Active Mobility Plan 2023

Draft: 01/17/24

Acknowledgments

The successful development of the Active Mobility Plan would not have been possible without the dedication, expertise, and support of various individuals and staff leaders.

City Council

- Justin Fischer, Mayor
- Laura Marie Casey, Mayor Pro-tem
- David Staudt, Council Member
- Brian Smith, Council Member
- Ericka Thomas, Council Member
- Matt Heintz, Council Member
- Priya Gurumurthy, Council Member

Technical Advisory Committee

- Barbara McBeth, Community Development
- Lindsay Bell, Community Development
- James Hill, Community Development
- Jeff Muck, Parks, Recreation and Cultural Services
- Rebecca Runkel, Public Works
- Matt Wiktorowski, Public Works
- Erick Zinser, Public Safety/Police
- Dean Reid, Public Works

Walkable Novi Committee

- Gary Becker, Planning Commission Member
- Laura Marie Casey, Council Member
- Jay Dooley, Parks, Recreation and Cultural Services Commission Member
- Justin Fischer, Council Member
- Edward Roney, Planning Commission Member
- Joe Tolkacz, Parks, Recreation and Cultural Services Commission Member

Other Thanks

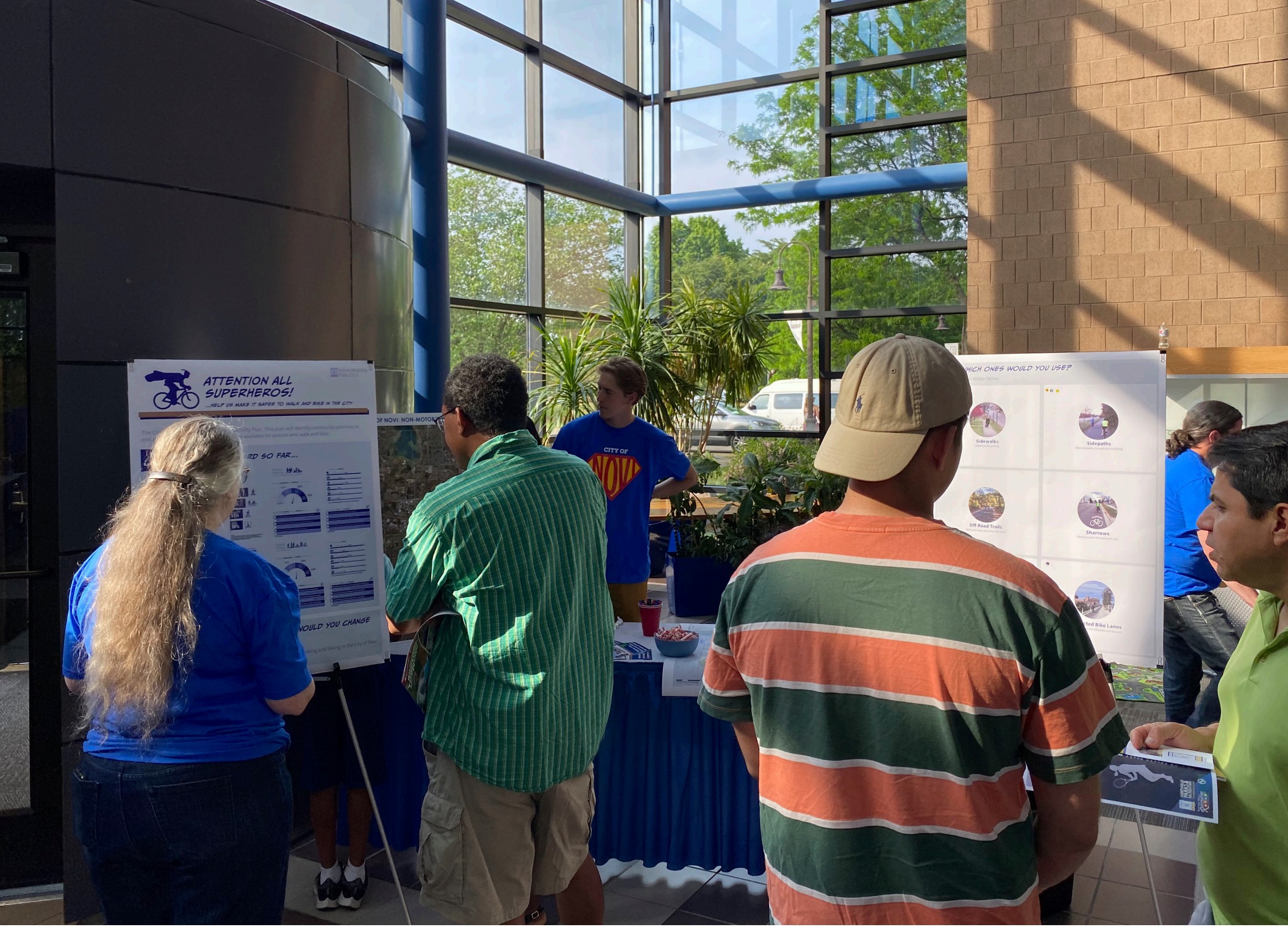
The City of Novi extends its gratitude to the citizens who actively participated in events and surveys. Additional appreciation is extended to the City of Novi staff for their guidance and support, notably:

- Victor Cardenas, City Manager
- Sheryl Walsh-Molloy and her team in Community Relations

Consulting Partners

This plan was facilitated by The Greenway Collaborative and Fishbeck and is intended for planning purposes only

Table of Contents


ATTENTION ALL SUPERHEROS!
...HELP US MAKE IT SAFER TO WALK AND BIKE IN THE CITY
CITY OF NOVI
Sidewalks
Sidepaths
Off-Road Trails
Sharrows

Overview & Process

The Novi Active Mobility Plan is an inclusive and comprehensive initiative aimed at improving active transportation options within the community. The plan focuses on enhancing the safety, accessibility, and connectivity for people who walk, bike and roll. By prioritizing the needs of these users, the plan aims to create a more sustainable, healthy, and vibrant community.

The development of the plan involved a collaborative process that included data analysis, public input, and expert consultation. Through community engagement and careful analysis, the plan identifies key priorities, challenges, and opportunities for enhancing the non-motorized network.

Introduction

Purpose of the Active Mobility Plan

The creation of an Active Mobility Plan stems from the City's recognition of the increasing demand for alternative forms of travel and the need to promote safe, comfortable, and convenient transportation options within the community. This plan serves as a strategic framework that will guide the City's response to this growing demand while ensuring connectivity within both the City and with the larger regional transportation network.

An Active Mobility plan aims to provide residents and visitors with viable alternatives to traditional motorized transportation, promoting healthier lifestyles, reducing traffic congestion, and improving overall accessibility and quality of life within the City. The plan will serve as a blueprint for future developments, infrastructure enhancements, and policies that prioritize active transportation that foster a more sustainable and connected community.

What is Active Mobility?

Active Mobility is simply engaging in physical activity while moving about freely and easily. From a community's perspective it promotes wellness, reduces transportation related injuries, deaths, and pollution. From an individual's perspective it integrates exercise into daily activities and eliminates barriers preventing people from leading a more active lifestyle. While focused on conditions for pedestrians and bicyclists, it is inclusive of all forms of non-motorized transportation as well as what is termed micromobility, compact, lightweight, clean-energy devices that leverage the power of the human body. An e-bike is the most common type of micromobility.

Community Benefits

An Active Mobility Plan is crucial for a variety of reasons that contribute to the well-being of communities and individuals. By prioritizing the development of non-motorized infrastructure through a comprehensive plan, communities can unlock a host of benefits that extend far beyond transportation. This approach not only promotes sustainability but also fosters healthier lifestyles, safer neighborhoods, and more vibrant communities. The following page highlights some of these benefits.

Improve Public Health

Encouraging walking and biking promotes physical activity, reducing the risk of chronic diseases and improving overall health.

Environmental Sustainability

Promoting non-motorized transportation reduces greenhouse gas emissions, contributing to cleaner air and a healthier planet.

Reduced Traffic Congestion

Fewer cars on the road can alleviate traffic congestion, leading to quicker and more efficient commutes for everyone.

Economic Benefits

Non-motorized infrastructure can attract residents and visitors, boost local businesses, and create jobs in construction and related industries.

Quality of Life

Walking and biking improve the overall quality of life by reducing stress, enhancing mental well-being, and promoting an active lifestyle.

Cost Savings

Less reliance on cars means lower transportation costs for individuals and reduced maintenance costs for municipalities.

Accessibility

Non-motorized transportation options make communities more accessible to people of all abilities, including those who cannot drive and rely on transit.

Community Building

Encouraging walking and biking fosters community interaction and a sense of belonging.

Future Transportation

Non-motorized plans prepare communities for future transportation trends and can help reduce dependence on fossil fuels.

Safety

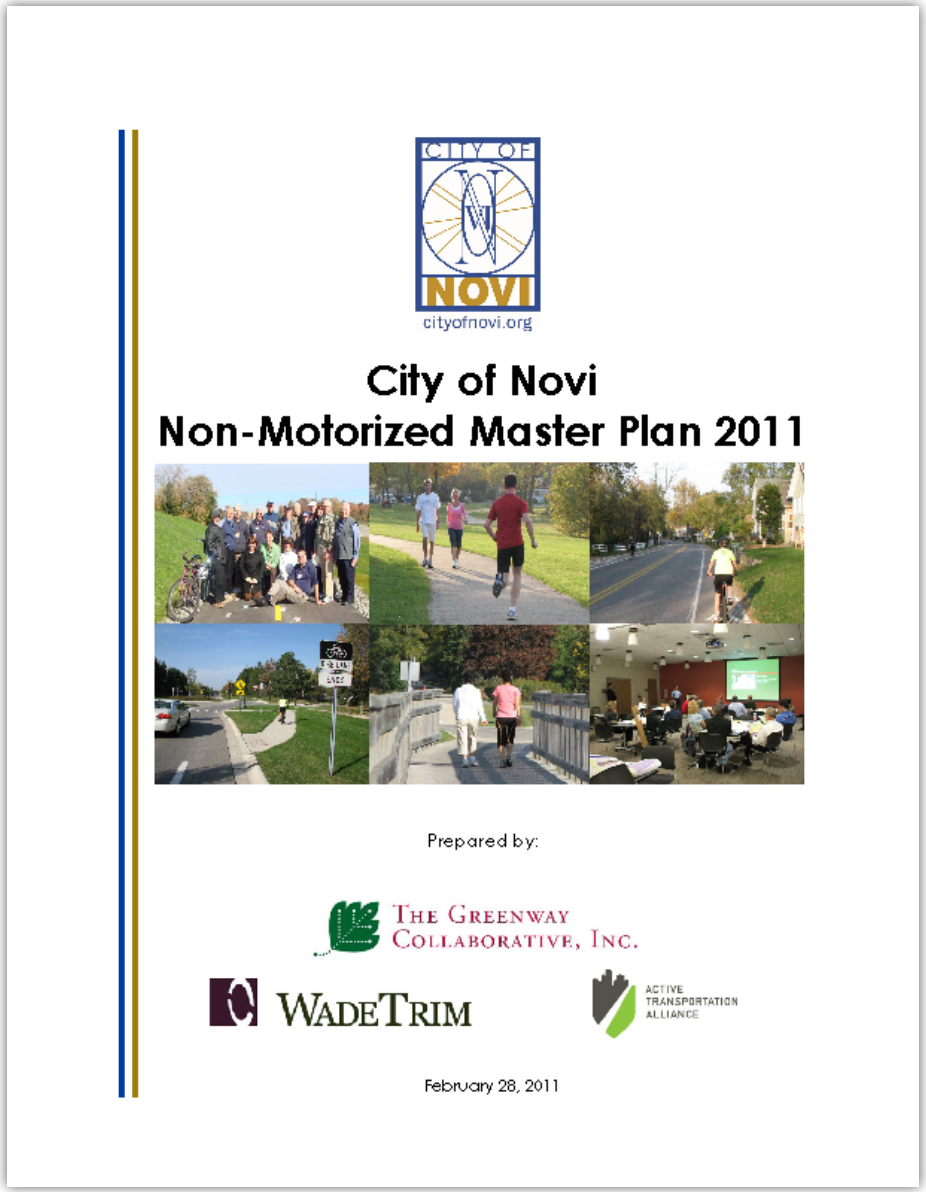
Well-designed pedestrian and bike facilities enhance road safety for all users, reducing accidents and injuries.

Why Update the 2011 Plan?

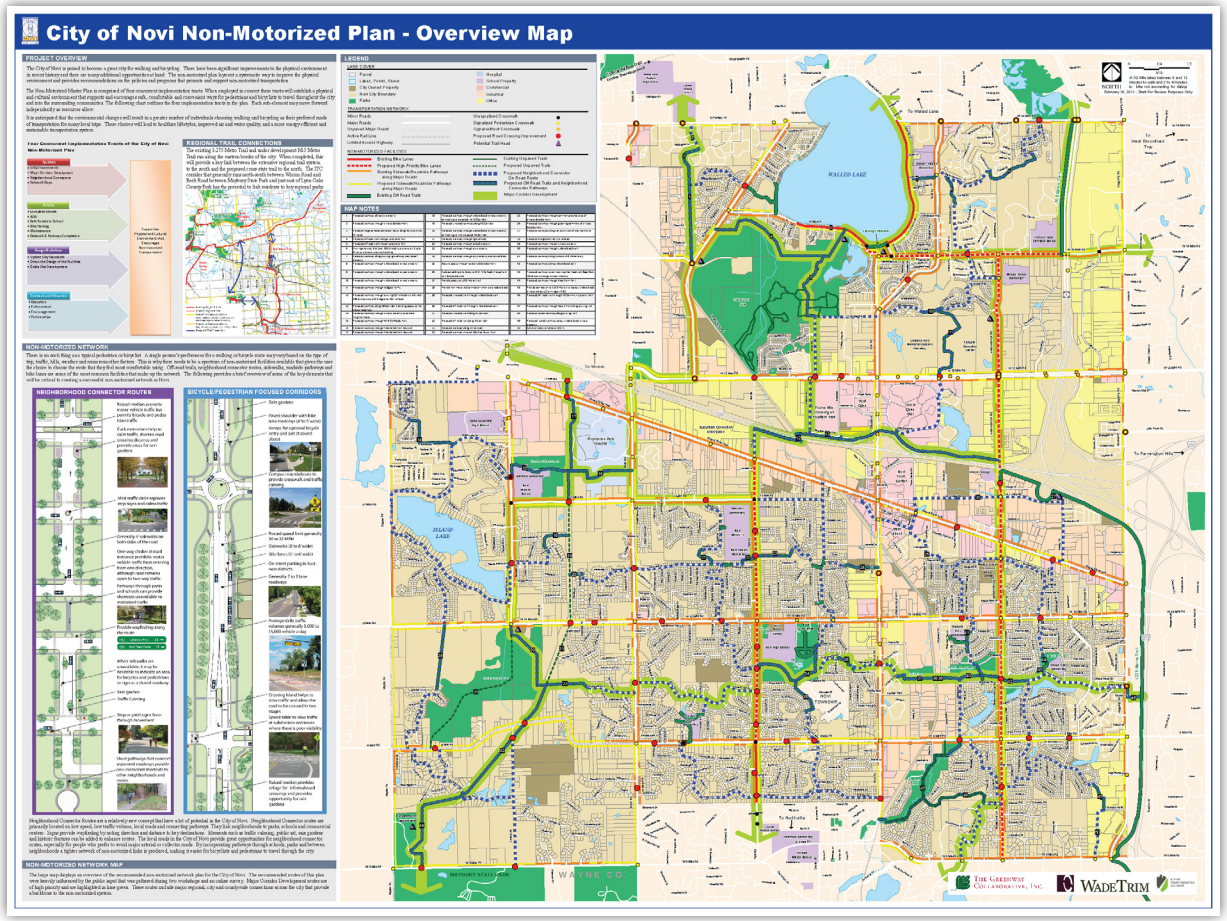
Over the last decade, significant changes in non-motorized transportation have occurred at the national, regional, and local levels prompting a reexamination of the plan.

- Numerous new national guides for non-motorized transportation have been published by the Federal Highway Administration that reinforce the improvements that have been made, and provide guidance on new types of facilities.
- Considerable headway has been achieved in closing sidewalk and pathway gaps along major roads. The construction of the new ITC Trail, Meadowbrook pathway and the Novi Road overpass connection have been implemented, positioning the city to advance the network to the next level.
- Emerging regional trails like the M-5 Metro Trail and the Air Line Trail are creating new opportunities for connections to regional trails and the cross-state Great-Lake-to-Lake Trail.
- SMART introduced enhanced transit in Oakland County, offering local service along key routes such as Grand River, 12 Mile, and Novi Road. New Routes servicing Novi include SMART 740, SMART 305 and SMART 805.

While some non-motorized facilities are currently in place, this plan identifies numerous opportunities to refine the system. The plan's update will concentrate on propelling the bicycle and pedestrian network to a higher level, offering recommendations for a more family-friendly system that fosters improved connections to parks and regional trails.



City of Novi Non-motorized Master Plan 2011



City of Novi Non-motorized Master Plan 2011 - Overview Map

The Intention of This Plan

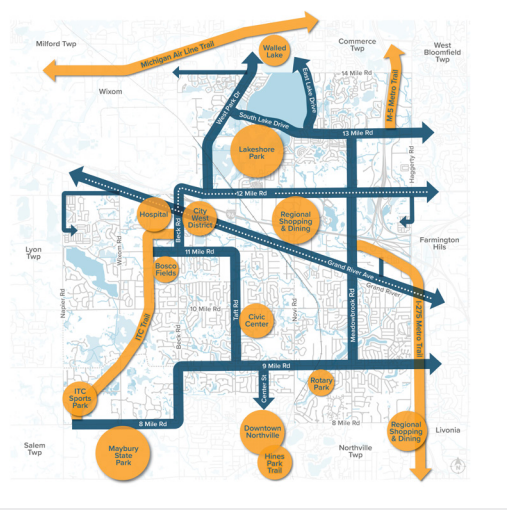
This plan aims to provide an overview of non-motorized transportation issues and suggests ways to address them through policies, programs, design guidelines, and facility improvements. It's important to note that this isn't meant to replace various official guides such as from AASHTO or FHWA, rather it focuses on how those and other resources may be applied to typical situations encountered in the City of Novi. Since non-motorized transportation planning is always changing, these guidelines should be reviewed periodically. The facility suggestions in this plan are a big-picture assessment of how proposed facilities fit current conditions. However, before acting on a specific recommendation, a more detailed study should be carried out to fully explore the suitability of proposed changes and facilities.

How to Use This Plan

Non-motorized recommendations are categorized into three sections: Near-Term Network, Long-Term Network, and Major Corridor Guidelines. Each section outlines specific recommendations for infrastructure, policies, programs, and metrics. The Near-Term Network addresses the immediate future, the Long-Term Network presents a visionary aspiration for the city, and the Major Corridor Guidelines aid in determining elements to consider during major road construction projects. The three sections of the plan are illustrated below.

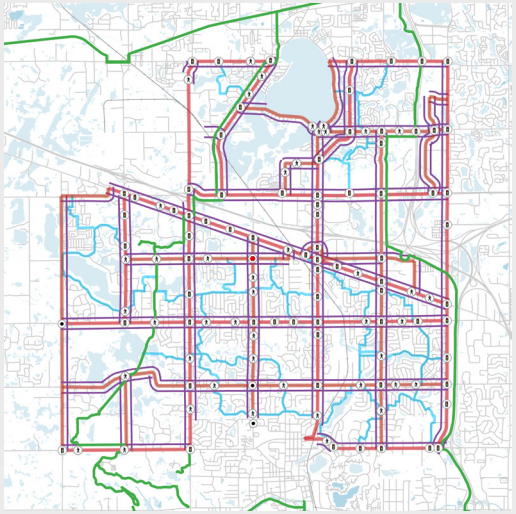
Immediate focus on stand-alone projects aimed at establishing a core network

NEAR-TERM NETWORK



Long-term vision the City should aspire to achieve

LONG-TERM NETWORK



Guidelines to reference when implementing road reconstruction projects

MAJOR CORRIDOR GUIDELINES

Document Organization

Overview & Process

Introduces plan objectives and development process, emphasizing community and stakeholder involvement to ensure a comprehensive and inclusive plan.

Existing Conditions

Provides a thorough assessment of current non-motorized conditions, including land use, traffic generators, and mobility patterns. Evaluates pedestrian and bicycle conditions, identifies improvement areas, coordination strategies, and potential safety enhancements.

Facility Types & Guides

Simplifies non-motorized terminology using images and explanations and promotes safety and efficiency through readily available design guidelines for new facilities.

Major Corridor Guides

Outline the long-term vision for the major roadway network by showing how current best practices may be applied to prioritize safety and enhance bicycle and pedestrian mobility.

Long-Term Network

Outlines the city's goals for the next two decades and beyond, including sidewalks, mid-block crosswalks, bike lanes, greenways, and local road routes.

Near-Term Network

Includes three components: Neighborhood Greenway Network, Transit Connections, and Improved Access. It primarily focuses on leveraging existing facilities to create a city-wide network connecting key destinations.

Specific Areas

Highlights key areas that hold significant potential for transformation, emphasizing the creation of a vibrant and pedestrian-friendly community. These areas encompass East Lake Drive and South Lake Drive, City West, and Northville's Riverwalk Vision.

Implementation

Addresses the diverse avenues of funding, construction and maintenance strategies that can be harnessed to support the implementation of the plan.

Active Mobility Network Map

Supplemental to the Active Mobility Plan Report, the large format Network Map provides a comprehensive visual depiction of the plan's components.

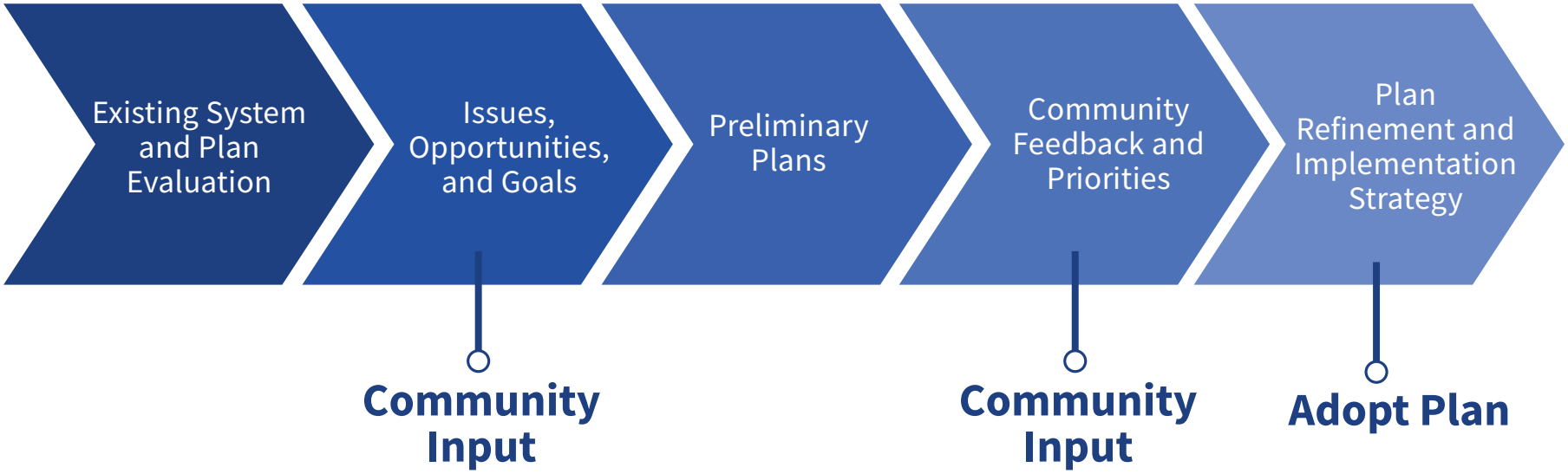
Appendix Materials

The project website, walkbike.info/novi, hosts an extensive digital appendix containing a wealth of information regarding the development of the plan and its supporting materials.

Process

Process & Timeline

The plan was developed over the year in 2023. The Technical Advisory Committee and Walkable Novi Committee guided the process and the public was engaged throughout via community open house events, meetings, pop-up stations at local events and parks and surveys. The Technical Advisory Committee and Walkable Novi Committee completed a final review of the Plan prior to the Plan being recommended for adoption.



Technical Advisory Committee

- Barbara McBeth, Community Development
- Lindsay Bell, Community Development
- James Hill, Community Development
- Jeff Muck, Parks, Recreation and Cultural Services
- Rebecca Runkel, Public Works
- Matt Wiktorowski, Public Works

Walkable Novi Committee

- Gary Becker, Planning Commission Member
- Laura Marie Casey, Council Member
- Jay Dooley, Parks, Recreation and Cultural Services Commission Member
- Justin Fischer, Council Member
- Edward Roney, Planning Commission Member
- Joe Tolkacz, Parks, Recreation and Cultural Services Commission Member

Community Engagement

Community Outreach

A public engagement plan was developed to gather input from potential users and ensure representation from a diverse and representational range of the community. The initial sessions occurred during the months of February, March, and April in 2023, concentrating on addressing issues, identifying opportunities, and establishing goals. Subsequently, the second series of sessions were held in July and August of 2023 to assess the draft preliminary plan elements. The following pages provide an overview of the process and tools employed to engage the community.

Focus Group Meeting

A virtual meeting was conducted with a focus on regional connections both within and around the city. The session included a brief presentation and a discussion that explored coordination prospects with neighboring communities. Meeting notes were compiled to record the discourse and highlight the key takeaways.

Local Events and Pop-up Displays

Handouts, yard signs, and display boards promoting project awareness, gathering basic input, and advertising online surveys and input maps were showcased at local events and key locations, such as parks and trailheads throughout the city. Local events included Tuesday Tunes at the Library, Summer Songfest, Superhero Showcase, and the Eggstravaganza.

Community Open House

An online crowdsourcing map was established to gather location-specific input, which was categorized into three groups: Issue/Concern, Idea/Suggestion, and Other. This map was hosted on the project web page and was promoted in conjunction with the online surveys. Additionally, input collected from in-person events was consolidated into this map.

Surveys

To gain input from as many community members as possible, online and paper surveys were developed and distributed. The surveys were colorful and easy to fill out. Surveys were hosted on the project web page, **www.WalkBike.Info/Novi** and focused on questions that would have a direct impact on the plan. Handouts and posters with the website link and QR code were distributed at the community open house, pop-up events, posted at key locations around the City, and promoted on social media.

Crowdsourcing Map

An online crowdsourcing map was established to gather location-specific input, which was categorized into three groups: Issue/Concern, Idea/Suggestion, and Other. This map was hosted on the project web page and was promoted in conjunction with the online surveys. Additionally, input collected from in-person events was consolidated into this map.

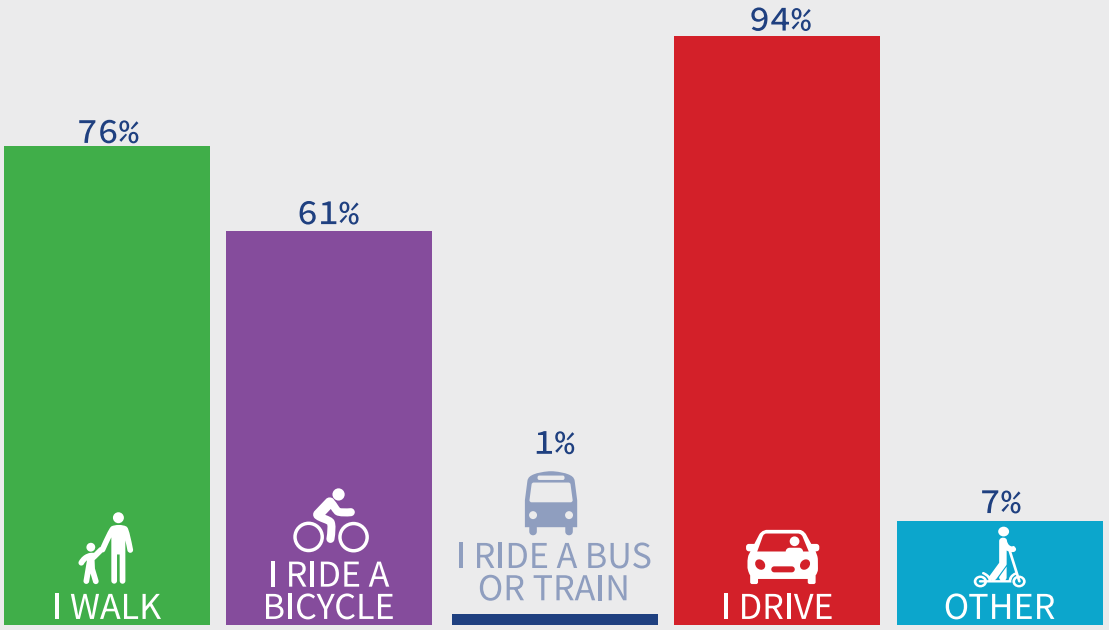
Public Input Summary

Throughout the months of February, March, and April 2023, public engagement for the plan was promoted through various social media platforms and in-person events. The input during this period was centered on identifying issues and opportunities for non-motorized transportation. Community members participated by attending local events, completing surveys, and offering location-specific comments on a map. This valuable input was instrumental in shaping the project's goals and laying out the foundation for guiding the non-motorized recommendations. The following pages provide a summary of the gathered input.

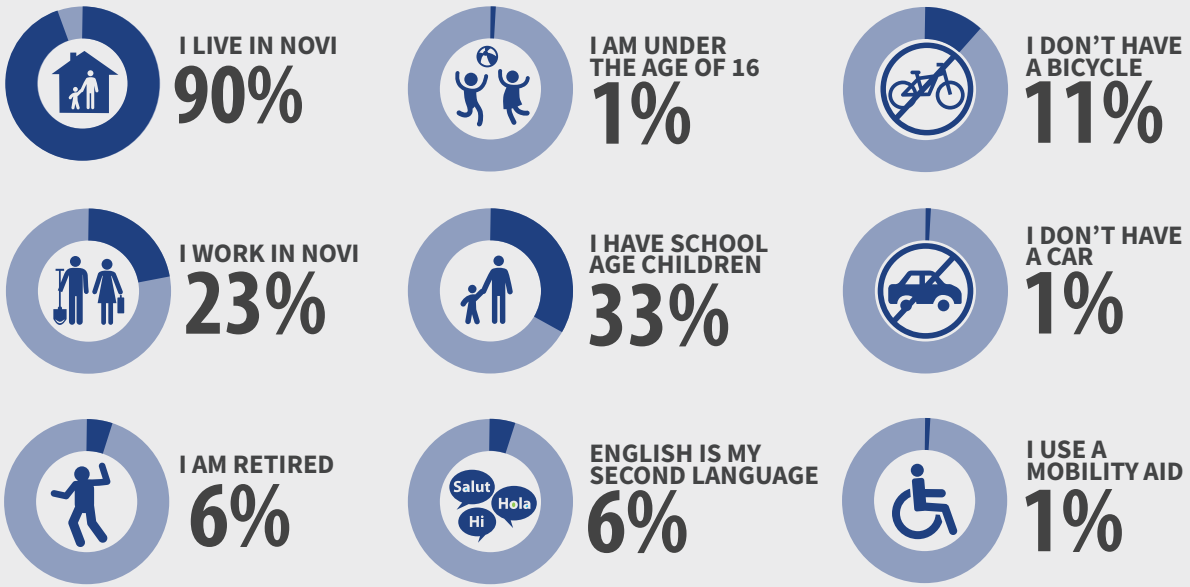
120+
Online Map Comments

175+
Surveys Completed

Please note that this survey was not conducted as a scientific study, and participants had the option to skip any questions they chose not to answer. Percentages are calculated based on the total number of respondents who answered each specific question.



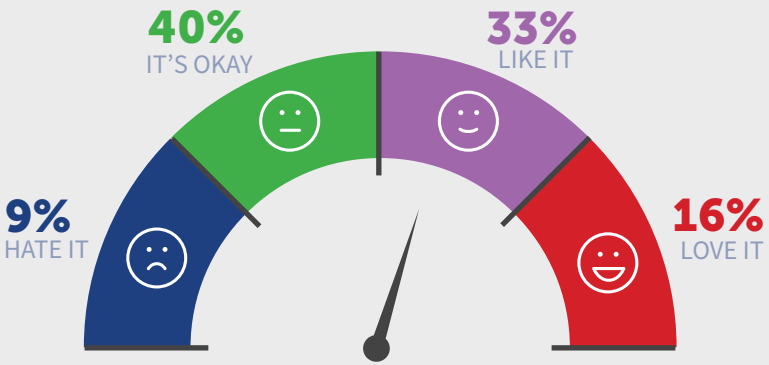
How Do You Get Around Novi?



People Walking...

running, in a wheelchair, pushing stroller, etc.

Rate your **Satisfaction** with **Walking** in Novi right now



I am Interested in **Walking...**

- For fitness & recreation **96%**
- To the store **54%**
- To see family & friends **46%**
- To school **22%**
- To a bus stop **9%**
- To work **9%**

OTHER: LIBRARY, RESTAURANT, CIVIC CENTER, PLACE OF WORSHIP

Is Anything **Preventing** You from **Walking** to those Destinations Right Now?

1. Incomplete Sidewalks (along major roads, in neighborhoods, abrupt stops)
2. Snow and Ice (sidewalks, ITC trail, bridges, intersections)
3. Safety (personal safety, traffic, road crossings, aggressive dogs, lighting)
4. Crosswalk Locations (mid-block, along major roads, where sidewalks ends, freeway)
5. Sidewalk Conditions (disrepair, cracked surface, drainage)
6. Crosswalk Safety (motorist yielding, running red lights, walk signal at intersections)

TOP 6 ANSWERS

What Would You **Like** to See **Changed**?

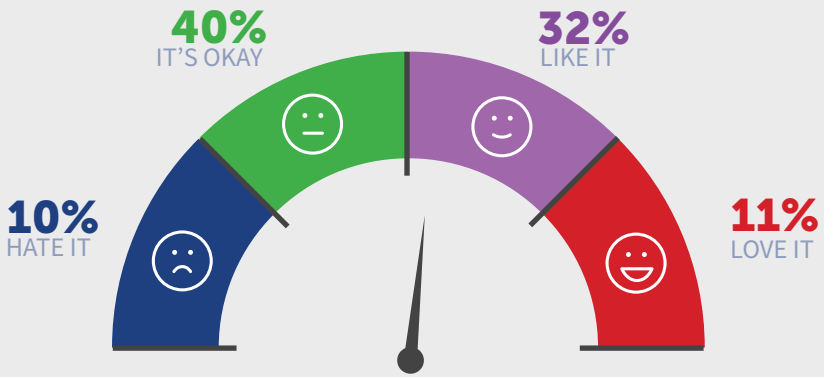
1. More Sidewalks (continuous, safe, wider, to destinations)
2. Connect to Destinations (parks, retail, resturants, shopping, library, transit)
3. Crosswalks (across freeway, mid-block, safety improvements)
4. Snow and Ice Removal (sidewalks, ITC trail, bridges, enforce ordinance)
5. Improve Maintenance (bumpy pavement, flooding, dog waste, mowing)
6. Enforcement (traffic violations and speeding, police presence)

TOP 6 ANSWERS

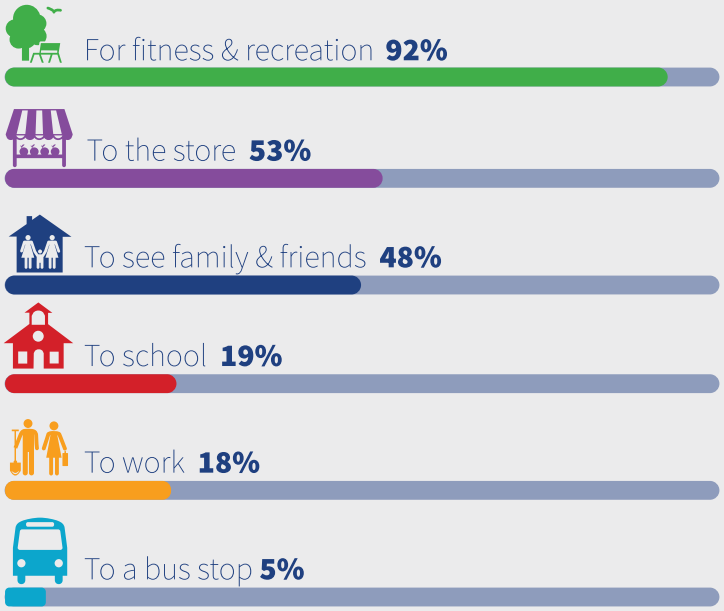
People Riding...

bike, scooter, skate, etc.

