be city, county, or regionally led. | City of Marquette | Marquette County | Long-term | New |
| **Speed Management** | Identify streets with speeding issues and consider traffic calming devices, stricter speed limits, road right sizing, and other measures as appropriate. | City of Marquette | Marquette County | Medium-term | New |
| **Policies and Guidelines** | Create and update policies and guidelines that support walking and bicycling (i.e., Complete Streets Policy, ADA Transition Plan, Winter Maintenance Plan). Update existing policies and guidelines to reflect the current, best practices for traffic safety and active transportation such as Bike Parking Guidelines, Rules and Regulations of Electric Transportation Devices, design standards, land use, development review, and 85th percentile speed-setting, etc. | City of Marquette | Marquette County | Short-term | New |
| **Safe Routes to School Programming** | Look for opportunities to improve safety around schools and teach students about pedestrian and bicycle safety. Potential programs include Safety Towns, bike rodeos, bike buses, bike to school day, walk to school day. Operational programs and policies include encouraging safe arrival and dismissal operations and training for staff specifically on safe walking and bicycling. | City of Marquette | Marquette Area Public Schools | Long-term | New |

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Collaborate with schools to develop e-bike permitting and education standards** | Schools are key touchpoints for introducing safe e-bike practices to student riders and are a direct way to ensure students have access to e-bike classes and educational resources. Schools could tie permission to park a student's bike at the school to a bike safety training class, presentation, and/or assessment. This approach ensures that students are introduced to safe riding practices before they start to ride an e-bike regularly to school. Additional "refresher" courses may also be taught throughout the school year as instructional time allows. | City of Marquette | Marquette Area Public Schools | Short-term | New |
| **Develop targeted e-bike safety campaign messaging materials** | Many communities have developed e-bike specific safety campaign materials targeted at youth, parents, and seniors. A few examples of campaigns across the U.S. include:<br>• Children's Hospital of Orange County E-Bike Safety Tips<br>• American Academy of Pediatrics E-Bike Safety<br>• Marin County E-Bikes: What Parents Should Know<br>• California Highway Patrol E-Bike Safety Training | City of Marquette | Marquette Area Public Schools | Short-term | New |
| **Equip retailers with customer-facing materials that provide information on safe riding and maintenance of e-bikes** | Retailers are often the first point of contact for new e-bike riders, and they can serve a critical role in providing safety education. The City could equip retailers with flyers or small cards that provide simple information about riding e-bikes safely in Marquette on the streets and multi-use paths, including a summary of the ordinance allowing only Class 1 e-bikes on the multi-use paths. | City of Marquette | Local Bike Shops | Short-term | New |

**Table 10: Encouragement-Focused Programs and Policies**

| Program/Policy | Description | Responsible Party | Key Partners | Timeframe | Status |
|---|---|---|---|---|---|
| **Open Streets** | Develop a toolkit for a program that opens streets to people walking and bicycling by temporarily closing access to motorists. Open Streets events allow communities to gain another perspective of how streets can be used for active modes and encourage people to walk and bicycle. | City of Marquette | | Medium-term | New |
| **Bike Share Program** | Establish a Bike Share Program to allow those who might not own a bicycle to have access to bicycles. | Non-Profits, Local Businesses | YMCA, Library, City of Marquette | Medium-term | New |
| **Free or low-cost bicycles and gear** | Work with local businesses, non-profits, and charities to provide refurbished, free, or affordable bicycles, e-bicycles, cargo bicycles, and trikes or other adaptive devices. Giveaway and donation events should foster a culture of safe riding practices by including high-quality locks, lights, baskets or panniers, and helmets. | Non-Profits, Local Businesses | City of Marquette | Short-term | New |

# PROJECT PRIORITIZATION

The infrastructure project recommendations are conceptual routes, meant to show the potential of a comprehensive active transportation system in Marquette. The recommendations are planning level and do not consider potential constraints. Funding, land use, property rights, terrain, and other project specific factors may make certain recommendations less practicable than others. Project prioritization uses measurable data to understand which projects are the most important to start developing first.

## PRIORITIZATION METHODOLOGY

As with most municipalities, the City of Marquette has a limited amount of funding to build bicycle and pedestrian infrastructure. Because of this, it is important that the projects providing the most benefit be prioritized over others. The prioritization method is a data-driven process that uses source GIS datasets to score and rank projects based on conditions in their relative locations. This prioritization method was developed based on public input. The weight of each prioritization metric is shown in Table 11 below. Projects for both linear (bicycle network) and points (spot improvements) were sorted into buckets (high, medium, and low). High-priority projects scored high based on the prioritization metrics and would provide the most benefit for the community, while lower priority projects might be implemented if the opportunity arises but will likely not be pursued in the short term..