Rate your **Satisfaction** with **Riding** in Novi right now



I am Interested in **Riding**...



OTHER: LIBRARY, RESTAURANT, CIVIC CENTER, PLACE OF WORSHIP

Is Anything **Preventing** You from **Riding** to those Destinations Right Now?

1. **Lack of Bikeways (trails, bike lanes, pathways, family friendly options)**
2. **Safety (high speeds and traffic, gaps in system)**
3. **Pavement Condition (bumpy, cracked/unleveled, pathways and roadway)**
4. **Poor Connectivity (network gaps, limited freeway crossings)**
5. **Crossing Busy Roads (intersection traffic, trail crosswalks, personal safety)**
6. **Availability of Bike Parking**

TOP 6 ANSWERS

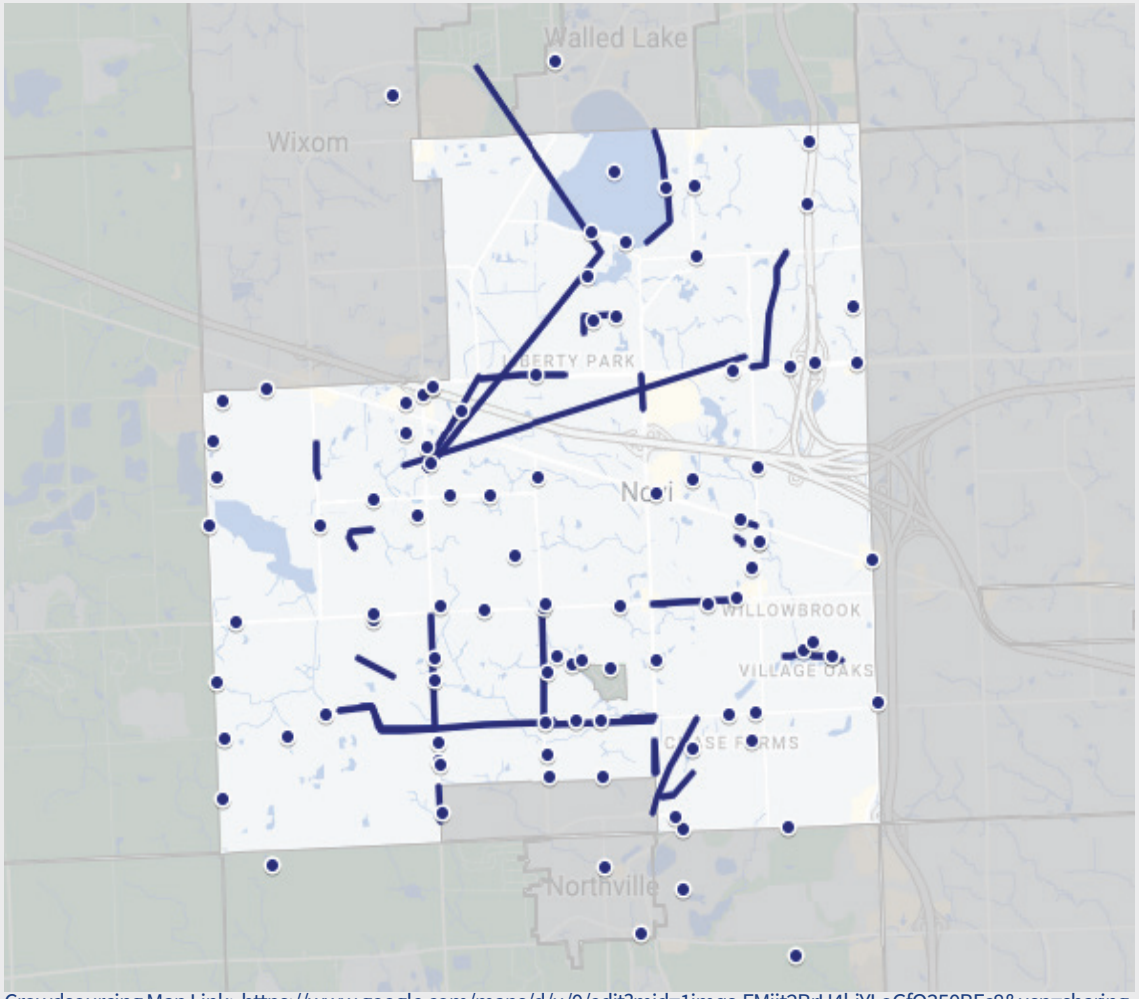
What Would You **Like** to See **Changed**?

1. **More Pathways and Sidewalks (wide enough for bikes and peds to use)**
2. **More Bike Lanes/Paved Shoulders**
3. **Crosswalk Improvements (signalized and mid-block locations)**
4. **Maintenance (snow removal, pavement condition of pathways and roads)**
5. **Connectivity (connect trails and destinations, complete gaps)**
6. **More Parking (motor vehicle parking at trail heads, bike parking around town)**

TOP 6 ANSWERS

Specific Places

A crowdsourcing map was used to collect over 120 comments on specific places. Input was distributed across the community with a majority of comments on the major corridors. The input data is very specific to individual places and should be referenced as specific area and corridor plans are developed. Overall, the main themes revolve around improving pedestrian and cycling infrastructure, connecting popular destinations, and addressing safety concerns.



Crowdsourcing Map Link: https://www.google.com/maps/d/u/0/edit?mid=1jmqs-FMjjt2BrU4l-jYLoGfO350BFc8&usp=sharing

Input Map Themes

Improve Connectivity and Access Through Sidewalks and Bike Lane Connections

Many people have requested new or improved connections between neighborhoods, parks, lodging, and shopping areas. Several comments mention the need for sidewalks and bike lanes in various areas of Novi such as on Beck Rd, 9 Mile Rd, and 10 Mile Rd. Others mention the need for crosswalks or mid-block crossings to connect residents on both sides of busy roads.

Provide Trail Connections to Parks and Popular Destinations

Many people have suggested adding connections between existing trails or creating new trails altogether. Some specific locations mentioned include Maybury State Park, the ITC Trail, the Air Line Trail, Lakeshore Park and the School/Civic Center complex.

Address Safety Concerns

Some comments express concerns about the safety of pedestrians and cyclists, particularly at busy intersections or areas without sidewalks or bike lanes. There are concerns regarding children, due to heavy school traffic and speeding vehicles. Suggestions include better signage and enforcement, adding guard rails to protect pedestrians from cars, and creating pedestrian-friendly streets with speed humps, protected bike lanes, and attractive street lighting.

Walking and Biking Facilities

I would like to see more...

Side walks
85%

OFF-ROAD TRIALS
65%

MID-BLOCK ROAD CROSSINGS
51%

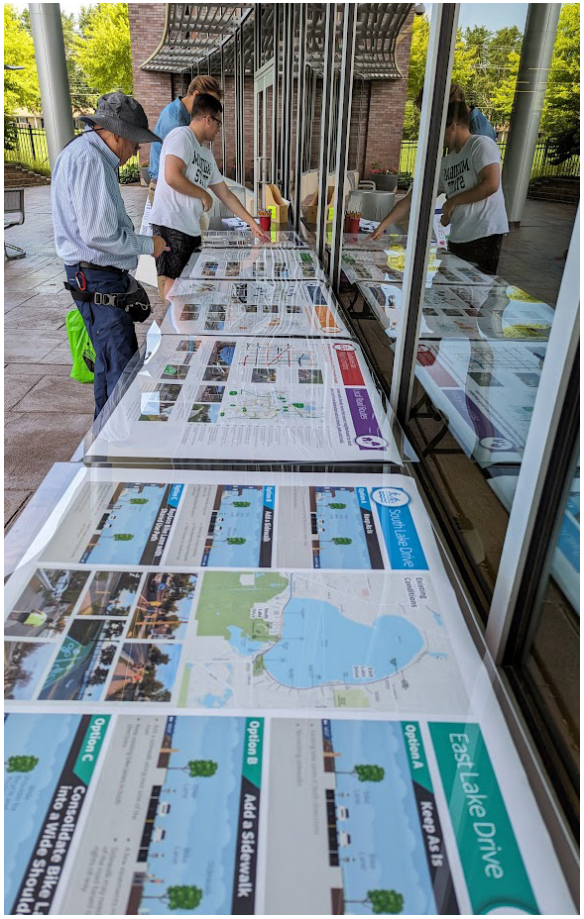
ON-ROAD BIKE LANES
50%

Other: Physical separation from vehicles, green paint on bike lanes, Raised Crosswalks, freeway crossings, ADA accessibility, bus routes, high visibility crosswalks, Wider pathways, traffic calming

Other Suggestions

Tell us anything else you feel is important...

- Development of more park trails and natural areas.
- Better maintenance of sidewalks and pathways.
- Crosswalks and continuous sidewalks on major roads.
- More funding for walking and bicycling facilities
- Speeding enforcement on roads with heavy pedestrian usage.
- Increase awareness for people to clean up after their dogs.
- Community events involving walking and biking.
- Safe routes for families walking and biking.
- More activities at the library.
- Add skate parks, bike parks and pickle ball courts at parks.
- Concerns about aggressive dog breeds, broken curbs and power lines.
- Opportunities for city to transition to more electrification, such as solar and underground transmission.
- Complaints about poor road conditions.




Active Mobility Plan 2023
NOVI
Review the Preliminary Plan and Provide Feedback!
WALKBIKE.INFO/NOVI
SCAN FOR SURVEY


1109

Existing Conditions

The recommendations set forth in this plan are anchored in findings made during an extensive analysis of existing conditions. The inventory and analysis process provides an assessment of the existing multi-modal environment and helps to identify what multi-modal improvements are possible and appropriate. The analysis begins with a general system overview looking at how land use and demographics influence transportation choices and patterns. It then takes a more specific view of the pedestrian and bicycle environments.

- Inventory & Analysis Process
- Land Use, Traffic Generators, & Mobility Patterns
- Pedestrian Conditions
- Bicycle Conditions
- Transportation Network Summary
- Composite Analysis
- Regional Connections

See Appendix: This chapter outlines some of the key findings from the inventory and analysis. Refer to the Appendix for the complete inventory and analysis document.

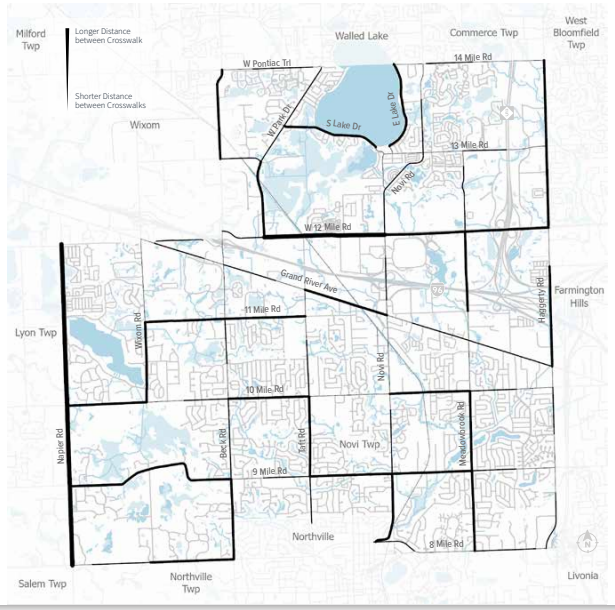
Inventory & Analysis Process

A comprehensive inventory and analysis of existing conditions has been conducted and is available as a 65-page report in the Appendix. Key findings and relevant maps are presented throughout this section to enhance the understanding of the assessment's results.

The following list outlines the major themes integrated into the non-motorized plan inventory and analysis.

- **Traffic and Mobility:** Studying where people travel, traffic patterns and key destinations.
- **Community Demographic:** Examining populations, commuting habits, and underserved areas.
- **Facilities and Improvements:** Assessing current paths, sidewalks, and planned enhancements.
- **Safety:** Looking into bicycle and pedestrian crashes and identifying high-risk areas.
- **Policy and Program Evaluation:** Reviewing existing non-motorized initiatives.
- **Deficiencies:** Highlighting areas with travel gaps and higher dependency on non-motorized transportation.
- **Corridor Prioritization:** Identifying priority areas for improvements based on equity, demand, and safety.

Nonmotorized Network Deficiencies

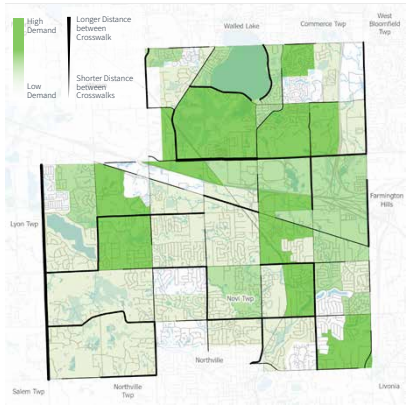


Distance between Crosswalks

This map highlights major road corridors with long distances between signalized and midblock crosswalks.

Crosswalk spacing is a key factor in directness of travel. Most pedestrian trips for personal business (like walking to the store) are about ½ mile long. Where there is demand to cross the road and crosswalk spacing is over ⅛-mile apart, midblock crossings are likely to occur.

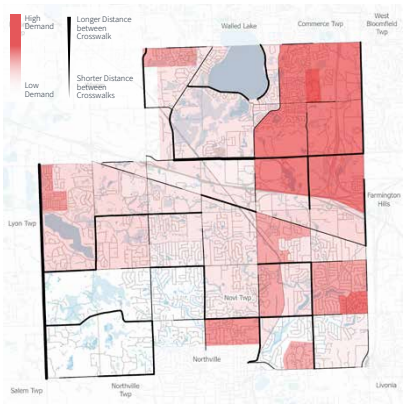
It is important to note that although there may be an existing pedestrian crossing or signalized intersection, they do not always provide an easy and safe way to get across the street. Many times additional improvements are needed at those locations to make them accessible to everyone.



This map highlights areas where there is potential for nonmotorized travel and long distances between existing crosswalks

Distance Between Crosswalks

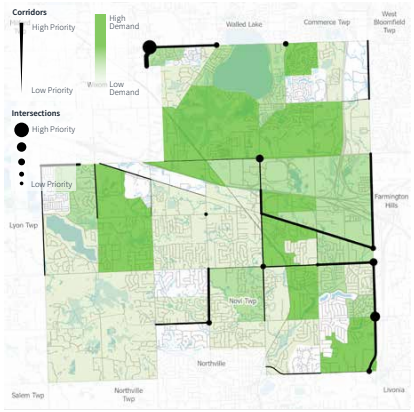
Latent Demand Composite



This map highlights areas where there is a higher probability for people to be dependent on nonmotorized transportation and long distances between existing crosswalks

Distance Between Crosswalks

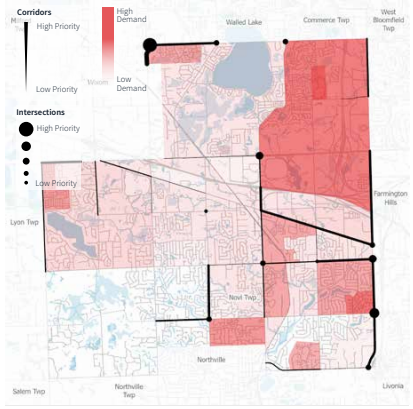
Equity Focus Composite



This map highlights areas where there is potential for nonmotorized travel and gaps in the sidewalk and high priority areas for pedestrian safety

High Priority Locations for Pedestrain Safety

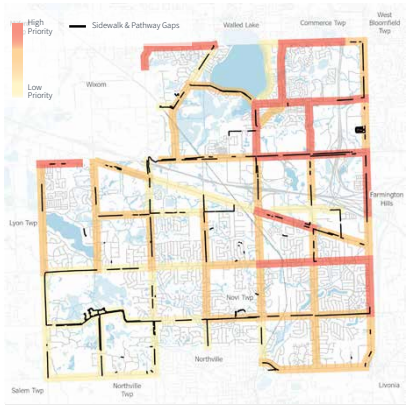
Latent Demand Composite



This map highlights areas there is a higher probability for people to be dependent on nonmotorized transportation and gaps in the sidewalk and high priority locations for pedestrian safety

High Priority Locations for Pedestrain Safety

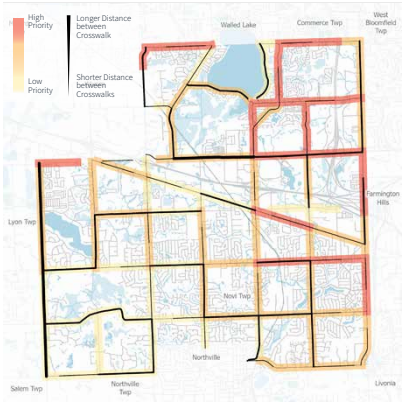
Equity Focus Composite



This map highlights areas where there is high priority for nonmotorized improvements and gaps in the sidewalk and pathway network along major corridors

Major Corridor Sidewalk and Pathway Gaps

Priority Corridors



This map highlights areas there is there is a high priority for nonmotorized improvements and long distances between existing crosswalks

Distance Between Crosswalks

Priority Corridors

For the complete 65-page report, please refer to the Appendix.

Land Use, Traffic Generators & Mobility Patterns

The City of Novi, situated in Michigan's Oakland County, covers approximately 30 square miles and has a population of around 66,560 residents. The City's layout is characterized by dispersed land uses that primarily cater to automobile transportation. Typical of the region, Novi employs a main road grid system with commercial hubs concentrated along busy roads, frequently clustered at intersections, and in proximity to freeway interchanges.

Bicycle and pedestrian travel beyond neighborhood streets typically occurs along the primary road system, using sidewalks and roadside pathways. Opportunities to cross busy roads are limited making it challenging for pedestrians and bicyclists to travel between neighborhoods on opposite sides of major roadways.

In coordination with the 2011 non-motorized plan, the City of Novi has systematically been adding sidewalks and pathways along the primary road system. Despite these efforts, there are still notable gaps in the system, resulting in routes often leading to dead ends without obvious alternatives or advance warning signage.

The ITC Trail, I-275 Metro Trail, and M-5 Metro Trail offer off-road pathways and provide regional connectivity. However, barriers such as multi-lane arterial roads, railroads, and expressways tend to fragment the community in terms of non-motorized travel. Moreover, the presence of wetlands across the city adds to the complexity and cost of the construction of non-motorized facilities.

Schools and parks function as community focal points, yet some lack adequate pedestrian and bicyclist access. High-speed roads in these areas necessitate safer crosswalks, with special attention needed to ensure the safety of families walking to school.

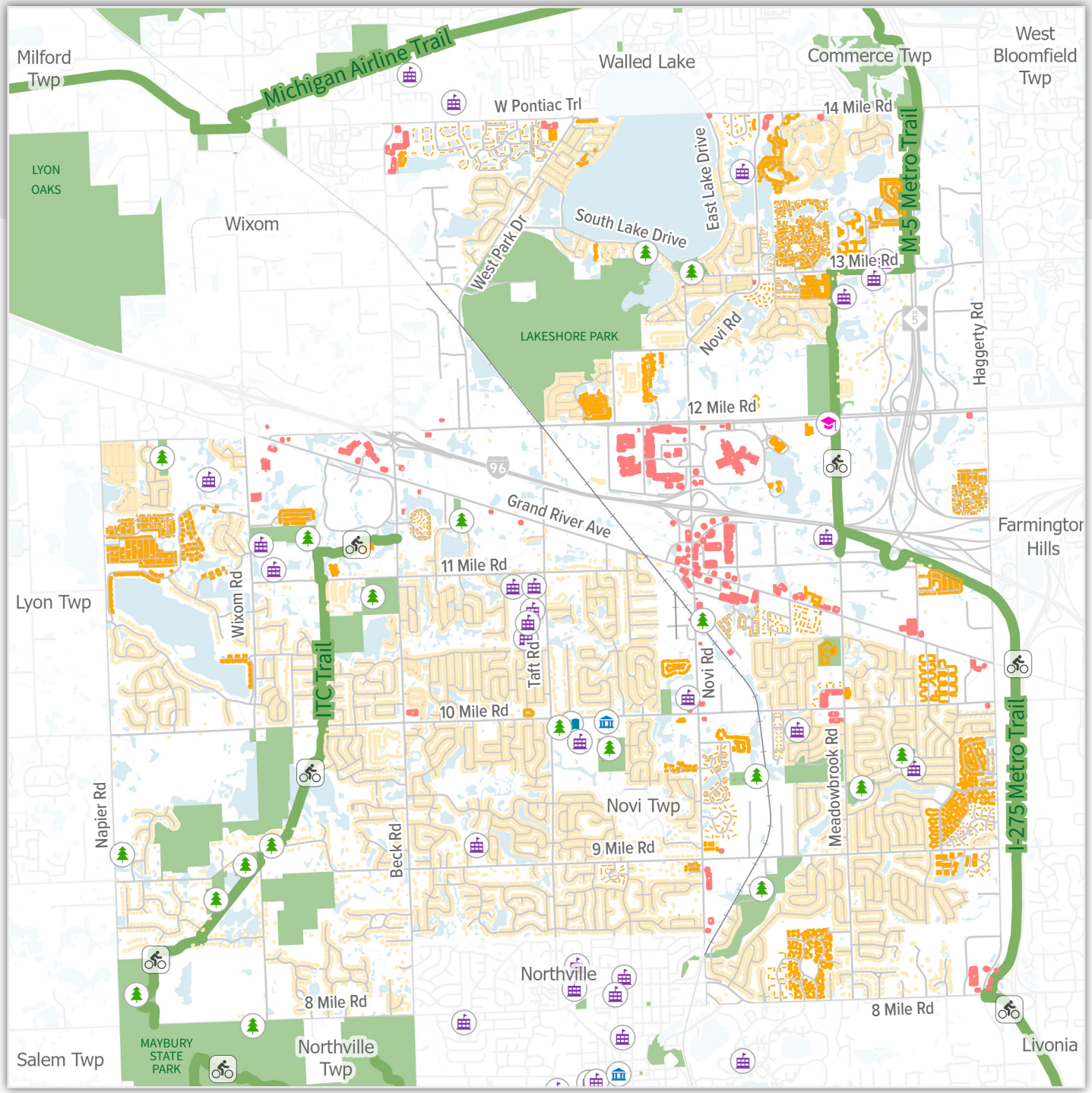
Commercial and shopping centers are hubs for pedestrian and bicycle activity. However, the challenge lies in establishing safe connections to these destinations amid substantial automobile traffic. The introduction of the anticipated City West district and SMART Transit routes underscores the significance of creating reliable bicycle and pedestrian links along the 12 Mile Road, Novi Road and Grand River Avenue corridors.

Key Destinations

Source: City of Novi & SEMCOG

The map highlights key destinations. The dispersed nature of residential areas in relationship to shopping, dining, recreation, educational and civic destinations pose a challenge for creating a walkable and bikeable community.

- Civic Center
- College/University
- Park
- Library
- School
- Regional Trails
- Shopping/Dining
- Single Family Residential
- Multi-family Residential, Manufactured Home Park, and Condominiums

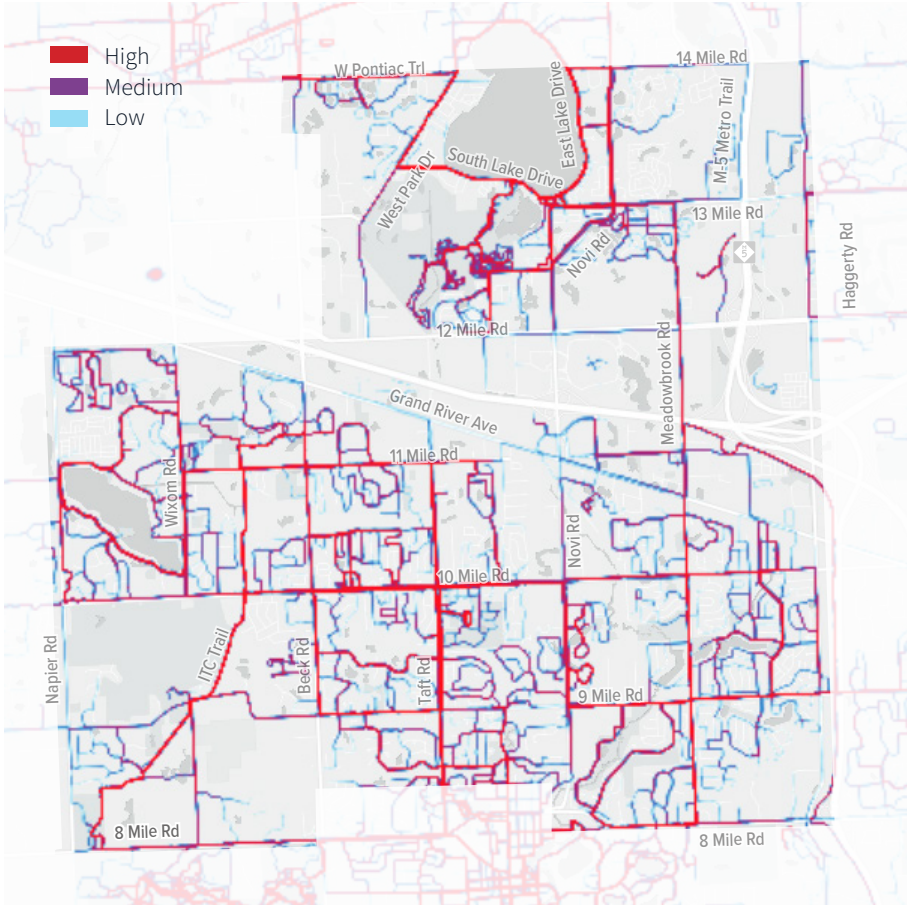


Pedestrian Conditions

The City of Novi has over 300 miles of existing sidewalks and pathways. Pedestrian travel in the city generally follows the primary road system with a partially complete sidewalk system along the major roadways. Many neighborhoods have sidewalks, however there are a few neighborhoods that lack sidewalk connection all together.

The quality of the pedestrian experience on these sidewalks varies greatly throughout the City. Most of the sidewalks have a buffer, such as a row of trees or parked cars, between the sidewalk and roadway. This type of buffer has been shown to have a significant impact on the quality of the walking experience. This buffer not only provides a sense of separation from traffic but also enhances safety and comfort for both drivers and pedestrians.

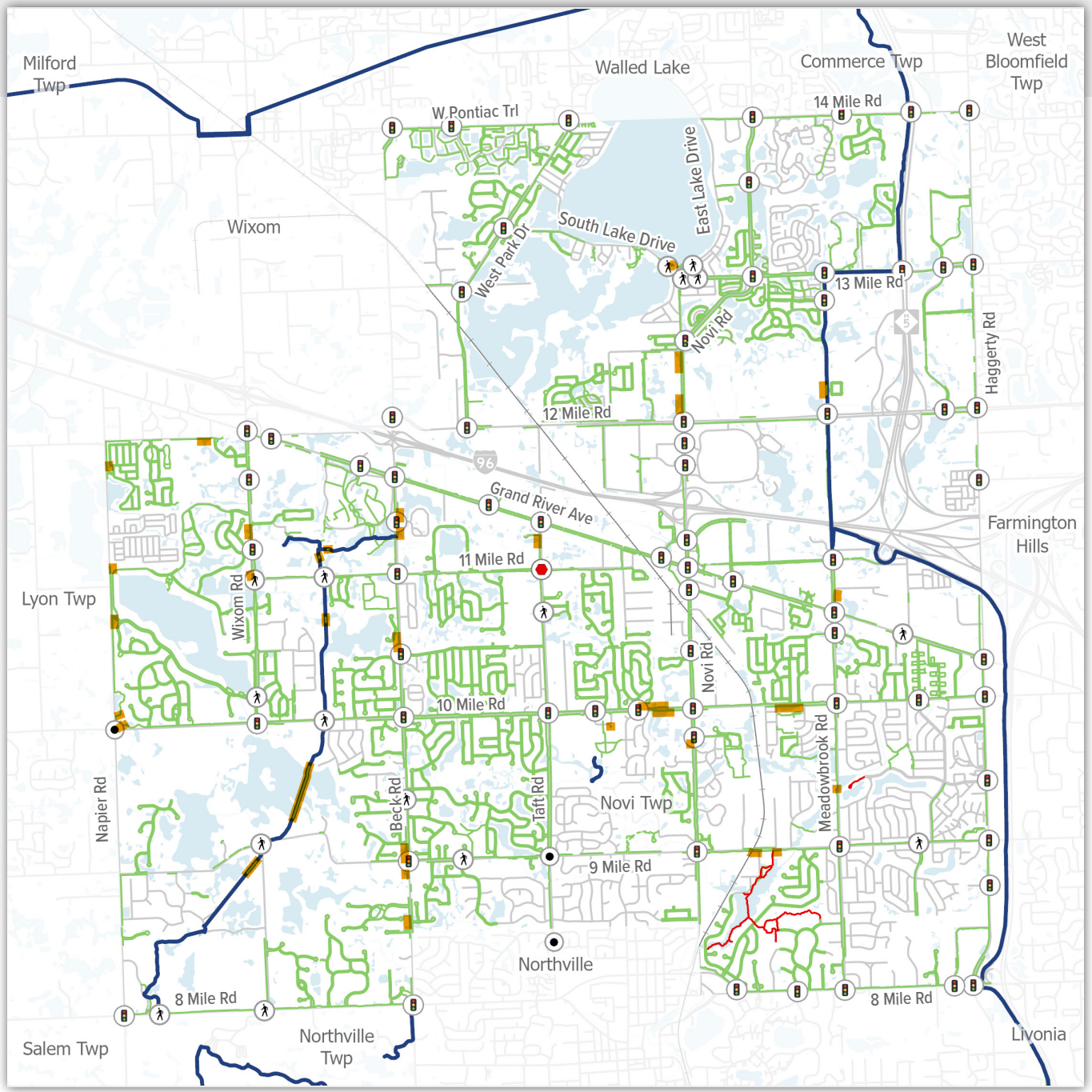
Crosswalks are an important infrastructure element when it comes to determining how walkable a community is. In general, pedestrians will not detour more than 10% of their total trip distance. Opportunities to cross busy roads, such as Grand River Avenue, and 12 Mile Road, are limited, leading to poor pedestrian connectivity between neighborhoods and destinations that are located on opposite sides of the roadway. This leads to risky decision making by pedestrians. There are a number of proven safety countermeasures that may be employed to make pedestrian crossings safer.



Pedestrian Travel Heat Map (Source: STRAVA)
The heat map displays popular routes from aggregated public activities in the past year. Comprising trillions of data points, it visualizes info from users who submitted or synced fitness activities. This data covers both direct app-recorded fitness info and synced data.

Existing Pedestrian Network

- Sidewalks and Pathways
- Natural Surface Trails
- Regional Shared Use Pathways
- Existing Boardwalks
- Signalized Intersection
- Stop-controlled Intersection
- Roundabout
- Mid-block Crosswalk



Pedestrian Safety

An analysis of pedestrian crash data spanning 18 years in the City of Novi was conducted to gain insights into pedestrian safety trends and challenges. This section highlights key findings drawn from this data.

- Two fatalities occurred along the expressway
- One fatality caused by parked vehicles sliding into each other
- Majority of crashes with pedestrians result in injury
- High speed limits at the location of crashes is likely to be contributing higher than average injury crashes
- There is a cluster of crashes near Beck Road and Pontiac Trail where multifamily residential is located across the street from a commercial strip development
- Over 80% of crashes occurred on the roadway

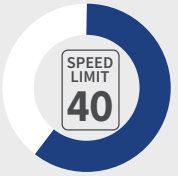
93 pedestrian crashes since 2004

5 average number of crashes per year

3 fatalities in 18 years

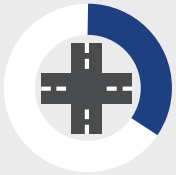
93%
Resulted in Injury
10% higher than state average

54%
Between 4pm and 10pm



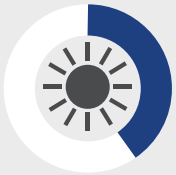
63%
Speed Limit 40 mph or Greater

Speed is a central factor in traffic deaths. As speed limits and speeds increase, so do fatalities. When struck by a vehicle at 40 MPH, a pedestrian has a 20% survival rate.



35%
At an Intersection

20%
Hit and Run



42%
Daylight

29%
Suspected Serious Injury
10% higher than state average

Economic and Societal Impact of Pedestrian Crashes in Novi - 2004 to 2021

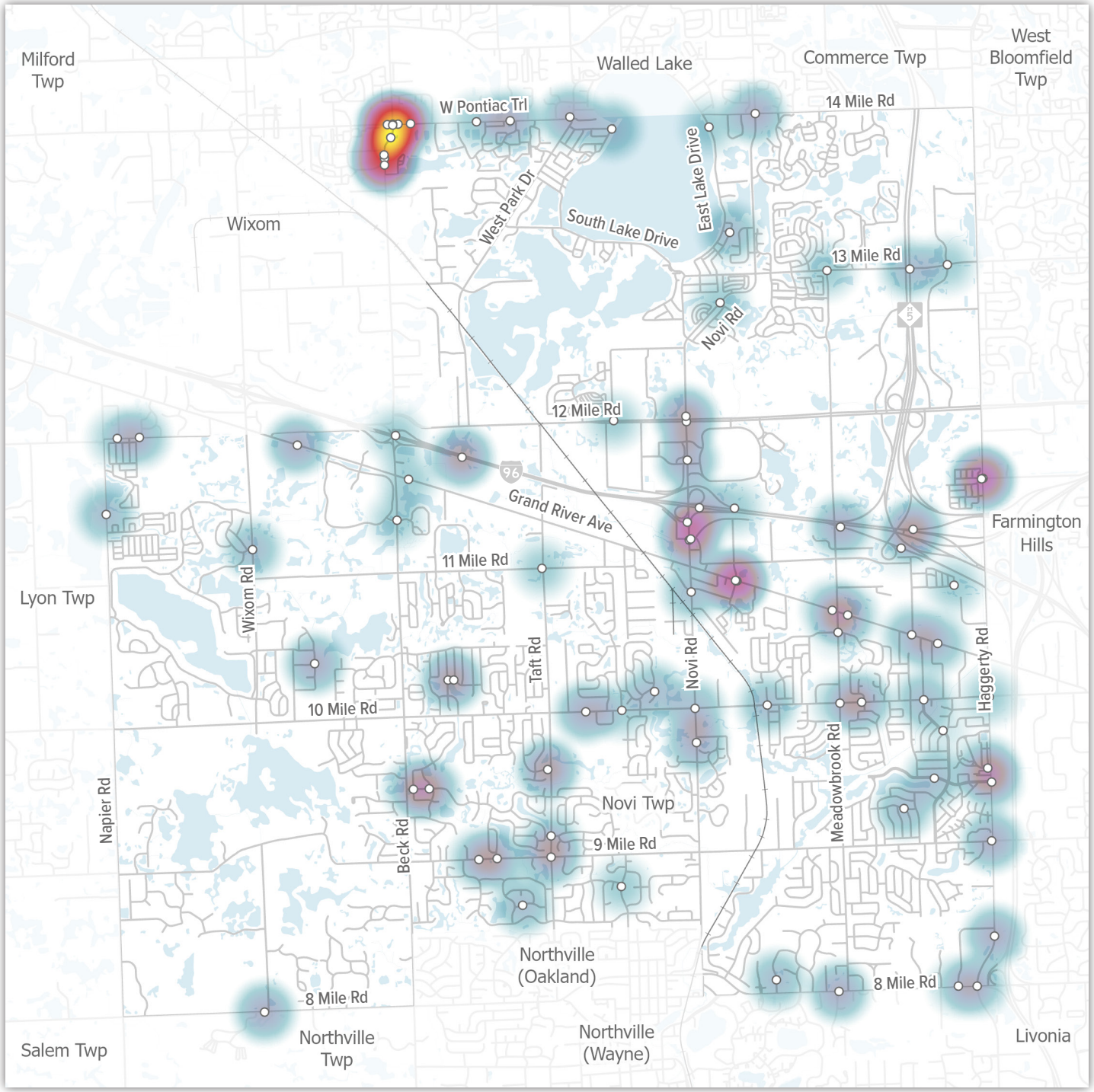
$10.6 Million
Economic Cost: Productivity, medical, emergency and costs to employers

$55.3 Million
Comprehensive Cost: Economic costs plus quality of life valuations (Amount society is willing to pay to avoid the crash)

An assessment of the Economic and Societal Impact of Pedestrian Crashes in Novi involved deriving calculations tailored to the local context. This process was informed by the US Department of Transportation publication titled "The Economic and Societal Impact of Motor Vehicle Crashes, 2009, December 2022."

Pedestrian Crash Heat Map

This heat map serves as a visual representation of pedestrian crash data spanning an 18-year period, highlighting specific locations where pedestrian accidents have occurred more frequently and with increased severity. The map offers valuable insights into areas where enhanced safety measures and infrastructure improvements may be warranted.



○ Pedestrian Crash (2004 - 2021)

Location with higher frequency and severity of crashes

Locations with lower frequency and severity of crashes

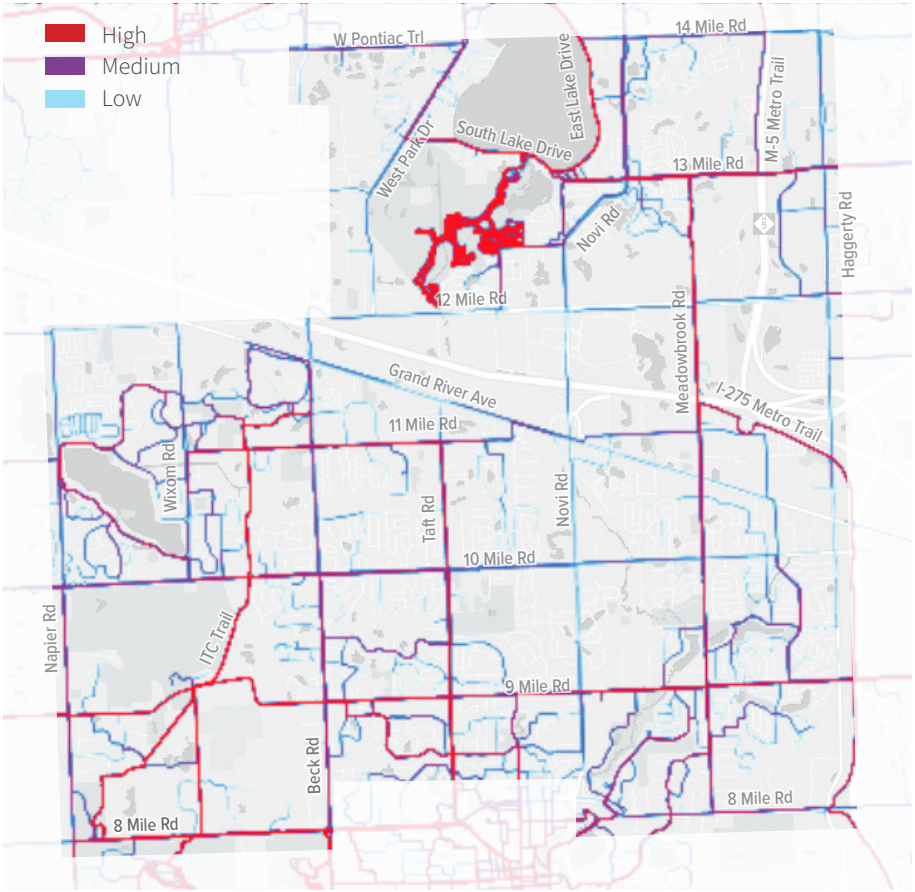
Bicycle Conditions

In general, bicycle travel in the city follows the roadway network with areas of sidepaths and marked bike lanes on Taft Road, South Lake Drive and East Lake Drive.

The existing bicycle network, comprising over 7 miles of regional trails, 4.5 miles of bike lanes, and 40 miles of sidepaths, is fragmented. These facilities frequently have gaps and do not connect seamlessly. Bicyclists often find themselves navigating a combination of sidewalks and sidepaths or sharing the roadway with motor vehicles.

A number of regional trail corridors exist around the City of Novi including the ITC Trail, I-275 Metro Trail, M-5 Trail, Michigan Air Line Trail, Hines Park Trail and Shared Use Paths in Maybury State Park. There is opportunity to improve and strengthen non-motorized connections between these regional destinations.

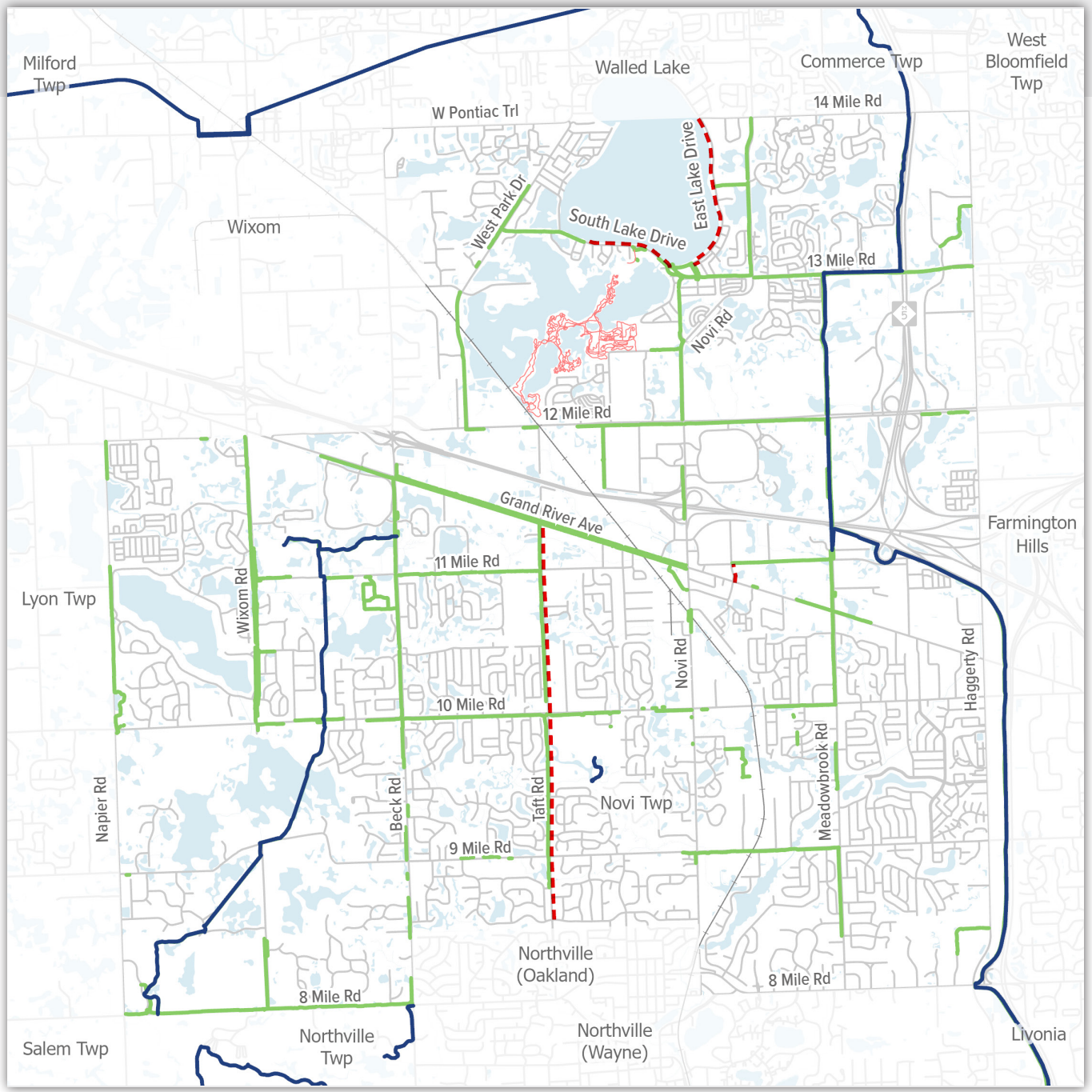
While there have been some initial steps towards wayfinding with the pathway along Meadowbrook Road that connects the I-275 Trail to the M-5 Trail, there is significant room for improvement. There has been interest expressed by surrounding communities to establish a regional trail wayfinding system. The wayfinding system could also be expanded to show preferred routes around the city to key destinations and just how close in time and distance they are.



Bicycle Travel Heat Map (Source: STRAVA)
This map compiles bicycle trips from the Strava app, with wider and lighter lines indicating more trips. This data tends to represent trips recorded by one app and leans towards recreational use, but it still offers a fair approximation of bicycle usage on roads and trails.

Existing Bicycle Network

- Shared Use Path (8’ wide or greater)
- Regional Shared Use Pathways
- Bike Lanes
- Mountain Bike Trails



Bicycle Safety

An analysis of bicycle crash data spanning 18 years in the City of Novi was conducted to gain insights into bicycle safety trends and challenges. This section highlights key findings drawn from this data.

- Zero fatalities in 18 years
- Majority of bicycle crashes occurred in the afternoon when daylight was present
- Safety Improvements are needed at intersections
- High speed limits at locations of crashes are likely contributing higher than average serious injury crashes
- Over 1/2 of all crashes were at a signalized intersection
- Around 90% of all crashes occurred in the roadway

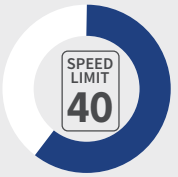
86 bicycle crashes since 2004

5 average number of crashes per year

0 fatalities in 18 years

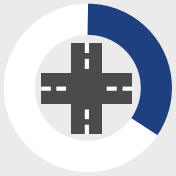
85%
Resulted in Injury
5% higher than state average

54%
Between 2pm and 6pm



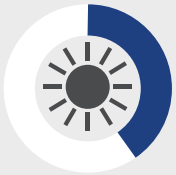
59%
Speed Limit 40 mph or Greater

Speed is a central factor in traffic deaths. As speed limits and speeds increase, so do fatalities



65%
At an Intersection
55% of all crashes were located at a signal

16%
Hit and Run



83%
Daylight

8%
Suspected Serious Injury

Economic and Societal Impact of Bicycle Crashes in Novi - 2004 to 2021

$3.2 Million

Economic Cost: Productivity, medical, emergency and costs to employers

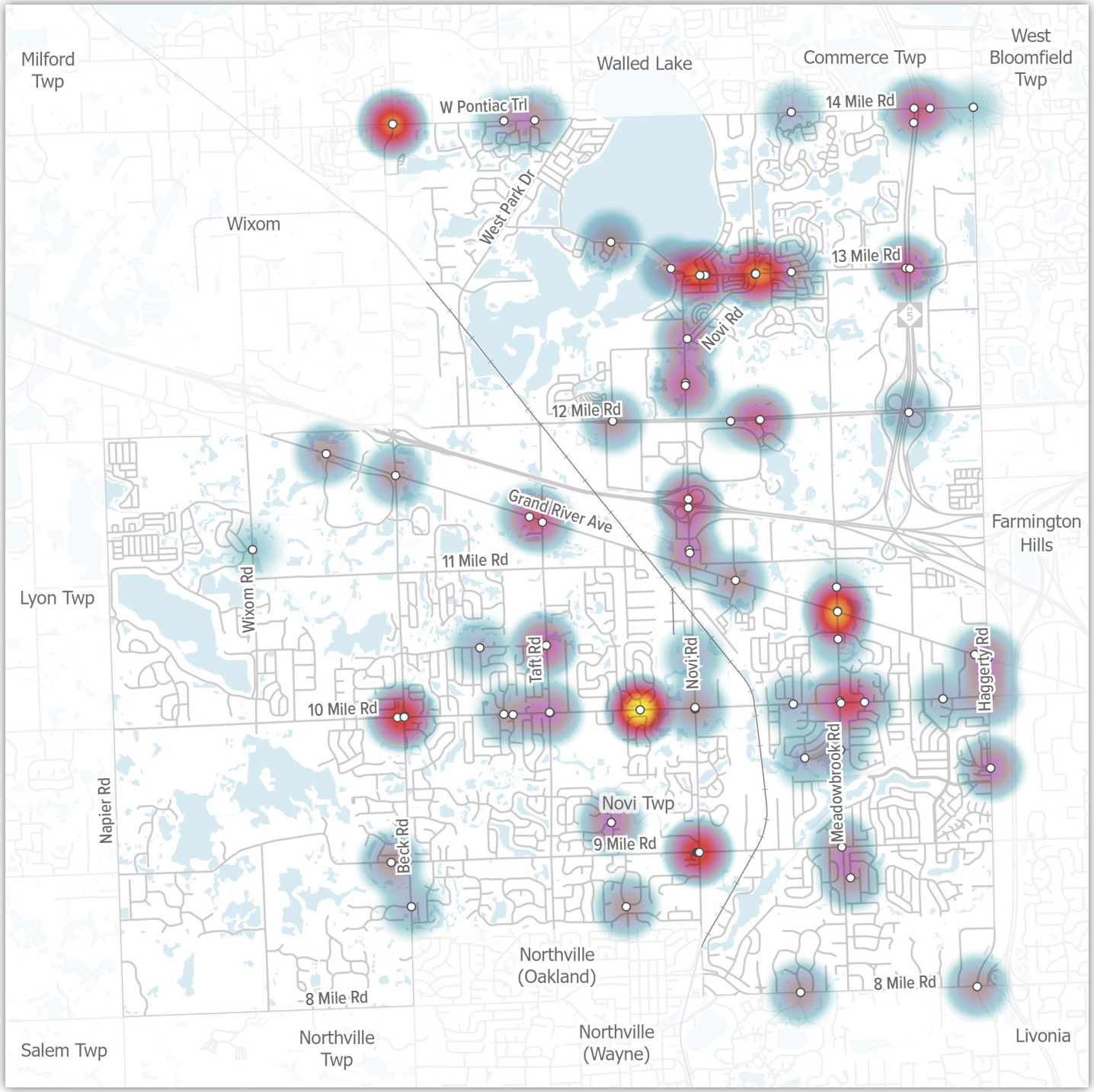
$17.6 Million

Comprehensive Cost: Economic costs plus quality of life valuations (Amount society is willing to pay to avoid the crash)

An assessment of the Economic and Societal Impact of Bicycle Crashes in Novi involved deriving calculations tailored to the local context. This process was informed by the US Department of Transportation publication titled "The Economic and Societal Impact of Motor Vehicle Crashes, 2009, December 2022."

Bicycle Crash Heat Map

This heat map serves as a visual representation of bicycle crash data spanning an 18-year period, highlighting specific locations where bicycle accidents have occurred more frequently and with increased severity. The map offers valuable insights into areas where enhanced safety measures and infrastructure improvements may be warranted.



Transportation Network Summary

Pedestrian and Bicycle Access and Mobility

311
Miles of sidewalk and pathways

97
Crosswalk locations

7
Miles of regional trails

4.5
Miles of bike lanes

- Most road crossings are greater than 1/2 mile apart. Where there is demand to cross the road, spacing should be less than 1/8 mile apart.
- The speed and number of lanes of most of the primary roads warrant that mid-block crossings and intersections incorporate substantial safety features for pedestrians and bicyclists.
- The visibility of pedestrians and bicyclists using sidepaths is a concern at man subdivision entrances given the general lack or minimal of crosswalk markings, entrance signage, and landscaping.
- Neighborhood streets and local roads provide a friendly environment for walking and bicycling compared to the busy arterials. More short connections between adjacent neighborhoods would reduce the need for pedestrians and bicyclists to travel along the busy roadways.
- Mid-block crossing improvements should align with the low stress bike routes along local roads.
- Novi's ITC Trail is a great asset within the City but needs to connect to other nearby trails and destinations in the region such as Maybury State Park, Lakeshore Park, the Michigan Air Line Trail, Downtown Northville, and the I-275 Trail.
- Wayfinding is needed throughout the city to connect bicycle and pedestrian routes to key destinations and trails and to provide advance notice of when sidepaths dead-end.
- Not all areas of the city have equal access to non-motorized facilities. Underserved areas would benefit from infrastructure that makes it easier and safer to walk and bike.

Novi Roadway Network

341
Miles of Roadway

80
Miles of Major Roads

260
Miles of regional trails

4.7
Square Miles of Right-of-way (15% of City Footprint)

Many of the busiest roads are under control by MDOT or Oakland County Road Commission

- The arterials were designed to move a high volume of motor vehicles at a high rate of speed with little consideration given to the needs of non-motorized transportation.
- The expressways combined with major arterials, such as Grand River Ave., M-5, and Haggerty Road, create challenges for making non-motorized connections across the middle and east side of the city. The I-275 Metro Trail and the M-5 Metro Trail allow for travel along these corridors, but not necessarily across them.
- Strip development along major roadways, such as Grand River Ave, Haggerty Road, Novi Road, and Beck Road lead to frequent curb cuts and conflict points on the sidewalks and sidepaths.

Transit

- In September of 2023, SMART introduced enhanced transit in Oakland County and now provides service in Novi along Grand River, 12 Mile Road, and Novi Road in the city.
- New routes servicing Novi include SMART 740, SMART 305, and SMART 805.
- Addressing gaps in the pedestrian network along the transit routes should be prioritized along with adding mid-block crosswalks near transit stops. Incorporating amenities along the route will help to promote safe and convenient access to the newly established transit stops.

Composite Analysis

This Composite Analysis encapsulates a comprehensive evaluation of Novi's non-motorized transportation system, epitomized by three pivotal analysis maps:

- **Equity Focus Composite Map:** This map highlights census block areas where residents are more likely to be dependent on non-motorized travel. The darker the red shading, the more likely the residents do not have the option of using a private motor vehicle.
- **Latent Demand Composite Map:** This map estimates potential bicycle and pedestrian travel demand, providing a vital tool to prioritize improvements in conjunction with existing deficiencies.
- **Priority Corridors Composite Map:** This map amalgamates equity, demand, and safety factors to spotlight corridors for targeted enhancements, embodying the city's commitment to cultivating safer, more interconnected non-motorized networks.

Collectively, these analysis maps present a multifaceted road map for advancing non-motorized transportation infrastructure. The insights gleaned from these maps will serve as the cornerstone for strategic decision-making, guaranteeing that the recommendations impact areas of the city with the greatest needs.

Equity Focus Composite Map

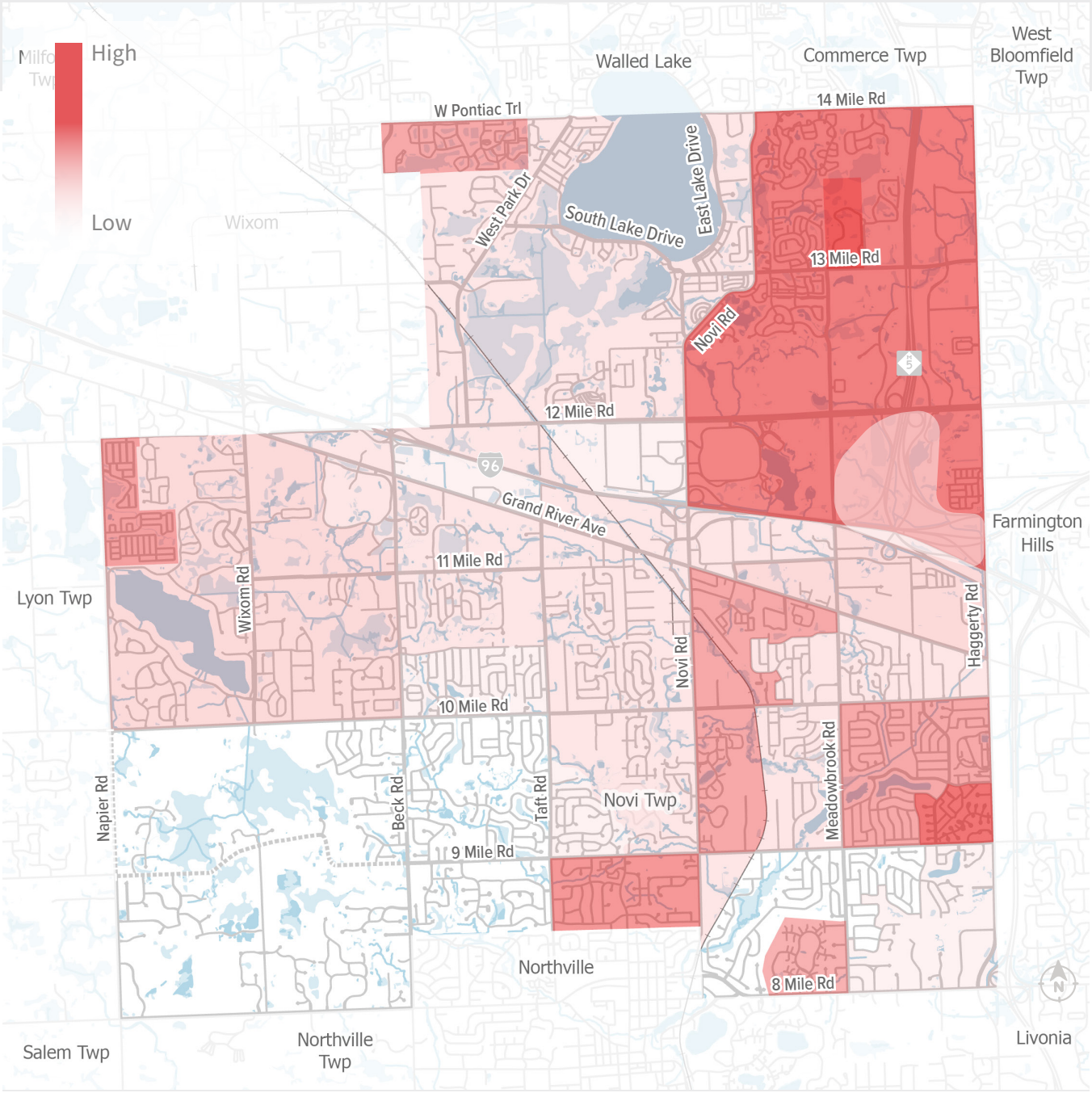
Equity focus areas highlight where there is a higher probability that people rely on non-motorized travel for transportation. This takes into consideration factors such as low-income households, senior citizens, and transit dependent households. The northeast quadrant of the city is most likely influenced by senior housing and rental properties. This map uses census blocks to illustrate equity focus areas and includes the following data sets:

Poverty

Households that lack access to vehicles

Residential Building Types

Environmental Justice Sensitivity



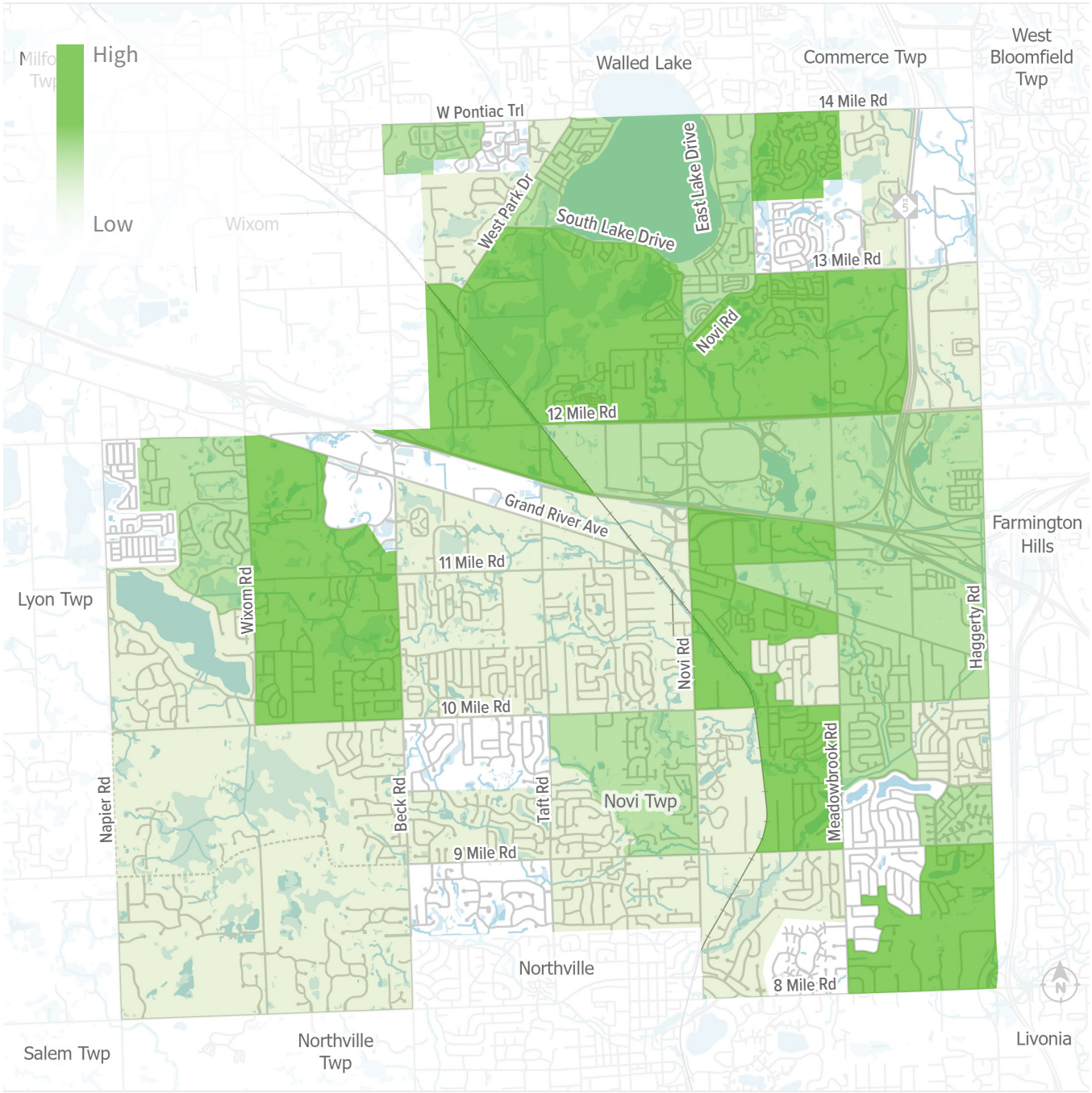
Latent Demand Composite Map

Latent demand areas estimate the potential demand for bicycle and pedestrian travel. Other factors may promote or inhibit actual non-motorized travel levels. The composite analysis is a useful tool to contrast with facility deficiencies and prioritize improvements. This map uses census block areas to illustrate latent demand for non-motorized travel areas and includes the following data sets:

Walkablity Index

SEMCOG Demand Areas

Civic Destinations



Priority Corridors Composite Map

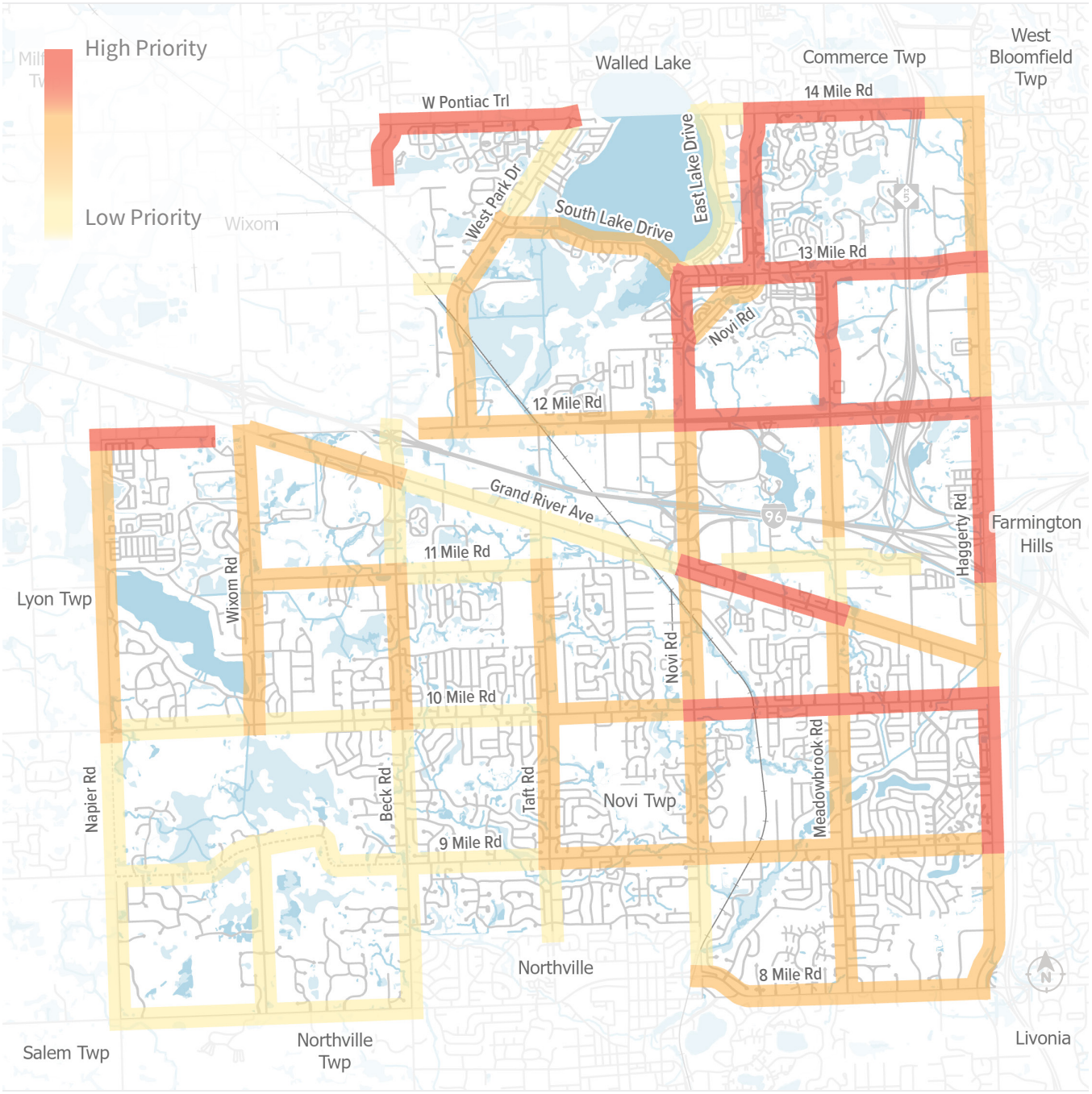
This summary map highlights priority corridors for non-motorized improvements based on equity, demand, and safety. The highest-priority corridors for these improvements are concentrated in the northeastern part of the city. The corridors that stand out as needing the most attention include sections of W Pontiac Trail, 14 Mile Road, Novi Road, 13 Mile Road, Meadowbrook Road, 12 Mile Road, Haggerty, and Grand River.

Equity Focus Composite

Latent Demand Composite

High Priority Locations for Bicycle Safety

High Priority Locations for Pedestrian Safety



Regional Trail Connections

Novi's fortunate to be surrounded by excellent trail options. Nevertheless, the connections to these trails lack clarity and often do not instill a sense of safety and comfort for most bicyclists. By fostering partnerships aimed at bolstering regional connections, the community can elevate the overall quality of the trail experience and inspire increased usage.

The statewide trail system consists of the Great Lake-to-Lake Trail and the Iron Belle Trail. Novi has the opportunity to connect to both of these systems by linking the Novi ITC Trail to other nearby trails.

1 Novi ITC Trail
ITC trail is a great asset within the City. Non-motorized connections to other nearby trails is needed to link into the regional trail network. There is the opportunity for a 30-mile regional trail loop through Novi if connections are completed to the Michigan Airline Trail, Maybury State Park and Hines Park Bikeway through Northville.

2 Maybury State Park
Non-motorized connections needed between Novi's ITC Trail and Maybury State Park.

3 Downtown Northville
There is a need to strengthen non-motorized connections between communities.

4 I-275 Metro Trail
This trail provides a north-south connection following the I-275 corridor on the City's east side. Improved wayfinding will help residents find access points to the trail.

5 M-5 Metro Trail
Provides a north-south connection along the M-5 corridor in the northeast corner of the city. This is currently the City of Novi's main link to the Great Lake-to-Lake Trail.

6 Meadowbrook Path
A relatively new, 2-mile pathway connection between the M-5 Metro Trail and the I-275 Metro Trail. Some signage exists to route trail users between both trails.

7 Lakeshore Park
This is a regional draw for mountain bikers with around 10 miles of trail. Improved non-motorized connections to this park are needed so users have the option to bike to the park instead of driving.

8 Iron Belle Trail
When complete, this 2,000 mile loop trail will connect the western tip of the Upper Peninsula to Belle Isle in Detroit.