**Table 11: Weighted Data-Driven Prioritization**

| Metric | Weight |
|---|---|
| Connections to existing bikeways | 10 |
| Connections to neighboring communities | 10 |
| Projects that connect neighborhoods to Downtown and NMU | 15 |
| Connections to priority underserved neighborhoods | 15 |
| Connections to schools, libraries, healthcare, and grocery stores | 10 |
| Projects that cross barriers such as waterways, highways, and railroads | 15 |
| Projects that address high severe crash locations | 15 |
| Public engagement priorities | 10 |
| **Total** | **100** |

### Prioritization – Linear Projects

Figure 64 maps the prioritized bicycle network and Table 12 displays the same project details as Table 6, but with each project's assigned with a priority level and ranking. High priority projects include projects along Wright Street, Presque Isle Avenue, Third Street, M553, and Washington Street. These corridors are identified as multimodal streets, serving multiple destinations or as roadways with higher speeds and no existing bicycle facilities.

A minor adjustment was made to project ID 18, which appears in two parts in the prioritization list but only one part in Table 6. The segment from Seventh Street to Third Street was added late in the review process at the City's request to improve network connectivity. Because this portion was added after the main analysis and because the segment from Third Street to Division had already been included in the initial recommended network, the two parts received different priority rankings.

**Table 12: Prioritization - Proposed Bicycle Network**

| ID | Facility Type | Street Name | Start | End | Rank | Priority |
|---|---|---|---|---|---|---|
| 4 | Proposed Buffered or Separated Bike Lane | Wright Street | City Boundary | Presque Isle Avenue | 1 | High |
| 5 | Proposed Buffered or Separated Bike Lane | Presque Isle Avenue | Hawley Street | Fair Avenue | 2 | High |
| 16 | Proposed Buffered or Separated Bike Lane | Third Street | Fair Avenue | Fisher Street | 2 | High |
| 21 | Proposed Multi-use Path | M553 | Division Street | City Boundary | 2 | High |
| 26 | Proposed Future AT Study | Washington Street | McClellan Avenue | Third Street | 2 | High |
| 38 | Proposed Multi-use Path | US41 | Genesee Street | State Prison Entrance | 7 | Medium |
| 9 | Proposed Bike Lane | Fair Avenue | McClellan Avenue | Seventh Street | 8 | Medium |
| 18 | Proposed Bike Lane | Fisher Street | Seventh Street | Third Street | 8 | Medium |
| 24 | Proposed Bicycle Boulevard | Baraga Avenue | Seventh Street | Lakeshore Boulevard | 8 | Medium |
| 23 | Proposed Bike Lane | Altamont Street | Fisher Street | Pioneer Road | 11 | Medium |
| 8 | Proposed Bike Lane | Lincoln Avenue | Wright Street | Washington Street | 12 | Medium |
| 10 | Proposed Multi-use Path | Seventh Street | Fair Avenue | Magnetic Street | 12 | Medium |
| 27 | Proposed Downtown (Open Streets) | Washington Street | Third Street | Front Street | 12 | Medium |
| 3 | Proposed Multi-use Path | County Road 492 | City Boundary/Wright Street | US 41 | 16 | Medium |
| 6 | Proposed Buffered or Separated Bike Lane | Fair Avenue | Presque Isle Avenue | Lakeshore Boulevard | 16 | Medium |
| 11 | Proposed Bike Lane | Seventh Street | Magnetic Street | Fisher Street | 16 | Medium |
| 12 | Proposed Bicycle Boulevard | Magnetic Street | Lincoln Avenue | Seventh Street | 16 | Medium |
| 14 | Proposed Bicycle Boulevard | Magnetic Street | Third Street | Proposed Multi-use Path | 16 | Medium |
| 28 | Proposed Bicycle Boulevard | Fifth Street | Spring Street | Trail | 16 | Medium |
| 29 | Proposed Bicycle Boulevard | Ridge Street | Seventh Street | Front Street | 16 | Medium |
| 7 | Proposed Multi-use Path | Proposed Multi-use Path | Hawley Street | Wright Street | 23 | Medium |
| 17 | Proposed Bike Lane | Champion Street | Third Street | Division Street | 23 | Medium |
| 2 | Proposed Multi-use Path | County Road 550 | City Boundary | Existing Multi-use Path | 25 | Low |
| 13 | Proposed Bike Lane | Magnetic Street | Seventh Street | Third Street | 25 | Low |
| 15 | Proposed Trail (soft surface) | Proposed Trail | Fair Avenue | Lakeshore Boulevard | 25 | Low |
| 35 | Proposed Bicycle Boulevard | Hewitt Avenue | Seventh Street | Fourth Street | 25 | Low |
| 36 | Proposed Multi-use Path | Wilson Street | Iron Ore Heritage Trail | Existing Multi-use Path | 25 | Low |
| 37 | Proposed Multi-use Path | Grove Street | City Boundary | M553 | 25 | Low |
| 1 | Proposed Future AT Study | Peter White Drive | Existing Multi-use Path | Existing Multi-use Path | 34 | Low |