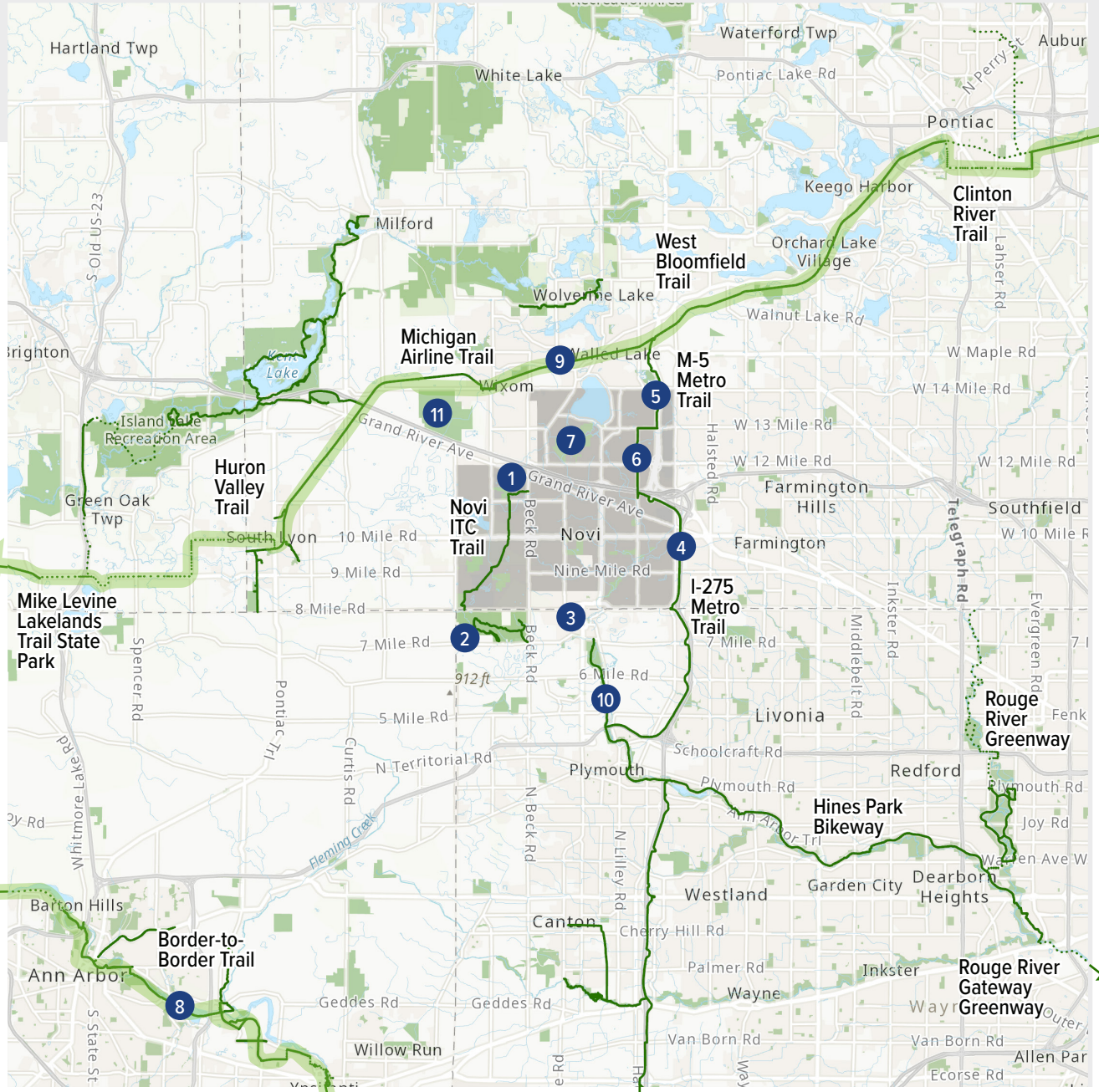
9 Great Lake-to-Lake Trail
This 275-mile bike route across southern Michigan stretches from South Haven to Port Huron. There may be opportunities to expand Novi's ITC Trail north to make a connection to the Michigan Airline Trail along the Great Lake-to-Lake Trail Route.

10 Hines Park
Provides a north-south connection along the Edward Hines Drive corridor at the southern end of the City of Northville and connects to the I-275 Trail. There are opportunities to coordinate with the City of Northville and Northville Township on a connection to this trail.

11 Lyon Oaks County Park
This park is located in the City of Wixom with 6 miles of natural surfaced trails. There is an existing sidewalk connection along Pontiac Trail to this park.

Regional Trails

- Existing Shared Use Paths
- Planned Shared Use Paths
- Statewide Trail Routes
- # Notes




STOP
CROSS TRAFFIC
DOES NOT STOP

Facility Types & Guides

In recent years, there has been a growing recognition of the critical role that non-motorized transportation plays in creating sustainable, inclusive, and vibrant communities. As the City of Novi continues to evolve, the need for efficient, safe, and accessible non-motorized infrastructure becomes increasingly apparent.

The Facility Types and Treatments explore a diverse array of different facilities and innovative treatments, including bike lanes, intersection enhancements, and mid-block crosswalk treatments. This section provides images and terminology to help demystify the non-motorized transportation terminology that is referenced in this report.

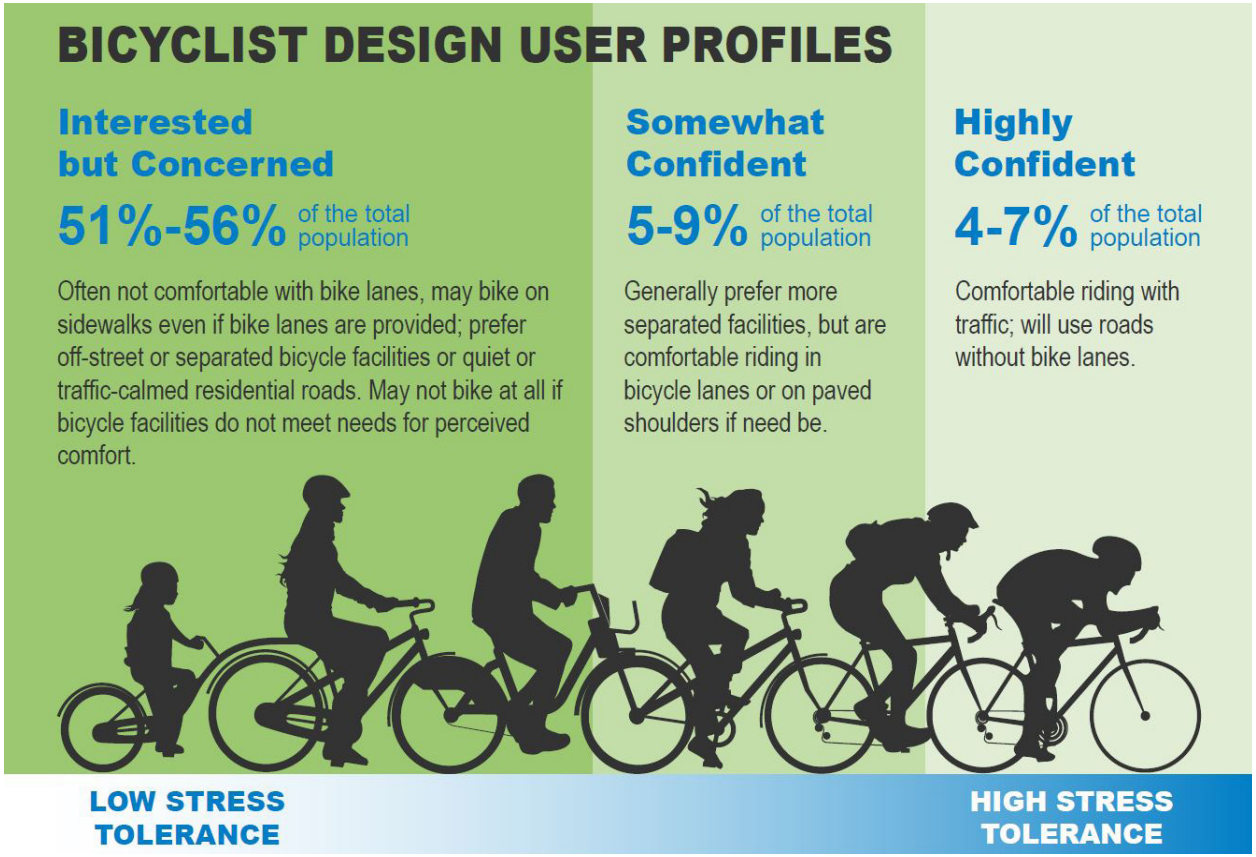
This section also highlights design guidelines that are readily available, offering comprehensive details on implementing new facilities and incorporating best practices in non-motorized network development.

- Facility Types & Treatments
- Design Guidelines & Resources

Facility Types & Treatments

Building a Non-motorized Network for Everyone

Efficient and safe non-motorized networks include a variety of facilities designed to accommodate individuals of all ages and abilities. From sidewalks and trails, acting as the bedrock of a low-stress network, to the thoughtful integration of non-motorized facilities at intersections and along busy corridors, each element plays a crucial role in promoting active transportation. Providing safe and comfortable facilities while making seamless transitions between them is key to a non-motorized network's success.



Source: FHWA Bikeway Selection Guide 2019

Non-motorized facilities are utilized by a diverse spectrum of people, including cyclists and pedestrians spanning all age groups and abilities. There is no 'typical' user, as these facilities cater to individuals with varying needs and motivations. From children learning to ride bicycles, to adults commuting to work, and seniors enjoying leisurely strolls, non-motorized facilities accommodate a wide range of users. It is imperative to acknowledge this diversity when designing and maintaining these spaces, ensuring their accessibility and creating a welcoming environment for all.

Facilities for Non-motorized Transportation

There are a number of terms and types of multi-modal transportation facilities discussed in this plan. A few are highlighted here. Several of these facilities can transition over time from relatively inexpensive and easy changes that are made with paint and posts in the near-term, to more expensive and complex changes that may be accomplished in concert with a more significant infrastructure project such as when a road is being completely rebuilt. When improvements are done in coordination with one another, a variety of corridor types can be created that offer multi-modal options and improved safety for all users.

Sidewalks

Dedicated space intended for use by pedestrians. They are separated from a roadway by a curb and/or an unpaved buffer space and typically constructed of concrete. Sidewalks should be set back from the roadway at least five feet from the back of curb. A preferred sidewalk width of six feet or more allows for a more comfortable walking environment. Additionally, integrating street parking or bike lanes along sidewalks provides a barrier between pedestrians and moving vehicles, creating a safer and more enjoyable pedestrian experience. Street trees in the buffer further contribute to the aesthetics and shade, enhancing the overall sidewalk environment.

Shared Use Paths

These are pathways that are physically separated from the roadway and are shared by people who walk and bike going both directions. These are wider than standard sidewalks (at least 10’ wide with 2’ clear zone on each side) and typically constructed of asphalt or carefully jointed concrete for smooth bicycling. When located adjacent to a roadway the facility may be referred to as a sidepath. For pathways seeking federal funding, adherence to the American Association of State Highway and Transportation Officials (AASHTO) guidelines is crucial to ensure eligibility and compliance with established safety standards.

Unpaved Trails & Foot Paths

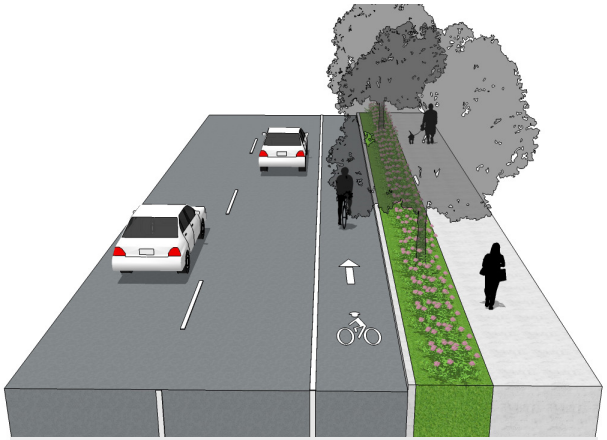
Unpaved trails have a natural or a compacted gravel surface and typically quite narrow. The are usually more recreational in nature than a paved pathway. They can be designed for specific activities like hiking or mountain biking.

Signed Bike Routes

These are selected local roads that provide low-stress connections to destinations around the City for people who would prefer to avoid the busiy main roads. These routes utilize clear and easily recognizable signage and/or pavement markings to direct cyclists onto roads that are considered safer and more accommodating for bike travel. Signed bike routes typically do not have dedicated cycling infrastructure but the traffic speeds and volume are low enough for bicyclists and motorists to safely share the road. Crosswalk improvements may be needed where these routes cross major roadways.

Bicycle Boulevards

A signed bike route that prioritizes bicycle travel by providing a range of amenities and design elements that make cycling safer, more comfortable, and efficient. Traffic calming features such as traffic diverters and traffic circles are incorporated to reduce traffic speeds and volumes. Stormwater management facilities, like rain gardens, may also be incorporated to contribute to a sustainable design solution. A Bicycle Boulevard may be considered an enhanced Signed Bike Route.

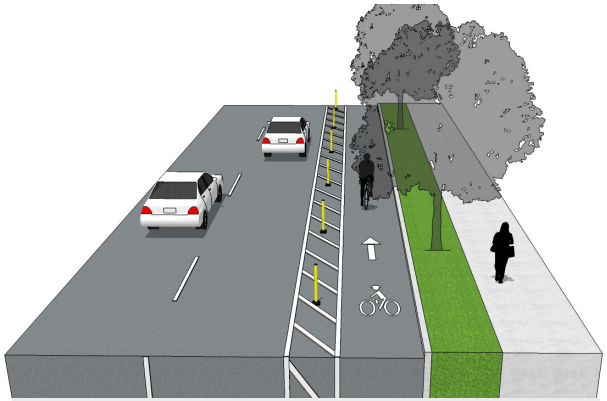


Minimal

Basic Bike Lanes

Used on lower speed and lower volume roadways where space is limited. They provide an exclusive space for bicyclists located adjacent to vehicular travel lanes. They assist in facilitating predictable behavior and movements between bicyclists and motorists. Key cost variables include the number of intersections that require special pavement markings and changes to existing lane configuration.

This is a FHWA Proven Safety Countermeasure. For more information visit https://highways.dot.gov/safety/proven-safety-countermeasures

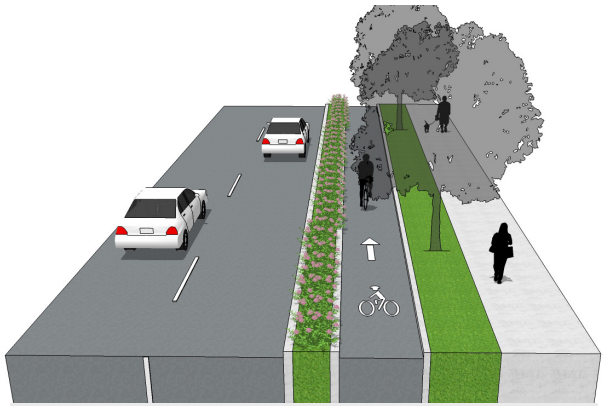


Enhanced

Buffered Bike Lanes

Often implemented with a road re-striping or resurfacing project. A basic bike lane is paired with a designated buffer space separating the bicycle lane from the adjacent motor vehicle travel lane and/or parking lane. This provides greater distance between motor vehicles and bicyclists and appeals to a wider cross-section of bicycle users.

Separation may be enhanced with the addition of delineator posts. These may be placed every 30’ - 40’ along the entire distance or used more sparingly at intersections. Key cost variables includes the spacing of the delineator posts.



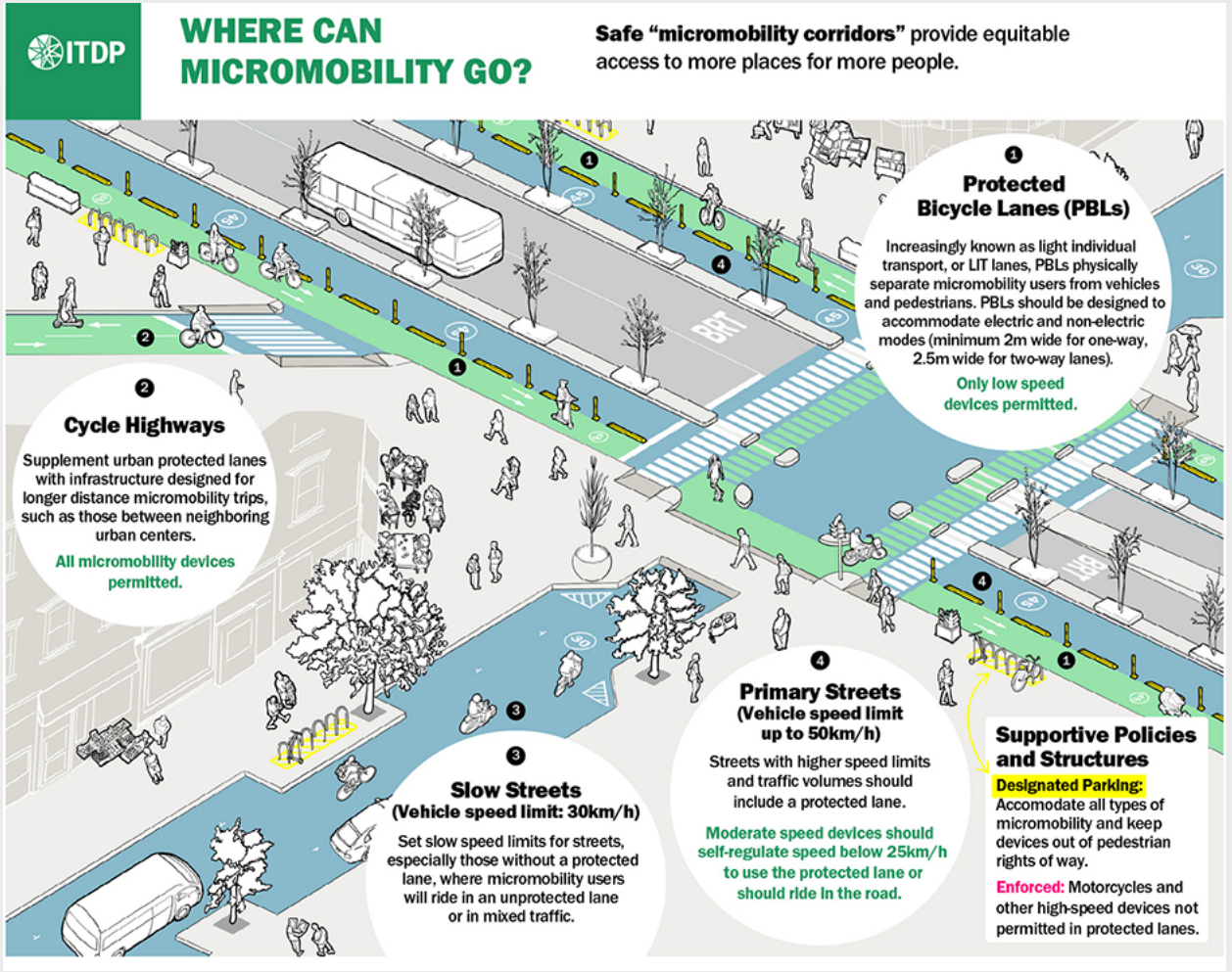
Optimal

Separated Bike Lanes

Typically implemented as part of a road reconstruction project but can also be accomplished through the temporary use of planters, movable curbs, or barriers. The lane may be placed at the street level, sidewalk level, or somewhere in-between. May be combined with a parking lane or other barrier between the separated bike lane and the motor vehicle travel lane. Protects space for bicyclists in order to improve perceived comfort and safety. Intersections must be carefully designed to minimize conflicts with motorized vehicles due to reduced visibility of the lanes. Key cost variables include curb construction and drainage.

Micromobility

Bike Lanes, also known as Micromobility Lanes, are portions of the road that have been designated through striping, signage, and pavement markings for the use of bicyclists, e-bikes, scooters, etc. Many times the lanes can be added to existing roads through lane narrowing or reducing number of vehicular travel lanes without effecting the existing curb. They typically run in the same direction as vehicular traffic. Facilities described on the previous page could become basic bike/micromobility lanes, buffered bike/micromobility lanes and separated bike/micromobility lanes.



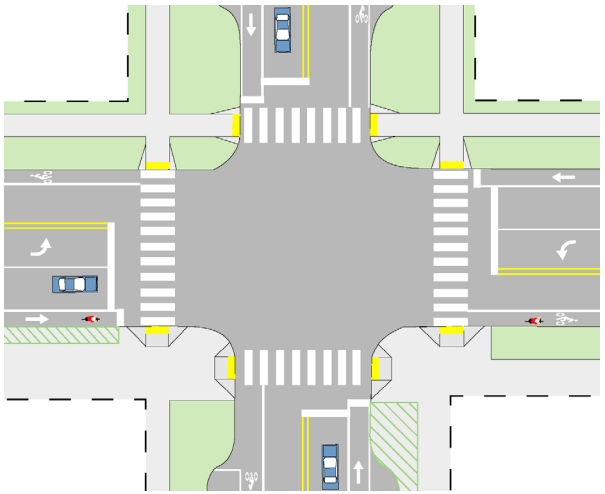
Source: Institute for Transportation & Development Policy

Road Crossing Treatments to Enhance Safety and Accessibility

While safely moving various modes through and along corridors is important, getting vulnerable modes, including pedestrians and bicyclists, safely across corridors is essential. The examples here illustrate various ways to get people across corridors. Specific design treatments vary based on distance, speeds, volumes, etc.

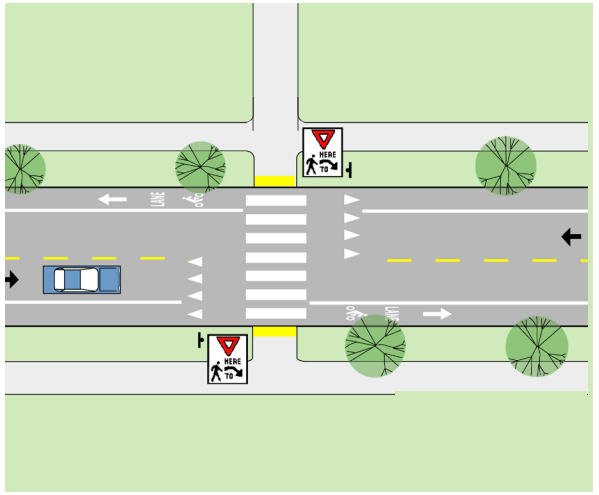
These treatments can be combined with each other and/or with corridor upgrades. For example, a raised crosswalk can be combined with a pedestrian crossing island and/or a rectangular rapid flash beacon. The associated cost would generally be the sum of the parts. However, some savings would be realized in the overlap in design, construction, and other “soft” costs.

Road crossings are pivotal points where pedestrians interact with vehicular traffic, and their design significantly impacts the overall pedestrian experience. One fundamental distinction in road crossings lies between mid-block crosswalks and crosswalks at intersections. While mid-block crosswalks focus on providing efficient and direct access, crosswalks at intersections demand careful coordination between pedestrian and vehicular movements. In both cases, providing a dedicated identifiable crossing that heightens driver awareness of pedestrian presence is key to enhancing safety.



Crosswalks at Intersections

Crosswalks at intersections are integrated into the junctions of roads, enabling pedestrians to traverse roadways while interacting with turning and oncoming vehicles. By employing strategies such as leading pedestrian intervals, advanced stop bars, and clear signage, crosswalks at intersections can create harmonious interactions between pedestrians and vehicles.



Mid-block Crosswalks

Strategically positioned between intersections, these road crossings offer pedestrians more convenient access to destinations and shorten walking distances. To enhance safety, various design elements are employed, such as high visability crosswalks, pedestrian-activated signals, and traffic calming measures. Crossings within roundabouts are often managed similarly to mid-block crossings.

High Visibility Crosswalk

High visibility marked crosswalks indicate optimal or preferred locations for pedestrians to cross a road and help designate right-of-way for motorists to yield to pedestrians. High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks. They should be considered at all mid-block pedestrian crossings and uncontrolled intersections.

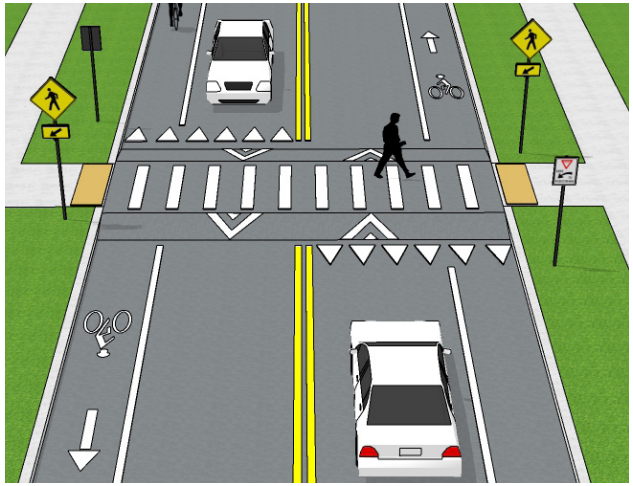
This is a ***FHWA Proven Safety Countermeasure***. For more information visit https://highways.dot.gov/safety/proven-safety-countermeasures

Crossing Islands

With crossing islands, pedestrians only need to cross one direction of traffic at a time. This allows for more crossing opportunities as they only need a gap in traffic from one direction. The island provides a strong visual indicator to motorists of the crosswalk. They are often used in tandem with rectangular rapid flash beacons.

Crossing islands should be employed whenever pedestrians need to cross more than two lanes of traffic, when the speed limit exceeds 35 mph, or when the gaps in traffic are insufficient.

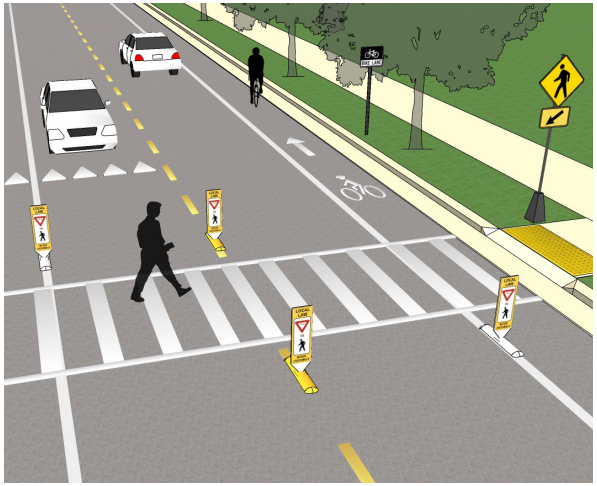
This is a ***FHWA Proven Safety Countermeasure.***



Raised Crosswalk

Also known as a speed table crosswalk, this is a traffic calming measure designed to improve pedestrian safety at intersections and mid-block crossings by raising the entire roadway surface to the level of the sidewalk while maintaining a smooth transition for vehicles. It provides a visual and physical cue to drivers to reduce their speed and expect pedestrians.

Raised crosswalks should be exclusively employed on streets with speed limits of 25 mph or less. In the case of three and four-way intersections, it's possible to raise the entire intersection for enhanced pedestrian safety.



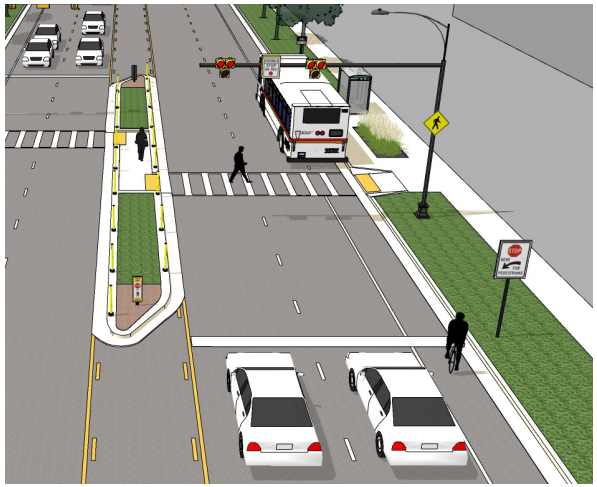
Gateway Treatment

Gateway treatments take many forms but typically consist of an R1-6 sign installed on the roadway centerline and R1-6 signs or delineator posts on the edge line. R1-6 signs have yellow-green reflective material and read “Yield To (or Stop For) Pedestrians Within Crosswalk.” On multi-lane roads, flexible delineators with reflective markings may be installed on the lane markings. With bike lanes, delineator posts my be used between the travel lane and bike lane. The effect is to visually narrow the lane slowing traffic and draw attention to the crosswalk.

Rectangular Rapid Flash Beacons

High-visibility strobe lights are placed below a crosswalk sign and activated by pedestrians to alert motorists that a pedestrian is about to or is currently in the process of crossing the roadway. These are typically used at mid-block crossing locations and are most effective on roads with speed limits less than 40-mile per hour. They are often used in conjunction with crossing islands on roads with more than two lanes.

This is a ***FHWA Proven Safety Countermeasure***. For more information visit https://highways.dot.gov/safety/proven-safety-countermeasures



Pedestrian Hybrid Beacons

These devices bring motor vehicles to a complete stop to help pedestrians safely cross busy and high speed roadways mid-block. Motorized traffic is permitted to proceed through the intersection after stopping if a pedestrian or bicycle has cleared the crosswalk when the beacon enters a flashing red phase.

Pedestrian Hybrid Beacons should be used whenever the speed limit is greater than 35 mph, three or more lanes must be crossed, or where average daily traffic volumes are above 9,000.

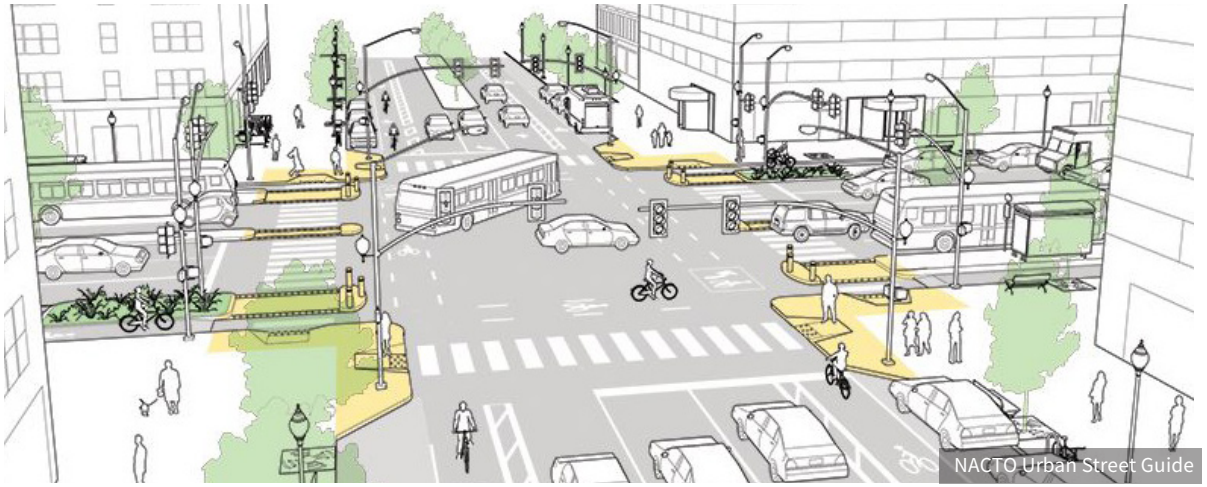
This is a ***FHWA Proven Safety Countermeasure***.

NACTO Urban Bikeway Design Guide

Bicycle Conflict Zones

Bike Boxes are areas painted green at intersections just past the stop bar. These allow cyclists to position themselves in front of vehicles during red signals. This improves visability and helps cyclists make left turns and helps reduce right-hook crashes.

Colored Bike Lanes highlight conflict zones with vehicles with green pavement markings. They draw attention to areas where interactions between bikes and vehicles are common, such as pocket bike lanes, bus stops, and traffic merging points. These visual cues increase awareness and safety for both bicyclists and motorists.


NACTO Urban Street Guide

Signalized Intersection Enhancements

No Right Turn on Red uses regulatory signs to prohibit vehicles from making right turns on red signals at specific intersections. This enhances pedestrian and bicyclist safety as motorists are often focused on finding gaps in traffic and do not look in the crosswalk before beginning a turn. This also helps reduce vehicles from blocking crosswalks as they pull forward in order to get a better view of traffic approaching from the left.

Protected Left Turn Phase is a green arrow signal that allows left-turning vehicles, including bicycles, to make left turns without conflicting with oncoming traffic or pedestrians in the crosswalk.

Leading Pedestrian Intervals (LPI) give pedestrians a head start at signalized intersections before vehicles can turn. This enhances the visibility of pedestrians and eliminates a stream of right-turning vehicles from preventing a pedestrian from even entering a crosswalk when the have the walk signal. This is particularly helpful at intersections with high turning volumes. LPI's may be used in conjunction with No Right Turn on Red controls.

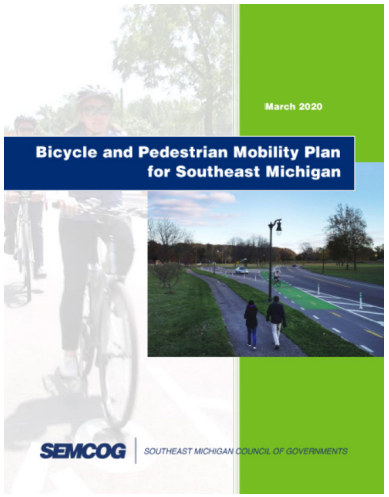
This is a *FHWA Proven Safety Countermeasure*. For more information visit https://highways.dot.gov/safety/proven-safety-countermeasures

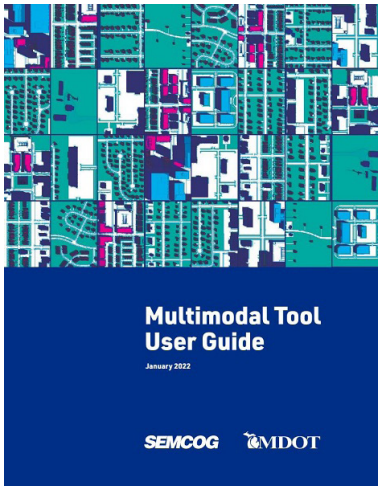
Design Guidelines & Resources

Numerous readily available design guidelines offer comprehensive details on implementing new facilities and integrating best practices into non-motorized network development. This section provides a snapshot of established manuals and publications from state, federal, local, and global organizations. It's important to note that this is just a glimpse of the resources available. For additional information on bicycle and pedestrian mobility, please visit the websites of these organizations.

Regional Resources

- **The Southeast Michigan Council of Governments (SEMCOG)** offers a range of resources and support for bicycle and pedestrian mobility including maps, educational materials, bicycle and pedestrian count programs, funding opportunities and grants, bicycle and pedestrian data and tools to assist users in planning trips and finding amenities. Coordinating planning efforts with SEMCOG is important in obtaining funding for plan implementation.
- **Website:** www.semcog.org



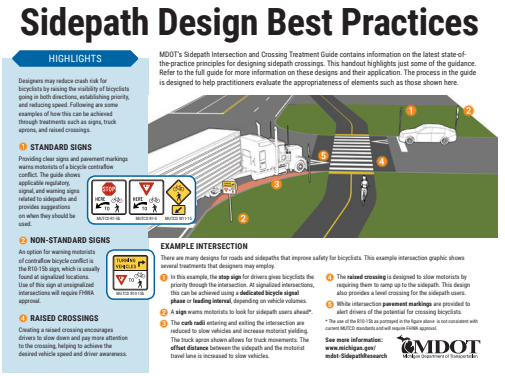


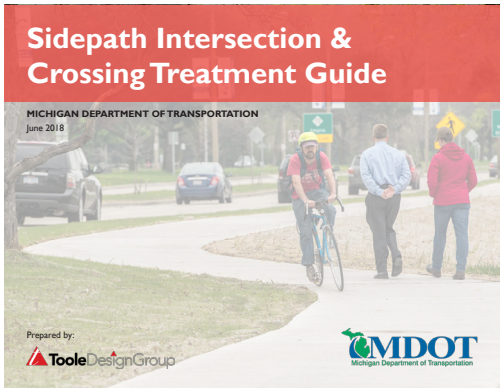
State Resources

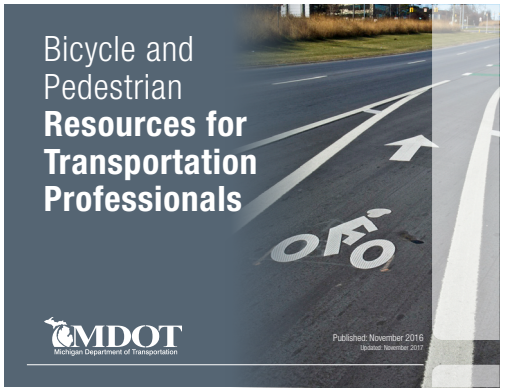
- **Michigan Department of Transportation (MDOT)** is vital for non-motorized planning in Michigan, allocating funds, implementing policies, and collaborating with communities. They collect data, conduct outreach, and integrate non-motorized plans into statewide transportation for safer pedestrian and bicycle infrastructure.
- **Website:** www.michigan.gov/mdot

- **Michigan Trails and Greenways Alliance(MTGA)** promotes walking, biking, and trails in Michigan, collaborating, providing resources, and supporting trail advocacy.
- **Website:** www.michigantrails.org

- **League of Michigan Bicyclists (LMB)** provide educational materials, mini-grants and host tours, races and advocacy events that support bicycle travel.
- **Website:** www.lmb.org







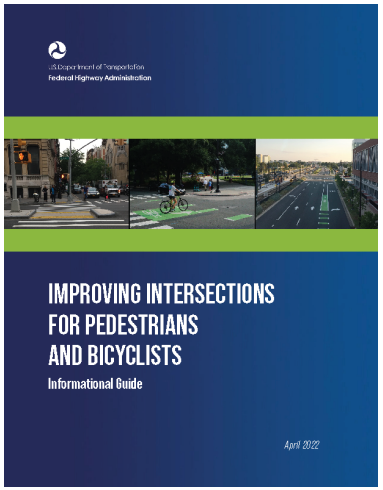
Federal and National Resources

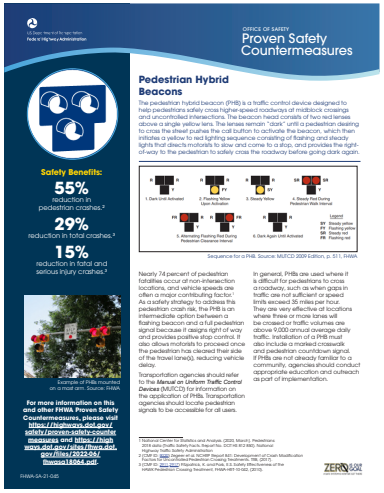
- **Federal Highway Administration (FHWA)** publish manuals, guidelines, and research studies on non-motorized transportation best practices, providing valuable resources for city planners and engineers. They also support non-motorized planning in cities through funding, technical guidance, resources.
- **Website:** www.fhwa.dot.gov

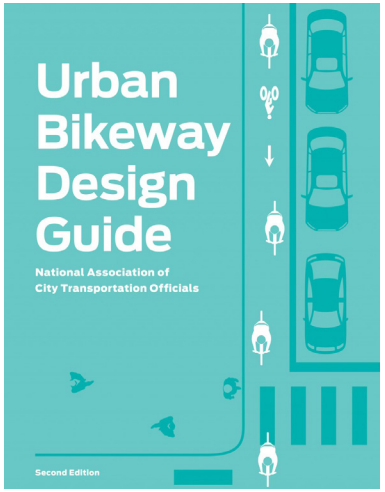
- **National Association of City Transportation Officials (NACTO)** publications provide a vital resource for practitioners, policy-makers, academics, and advocates alike.
- **Website:** www.nacto.org

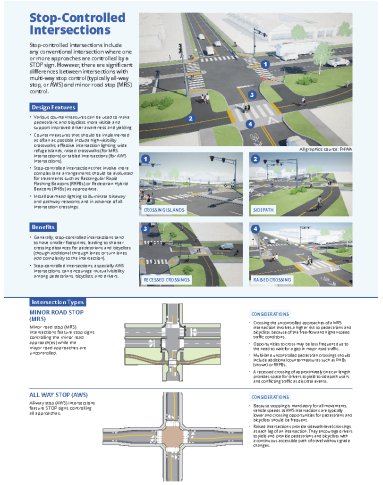
- **American Association of State Highway and Transportation Officials (AASHTO)** offers design guidelines and technical standards that assist state and local agencies in creating pedestrian and bicycle-friendly infrastructure.
- **Website:** www.transportation.org

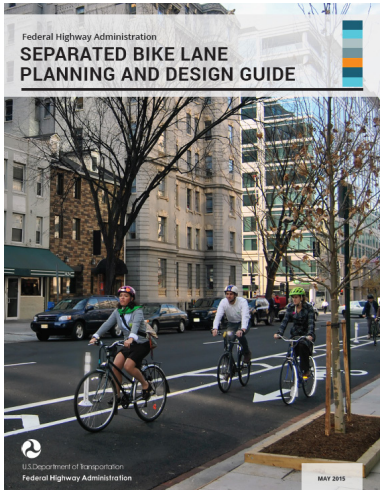
- **Institute of Transportation Engineers (ITE)** provides guidelines, technical publications, and best practices related to non-motorized transportation.
- **Website:** www.ite.org

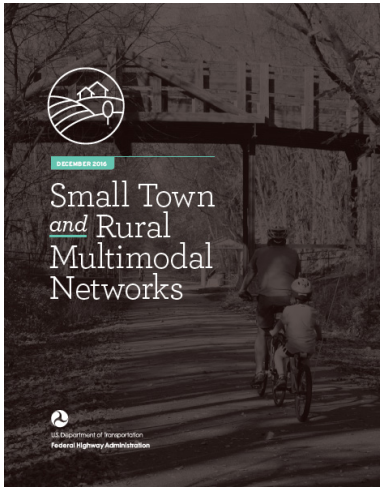




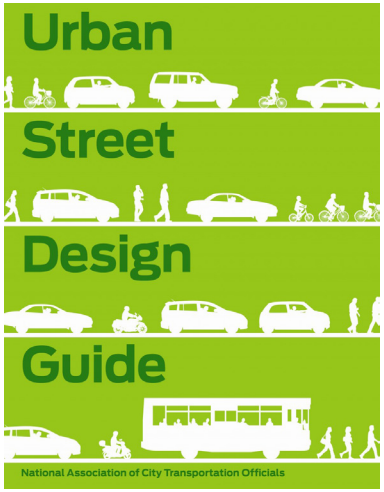


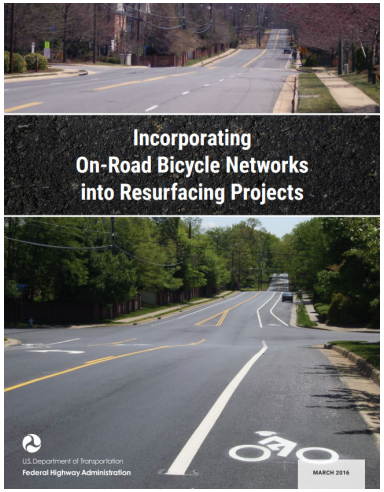


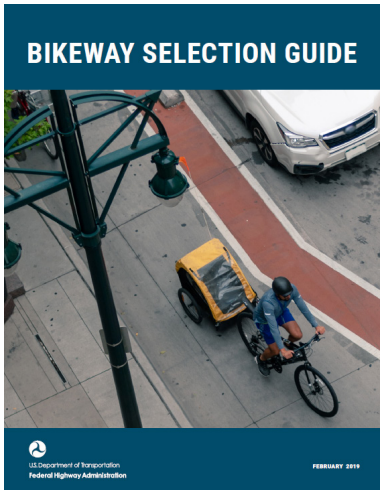


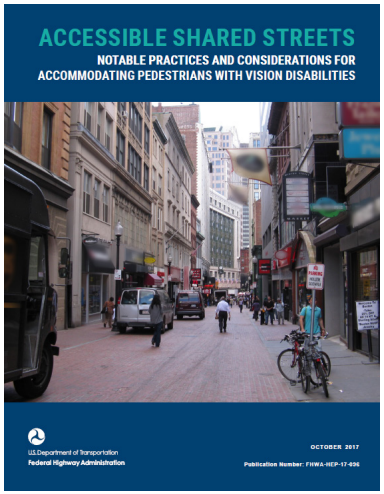


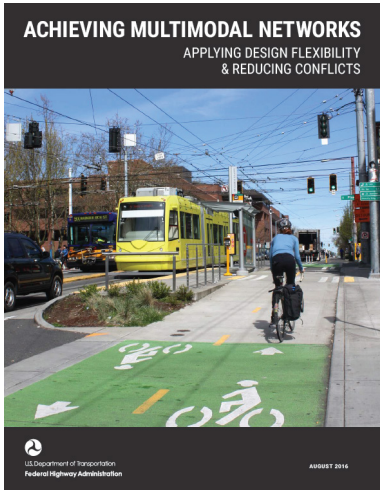
Other Resources











- **Collaborative Mobility UK (CoMoUK)** publishes resources that support the development of shared modes, such as bike share, e-scooters and mobility hubs.
- **Website:** www.como.org

- **Global Designing Cities Initiative** Designing Global Cities offers guides that redefine the role of streets around the world.
- **Website:** www.globaldesigningcities.org


Novi Road
LEFT
Auto
ARY CLINIC
Mobil
NOVI
POLICE
ACADIA

Major Corridor Guidelines

The existing road network is constantly undergoing repairs, upgrades, and expansions. The Major Corridor Guidelines illustrate how current best practices should be applied to existing corridors, aiming to enhance safety and improve bicycle and pedestrian mobility. This is the long-term vision for the major roadway network.

These guidelines ensure that when a road is completely reconstructed or widened, it functions as a complete street. Since roads last 20 to 25 years, many elements are gradually implemented through yearly maintenance, 3R projects, and Capital Improvement Plan (CIP) initiatives. Refer to the ***Implementation Section*** for guidance on incorporating these guidelines into road various types of roadway projects.

Novi's major roads are based on a one-mile grid, with Grand River Avenue running diagonally. However, this grid is interrupted and altered by features such as Walled Lake, wetlands, and former sand and gravel mines that have since become water bodies. Additionally, the construction of I-96 and I-275 severed Taft Road and 11 Mile Road. Consequently, there are very few major transportation corridors that traverse the city without some form of interruption. Thus all roads need to function as complete streets.

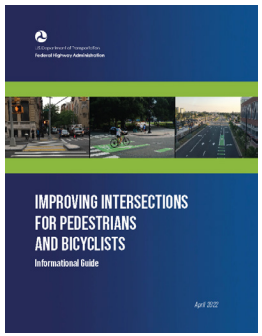
When consulting the guidelines, please note that the available right-of-way (ROW) varies across road types and segments. In some areas, achieving the desired buffer width may not be possible. In such cases, where horizontal buffering is not feasible, a more robust vertical buffering should be considered.

Please note that not all of the roads and intersections fall under sole control of the city. Coordination and collaboration with MDOT, the Road Commission for Oakland County, and Wayne County Road Commission is required for many of the roads. When roads of different classifications intersect, in general, the higher order treatment should be used.

Major Corridor Classifications

The Guidelines for Major corridors are intended to define what active mobility elements should be incorporated for the various types of roadways found in Novi. The corridor classifications do not exactly follow the National Functional Classifications (NFC) nor are they intended to replace the requirements tied to NFC classes , rather they reflect both the character and how the roads function currently.

Any road classification system is fraught with challenges and there will always be exceptions. Thus, these guidelines should be used as a starting point. Before any major improvements, the individual roadway classification should be reviewed to see if it still applies. When speeds exceed the proposed conditions, higher order improvements for pedestrian crossings and bicycle facilities will be warranted.



The following pages include graphics from Improving Intersections for Pedestrians and Bicyclists an FHWA Informational Guide published in 2022. It is highly recommended that this guideline be used whenever making any improvements to intersections. It includes detailed recommendations for many intersections and mid-block crossing scenarios that occur in Novi.

Major Corridor Classifications

Crosstown Corridors

These roads have moderate speeds and traffic volumes, primarily providing access to residential areas.

Suburban Corridors

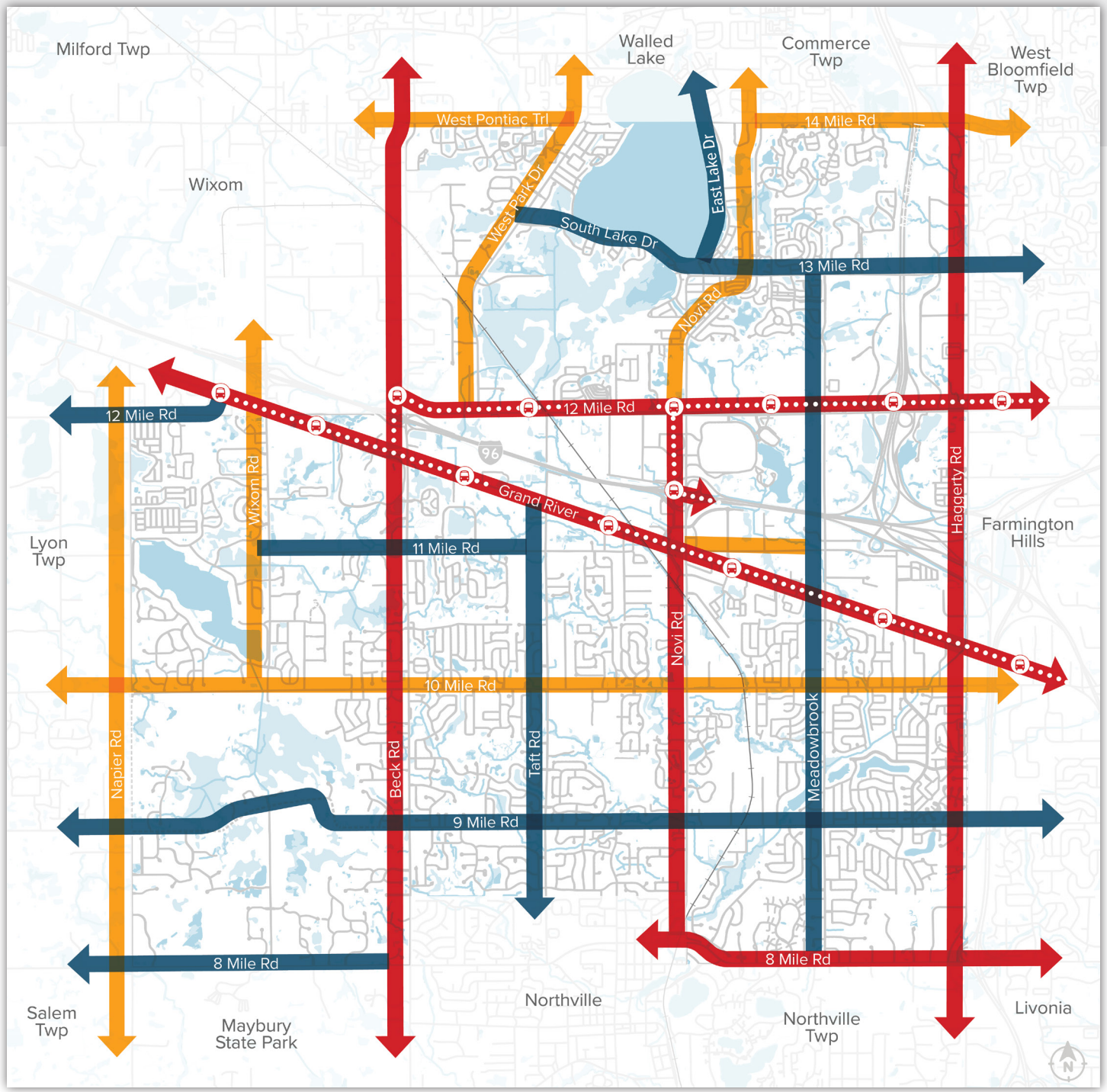
These roads are characterized by higher-speed and greater traffic volumes. They serve as access routes to a combination of local commercial and residential areas

Multi-Modal Thoroughfares

These are the highest-speed and highest-volume roads within the city, primarily serving as through routes and providing access to regional commercial areas.

Major Corridor Classification Map

- Transit Service
- Crosstown Corridors
- Suburban Corridors
- Multi-modal Thoroughfares

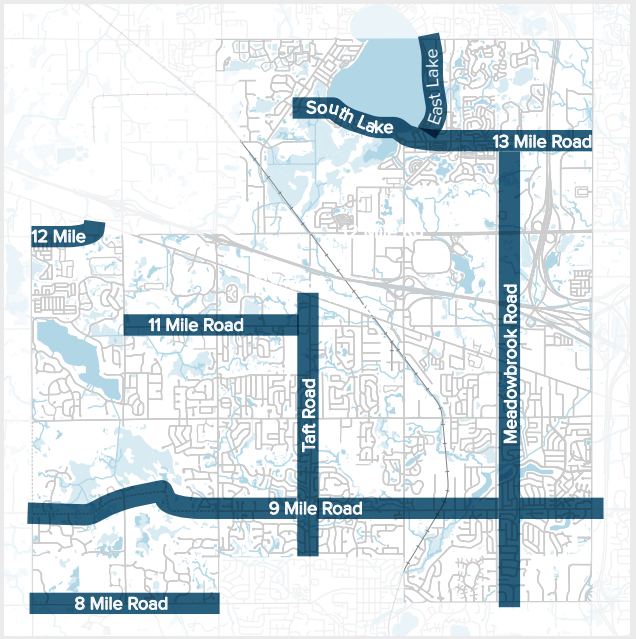


Crosstown Corridors

Current Conditions

These roadways have moderate speeds and traffic volumes that provide access primarily to residential areas. They are for the most part two-lane roads with short stretches widening to three and four lanes with the addition of bypass lanes and acceleration tapers / deceleration lanes at subdivision entrances. These roads are the ones most frequently used by people walking and bicycling as they provide the most comfortable place to do so. Most of the roadways do not have curbs. The only bike lanes in the city are in Crosstown Corridors roadways.

Example Crosstown Corridor: Taft Road



Crosstown Corridors

- 9 Mile Road
- Taft Road
- 8 Mile Road (Oakland County portion)
- Meadowbrook Road
- South Lake Drive & East Lake Drive
- 13 Mile Road
- 12 Mile Road (portion)
- 11 Mile Road (portion)

Proposed Conditions

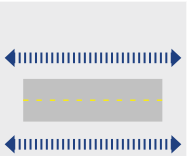
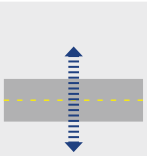
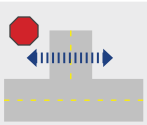
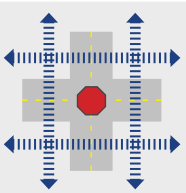
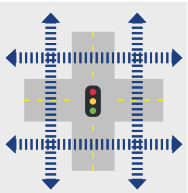
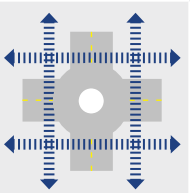
The Crosstown Corridors are proposed to be even more welcoming to pedestrians, bicyclists, and micromobility. For bicyclists and micromobility there with both on-street facilities for faster and more efficient travel as well as an off-road Shared-use Path option for those adverse to exposure to motorized traffic. The roads will have a more consistent cross section that removes all by-pass lanes and most acceleration tapers and deceleration lanes. This will improve motorized traffic safety, moderate traffic speeds, and permit more direct mid-block crossings at subdivision entrances. The corridors will be verdant with trees between the sidewalks/sidepaths and the roadway. Landscaped medians will be used for traffic calming, beautification, and reducing the heat island effect. Rain gardens in the buffer will help manage storm water.

Crosstown Corridor Proposed Traits

- Design speeds of 25 to 30 mph
- Two through lanes or a consistent three-lane cross section with landscaped medians and crossing islands where left-turn lane is not necessary
- Both on-road and off-road bicycle facilities
- Mid-block crosswalks with Rectangular Rapid Flash Beacons at neighborhood entrances and other key locations
- Intersections with high-visibility markings for pedestrians and bicyclists

Coordination with the Nine Mile Feasibility Study: Oakland County communities, located between Hazel Park and the City of Farmington, are collaborating on 17 miles of continuous non-motorized pathways along Nine Mile Road. The Nine Mile Feasibility Study seeks to bolster recreational opportunities and placemaking along the corridor by creating or improving safe and equitable transportation options. By aligning these two plans, the 9 Mile corridor can be transformed into a vibrant, accessible, and eco-friendly space, benefiting the community and promoting healthy, active lifestyles.

Crosstown Corridor Baseline Improvements:

	In-Road	Buffer Strip	Along Road in ROW	Mid-block and Trail Crossings	Minor Road Stop	All-Way Stop	Signalized Intersection	Roundabout	Amenities
									
Pedestrian Facilities	–	10' min. width with Street Trees	6' min. Sidewalk on one side and 8' min. Sidepath on other side	Rectangular Rapid Flash Beacon with High Visibility Crosswalk	Raised High Visibility Crossing at Sidepath, High Visibility Crosswalk at Sidewalk. Recessed Crossing where feasible	High Visibility Crosswalks, Raised Intersections / Raised Crossings on 25 mph Roadways	High Visibility Crosswalks, Leading Pedestrian Intervals, Pedestrian Countdown Signals, Accessible Pedestrian Signals	Raised High Visibility Crossings	Landscaped Rest Areas every 1/3 Mile, Water and Restrooms every 3-4 Miles
Bicycle and Micromobility	Buffered Bike Lanes with 2' min. buffer and 5' min. lane width	–	8' min. Sidepath on at least one side	Rectangular Rapid Flash Beacon with High Visibility Crosswalk	Dashed Bike Lane Intersection Crossings with Green Paint	Dashed Bicycle Intersection Crossings with Green Paint	Dashed Bicycle Intersection Crossings with Green Paint, Bike Boxes, Two-Stage Turn Queue Boxes	Bike Lane Transition / Merge Option	Charging Stations and Repair Stations every 3-4 miles
Other Key Elements	Intermittent Landscaped Medians	Rain Gardens	Pedestrian Scale Lighting	Crosswalk Lighting	Crosswalk Lighting	Intersection Lighting	Intersection Lighting	Intersection Lighting	Wayfinding Signage with Information Kiosks at key junctures

Example Resource:

Federal Highway Administration (FHWA). (2022). Improving Intersections for Pedestrians and Bicyclists Informational Guide (Report No. FHWA-SA-22-017). Page 24.

Traditional Signalized
Bike Lane

Traditional intersections provide direct access for all turning movements and are the most common intersection design found throughout the United States. This design, shown in figure 9, incorporates bike lanes with green colored pavement to emphasize continuity through the intersection, as well as two-stage left-turn boxes to allow cyclists to make left-turns without merging across lanes of through-moving vehicle traffic. Pedestrian facilities include sidewalks on both sides of all four legs, marked crosswalks, and pedestrian refuge islands on two legs. Pedestrian refuge islands simplify the pedestrian crossing by reducing the number of lanes crossed in one stage. Traffic signal phasing plans will depend on the traffic volumes, sight distance, and context of the intersection.

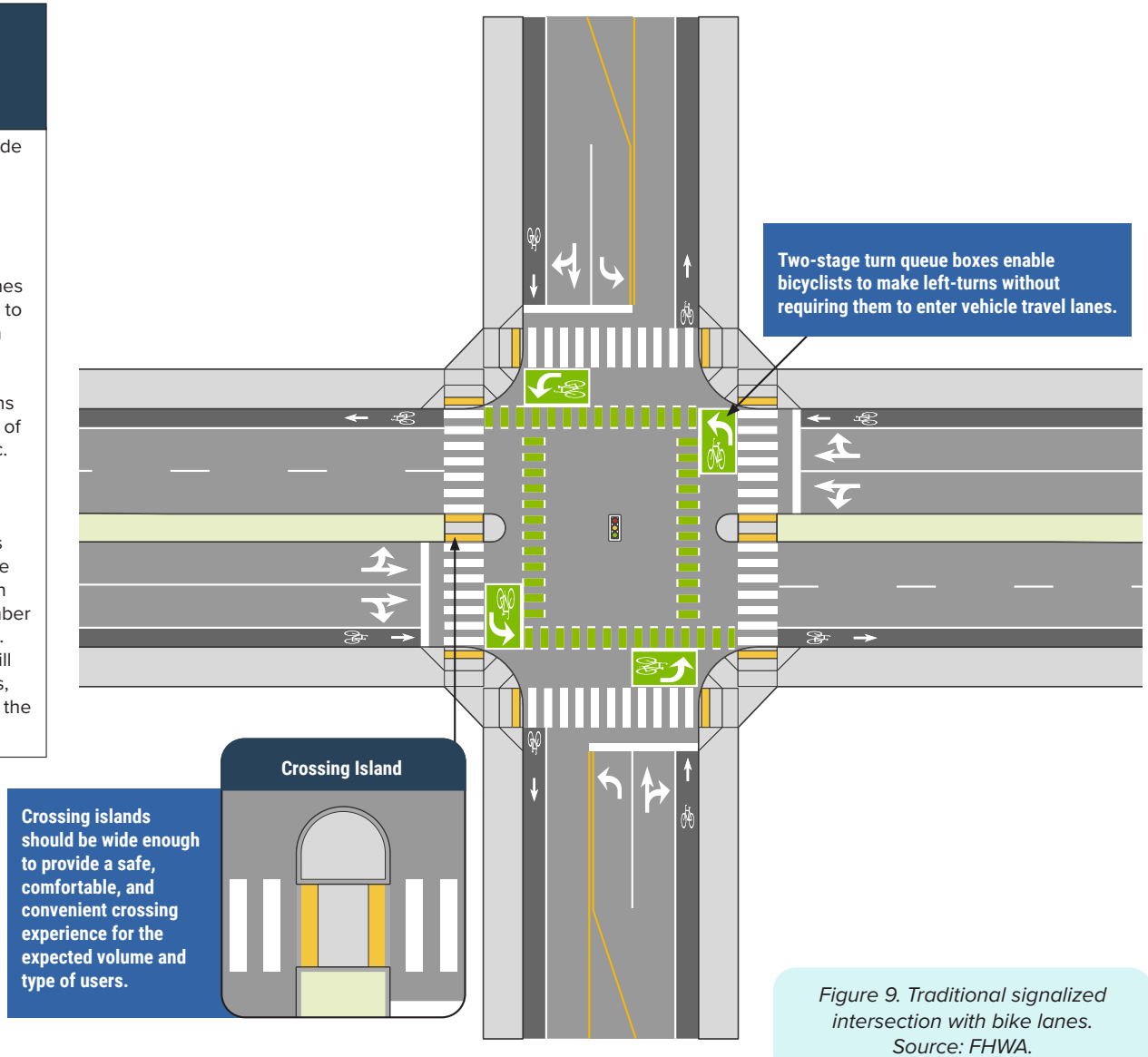


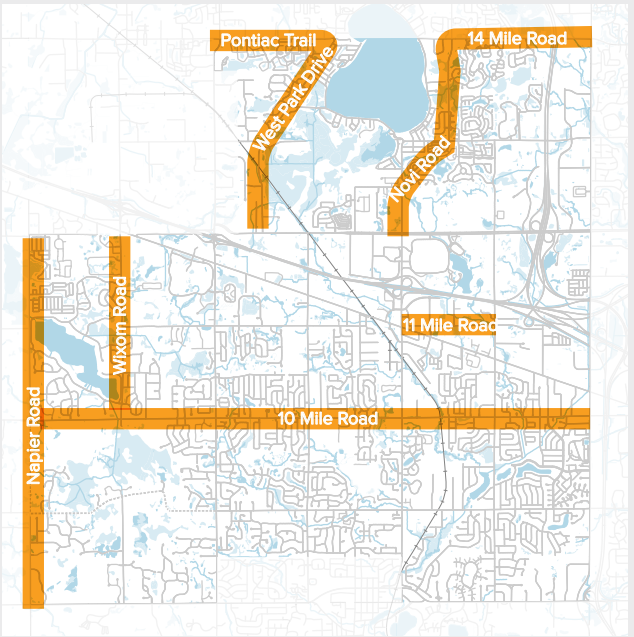
Figure 9. Traditional signalized intersection with bike lanes. Source: FHWA.

Suburban Corridors

Current Conditions

These are higher-speed and higher-volume roads than the Crosstown Corridors that provide access to a mix of local commercial and residential areas. They range from two-lane roads to four-lane roads. Many of the two-lane segments flair to three and four lanes with bypass lanes and have acceleration tapers / deceleration lanes leading to a very inconsistent road cross section. These roads are not generally sought out as recreational routes by non-motorized users, but connect residents to local commercial areas, the civic center, schools, and trails. Most of the roadways do not have curbs.

Example Suburban Corridor: 10 Mile Road



Suburban Corridors

- 10 Mile Road
- Wixom Road
- West Park Drive
- Napier Road
- 14 Mile Road / W Pontiac Trail Drive
- 11 Mile Road (portion)
- Novi Road (portion)

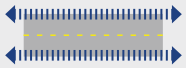
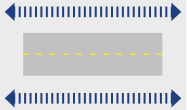
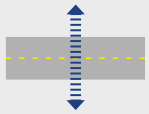
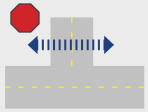
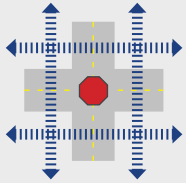
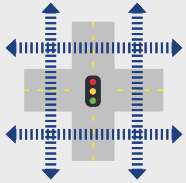
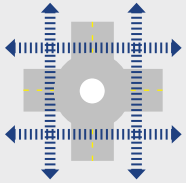
Proposed Conditions

The Suburban Corridors increase the separation between motorized and non-motorized users with a mix of separated in-road and along the road facilities for bicycles and micromobility. The roads will have a more consistent cross section that replaces all by-pass lanes and minimizes the use of the acceleration tapers and deceleration lanes. This will improve motorized traffic safety, moderate traffic speeds, and permit more direct mid-block crossings at subdivision entrances. The corridors will have trees between the sidewalks/sidepaths and the roadway. Landscaped medians will be used for traffic calming, beautification, and reducing the heat island effect. Rain gardens in the buffer will help manage storm water.

Suburban Corridor Proposed Traits

- Design speed limits of 35 mph or less
- Consistent three lane cross section with a landscaped median or crossing islands where turn lane is not necessary
- Mid-block crosswalks with Rectangular Flashing Beacons and Crossing Islands at neighborhood entrances and other key locations
- Separated in-street bicycle facilities with the option for bicyclists to use protected intersections to reduce their exposure to the motorized traffic

Suburban Corridor Baseline Improvements:

	In-Road	Buffer Strip	Along Road in ROW	Mid-block and Trail Crossings	Minor Road Stop	All-Way Stop	Signalized Intersection	Roundabout	Amenities
									
Pedestrian Facilities	–	15' min. width with Street Trees and physical barrier at bridges	8' min. Sidewalks on one side and 10' min. Sidepath on other side	Rectangular Rapid Flash Beacons with Crossing Islands, High Visibility Crosswalks, and Advance Warning Signs with Beacons	Raised Crossings, High Visibility Crosswalks, Recessed Crossings where feasible	High Visibility Crosswalks	Crossing Islands, High Visibility Crosswalks, Leading Pedestrian Intervals, Pedestrian Countdown Signals, Accessible Pedestrian Signals	Rectangular Rapid Flash Beacons	Landscaped Rest Areas every 1/3 Mile, Water and Restrooms every 3-4 Miles
Bicycle and Micromobility	Separated Bike Lanes with 4' min. Separation and 6' min. lane width	–	10' min. Sidepath on at least one side	Rectangular Rapid Flash Beacons with Crossing Islands, Dashed Bicycle Crossings with Green Paint, and Advance Warning Signs with Beacons	Dashed Bicycle Intersection Crossings with Green Paint	Dashed Bicycle Intersection Crossings with Green Paint. Pocket Bike Lanes with Green Paint at Designated Right Turn Lanes	Protected Intersections, Bicycle Signals, and Dashed Bicycle Intersection Crossings	Bike Lane Transitions / Merge Option	Charging Stations and Repair Stations every 3-4 miles
Other Key Elements	Intermittent Landscaped Medians	Rain Gardens	Pedestrian Scale Lighting	Crosswalk Lighting	Crosswalk Lighting	Intersection Lighting	Intersection Lighting	Intersection Lighting	Wayfinding Signage with Information Kiosks at key junctures

Example Resource:

Federal Highway Administration (FHWA). (2022). Improving Intersections for Pedestrians and Bicyclists Informational Guide (Report No. FHWA-SA-22-017). Page 25.

Traditional Signalized *Separated Bike Lane*

This traditional intersection design, shown in figure 10, features bike lanes that are separated from motor vehicle traffic vertically and horizontally along the intersection legs. The one-way, separated bike lanes cross through the intersection following the routes designated by green colored pavement. Pedestrians travel on sidewalks that are separated from the bike lanes and cross through the intersection at marked crosswalks. In this design, it is important to consider the interactions between pedestrians and bicyclists at the corners and at medians where people may wait in groups to cross the intersection.

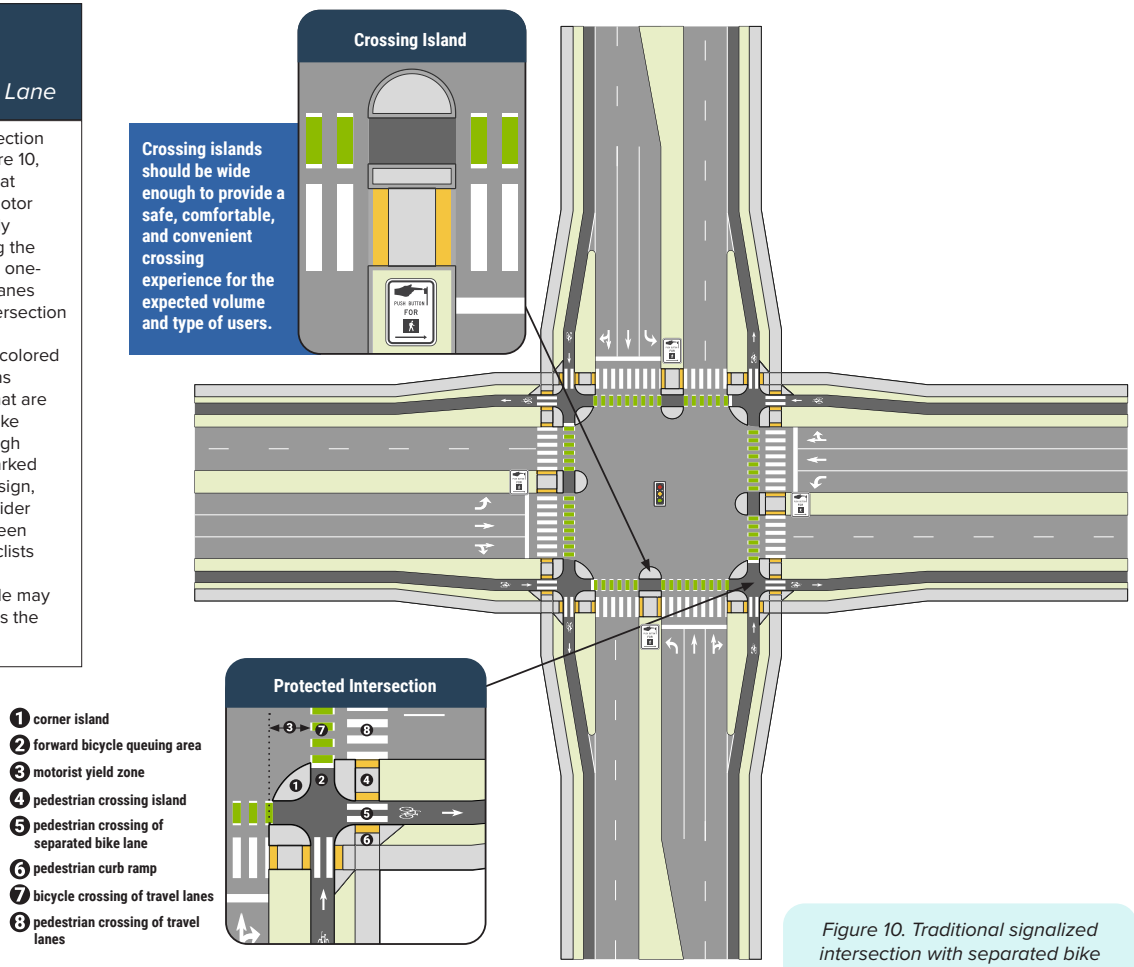
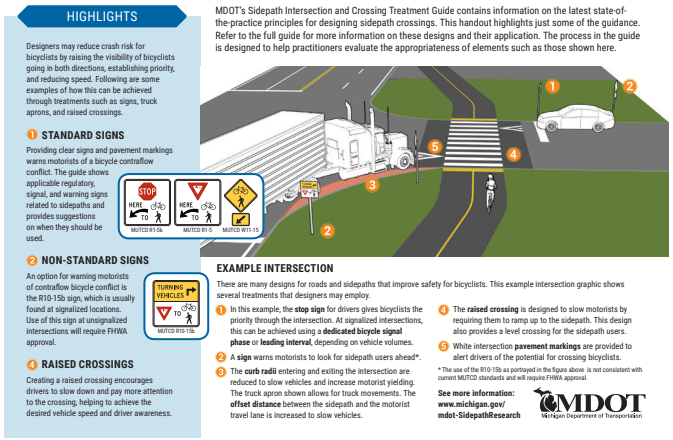


Figure 10. Traditional signalized intersection with separated bike lanes. Source: FHWA.