| | | | | | | |
|---|---|---|---|---|---|---|
| 19 | Proposed Buffered or Separated Bike Lane | Division Street | Genesee Street | Pioneer Road | 34 | Low |
| 20 | Proposed Multi-use Path | Division Street | Pioneer Road | M553 | 34 | Low |
| 22 | Proposed Multi-use Path | Pioneer Road | M553 | Division Street | 34 | Low |
| 25 | Proposed Bike Lane | Baraga Avenue | Existing Bike Lane | Seventh Street | 34 | Low |
| 30 | Proposed Bicycle Boulevard | Bluff Street | Rublein Street | Seventh Street | 34 | Low |
| 30 | Proposed Bicycle Boulevard | Ridge Street | McClellan Avenue | Rublein Street | 34 | Low |
| 31 | Proposed Bike Lane | Ridge Street | Meeske Avenue | McClellan Avenue | 34 | Low |
| 32 | Proposed Bicycle Boulevard | Meeske Avenue | Proposed Multi-use Path | Ridge Street | 34 | Low |
| 33 | Proposed Multi-use Path | Werner Street/ Proposed Multi-use Path | Meeske Avenue | Cleveland Avenue | 34 | Low |
| 18 | Proposed Bike Lane | Fisher Street | Third Street | Division Street | 44 | Low |
| 30 | Proposed Bicycle Boulevard | Rublein Street | Bluff Street | Ridge Street | 44 | Low |
| 34 | Proposed Bicycle Boulevard | Cleveland Avenue | Proposed Multi-use Path | Existing Multi-use Path | 44 | Low |

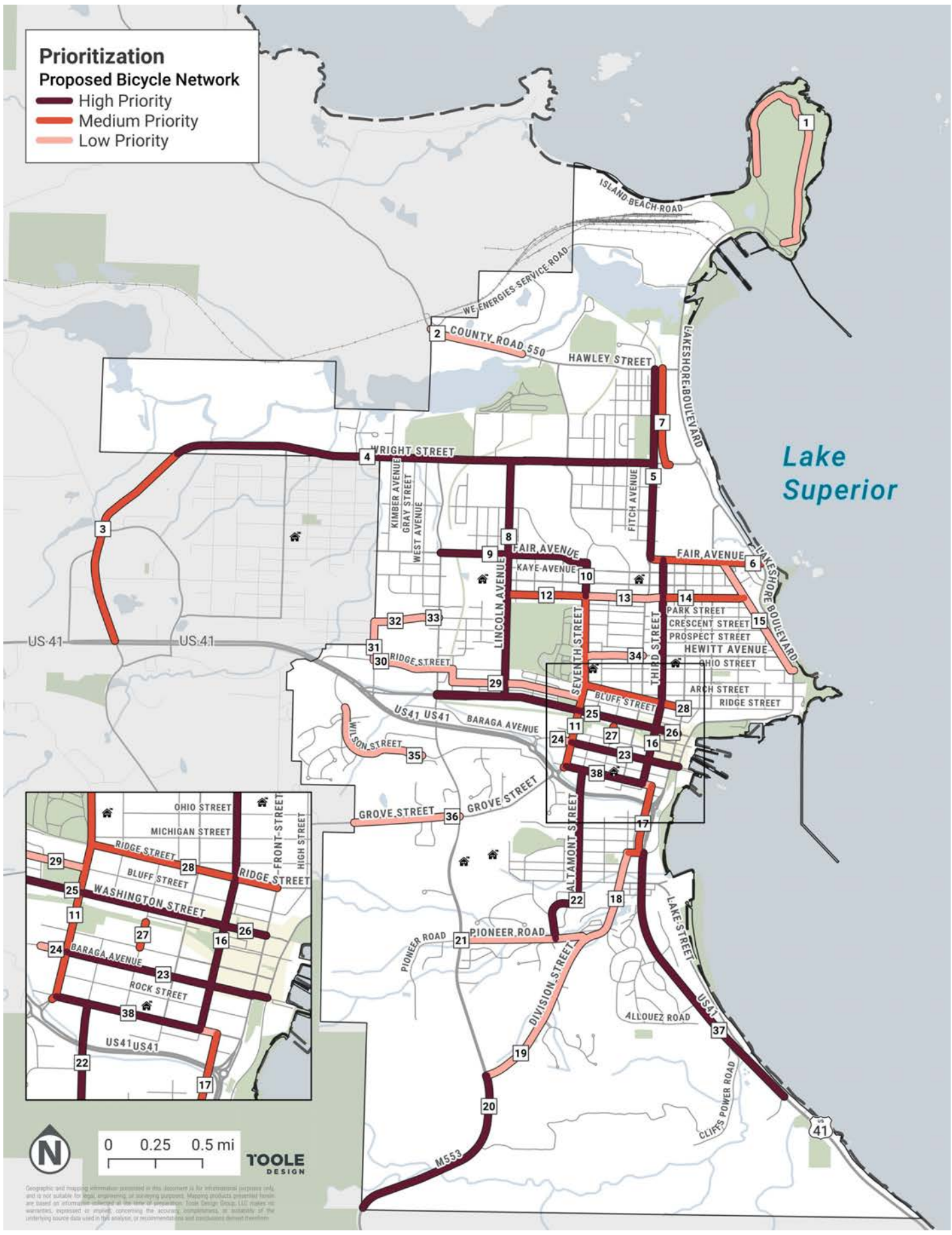


**Figure 64: Prioritization - Proposed Bicycle Network**

## Prioritization – Spot Improvement Projects

Spot improvements, also known as “points” were prioritized using the same weighted metrics outlined in Table 11. Table 13 and Figure 65 presents the prioritization of the proposed spot improvements. Again, Table 13 provides the same project details as shown in Crossing Treatments