25

Sidepath Design Best Practices



Resource Example:

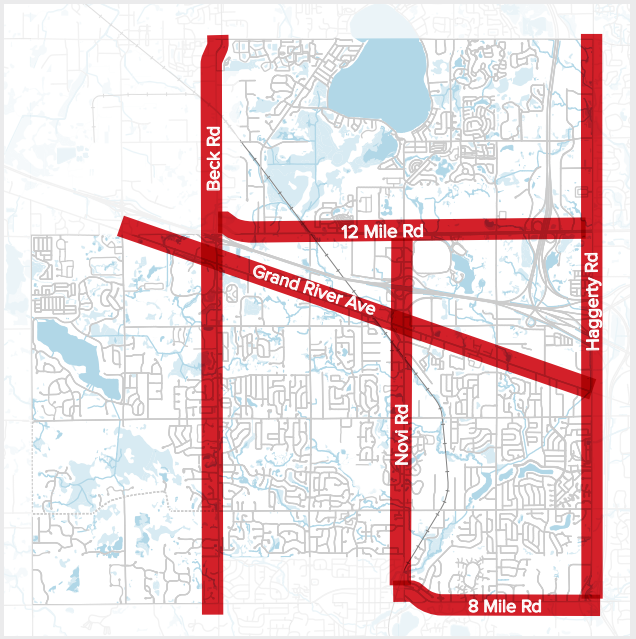
Michigan Department of Transportation. Sidepath Reference Sheets.

Multi-modal Thoroughfares

Current Conditions

These are the highest-speed and highest-volume roads in the city that primarily serve as through routes and access to regional commercial areas. These roads carry the most traffic and most of them are multi-lane roadways or are planned to be so. About a third of these routes are new transit routes. The traffic on these roads make them the least desirable routes for bicyclists, pedestrians, and micromobility. But nevertheless, the transit and commercial activity make them critical routes for everyday active mobility trips.

Example Multi-modal Thoroughfare: Grand River Avenue



Multi-modal Thoroughfares

- 12 Mile Road
- Beck Road
- Novi Road (portion)
- Haggerty Road
- 8 Mile Road (Wayne County)(portion)
- Grand River Avenue

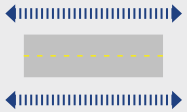
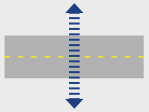
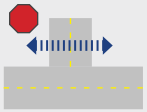
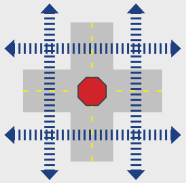
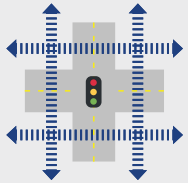
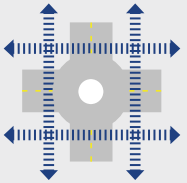
Proposed Conditions

The Multi-Modal Thoroughfares will provide the maximum separation between motorized and non-motorized users possible. The roads will have a more consistent cross section and use acceleration tapers and deceleration lanes only when warranted. This will improve motorized traffic safety, moderate traffic speeds, and permit more direct mid-block crossings at subdivision entrances and transit stops. The corridors will have trees between the sidewalks/sidepaths and the roadway. Landscaped medians will be used for traffic safety, beautification, and reducing the heat island effect. The following summarize some of the key traits:

Multi-modal Thoroughfares Proposed Traits

- Design speed limits of 45 mph or less
- Four through lanes with a center turn lane when warranted otherwise with a landscaped median
- Mid-block crosswalks with crossing Islands and hybrid pedestrian signals at transit stops and other key locations
- Bicycle and micromobility facilities within the right-of-way with significant buffer from the roadway
- Intersections with separate crossings for pedestrians and bicyclists completely separated from the turning movements of motor vehicles.

Multi-modal Thoroughfare Baseline Improvements:

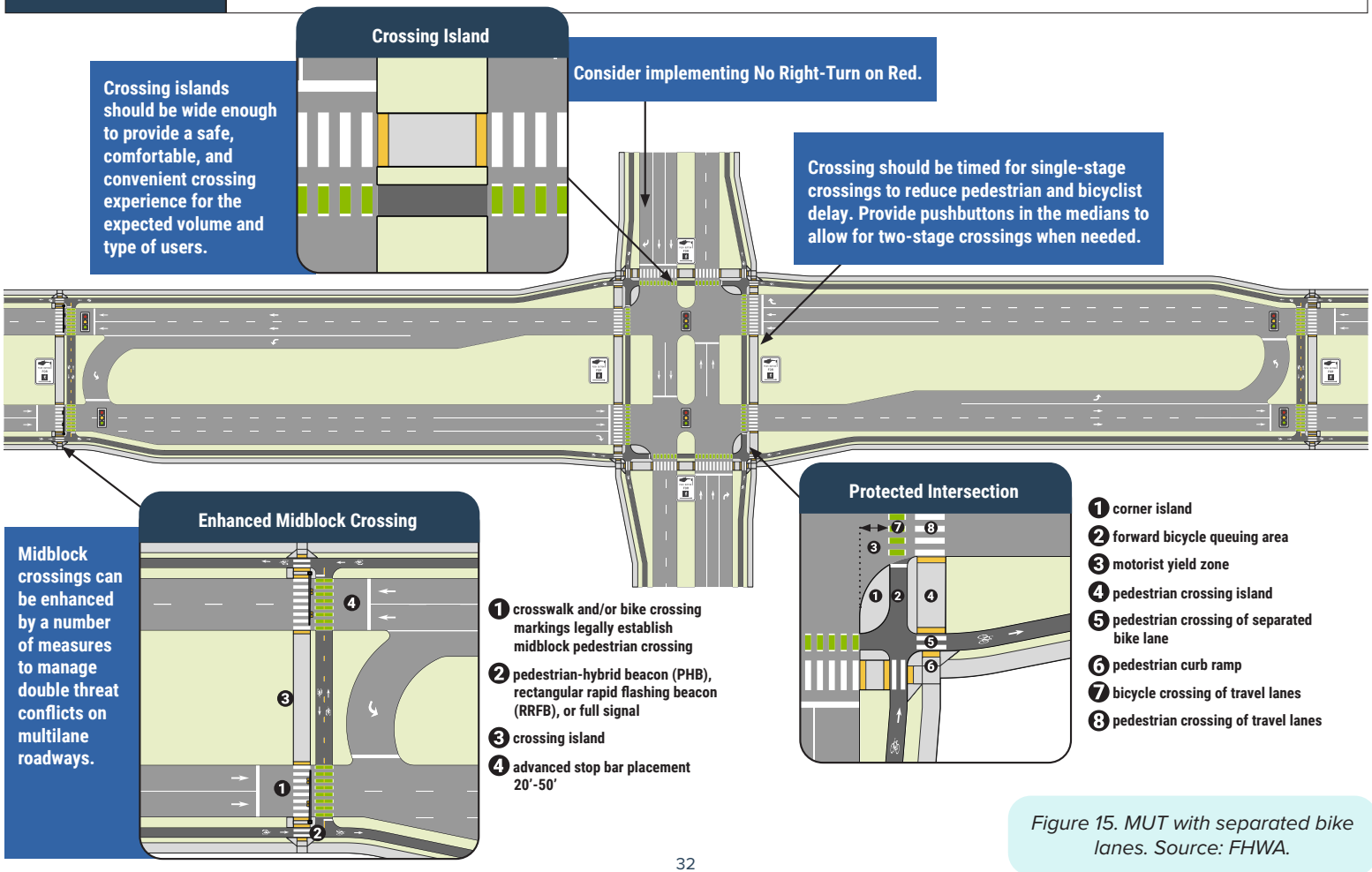
	In-Road	Buffer Strip	Along Road in ROW	Mid-block and Trail Crossings	Minor Road Stop	All-Way Stop	Signalized Intersection	Roundabout	Amenities
									
Pedestrian Facilities	–	20' min. width with Street Trees and barrier at bridges	8' min. Sidewalk on one side and 12' min. Sidepath on other side	Pedestrian Hybrid Signals with Crossing Islands, Advanced Stop Bars, and High Visibility Crosswalks	Raised Crossings. High Visibility Crosswalks. Recessed Crossing where feasible	–	Crossing Island, High Visibility Crosswalks, Leading Pedestrian Intervals, Pedestrian Countdown Signals, Accessible Pedestrian Signals, Protected Left Turn Phases, No Right Turn on Red	Pedestrian Hybrid Beacons, Crossing Islands, High Visibility Crosswalks, Pedestrian Countdown Signals, Accessible Pedestrian Signals	Landscaped Rest Areas every 1/3 Mile, Water and Restrooms every 3-4 Miles
Bicycle and Micromobility	–	Separated Bike Lanes may be best located next to sidewalk on other side of buffer strip	5' min. Separated Bike Lanes (preferred) or 12' min. Shared Use Paths	Pedestrian Hybrid Signals with Crossing Islands, Advanced Stop Bars, Dashed Bicycle Intersection Crossings with Green Paint	Dashed Bicycle Intersection Crossings with Green Paint	–	Protected Intersections, Bicycle Signals, and Dashed Bicycle Intersection Crossings	Bike Lane Transition / Merge Options. Dashed Bicycle Crossings with Green Paint	Charging Stations and Repair Stations every 3-4 miles
Other Key Elements	Continuous Landscaped Medians	Rain Gardens	Pedestrian Scale Lighting	Crosswalk Lighting	Crosswalk Lighting	–	Intersection Lighting	Intersection Lighting	Wayfinding Signage with Information Kiosks at key junctures

Example Resource:

Federal Highway Administration (FHWA). (2022). Improving Intersections for Pedestrians and Bicyclists Informational Guide (Report No. FHWA-SA-22-017). Page 32.

Median U-Turn (MUT)
Separated Bike Lane

The MUT intersection design redirects all left-turns at the intersection to U-turn cut-throughs downstream of the main intersection. From a pedestrian and bicyclist standpoint, MUTs operate similarly to traditional intersections but typically feature longer crossing distances due to the wide median necessary for the U-turns. However, this added space does provide the opportunity for pedestrian and bicyclist refuge and the U-turns are opportunities to provide additional crossing locations. Traffic signals should be timed for single-stage crossings by both pedestrians and bicyclists, but with actuation buttons placed in the medians to allow for two-stage crossings or WALK phase extension when needed by some pedestrians. The design shown in figure 15 features separated bike lanes parallel to the sidewalks and marked crosswalks through the intersection.



32

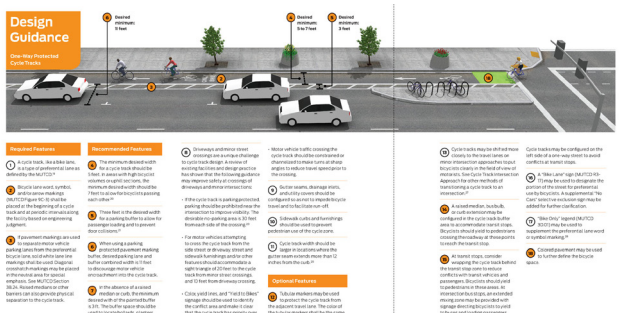
Figure 15. MUT with separated bike lanes. Source: FHWA.

Related Policies, Programs, & Metrics

Integrate Active Mobility improvements in all roadway projects

Whenever a roadway is improved, including pavement markings, resurfacing, restoration, and rehabilitation projects, incorporate nonmotorized facility and safety measures. The Implementation Framework section provides a guide for what types of improvements should be incorporated with different types of roadway projects.

See the ***Implementation Framework*** section for more details.



Apply FHWA and NACTO best practices

Apply best practices to enhance non-motorized infrastructure. Incorporate recommendations based on FHWA's guidance on pedestrian safety, accessibility, and bikeway design, as well as NACTO's urban street design principles and guidelines for protected bike lanes and shared streets. Integrate these practices into non-motorized projects to create safer and more efficient active transportation networks. Keep the recommendations up-to-date with evolving industry standards and innovations in non-motorized transportation planning and design.

See the ***Design Guidelines and Resources*** section for more details.

Guidelines for pavement marking program to integrate best practices

Update pavement marking plans to incorporate current best practices for active mobility and use the checklist included in the Implementation Framework section to implement projects as part of all pavement marking projects. Regularly review and update these guidelines to reflect evolving best practices and changing community requirements, fostering a more sustainable and user-friendly transportation network.

Provide buffers between modes with significant speed differentials

On thoroughfares, implement buffers between modes of transportation with significant speed differences to enhance safety for all users. This can include painted buffer zones, flexible posts, physical barriers, or lanes separated by curbs to create a clear separation between faster-moving vehicles and slower-moving bicycles and pedestrians. Ensure that these buffer zones align with recognized safety standards and best practices. Regularly review and adjust these buffer zones as needed to accommodate changing traffic patterns and evolving safety needs.

Design the roadway to encourage safe speeds to enhance the experience of non-motorized users and improve the overall safety of the roadway

Research consistently shows that higher road speeds are directly related to increased pedestrian injuries and fatalities. To mitigate this, implement measures like narrowing lanes, speed limit reductions, and the incorporation of traffic calming techniques such as roundabouts, crossing islands, and raised crosswalks. These strategies not only promote a safer environment for pedestrians but also contribute to reducing the severity of motor vehicle crashes.

National Traffic Safety Board (2017) Reducing Speeding-Related Crashes Involving Passenger Vehicles available from: https://www.ntsb.gov/safety/safety-studies/documents/SS1701.pdf

As work is done within road rights-of-way seek opportunities to complete the gaps in the sidewalk and pathway network

Seek opportunities to fill sidewalk and pathway gaps within road rights-of-way during construction projects. Prioritize the completion of missing links in the non-motorized network, ensuring safe and continuous routes for pedestrians and cyclists. This approach maximizes the use of existing projects to enhance the overall connectivity and accessibility of the community.

Please refer to the ***Capital Improvements Projects*** section for information on upcoming projects.

Prioritize the safety of vulnerable roadway users

Ensure safe road crossings at locations of high demand, such as bus stops, shopping areas and apartment buildings to facilitate the movement of people across the corridor.

The *Near-term Network* section identifies locations where immediate improvements are required.

Regional Coordination for Non-motorized Integration

To ensure the integration of the non-motorized plan, regional coordination should be established with Wayne County Road Commission, the Road Commission for Oakland County, and the Southeast Michigan Council of Governments (SEMCOG). Collaborating with these regional authorities will be instrumental in aligning non-motorized initiatives with upcoming Capital Improvement Projects (CIP), obtaining funding, and integrating the plan into the broader regional non-motorized network.

Transit Supporting Infrastructure

Work with SMART to incorporate shelters at bus stops and coordinate mid-block crossings with bus stop locations. Bus stops should be located past mid-block crossings and on the far side of intersections.

The *Connecting to Transit* section identifies locations where immediate improvements are required.

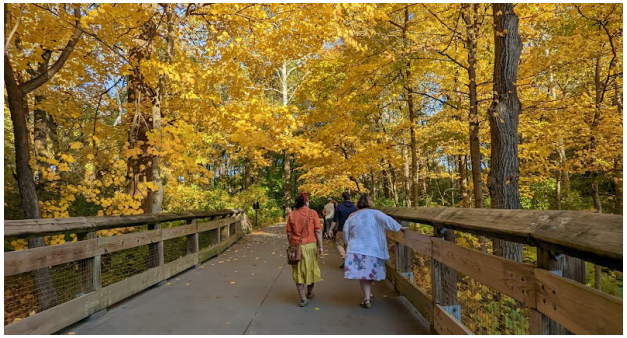
Enhancing Road Safety through Consistent Roadway Design

Many road corridors in Novi currently feature acceleration flares and deceleration lanes and by-pass lanes at intersections. These are intended to aid turning vehicles, which, unfortunately, create safety concerns for pedestrians and bicyclists due to longer crossing distances, reduced visibility, and potential traffic pattern confusion. To address these safety issues, it is advisable to evaluate these corridors and intersections with the aim of transitioning them to a uniform cross-section design, which would entail incorporating a center turn lane and removing flares at intersections. This shift in design not only reduces crossing distances and improves visibility for all road users but also promotes traffic predictability and facilitates the inclusion of dedicated pedestrian and bicycle facilities. Implementing these changes would notably enhance safety for pedestrians, bicyclists, and motorists throughout the city. This will require working with the Road Commission for Oakland County and Wayne County Road Commission as many of these designs originate from their standard plans.

Promoting Safe Usage of New Facilities through Grand Opening Events and Outreach

The completion of a project is an opportunity to introduce the public to new facilities in the controlled environment of a special event and raise awareness on how to safely use something they may not be familiar with. To effectively reach a wider audience, a multifaceted approach can be adopted. Utilizing social media platforms for targeted campaigns and educational blasts can disseminate information efficiently. Additionally, eye-catching education posters strategically placed in high-traffic areas can serve as visual reminders and guides. Pedestrian Hybrid beacons and Rectangular Rapid Flash beacons are examples of two crosswalk treatments where additional education would be beneficial.

Recognizing the diverse population, the Southeast Michigan Council of Governments has developed a comprehensive program with tip cards, posters, videos, story templates, and media kits available in multiple languages. These ready to use materials should be integrated into the City's education efforts.



Minimizing Boardwalk Construction and Incorporate Concrete Decks for Trail Enhancement

Where feasible, rather than creating a separate boardwalk over a waterway, evaluate extending the roadway culvert to allow for a pathway. This results in lower maintenance costs for the pathway. Where a boardwalk is the best option, utilize concrete decking rather than wood decking. Concrete decks are known for their durability, low maintenance requirements, better traction, and user-friendly smooth surfaces, making them an ideal choice for trail construction. This approach optimizes resource allocation, reduces long-term maintenance costs, and improves accessibility for all trail users.

To implement this policy, the city should assess existing and future trail and roadways projects to identify opportunities to minimize boardwalks and adjust project scopes and costs to account for different construction approaches.

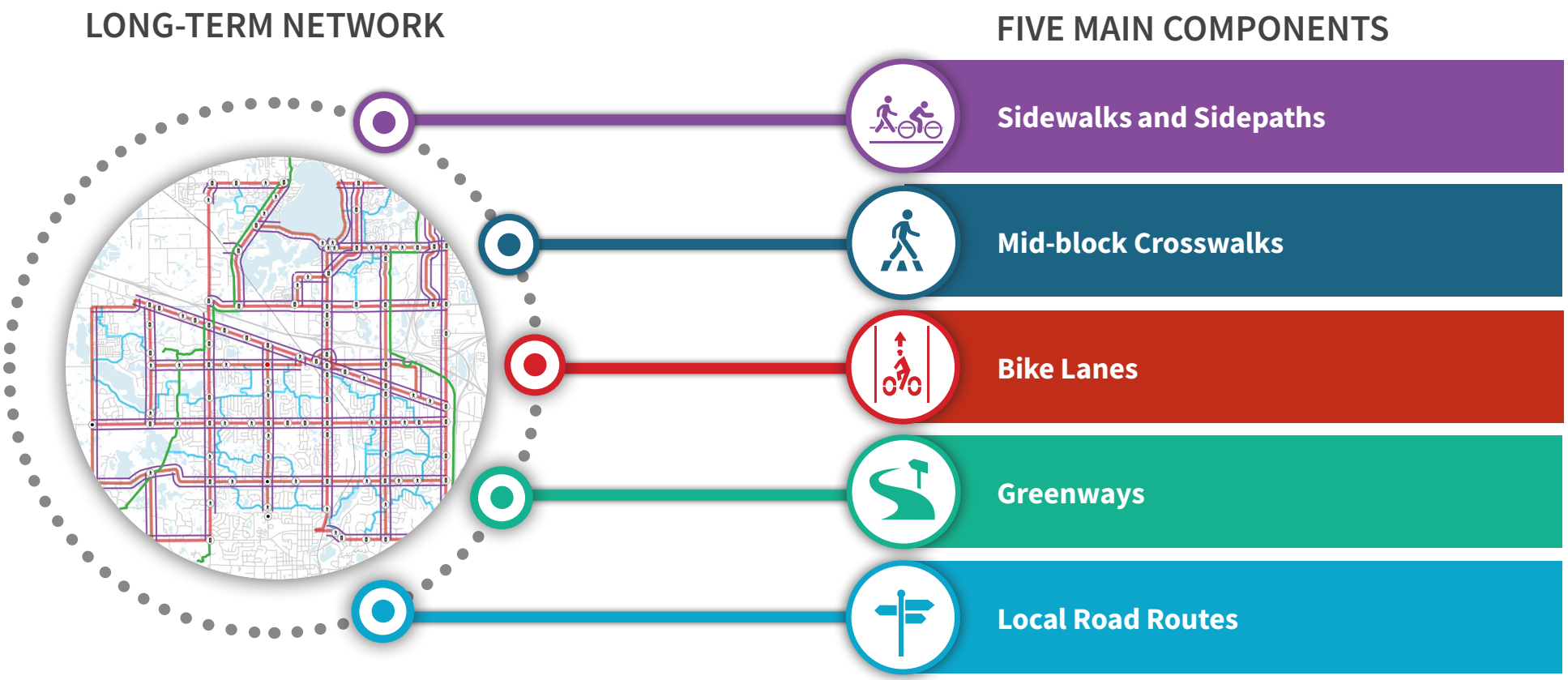
Long-Term Network

The Long-Term Vision encapsulates the City's aspirations for the next two decades and beyond. It serves as a guiding compass, directing the city toward its goals of fostering sustainable transportation and creating pedestrian and bicycle-friendly infrastructure and being flexible to evolving modes of transportation such as micromobility. The recommendations are constrained by available right-of-way and the need to accommodate projected traffic. Many of the recommendations will likely be implemented when roads are reconstructed.

- Sidewalks & Sidepaths
- Mid-block Crosswalks
- Bike Lanes
- Greenways
- Local Road Routes

Long-Term Network Overview

The Long-Term Network consists of five main components: Sidewalks and Sidepaths, Mid-block Crosswalks, Bike Lanes, Greenways, and Local Road Routes. The following section provides an outline of recommendations for the Long-Term Network.

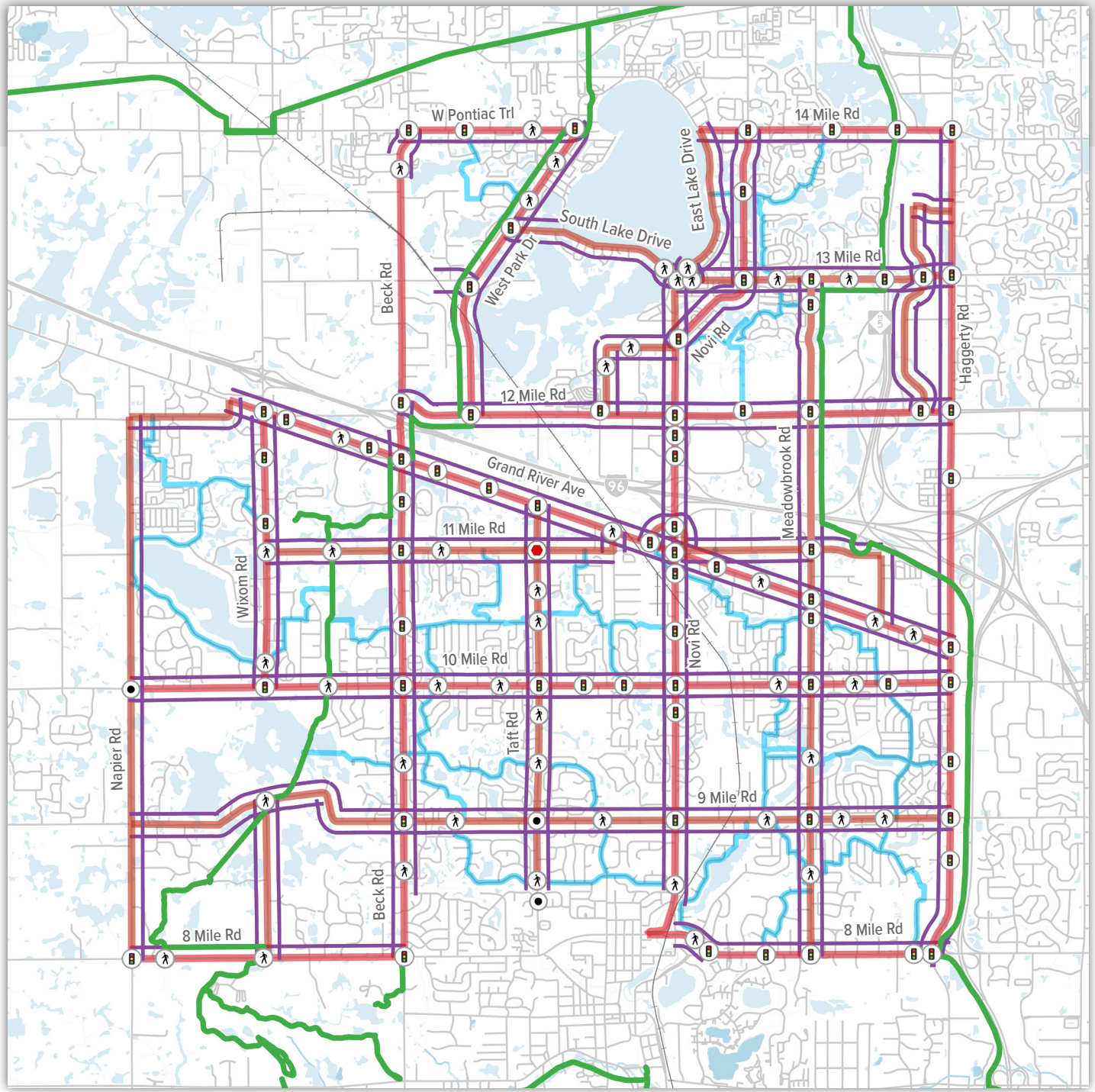


Long-Term Network Map

This map illustrates the primary framework of the active mobility network.

- Sidewalks and Sidepaths
- Bike Lanes
- Local Road Routes
- Greenways
- Pedestrian Crossing
- Signalized Intersection
- Stop-controlled Intersection
- Roundabout

The following maps provide more specifics on the types of sidewalks, sidepaths, bike lanes, and pedestrian crossings.

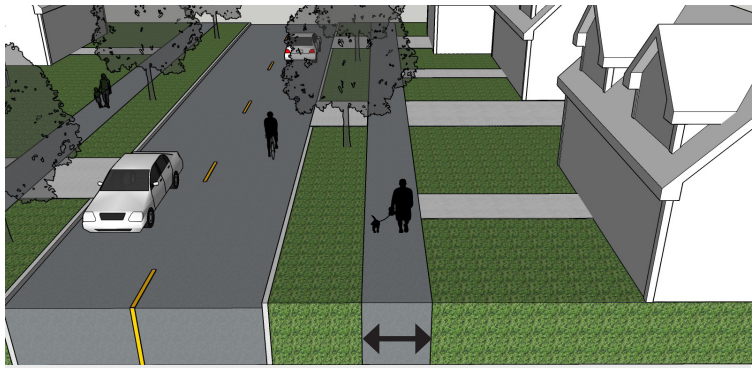


Sidewalks & Sidepaths

Ideally, all roads should feature sidewalks on both sides of the street. As work is conducted within the road rights-of-way, or as development on adjacent parcels occurs, opportunities to close gaps in the sidewalk network should be actively pursued. Sidewalks along major collector and arterial roads should maintain a minimum width of 6', incorporating a buffer zone and vertical elements such as trees between the sidewalk and the road. Furthermore, on one side of the corridor, the sidewalk should be expanded to a minimum width of 10' to accommodate shared uses, particularly in areas where on-road bike lanes are absent. The following map identifies key locations where gaps exist and should be addressed.

Sidewalks

pathways less than 8' wide



Typically 6' to 8' Wide

To ensure a more user-friendly and accommodating experience for all, bicycle and pedestrian facilities should be separated. In areas with higher bicycle use or where separated bicycle facilities are not provided, a sidepath should be included.

Sidepaths

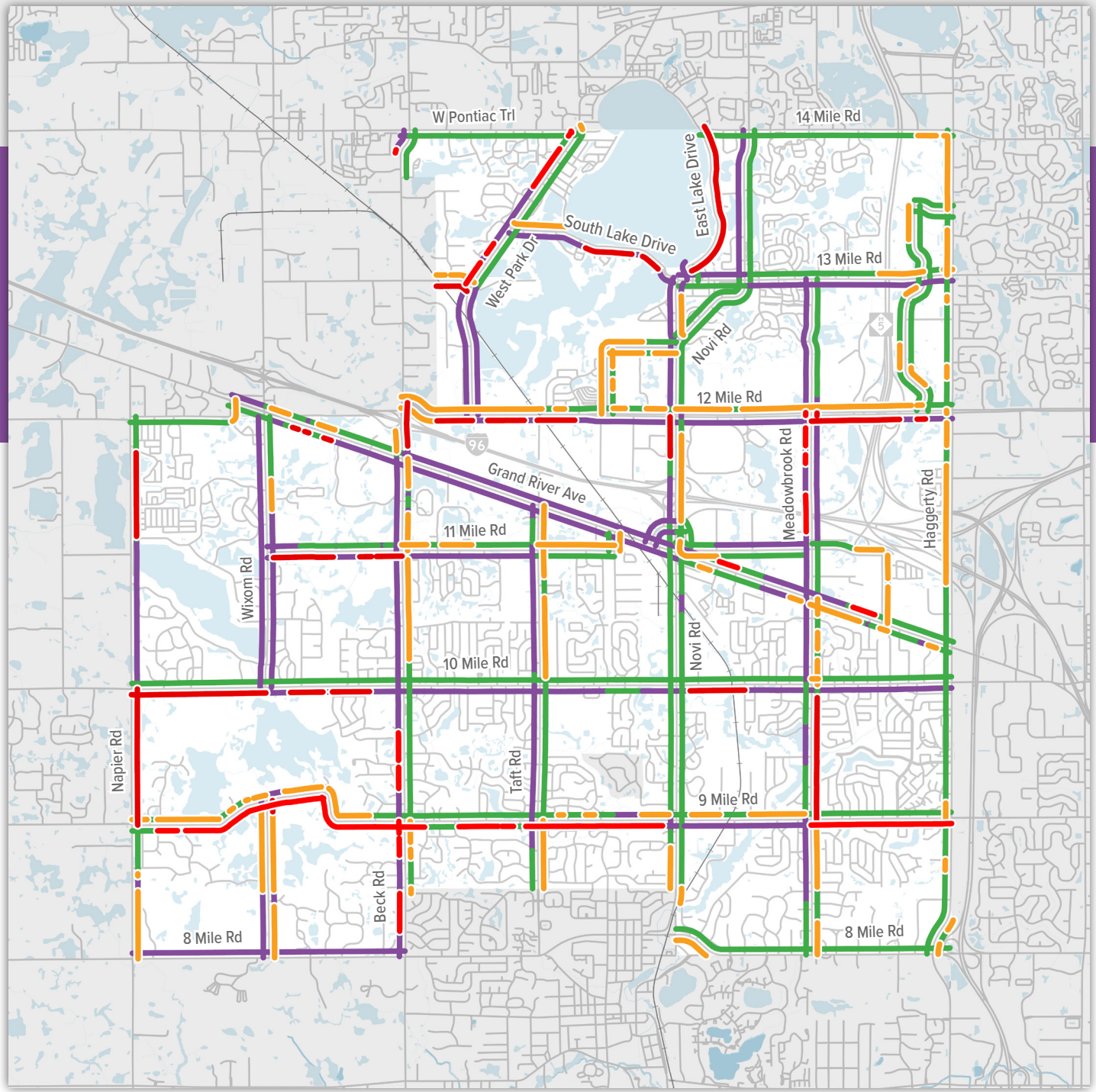
pathways 8' wide or greater

Typically 10' to 14' wide

The standard for shared use paths has evolved, and it's becoming increasingly recognized that 8-foot-wide pathways are no longer sufficient for accommodating both bicycles and pedestrians comfortably and safely. To ensure a more user-friendly and accommodating experience for all, it is recommended that a minimum of 10-foot-wide pathways be provided for routes shared by both bicycles and pedestrians.

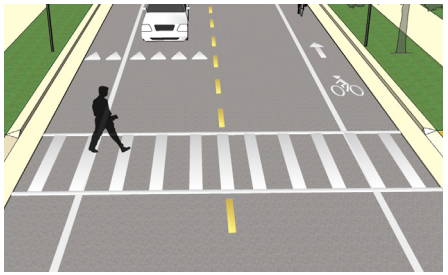
Sidewalk and Sidepath Map

- Existing Sidewalks (< 8’ wide)
- Proposed Sidewalk (< 8’ wide)
- Existing Sidepaths(≥ 8’ wide)
- Proposed Sidepath (≥ 10’ wide)



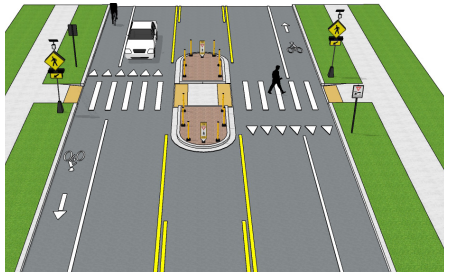
Mid-block Crosswalks

This map showcases proposed locations for crosswalk treatments at mid-block locations and identifies treatments designed to address potential hazards and elevate the overall pedestrian experience. Many of these treatments can be implemented within the existing cross-section of roadway and should actively be pursued to improve bicycle and pedestrian safety. The crosswalk measures shown are based on a master plan level assessment of anticipated speeds, number of lanes, and presence of a crossing island. Each crosswalk requires a separate engineering study and may necessitate a higher or lesser order of treatment based on a more detailed assessment.

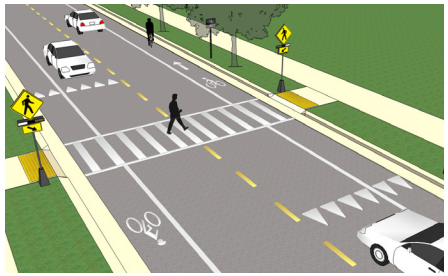


High Visibility Crosswalk

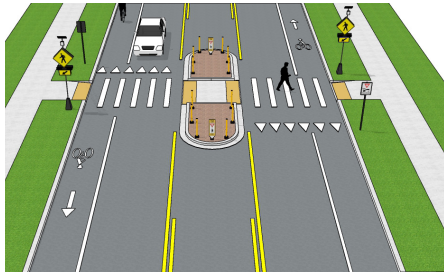
Crossing Island



Speed Table



Rectangular Rapid Flash Beacon

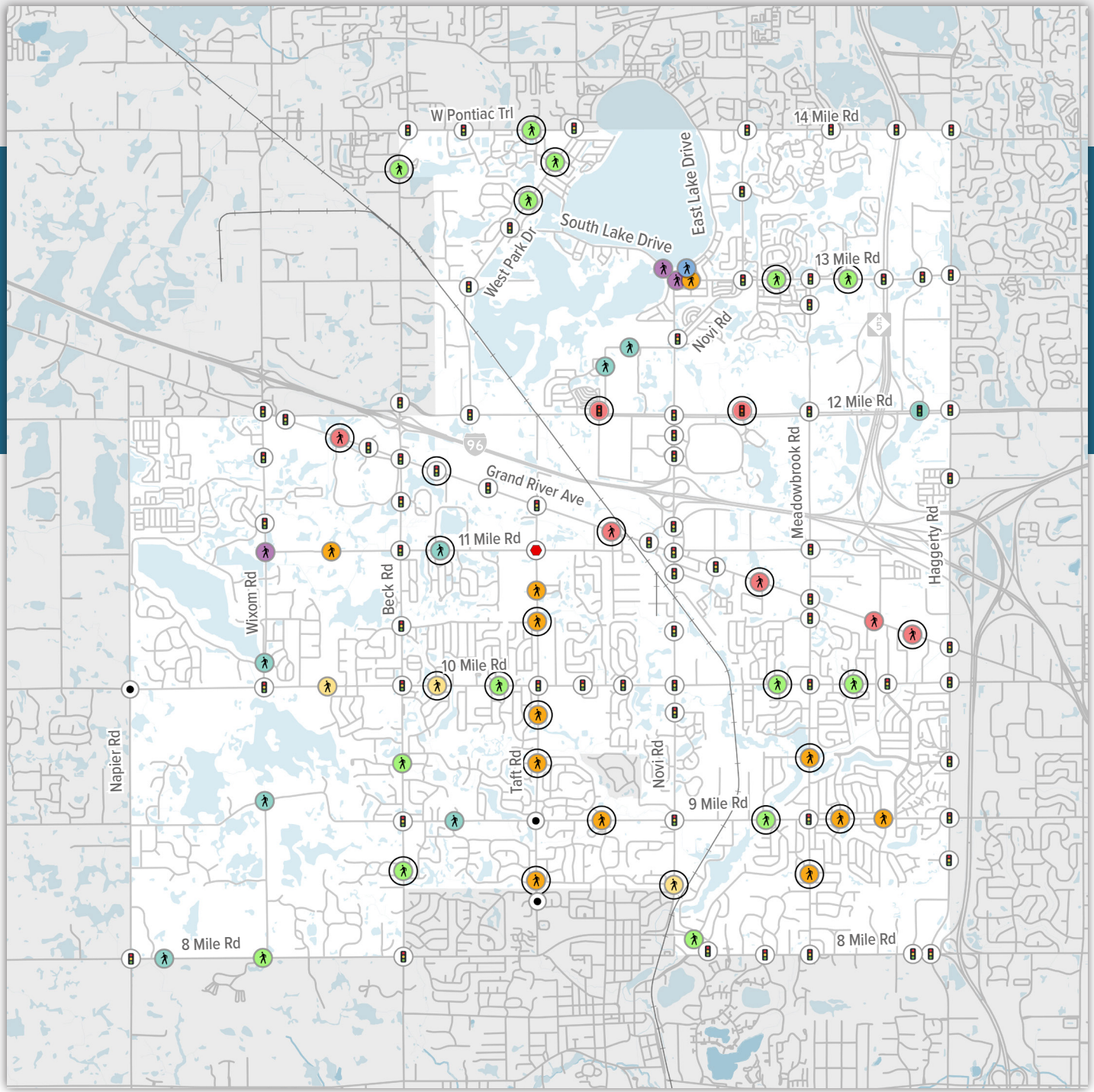


Rectangular Rapid Flash Beacon with Island

Pedestrian Hybrid Beacon with Island

Mid-block Crosswalk Map

- Signalized Intersection
- Stop-controlled Intersection
- Roundabout
- Mid-block Crosswalk
- Pedestrian Hybrid Beacon with Island
- Pedestrian Hybrid Beacon
- High Visibility Crosswalk
- Crossing Island
- Rectangular Rapid Flash Beacon
- Rectangular Rapid Flash Beacon with Island
- Speed Table
- New Crosswalk Location



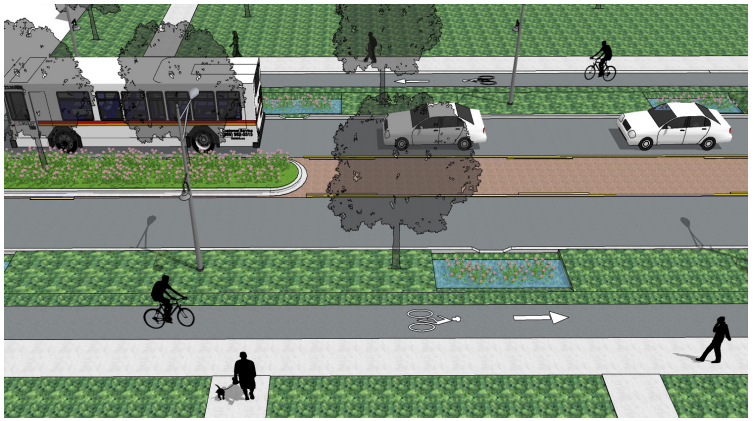
Bike Lanes

This map identifies the appropriate on-road bicycle facilities based on the Major Corridors Classifications outlined in this plan. To ensure the safety of bicyclists, physical buffers between bike lanes and motor vehicle lanes are recommended. As roadway speeds and volumes increase, it becomes increasingly important to provide these buffers to enhance bicycle safety and comfort. Additionally, the growing popularity of micromobility devices necessitates their consideration in future bike lane design.

Bike Lane

Where space permits, a painted buffer zone should be incorporated between the bike lane and the motor vehicle lane for added safety and separation from vehicles. Flexible posts may also be included as to increase bicyclists comfort.

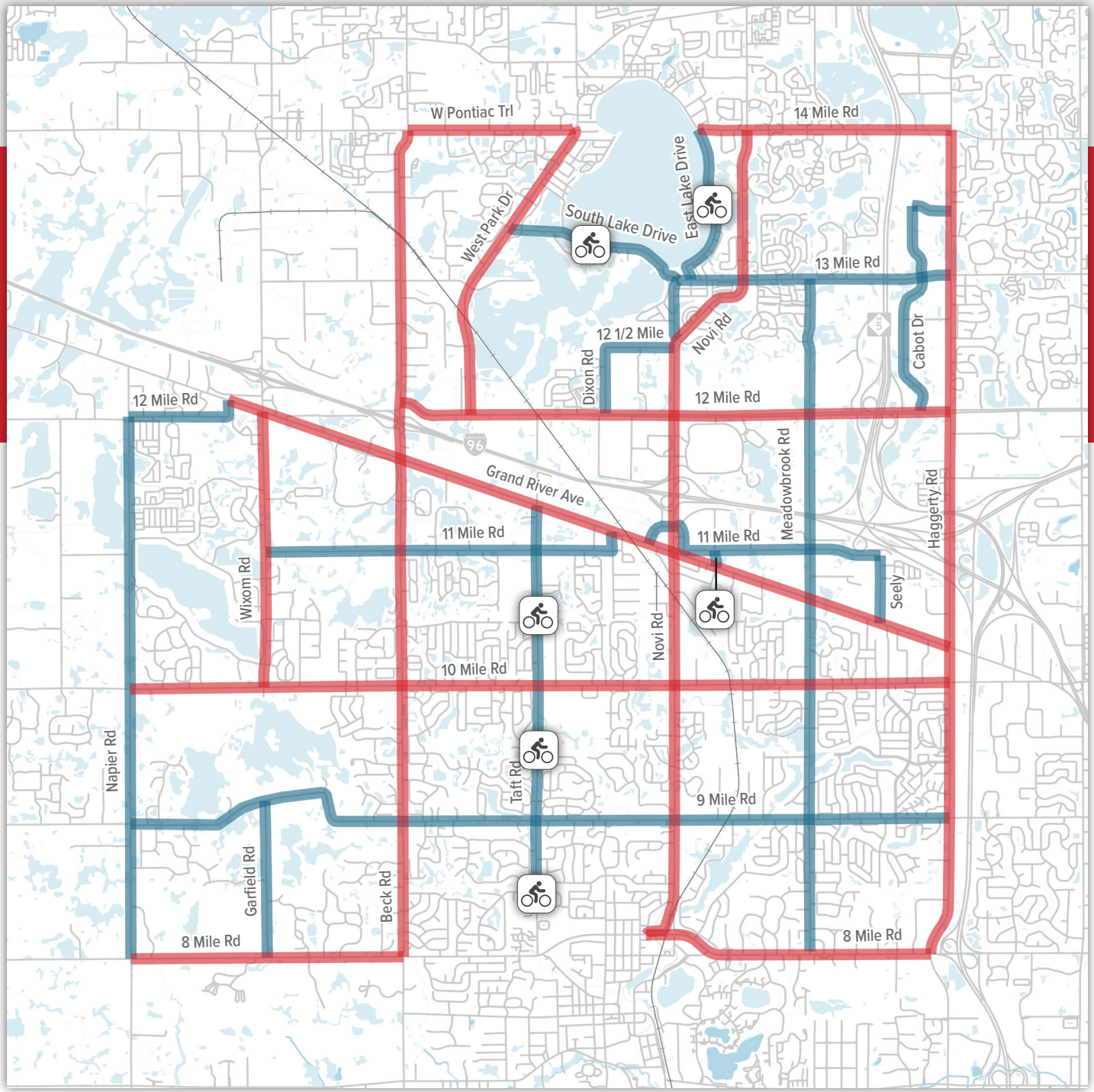
Separated Bike Lake or Sidepath



In areas with high pedestrian traffic, separate facilities for bicycles should be provided to minimize conflicts between pedestrians and bicyclists.

Bike Lane Map

- Bike Lane
- Separated Bike Lane or Sidepath
- Existing Bike Lanes



Greenways

The Active Mobility Plan is an integral part of the broader regional network. This map identifies key regional corridors that play pivotal roles in connecting Novi to the regional trail framework. There is the opportunity for a 30 mile regional trail loop through Novi if links are completed to the Michigan Airline Trail, Maybury State Park and Hines Park Bikeway through Northville.

ITC Trail to the Michigan Air Line Trail

1. Establish a trail connection across the I-96 interchange at Beck Road with the City of Wixom.
2. Complete sidepath gaps along 12 Mile and West Park to Pontiac Trail as part of the near-term network.
3. Collaborate with Walled Lake to provide a trail connection to the Michigan Air Line Trail from Pontiac Trail and West Park Drive.

ITC Trail to Hines Park Trail

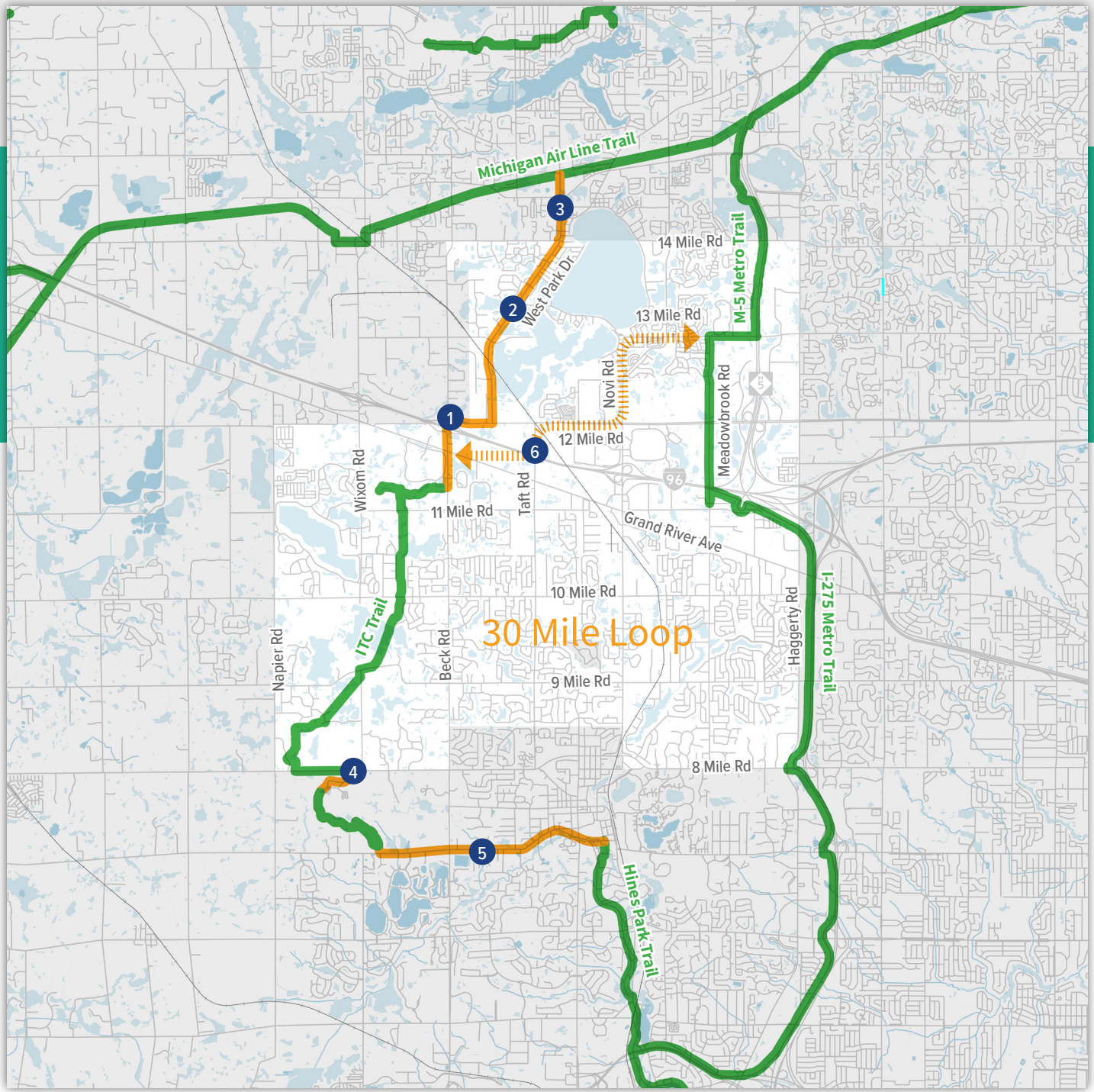
4. Coordinate with Maybury State Park to provide a trail connection in the vicinity of the park entrance from the sidepath on the north side of 8 Mile Road to the park trailhead.
5. Support the City of Northville and Northville Township in their efforts to complete a pathway connection along 7 Mile Road to Hines Park Trail.

Taft Road Alternative

6. Recognizing the strong desire to establish a non-motorized connection across I-96 at Taft Road, linking the northern and southern parts of the city, it is recommended that the city actively seek opportunities for its construction as the anticipated City West district develops.

Greenways Map

- Existing Trail
- Future Regional Trail Network
- Taft Road Alternative



Local Road Routes

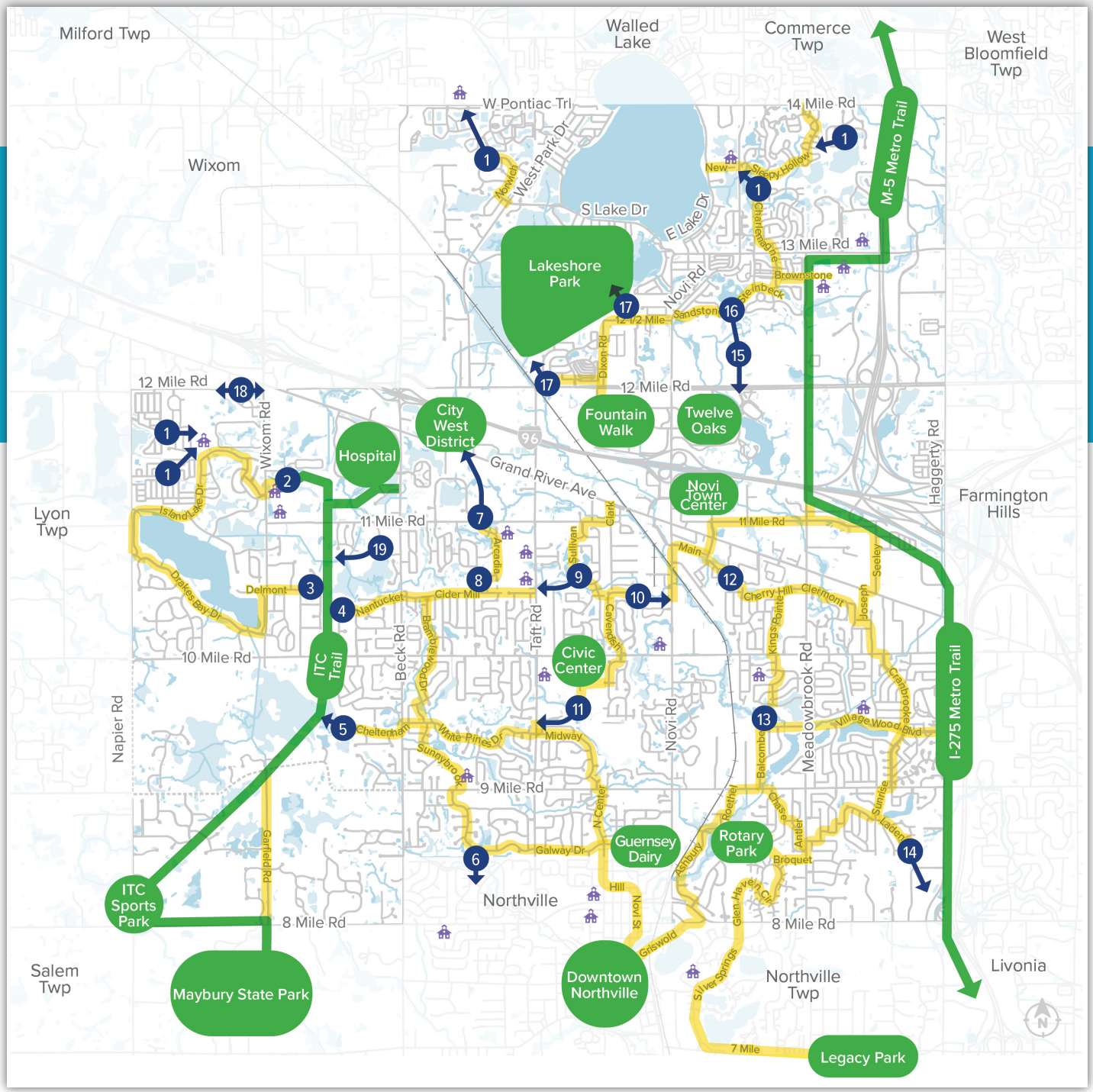
The proposed connections focus on creating family-friendly routes that connect neighborhoods to each other and to local destinations such as schools, parks and trails. This network prioritizes the utilization of low-stress bike routes that traverse neighborhood roads while also emphasizing the creation of crucial sidewalk and pathway connections within subdivisions. These measures enhance mobility and strengthen connectivity to nearby destinations and trails, fostering a more accessible and cohesive urban environment. The following pages outline policies, programs and infrastructure recommendations to support this network.

Map Notes:

1. Provide direct pathway connections between adjacent neighborhoods and school.
2. Trail ends abruptly into parking lots at Deerfield Elementary and Wildlife Wood Park. Continue trail so it links into the City's pathway network.
3. Connect neighborhood to ITC Trail from Woodworth Drive through community open space.
4. Connect neighborhood to ITC Trail from Sandpiper Court.
5. Connect neighborhood to ITC Trail from Cheltenham Drive or Heartwood Street
6. Connect adjacent neighborhood between Galway Drive and Coldspring Drive.
7. Explore options for a direct pathway connection to the anticipated City West district from W 11 Mile Road.
8. Connect adjacent neighborhood between Arcadia Drive and Cider Mill Road.
9. Formalize pathway connection between Taft Road and Kerri Court.
10. Add pathway through city owned parcel between Thatcher Drive and Novi Road.
11. Extend existing pathway all the way to Taft Road from Ella Mae Power Park.
12. Add pathway between Fountainpark Drive and Highland Drive.
13. Explore optional pathway through city owned parcel between Chattman St/ Balcombe Dr to Malott Drive.
14. Explore options for a direct pathway connection between neighborhoods and the commercial area at Eight Mile Road and Haggerty Road.
15. Explore options for a direct pathway connection to Twelve Mile Road from Sandstone Drive and Steinbeck Glen.
16. Add pathway between Sandstone Drive and Steinbeck Glen.
17. Add pathway connection to Lakeshore Park Mountain Bike Trails from 12 Mile Road and improve access from 12 1/2 Mile Road.
18. Extend sidewalk from 12 Mile Road to Wixom Road.
19. Add pathway connection between ITC Trail and Bosco Fields

Local Road Routes Map

- Local Road Bike Routes
  Examples of low-stress bicycle route following neighborhood roads.
- Opportunity for Short Pathway Links
  Short pathway links that connect neighborhoods away from major road corridors. Surface may vary and easements may be required. See map notes for details.
- Destinations and Existing Regional Trails
- Schools
- Map Notes



Support the Local Road Routes

Low-stress bicycle routes following neighborhood roads, identified on bicycle maps and reinforced with pavement markings.

These routes should be clearly identified on bicycle maps for easy reference. To further enhance safety and navigation, wayfinding signs should be strategically placed at neighborhood entrances along major road corridors, indicating the distance, direction and time to nearby destinations. Additionally, pavement markings can be employed on local roads to reinforce the designated bicycle route through the neighborhood.

Ensure new developments provide pedestrian and bicycle links to adjacent neighborhoods and local destinations.

To promote a pedestrian and bicycle-friendly urban environment in new developments, non-motorized transportation should be integrated into urban planning by enforcing design standards and prioritizing accessibility. Encourage connectivity planning, offer incentives for exceeding infrastructure requirements, and promote mixed-use development within walking or biking distance. Engage the community for input, establish regular maintenance, collaborate with local agencies, and conduct education and outreach programs to foster active transportation as a sustainable lifestyle choice.

Provide safe routes for walking and biking to schools from nearby neighborhoods

To establish safe routes to schools in neighborhoods without sidewalks, start by working closely with subdivisions to understand their needs. Conduct safety assessments, develop a comprehensive plan, and seek funding sources for necessary infrastructure improvements, like sidewalks and crosswalks. While working on long-term solutions, consider temporary measures like speed limits and traffic calming. Prioritize high-traffic areas and engage in educational initiatives. Maintain open communication with the community throughout the process and establish regular maintenance plans. Continuously evaluate the program's effectiveness and make adjustments as needed to ensure students can safely walk and bike to school.

Build short pathway links that connect neighborhoods away from major road corridors (surfaces may vary and easements may be required).

These pathways should be designed with flexibility, acknowledging that surface conditions may vary, and in some cases, securing easements may be necessary to facilitate these connections. These short pathways not only promote safe and convenient pedestrian and bicycle travel but also foster a sense of community, as they enable residents to easily access neighboring areas, local amenities, and recreational spaces. Investing in these linkages will enhance mobility, promote active lifestyles, and strengthen the overall connectivity of the city. For new developments with designated open space areas, make sure the development language permits paved trails.

Near-Term Network

The Near-Term Network illustrates projects that can generally be implemented without changing the curb lines and are, for the most part, within the public right-of-way or public lands.

The Near-Term network focuses on eliminating gaps and providing the framework for a continuous network to access key destinations and trails throughout the city. These Near-Term recommendations should be reviewed and consulted whenever there is road work (repaving, restriping or reconstruction) being planned within the City. Many of these recommendations could be implemented with modifications to the existing road cross-section.

Implementation of the Near-term Network will require close coordination with the Road Commission for Oakland County, Wayne County Road Commission, and MDOT at the earliest stages of roadway improvement planning.

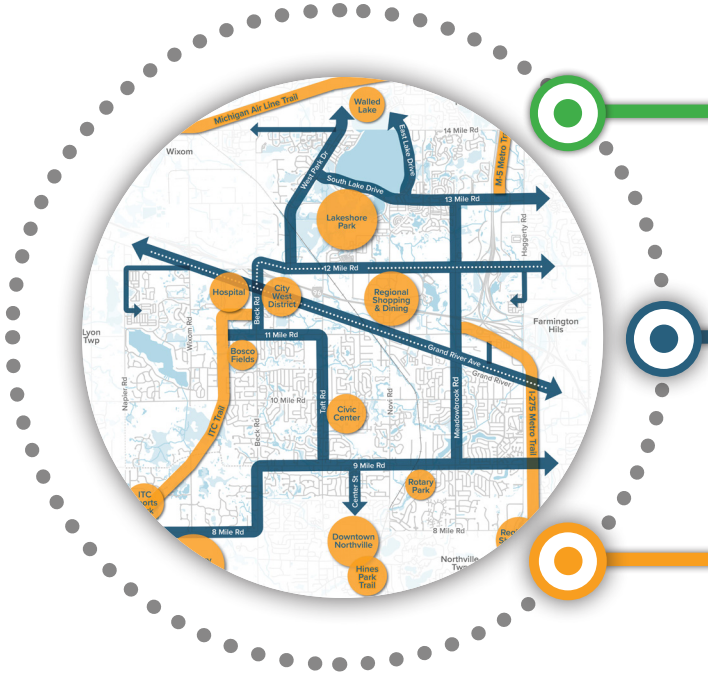
The Near-Term Network is the focus for the foreseeable future.

Near-Term Network Overview

The purpose of the Near-Term Network is to create a comprehensive framework and set of guidelines with the aim of enhancing and promoting active modes of transportation, such as walking and biking, within the community. Its primary focus is on utilizing existing facilities to establish a functional city-wide network that links key destinations.

The Near-Term Network consists of three main components: the Neighborhood Greenway Network, Connecting to Transit, and Improved Access to Shopping and Dining. The following section provides an outline of recommendations for the Near-Term Network.

NEAR-TERM NETWORK



THREE MAIN COMPONENTS

Neighborhood Greenway Network

A continuous non-motorized network with amenities to enhance the overall experience for people who walk and bike

Connecting to Transit

Proactively addressing the needs of non-motorized users to provide safe and convenient access to transit

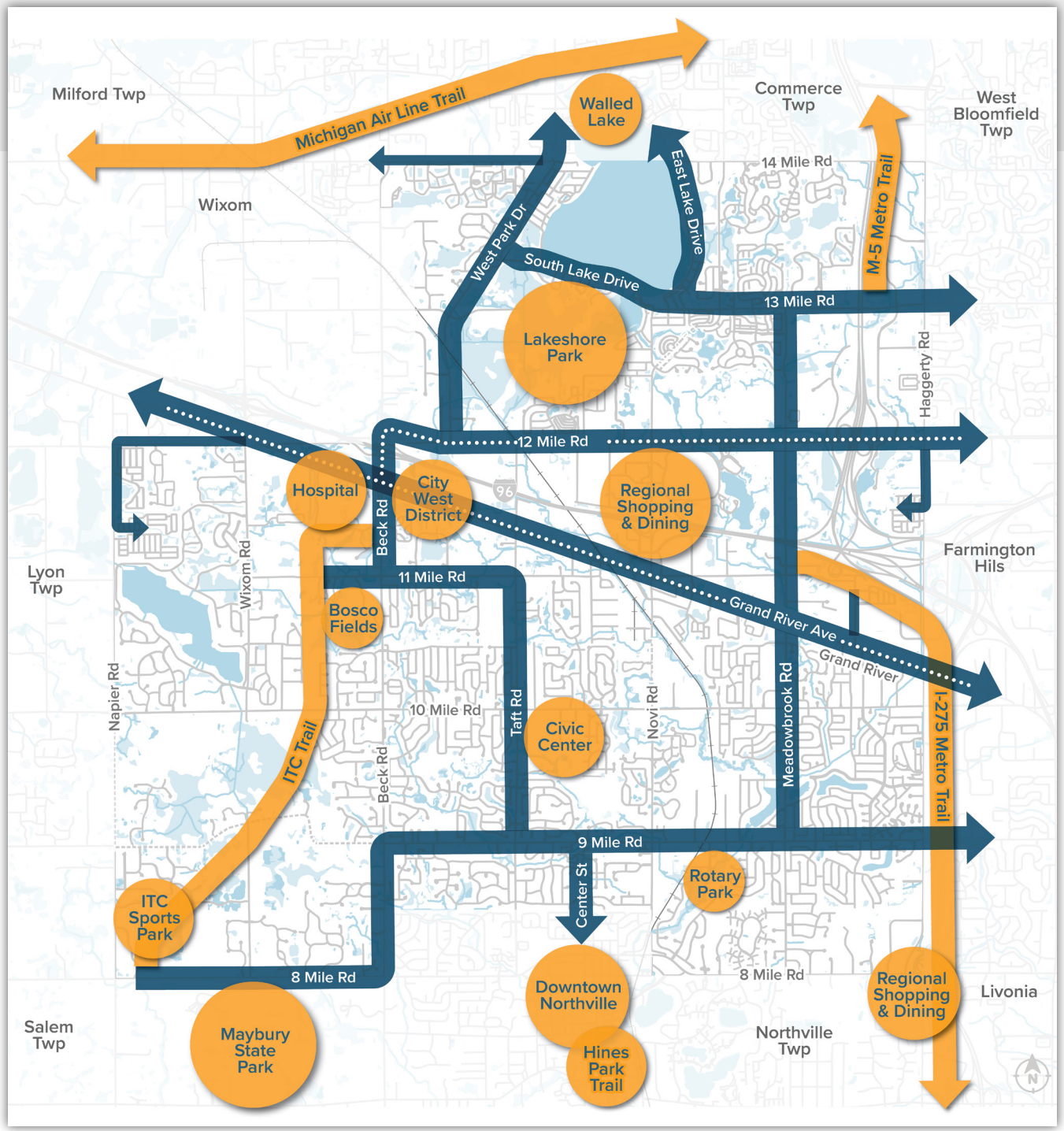
Improved Access to Shopping and Dining

A welcoming environment that facilitates easy access for bicyclists and pedestrians to reach businesses directly from the street

Near-Term Network Map

This map illustrates the primary framework of the near-term network.

- Near-Term Network (*Priority Corridors for Active Mobility Improvements)*
- New Transit Routes
- Regional Shared Use Paths
- Key Destinations



Neighborhood Greenway Network

The Neighborhood Greenway Network is a continuous non-motorized network with amenities to enhance the overall experience for people who walk and bike.

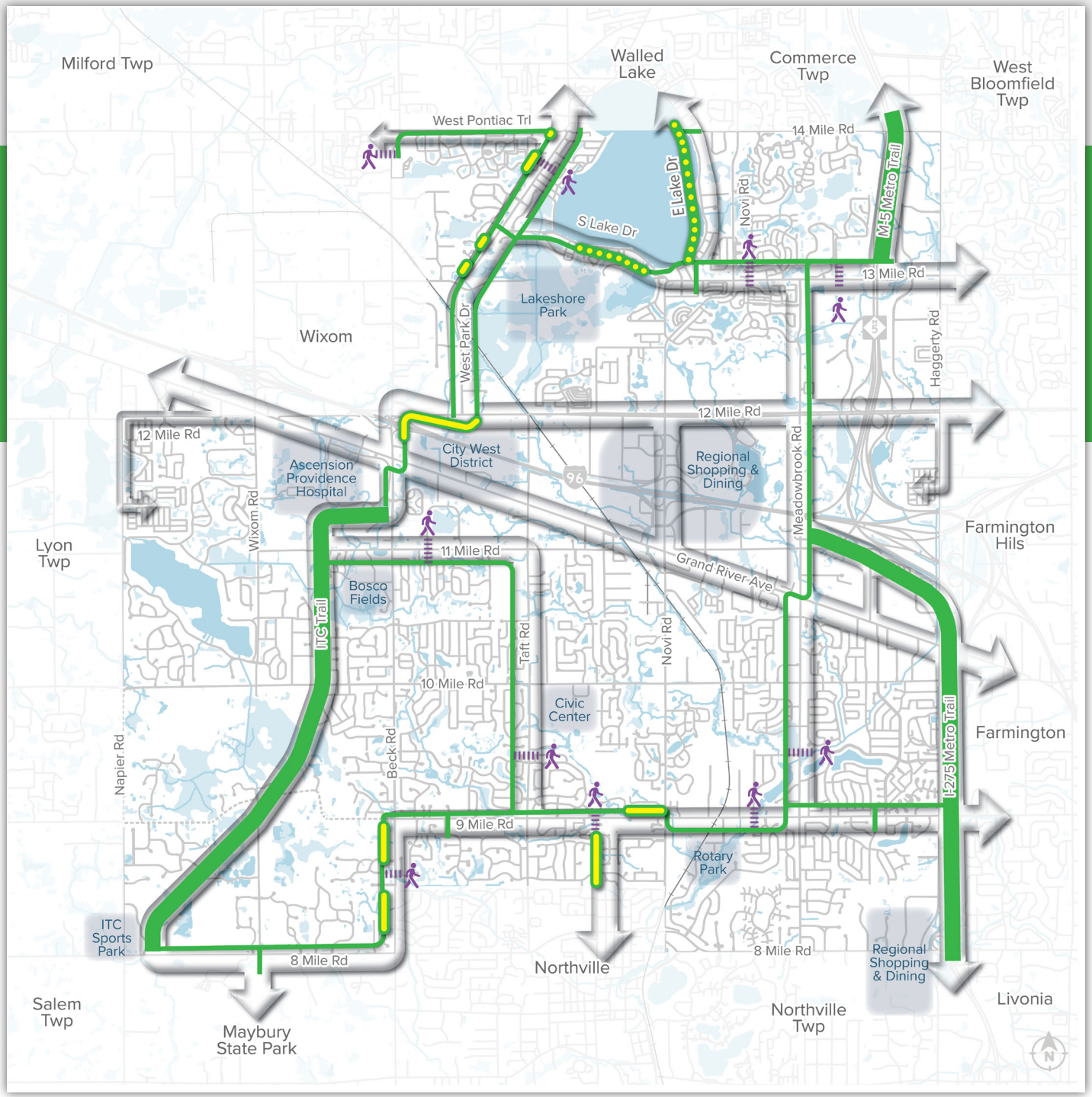
The Neighborhood Greenway Network prioritizes the implementation of modest yet highly impactful interventions, including the completion of key sidewalk gaps and crosswalks. These small-scale enhancements play a pivotal role in establishing a continuous route across the city, providing a framework for linking neighborhoods to essential destinations.

A near-term priority involves establishing a connection across the Beck Road overpass, a critical undertaking given the limited opportunities to cross the expressway. This connection assumes even greater significance in light of the anticipated City West district and the new transit routes along Grand River Avenue and 12 Mile Road. Notably, the existing bridge deck provides ample width to facilitate a retrofit for a pathway connection.

East Lake Drive and South Lake Drive are well-traveled non-motorized routes along the lakeshore, connecting to two major parks and downtown Walled Lake. While there is a desire to upgrade the current facilities, a corridor study is necessary to address traffic patterns and safety concerns. Please see the *Specific Area* section for more details on East Lake Drive and South Lake Drive.