A critical component to creating a safe, accessible, and comprehensive pedestrian and bicycle network for people of all ages and abilities is improving street crossings. This plan includes a suite of “spot improvements” primarily at intersections, designed to make it safer and more comfortable for people walking and biking to cross busy streets. Most of these are recommended as “enhanced crossings” with two additional recommendations for grade-separated crossings (tunnels or bridges). In total, 29 spot improvements are proposed and described in detail in Error! Not a valid bookmark self-reference., which outlines the type of improvement, intersecting streets, and details about the potential enhancement. Figure 53 maps these proposed improvements, with each map ID corresponding directly to the project IDs listed in Error! Not a valid bookmark **self-reference.**.

Table 7, but with each improvement assigned with a priority level and ranking. High priority spot improvements are concentrated mainly in Downtown Marquette, and one high priority spot improvement is located at the major intersection and trail crossing along M553 and US 41. These locations most likely rise to the top because they serve as critical multimodal hubs, carry higher speeds and volumes, or represent challenging crossings where people walking and biking face increased conflict potential.

Overall, the distribution reflects the greatest safety needs and the most significant barriers to connectivity, while medium and lower priority improvements address important but more localized pedestrian and bicycle crossing needs throughout the rest of the city.

**Table 13: Prioritization – Proposed Spot Improvements**

| ID | Type | Street 1 | Street 2 | Street 3 | Potential Enhancement | Rank | Priority |
|---|---|---|---|---|---|---|---|
| 29 | Enhanced Crossing | Rock Street | Front Street | | Crossing treatment + design elements | 1 | High |
| 15 | Enhanced Crossing | Washington Street | McClellan Avenue | | Protected intersection and wayfinding signage | 2 | High |
| 17 | Enhanced Crossing | US41 | Grove Street/Seventh Street | Roundabout | Crossing study to improve pedestrian and bicycle safety (potential improvements could include RRFBs, potentially advanced RRFBs, dual roundabouts) | 2 | High |
| 18 | Enhanced Crossing | Iron Ore Trail | Fifth Street | | Crossing treatment + design elements | 2 | High |
| 21 | Enhanced Crossing | Washington Street | Lakeshore Boulevard | | Crossing treatment + design elements | 5 | High |
| 22 | Enhanced Crossing | Spring Street | Lakeshore Boulevard | | Crossing treatment, design elements, signage, and narrowing along Spring Street | 5 | High |
| 23 | Enhanced Crossing | Baraga Avenue | Spring Street | | Median refugee island, crossing treatment, + design elements | 5 | High |
| 16 | Pedestrian and Bicyclist Underpass (Tunnel) | US41 | M553/McClellan Avenue | | Planned pedestrian and bicyclist underpass tunnel | 8 | Medium |
| 19 | Enhanced Crossing | Washington Street | Third Street | | Leading Pedestrian Interval | 8 | Medium |
| 1 | Enhanced Crossing | Presque Isle Avenue | Hawley Street | | Crossing treatment + design elements | 10 | Medium |
| 2 | Enhanced Crossing | Hawley Street | Lakeshore Boulevard | | Crossing treatment + design elements | 10 | Medium |
| 20 | Enhanced Crossing | Washington Street | Front Street | | Leading Pedestrian Interval + design elements | 10 | Medium |
| 25 | Enhanced Crossing | Genesee Street | Lakeshore Boulevard | | Planned pedestrian and bicycle overpass bridge | 10 | Medium |
| 26 | Pedestrian and Bicyclist Overpass (Bridge) | Craig Street | Trail | | Planned pedestrian and bicyclist overpass bridge | 10 | Medium |
| 28 | Enhanced Crossing | M553 | Marquette Mountain Resort/Parking | | Crossing treatment + design elements for Marquette Mountain Resort | 15 | Medium |
| 8 | Enhanced Crossing | Fair Avenue | Elizabeth Harden Drive | | Crossing treatment + design elements | 16 | Medium |
| 24 | Enhanced Crossing | Baraga Avenue | Third Street | | Crossing treatment + design elements | 16 | Medium |
| 4 | Enhanced Crossing | Norwood Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study | 18 | Low |
| 9 | Enhanced Crossing | Fair Avenue | Pine Street | | Protected intersection, trail signage | 18 | Low |
| 10 | Enhanced Crossing | Fair Avenue | Lakeshore Boulevard | | Crossing treatment + design elements | 18 | Low |

| ID | Type | Street 1 | Street 2 | Street 3 | Potential Enhancement | Rank | Priority |
|---|---|---|---|---|---|---|---|
| 12 | Enhanced Crossing | Lakeshore Boulevard | Picnic Rocks | | Crossing treatment + design elements | 18 | Low |
| 13 | Enhanced Crossing | Crescent Street | Lakeshore Boulevard | | Crossing treatment + design elements | 18 | Low |
| 14 | Enhanced Crossing | Hewitt Avenue | Lakeshore Boulevard | | Crossing treatment + design elements | 18 | Low |
| 6 | Enhanced Crossing | Summit Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study | 24 | Low |
| 3 | Enhanced Crossing | Wright Street | Trail | | Crossing treatment + design elements | 25 | Low |
| 11 | Enhanced Crossing | Third Street | Magnetic Street | | Crossing treatment + design elements | 25 | Low |
| 5 | Enhanced Crossing | Center Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study | 27 | Low |
| 7 | Enhanced Crossing | Waldo Street | Presque Isle Avenue | | Crossing treatment + design elements based on NMU ped study | 28 | Low |
| 27 | Enhanced Crossing | M553 | MTB Trail | | Crossing treatment + design elements for MTB Trail crossing | 29 | Low |

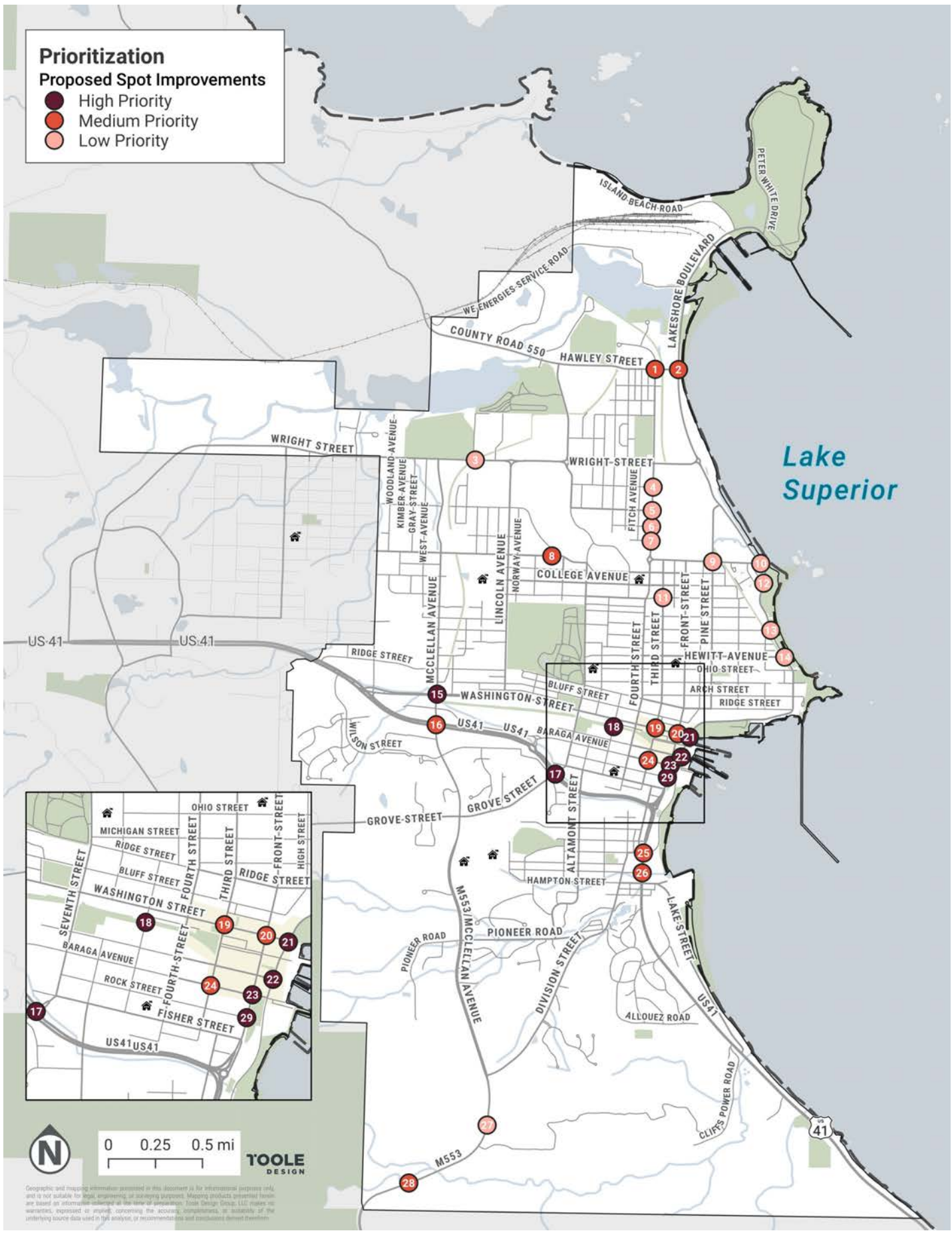


**Figure 65: Prioritization – Proposed Spot Improvements**

# CHAPTER 4: IMPLEMENTATION

Implementing the recommended projects, programs, and policies in this plan will require collaboration across City departments and with external stakeholders. To support this process, this implementation chapter outlines potential funding sources, maintenance considerations, and a process for ongoing monitoring and evaluation of progress.

## FUNDING SOURCES

Several state and federal funding sources can be used to supplement local funding sources to build out the active transportation network and fund related programming efforts. Table 14 lists the primary funding sources for active transportation projects in Michigan; click on the name of each funding source to access web pages with further information.

**Table 14. Primary Active Transportation Funds in Michigan**

| Funding Source | Distributed by | Eligible Project Examples | Eligible Project Sponsor |
|---|---|---|---|
| Transportation Alternatives | MDOT | Bicycle & pedestrian facilities<br>Safe routes for non-drivers<br>Conversion & use of abandoned railroad facilities<br>Overlooks & viewing areas | City of Marquette |
| Safe Routes to School | MDOT | Infrastructure<br>Non-Infrastructure<br>School Travel Plan assistance | Local governments (infrastructure)<br>Local governments, school or health district, or non-profit (non-infrastructure) |
| Highway Safety Improvement Program | MDOT | Signalization<br>Turn lanes<br>Pavement markings<br>Traffic signals<br>Pedestrian signals/crosswalks<br>Bike lanes<br>Road diets | Local governments |
| Community Development Block Grants (CDBG) | HUD | ADA Accessibility Projects<br>Neighborhood Revitalization<br>Sidewalk Replacement Projects | City of Marquette |
| Additional Federal Grant Programs | U.S. Department of Transportation | USDOT grant programs change frequently, however, the link in the funding source column includes a detailed table explaining which facilities are eligible under each USDOT grant program | Municipalities<br>Tribal governments<br>Counties |

# MAINTENANCE CONSIDERATIONS

The long-term performance of bicycle and pedestrian networks depends on both the construction of new facilities and an investment in continued maintenance. Maintaining bicycle and pedestrian facilities is critical to ensuring those facilities are accessible, safe, and functional.

## FREQUENCY

The first step to approaching maintenance is to understand how often maintenance should be performed. Many activities, such as signage updates or replacements, are performed as needed, while other tasks such as snow removal are seasonal (see Table 15). Creating a winter maintenance approach is important to encourage year-round travel by walking and biking. One key component of this approach should be identifying priority routes for snow removal. More information on winter maintenance such as types of equipment needed for different facility types and how to consider snow removal in the design of facilities can be found in Toole Design's Winter Maintenance Resource Guide.

**Table 15: Maintenance Activity Frequency**

| *Frequency* | Facility Type | Maintenance Activity |
|---|---|---|
| *As Needed* | Multi-use paths | Tree/brush clearing and mowing |
| | | Replace/repair trail support amenities (parking lots, benches, restrooms, etc.) |
| | | Map/signage updates |
| | | Trash removal/litter clean-up |
| | | Repair flood damage: silt clean-up, culvert clean-out, etc. |
| | | Patching/minor regrading |
| | Multi-use paths/ Separated Bike Lanes / Bike lanes | Sweeping |
| | Sidewalks | Concrete panel replacement/Shaving of trip hazards |
| *Seasonal* | All | Snow and Ice control |
| | Multi-use paths | Planting/pruning/beautification |
| | | Culvert/drainage cleaning and repair |
| | | Installation/removal of seasonal signage |
| *Yearly* | Multi-use paths/ Sidewalks | Evaluate support services to determine need for repair/replacement |
| | | Perform walk audits to assess ADA compliance of facilities |
| | Separated Bike Lanes / Bike lanes | Surface evaluation to determine need for patching/regrading/re-striping of bicycle facilities |
| *5-year* | Multi-use paths | Repaint or repair trash receptacles, benches, signs, and other trail amenities, if necessary |
| | | Rejuvenate asphalt multi-use paths |
| *10-year* | Multi-use paths | Resurface/regrade/re-stripe multi-use paths |
| *20-year* | Multi-use paths/ Sidewalks | Assess and replace/reconstruct multi-use paths/ sidewalks |

## PLAN FOR MAINTENANCE

Creating a strong maintenance program begins in the design phase. The agency that will eventually own the completed project should collaborate with partners to determine the infrastructure placement, final design, and life cycle maintenance cost. Maintenance staff should help identify typical maintenance issues, such as areas with poor drainage or frequent public complaints. They may have suggestions for design elements that can mitigate these issues or facilitate maintenance activities and can provide estimates for ongoing maintenance costs for existing and proposed facilities.

## COORDINATION & RESPONSIBILITY BETWEEN AGENCIES

Many jurisdictions struggle with confusion around which entity – city, village, township, county, or state – is responsible for the maintenance of trails and other active transportation facilities. Frequently there is no documentation showing who is responsible for maintenance of existing facilities, which can prolong unsafe conditions for trail users. Coordination between government agencies is key for effective maintenance programs. Intergovernmental agreements (IGAs) are used to codify the roles and responsibilities of each agency regarding ongoing maintenance. For example, a local government may agree to conduct plowing, mowing, and other maintenance activities on trails in its jurisdiction that were built by another agency. Clarifying who is responsible for maintenance costs and operations ensures that maintenance problems are resolved in a timely manner.

## MAINTENANCE ACTIVITIES

Different facility types require different types of strategies to be maintained. Table 16 breaks down maintenance activities and strategies for each by facility type.

**Table 16: Maintenance Strategy Recommendations**

| *Facility Type* | Maintenance Activity | Strategy |
|---|---|---|
| *Multi-use paths/ Separated Bike Lanes* | Pavement Preservation | Develop and implement a comprehensive pavement management system for the multi-use path network. |
| | Snow and Ice Control | Design shared-use paths to accommodate existing maintenance vehicles, pavement design should support emergency vehicles. |
| | Drainage Cleaning/Repairs | Clear debris from all drainage devices to keep drainage features functioning as intended and minimize trail erosion and environmental damage. |
| | | Check and repair any damage to trails due to drainage issues. |
| | Sweeping | Implement a routine sweeping schedule to clear shared-use paths of debris. |
| | | Provide trail etiquette guidance and trash receptacles to reduce the need for sweeping. |
| | Vegetation Management | Implement a routine vegetation management schedule to ensure user safety. |
| | | Trim or remove diseased and hazardous trees along trails. |
| | | Preserve and protect vegetation that is colorful and varied, screens adjacent land uses, provides wildlife habitats, and contains prairie, wetland and woodland remnants. |
| | ADA Requirements | Conduct walk and bike audits to assess accessibility of new, proposed, and existing shared-use paths. |
| | | Ensure that ADA compliance is incorporated into the design process for new facilities. |
| | Pavement Markings | Explore approaches to routinely inspect pavement markings for bicycle infrastructure and replace as needed. |

| *Facility Type* | Maintenance Activity | Strategy |
|---|---|---|
| *Paved Shoulders/ Bike Lanes* | | Consider preformed thermoplastic or polymer tape on priority bikeways (identified in this Plan) adjacent to high-volume motor vehicle routes (preformed thermoplastic or polymer tape are more durable than paint and requires less maintenance). |
| | Snow and Ice Control | Clear all signed or marked shoulder bicycle facilities after snowfall on all state-owned facilities that do not have a maintenance agreement with a local governmental unit in place. |
| | Sweeping | Implement a routine sweeping schedule to clear high-volume routes of debris. |
| *Bicycle Boulevards* | Sign Replacement | Repair or replace damaged or missing signs as soon as possible. |
| *Sidewalks* | Pavement Preservation and Repair | Conduct routine inspections of high-volume sidewalks and apply temporary measures to maintain functionality (patching, shaving, leveling/grouting). |
| | | Consider using public agency staff or hiring contractors for sidewalk repairs, rather than placing responsibility on property owner (property owner can still be financially responsible). |
| | Snow and Ice Control | Educate the public about sidewalk snow clearance. |
| | | Require sidewalk snow clearance to a width of five feet on all sidewalks. |
| | | Establish required timeframes for snow removal. |
| | | Implement snow and ice clearing assistance programs for select populations. |

# ONGOING MONITORING AND EVALUATION

Measuring the performance of active transportation networks is essential to ongoing success. Bicycle and pedestrian counts, crash records, and other data contribute to a business case for continued improvement of and investment in multimodal infrastructure. As recommendations are implemented, the City of Marquette must be able to measure whether these investments are paying active transportation dividends (i.e. more people walking and bicycling). An affirmative answer reinforces this Plan's legitimacy and provides evidence that future investments will also yield positive results. The performance measures in Table 17 will help chart progress towards making walking and bicycling safe, connected, and comfortable. The City of Marquette should establish baseline targets and revisit these metrics as new plans and priorities occur. Data on these measures should be documented and published for public review annually. A robust performance measures program includes establishing baseline measurements, performance targets, data collection frequency, and data collection and analysis responsibility.

**Table 17: Performance Measures**

| ***Goal*** | **Performance Measure** | **Timeline** (how often is data collected/updated) | **Responsibility** (who will collect the data) |
|---|---|---|---|
| *Reduce crashes* | Annual number of crashes involving bicycles and pedestrians | Annually | City Engineering - MDOT's Mi-CAT tool |
| *Increase the total number of miles of facilities* | Linear feet of sidewalks, shared use paths, and bike lanes constructed/ Maintained | Annually | City Engineering - City project data |
| *Complete half of ATP goals in ten years* | Number of projects completed that incorporated ATP projects/Goals | Annually | City Engineering - City project data |
| *Complete majority of ATP goals in twenty years* | Percentage of projects completed from Active Transportation Plan and ADA Transition Plan | Annually | City Engineering - City project data |
| *Increase funding to complete plan in twenty years* | Amount of funding received for ATP projects | Annually | City Engineering - City project data |
| *Increase share of work commute trips using modes other than signal occupancy vehicle.* | Percent of work commute trips using modes other than signal occupancy vehicle. | Annually | City Planning – Census Data |

CITY OF MARQUETTE
**PLANNING AND ZONING**
1100 Wright Street
MARQUETTE, MI 49855
(906) 228-0425
www.marquettemi.gov

# MEMORANDUM

**TO:** Planning Commission
**FROM:** Dave Stensaas, City Planner and Zoning Administrator
**DATE:** December 23, 2025
**SUBJECT:** **Work Session – Land Development Code Amendments for 2026**

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Staff and the Planning Commission will continue the recent work on potential amendments to the Land Development Code. This effort will continue for the next few months until all known issues have been resolved. Materials for the work session follow.

# Land Development Code language for Discussion at the January 6, 2026, Planning Commission meeting

The proposed draft amendments to the **Land Development Code** are formatted in the following way:

1. New subsections and/or language is shown underlined and highlighted, as the example below indicates:

   Example) H. Light Manufacturing

2. A subsection or language that is to be eliminated is indicated by strikethrough lines in the font, as the example below indicates:

   Example) ~~F. Dwelling units must be located above the first floor.~~

Other text that is neither highlighted or lined-through is included for context.

Some text is highlighted in blue to explain features of the amended text.

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**Fix this language to allow for other structures that allow water to infiltrate in the rear yard. Also, hold a discussion for an exception for the shipping containers, etc. in M-U zoning districts which allow for Light Manufacturing as a Special Land Use.**

## Section 54.705 Accessory Buildings and Structures

All accessory buildings and structures must meet the setback and height requirements of *Article 4* unless otherwise stated in this Section or in another section of this Ordinance applicable to accessory buildings and structures. No accessory building or structure may be located on any parcel of land which does not have a principal building or use already established or being established contemporaneously with the accessory building or structure.

**(A) Accessory Buildings and Structures in the Low Density Residential (LDR) District, Medium Density Residential (MDR) District, and Mixed-Use (M-U) District.**

**(1) Attached Accessory Buildings and Structures.** Where the accessory building or structure is structurally attached to a main building, it shall be subject to, and must conform to, all yard regulations of this Ordinance, applicable to main building.

**(2) Location.** Detached accessory buildings or structures shall not be located in any required yard setback except as permitted in *Section 54.705(A)(4)*.

**(3) Maximum Lot Coverage.** Detached accessory buildings or structures (such as concrete or asphalt structures shall not occupy more than twenty-five percent (25%) of a rear yard area, provided that in no instance shall the total ground floor area of the detached accessory buildings exceed the ground floor area of the main building and provided the impervious surface coverage limits of the lot (see *Article 4*) are not exceeded.

**(a)** If the main structure's footprint is less than 500 square feet at full build out, an accessory structure may exceed the ground floor area of the main structure (home) by up to 10 percent of the footprint area of the main structure. An accessory structure footprint may be increased to equal that of the main structure if the main structure is remodeled to more than 550 square feet.

~~**(b)** Patio pervious pavers that are used for accessory structures such as patios, sidewalks, etc. that allow infiltration are not included in the 25% calculation.~~

Accessory structures such as patios, sidewalks, stairs, decks, and similar features that allow water to infiltrate or do not have an impervious surface beneath, and are not covered by a roof or overhead covering that prevents water infiltration, are excluded from the twenty-five percent (25%) rear yard area coverage limitation.

**(4) Separation and Setback Distances.** No permanent accessory building or structure shall be located in a minimum front yard setback. No detached accessory building shall be located closer than five (5) feet to any main building nor closer than three (3) feet from a side or rear lot line, except swimming pools, which are regulated in *Section 54.707*. Non-building accessory structures (e.g., fences and steps) or open buildings (i.e., a shelter without walls including an open lean-to or open carports) are not subject to the minimum separation distance requirements unless a minimum separation distance is required by the Building Official.

**(5) Maximum Height.** Unless otherwise stated in this Ordinance, no attached or detached accessory building or structure in a the LDR, MDR, and M-U Districts shall exceed sixteen and one-half (16.5) feet in height. The height of Accessory Dwelling Units must comply with *Section 54.611*.

~~**(6)** Shipping containers, cargo containers, or semi-trailers are prohibited as accessory structures.~~

**(6)** Shipping containers, cargo containers, and semi-trailers shall not be permitted as accessory structures unless all of the following conditions are met:
**(a)** The structure is located within a Mixed-Use (M-U) Zoning District;
**(b)** The structure does not abut or adjoin a residential use; and
**(c)** A landscape buffer is installed in accordance with Section 54.1003(D)(3)(a)(i).