Neighborhood Greenway Map

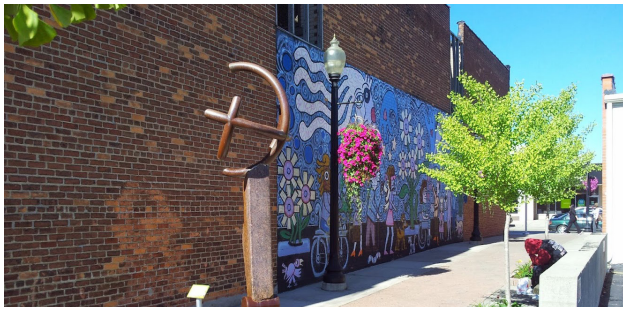
- Existing Sidewalks/Pathways
- Off-Road Trails
- Pathway/Sidewalk Gap
- Corridor Study required before upgrading facilities
- Proposed Mid-block Crosswalk
- Near-Term Network



Create safe and inviting routes both on and off-road

Attractive and sustainable landscapes in the buffer zone

Planting trees in the buffer zone between the sidewalk and road enhances pedestrian comfort by offering shade and creating a vertical barrier between motor vehicles and pedestrians. The tree canopy also reduces the heat island effect of built up areas and holds rain water helping to mitigate the impact of heavy rain events. The integration of rain gardens in the buffer offer another sustainable and cost effective solution for the managing stormwater runoff. Together, street trees and rain gardens provide an attractive and varying landscape with many benefits.



Community art and interpretive signage

Integrating community art and informative signage along the routes adds cultural and educational value to the network. It helps celebrate local culture, history, and natural features, making the routes not just transportation corridors but also destinations in themselves. Art and interpretive exhibits can be permanent, temporary, or even seasonal.

Links to parks and public buildings with water and restrooms

Seamless connections to parks and public buildings with water fountains and restroom facilities are essential for user convenience. These amenities encourage longer journeys, as users don't have to worry about basic necessities during their trips. The addition of bicycle repair stands and orientation maps make these rest areas even more helpful.

Periodic rest areas with benches

Establishing rest areas is essential for user comfort along a pathway. Benches and tables offer places for users to rest, take breaks, enjoy the scenery, and socialize with others. These rest stops are often located in shaded areas to provide protection from the sun. Placing trash and recycling receptacles nearby is important to promote trail cleanliness and discourage littering. These amenities contribute to a positive user experience and encourage people to utilize the non-motorized network.

Pedestrian scale lighting

Proper lighting is crucial for both safety and encouraging use. Lighting helps users feel more secure and promotes use at all times of day and night and during every season. While the installation of lighting is desirable, it can be a significant investment. Solar-powered lights should be considered in areas with ample direct sunlight to minimize both installation and operational expenses.

Evaluate the existing lighting levels on sidewalks along major roadways and existing crosswalk locations and develop a prioritization system to upgrade lighting for deficient locations. Special emphasis should be placed on providing lighting at unsignalized crosswalks to make sure that pedestrians crossing the street are visible to motorists.

Enhanced year-round maintenance

Establish a robust maintenance plan for year-round upkeep, including snow removal during the winter months. Consistent maintenance ensures that the routes remain safe and inviting in all seasons.

Please refer to the ***Implementation*** section for specifics.

Pet Waste Management

Provide pet waste bags, trash receptacles, and signage reminding pet owners that they are responsible for cleaning up after their pet.

Support the Community Greenway

Provide uniform wayfinding system that integrates with regional trail network and bike routes

A uniform wayfinding system is essential for user navigation and satisfaction. Consistent signage and directions ensure that users can easily find their way through the network and connect with other regional trails and bike routes.

In collaboration with adjacent communities, implement a wayfinding system for the area that includes uniform signage, information kiosks, maps, and online resources.

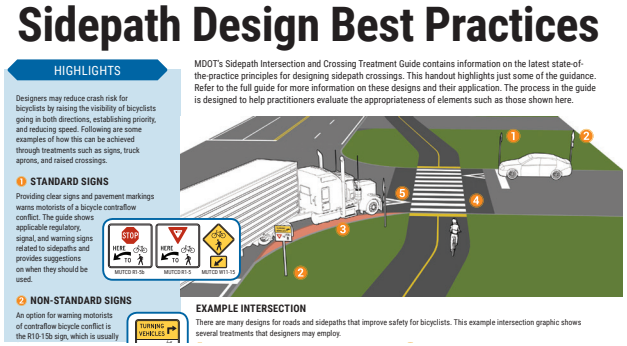
Promote the network through events, group rides, maps and by supporting local bike clubs

Active promotion through events, group rides, maps, and support for local bike clubs is crucial for raising awareness and encouraging usage. The outreach strategy should include hosting events like bike races, family rides, and nature walks to celebrate the network. Scheduled group rides on different routes can encourage users and create a sense of community. Creating user-friendly maps for both online and print will highlight the network's features. Collaborating with local businesses for map distribution and partnering with bike clubs for events and safety workshops would be beneficial. Additionally, offering educational programs in schools and community centers, maintaining a strong online presence, and actively gathering user feedback for network improvements based on their suggestions are all key components of this strategy.

Evaluate use through automatic counters and satisfaction through yearly surveys

Install permanent automatic counters for pedestrians, bicyclists, and micromobility vehicles along significant new facilities. Implement a program where temporary traffic counters are regularly moved to key destinations within the city on a predefined schedule. Ensure coordination with state and regional counting initiatives. Before constructing new facilities, establish baseline counts.

Introduce an annual resident survey to gauge community utilization and satisfaction with the multi-modal transportation system. This survey can inform adjustments and refine community priorities as needed.



Establish a grant program to improve safety at neighborhood entrances

Create a grant program aimed at improving safety at neighborhood entrances along the non-motorized routes. Encourage neighborhoods to incorporate enhanced safety measures in these critical areas. This program can be based on or an extension of the City's current Entryway Grant Program that focuses on landscaping.

Reference *MDOT Sidepath Reference Sheet* for more information on sidepath safety issues and design best practices.

Upgrade existing facilities to current best practices

Upgrade existing facilities to align with current best practices in non-motorized transportation to assure consistency across the roadway system. Assess near-term routes for safety, accessibility, and compliance with modern standards. Enhance safety with better crosswalks, signals, and signs. Add modern amenities like energy-efficient lighting, bike racks, benches, and wayfinding systems for user convenience. Phase upgrades to minimize disruptions, focusing on busy areas and key intersections. Stay flexible to adapt to evolving best practices and technologies, periodically reviewing facilities to ensure they meet high standards.

Please refer to the *Facility Types and Guides* section for more information on design guidelines and resources for best practices and the *Implementation* section for more information on processes.

Sponsor and adopt-a-greenway or trail amenity

Engage the community in the funding and care of greenway segments and amenities such as rain gardens and parklets through sponsorships and adoption programs. These public-private partnerships provide a means for local clubs and business to direct meaningful volunteer hours as well as a way for Novi based businesses to give back to the community. Appropriate recognition signage should be provided.

Focus on a continuous, near-term route

Establish high quality non-motorized link through the Beck Road overpass

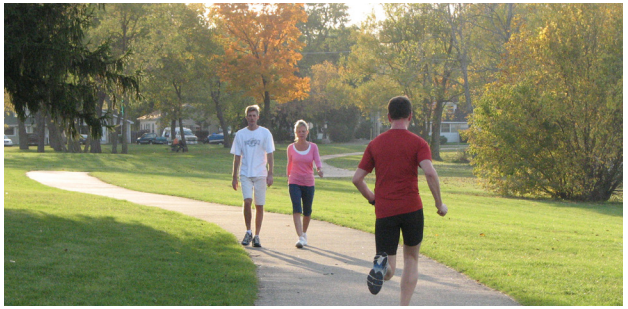
Prioritizing the creation of a high-quality link through the Beck Road overpass demonstrates a commitment to safety and accessibility. Given the limited opportunities to cross the expressway, this connection serves as a vital link, particularly in light of the new transit developments along Grand River and 12 Mile Road. The existing bridge deck is sufficiently wide to accommodate a retrofit for a spacious pathway connection. An aesthetically pleasing overpass not only encourages usage but also fosters connectivity between different sections of the network. Ensuring that this connection is safe, accessible, and visually appealing is paramount. This improvement will require additional engineering studies and changes to signalization to assure the proper treatments are being implemented.

Address the critical gaps in sidepath network to provide continuous off-road trail and sidepath system

Identifying and addressing critical gaps in the sidepath network is essential for creating a user-friendly non-motorized system. The near-term network identifies priority gaps in the network that should be addressed first.

Provide warning and detour signs for dead end pathways

To address existing gaps in the system install signage at key decision points, like intersections, to alert users to gaps and prevent them from inadvertently following a route that abruptly ends without any safe means to cross the road to another facility. This proactive approach improves safety and navigation throughout the network.



Integrate major off-road trails into the network, such as the ITC Trail and the I-275 Metro Trail

To seamlessly integrate major off-road trails like the ITC Trail and the I-275 Metro Trail into the non-motorized network, it's vital to assess potential connection points and establish guidelines for safety and usability. Collaborate closely with trail managers, implement clear wayfinding signage, prioritize safety measures at intersections, and conduct outreach campaigns to inform the community. Enhance trailheads with user-friendly amenities and determine if additional trail access points are needed. Regularly monitor trail usage and satisfaction levels to ensure a successful and well-integrated network that promotes active and sustainable transportation.


Roethel Dr

Connecting to Transit

Addressing the needs of non-motorized users to provide safe and convenient access to transit.

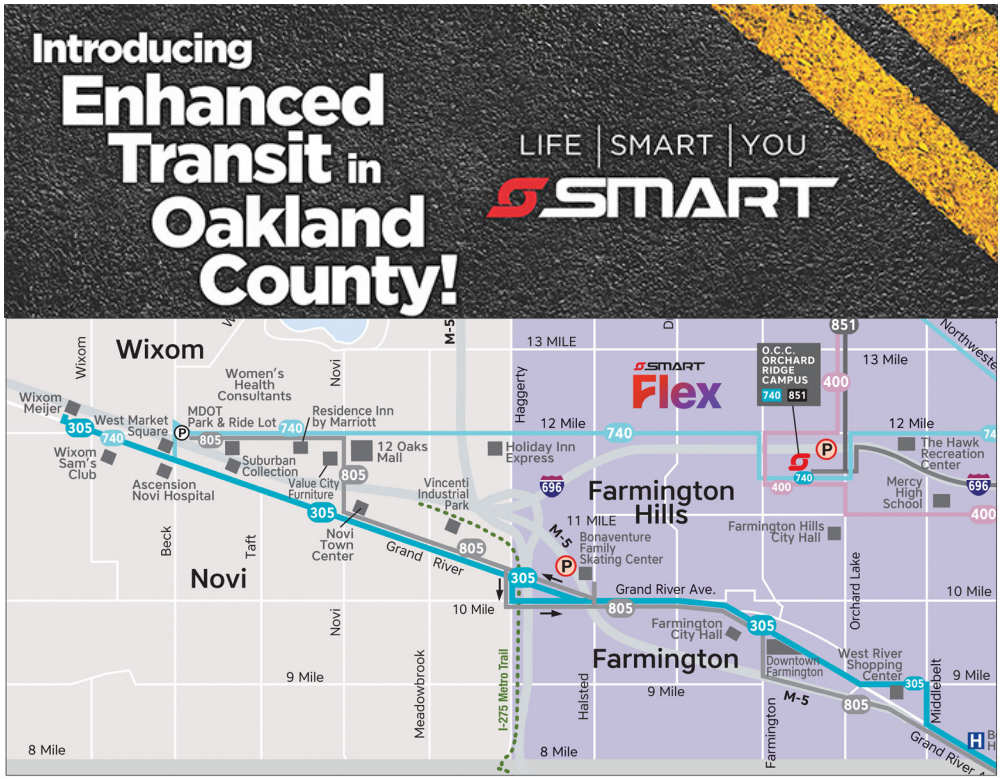
In 2023, SMART introduced enhanced transit in Oakland County, offering local service along key routes such as Grand River, 12 Mile, and Novi Road. This section outlines strategies designed to address gaps in the pedestrian network and create a support system, ensuring the creation of safe and convenient access to the newly established transit stops.

Novi's New Transit Service:

SMART 740

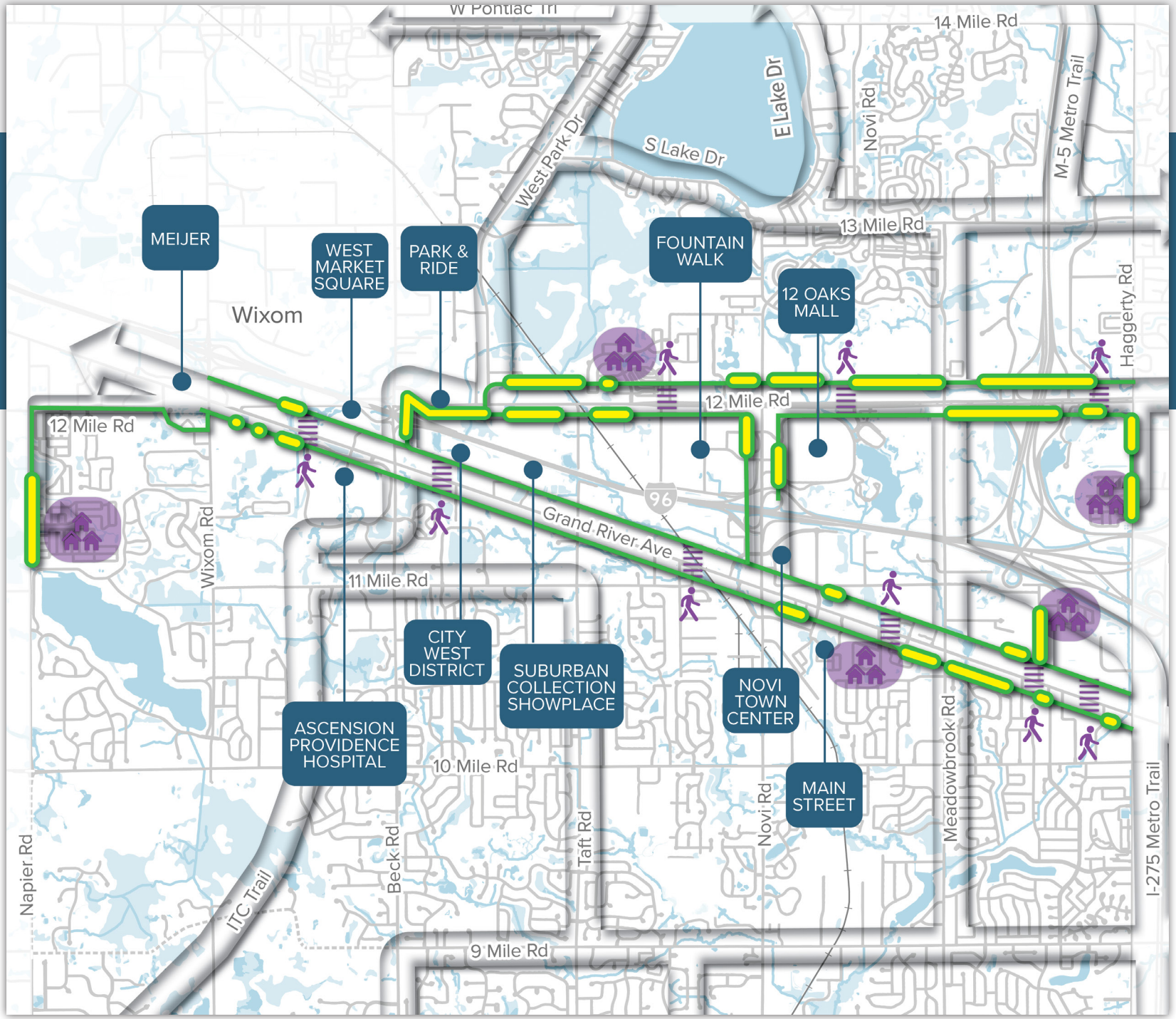
SMART 305

SMART 805



Connecting to Transit Map

- Existing Sidewalks/ Pathways
- Pathway/ Sidewalk Gap
- Proposed Crosswalk
- Connect Isolated Neighborhoods to Transit
- Near-Term Network



Support the New Transit Routes

Provide direct access to major destinations along the route

Engage in partnerships with local businesses to provide pathways that guide transit users to their establishments, focusing on attractive, pedestrian-friendly routes. Ensure these pathways meet accessibility standards, accommodating all individuals with features like ramps and clear signage. Highlight the economic benefits of this connection, including more visitors, increased business, and potential job opportunities, to gain support from stakeholders and foster a thriving local economy.

Coordinate crosswalks with transit stops

To ensure a safe and efficient connection between transit stops and pedestrian crosswalks, it is recommended to strategically place crosswalks adjacent to transit stops, ensuring they align with passenger traffic patterns. Enhanced safety features, including crossing islands, beacons, lighting, and high-visibility crosswalks, should be employed. By situating crosswalks where they are most needed, a more user-friendly and accessible non-motorized network will be established, promoting the utilization of public transportation and enhancing pedestrian safety throughout the community.

Incorporate streetscape amenities to create an inviting and pedestrian-friendly environment at transit locations

This involves including elements like adequate lighting, comfortable seating, aesthetically pleasing landscaping, bike parking and shading structures. These improvements serve not only to enhance safety but also to promote the utilization of public transportation by creating a more appealing and enjoyable experience for pedestrians. Locations offering more amenities, especially shelters, typically have a larger draw area, enticing individuals to walk a bit farther to access transit stops.

Establish mobility hubs, a place where people can connect to multiple modes of transportation.

Establish mobility hubs at transit stops that include:

- Wayfinding kiosks
- Short and secured long-term bike parking
- Bike repair stations
- E-bike charging
- Security cameras and emergency call boxes

Establish transit-friendly business program

- For business near stops
- Provide real-time bus information display boards
- Focus on cafés, convenience stores, and lodging

Source: Collaborative Mobility UK

Improved Access for Shopping & Dining

A welcoming environment that facilities easy access for bicyclists and pedestrians to reach businesses directly from the street.

Novi has long been known for its regional shopping opportunities, but until recently, the landscape has been predominantly car-centric. The city boasts a wide range of retail destinations and dining establishments, making it an attractive hub for shoppers from across the region. However, the arrival of new transit routes to the area is poised to usher in a significant shift. With the potential for increased pedestrian traffic, there's a growing recognition of the need to transform Novi into a more welcoming environment that facilitates easy access for bicyclists and pedestrians to reach businesses directly from the street. This transformation is not only essential for the convenience and enjoyment of both visitors and residents but also aligns with the broader goal of creating a sustainable and vibrant urban landscape that embraces diverse modes of transportation.

See the ***City West*** section for specific details on the integration of non-motorized solutions into this new and evolving district.

Improved Access for Shopping and Dining Map

Shopping and Dining Areas

Near-Term Network

Supporting Access to Shopping and Dining

Establish a bicycle friendly business program

Cities can engage in the League of American Bicyclists' Bicycle Friendly Business program by encouraging local businesses to apply for certification. Businesses interested in certification can submit applications detailing their cycling infrastructure, policies, and programs. These applications are assessed by the League's panel, considering factors like bike parking, support for bike commuting, and community engagement. Businesses meeting the criteria receive certification, and their level (Platinum, Gold, Silver, or Bronze) depends on their efforts. Certified businesses gain recognition, access resources, join a network of bicycle-friendly companies, and can renew their certification every four years, promoting a more bike-friendly community with city support.

Learn more at https://bikeleague.org/

Subsidize placing bike racks in existing developments

Establish a program to install additional permanent and seasonal bike parking in commercial districts. Create a bulk rack purchase, technical assistance and cost-sharing program to assist businesses to install bike parking. Require bike parking to be included as part of all re-developments.

Provide grants to help retrofit existing developments with high quality connections

Establish a dedicated grant fund within the non-motorized plan's budget to support retrofitting projects and allocate resources that can create a significant impact on various developments. Define precise eligibility criteria and offer technical assistance to applicants. Allocate funding based on project scope and impact, setting clear and measurable goals.

Encourage trail centered site development plans

Revise zoning ordinances and land-use regulations to prioritize the inclusion of trails and pedestrian pathways in new developments. Enforce design guidelines that encourage the seamless integration of trails into site plans. Offer incentives, such as density bonuses or tax incentives, to developers who incorporate trails and pedestrian-friendly infrastructure into their projects. These incentives can motivate developers to prioritize non-motorized access.

Provide site plan approval checklist and technical assistance for existing development

Create a comprehensive checklist outlining the non-motorized infrastructure and design elements that development or redevelopments should incorporate to enhance accessibility. This checklist should cover aspects such as pedestrian pathways, bike lanes, bike racks, crosswalks, signage, and accessibility features. Explore the option of offering incentives, such as expedited permitting or fee reductions, to developments that actively integrate non-motorized improvements as per the checklist's recommendations. Acknowledge that retrofitting existing developments might necessitate flexibility in meeting checklist requirements, taking into account factors like available space and budget constraints.

A welcoming environment that facilitates easy access for bicyclists and pedestrians to reach businesses directly from the street

Provide access from the public pathways and bike lanes along the street to the business' front door

Collaborate with local businesses to jointly design pathways that are accessible and welcoming. Ensure these pathways comply with accessibility standards, incorporating elements like ramps and clear signage to accommodate individuals of all abilities. Highlight the economic benefits of this connection, such as increased foot traffic, boosted business activity, and potential job opportunities, to gain support from stakeholders and energize the local economy.

Better access to public sidewalks and transit for visitors at hotels

Improving access to public sidewalks and transit for hotel visitors is essential. Work with local partners to upgrade pedestrian pathways between hotels and transit stops, ensuring they remain well-maintained and accessible. Additionally, provide easily understandable transit information within hotel lobbies, encourage the availability of bike-friendly amenities, and improve crosswalks at crucial intersections. Explore potential partnerships with public transit agencies to create incentives for guests and provide educational resources to inform them about non-motorized travel options and routes to near-by destinations.

Use new developments, such as the City West District, to model pedestrian and bicycle elements

Prioritize pedestrian and bicycle infrastructure from the outset, including wide sidewalks, protected bike lanes, and accessible crossings. Encourage mixed-use zoning, establish interconnected routes within the district, and seamlessly integrate public transit. Design buildings that face the trail and create pedestrian and bicycle-friendly spaces and amenities to enhance connectivity and promote active transportation options.

Capital Improvement Projects

UNDER CONSTRUCTION/ RECENTLY BUILT

1. Construct the missing sections of sidewalk near the Knightsbridge Gate (segment 178) and along the fronts of the City's future Northwest Neighborhood Park (segment 45). ***COMPLETE***
2. Bike lanes would be added along Taft Road as recommended by the non-motorized master plan to improve non-motorized connectivity. A roundabout would replace the current four-way stop at the intersection of Taft and 9 Mile Roads. ***COMPLETE***
3. Construction of 1,750 feet of 6-foot-wide sidewalk and ADA improvements along the north side of 9 Mile Road from Novi Road to CSX Railroad.
4. Water main project on 11 Mile and Meadowbrook
5. Water main project on Meadowbrook
6. Construction of 5, 300 feet of pathway on south side of 10 Mile from Haggerty to Meadowbrook. ***COMPLETE***

PLANNED BIKE/PED IMPROVEMENTS

1. An 8-foot asphalt pathway (Segment 52a) will be added to the south side of 11 Mile Road between Wixom Road and the ITC Trail.
2. Construction of a 10-foot wide asphalt pathway and 14-foot wide boardwalk to serve as a connection between the ITC Trail and Bosco Fields.
3. ADA improvements will be included at intersections, and sidewalk will be added to the gap on the east side of Wixom Road, between the Novi Middle School driveway and Target.
4. Sidewalk on the north side of 11 Mile Rd between Beck Road and East Mandalay Circle
5. Construction of a 6-foot sidewalk on both the north and south side of Village Wood Road
6. This sidewalk would connect the existing path in Village Wood Lake Park to the east side of Meadowbrook Road, with a crossing over Meadowbrook Road at Chattman Drive. An 8-foot concrete sidewalk would be used from the park to the existing 5-foot sidewalk on the south side of the Meadowbrook Road bridge. A 5-foot sidewalk would be used north of the bridge to the Chattman Drive crossing. Some boardwalk would be needed over the wetlands adjacent to Village Wood Lake Park.
7. ADA improvements at intersections on Novi Road
8. The adjacent sidewalk ramps will also be upgraded to current ADA standards with 13 Mile Road rehabilitation
9. An 8-foot concrete sidewalk on the east side of Napier Road would connect the sidewalk along the north side of the ITC Community Sports Park entrance drive to the Villa Barr Art Park at 22600 Napier Road.
10. The Napier Road Connector portion of the ITC Corridor Trail would connect the southern end of the existing trail west across the northern edge of the park to Napier Road.
11. Widen Beck Road as 5-lane road or 4-lane boulevard. Estimate includes intersection and traffic signal modernization of Beck and 10 Mile Roads. ADA ramp upgrades and pathway gaps included.

OTHER PROJECTS AND OPPORTUNITIES

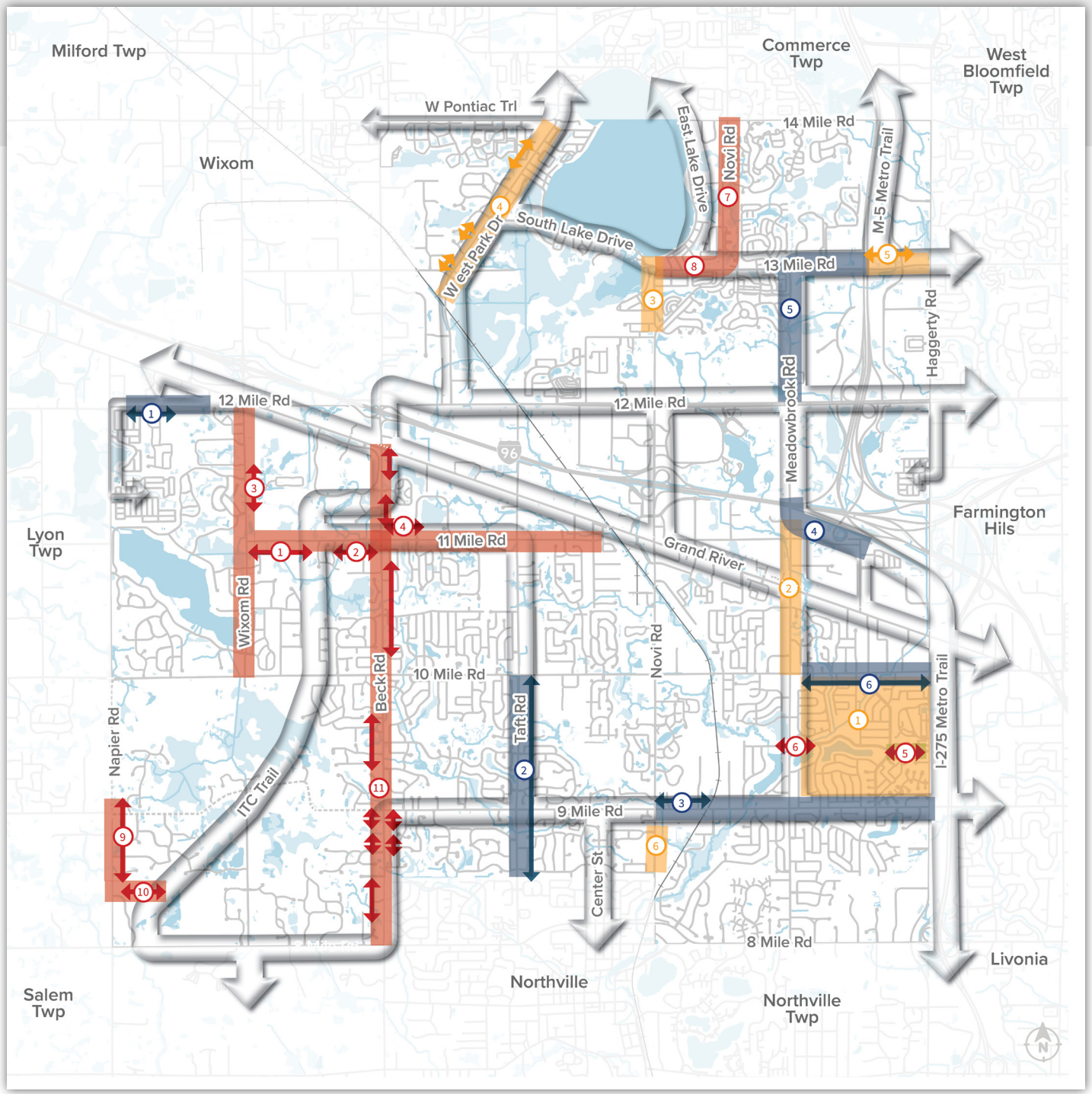
1. Option to add sidewalks to neighborhoods when ditches are enclosed
2. Road rehabilitation on Meadowbrook
3. Any bicycle or pedestrian improvements included with road rehabilitation on Old Novi Road
4. Road rehabilitation and signal modernization on West Park Dr - Option to complete sidewalk gaps on west side of road or provide mid-block crosswalks at apartment complexes to access existing sidewalks along corridor
5. 13 Mile Road rehabilitation - Option to complete sidewalk gaps on north side of corridor
6. According to SECMOG TIP and RTP, Oakland County plans to rehab Novi Road from 8 Mile Rd to 9 Mile Rd in 2025. No sidewalks are planned as part of the project. Option to reconfigure lanes to a consistent 3-lane road and add crossing island near Galway Drive

Based on Novi's Capital Improvement Program - Adopted by City Council on May 8, 2023

Coordination with Capital Improvement Projects

Integrating non-motorized improvements with upcoming construction projects present a compelling opportunity to realize both economic and community benefits. The preceding page outlines upcoming capital improvement projects that included non-motorized elements.

- Under Construction/ Recently Built
- Planned Bike/Ped Improvements
- Other Projects and Opportunities
- Near-Term Network



Near-Term Infrastructure Projects

The Near-Term Plan illustrates projects that can generally be implemented without changing the curb lines and are, for the most part, within the public right-of-way or public lands. Inventory and analysis, along with public input, helped identify the near-term infrastructure projects. These projects focus on completing key gaps in the sidewalk and pathway network, identifying priority crosswalk locations, and featuring a new expressway crossing at Beck Road.

The selection of priority projects was influenced by their capacity to provide access to transit, shopping and dining districts, and their role in connecting residential neighborhoods with essential destinations. Equity, demand, and safety considerations were pivotal factors in the selection process. For further insights into the inventory and analysis process that guided the project selection, as well as the Priority Corridors Composite Map that steered the decision-making process, please refer to the Existing Condition Section.

The prioritization of these projects represents a notable shift in the city's approach to near-term sidewalk and pathway initiatives, effectively supplanting the previous biannual report system. Furthermore, this revised approach incorporates crosswalk enhancements, which play a crucial role in bridging gaps within the sidewalk and pathway network and may offer a more cost-effective near-term solution while addressing more challenging segments is deferred.

While these represent near-term priorities, bicycle and pedestrian improvements should also be incorporated whenever roadways are reconstructed or widened. In such cases, it is advisable to reference the ***Major Corridor Guidelines*** section.

The following pages list the specific near-term infrastructure projects outlined in the plan.

3.1
Miles of Sidewalk

5.3
Miles of Shared Use Pathways

17
Crosswalk Improvements

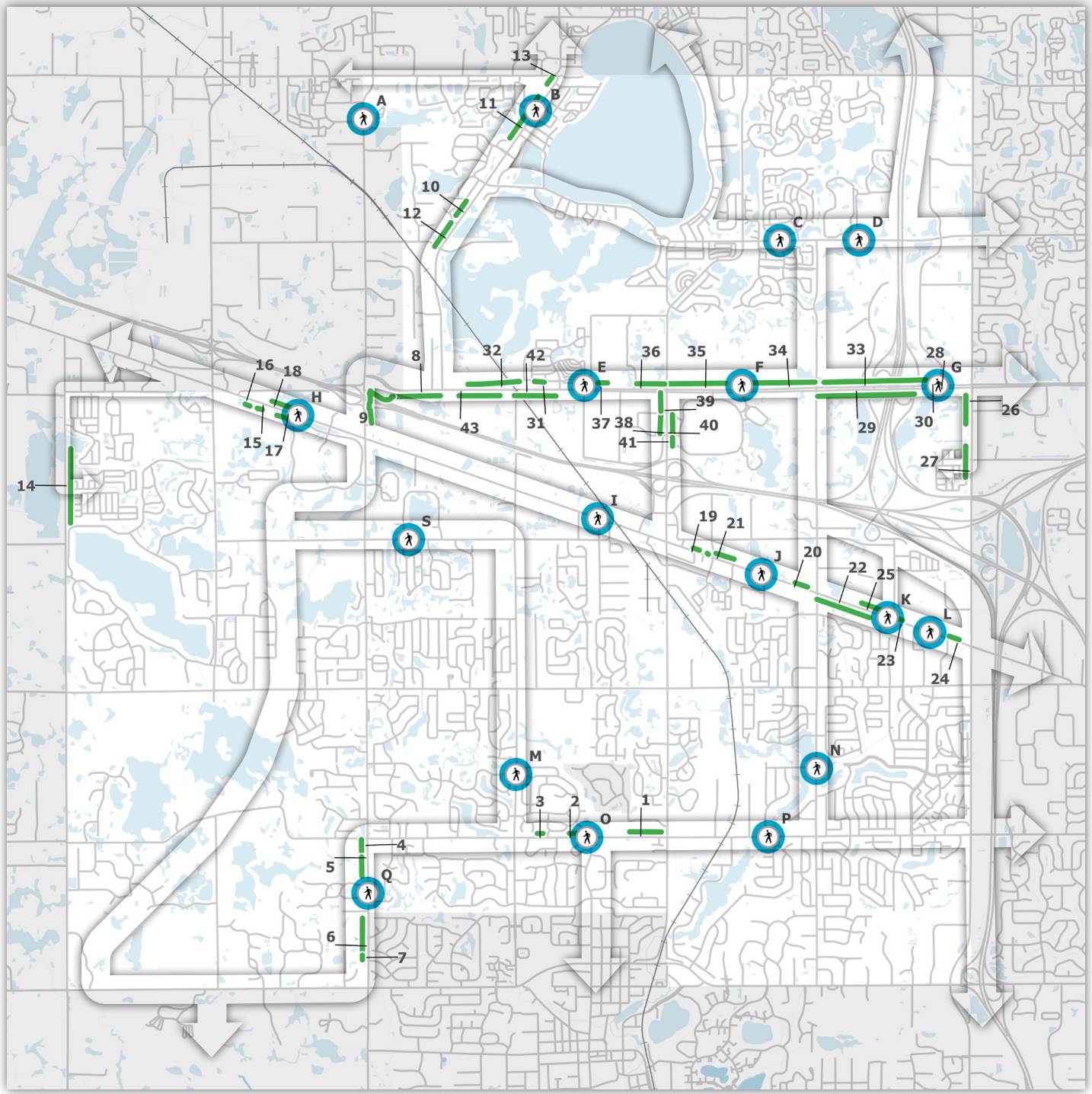
Near-term Infrastructure Projects

The following map uses the Map ID to reference projects listed in the spreadsheet.

Locations for Crosswalk Improvements

Sidewalks and Pathways

Near-Term Network



Map ID	Type	Street Name	Location	Length	Asset ID
1	Sidewalk	9 Mile	North side of 9 Mile west of Novi Road	1122 LF	SKS-024197
2	Shared Use Path	9 Mile	North side of 9 Mile east of Taft Road	273 LF	SKS-023555
3	Shared Use Path	9 Mile	North side of 9 Mile east of Taft Road	200 LF	SKS-023555
4	Shared Use Path	Beck	West side of Beck south of 9 Mile	414 LF	SKS-024174
5	Shared Use Path	Beck	West side of Beck south of 9 Mile	608 LF	SKS-023582
6	Shared Use Path	Beck	West side of Beck south of 9 Mile	1307 LF	SKS-023583
7	Shared Use Path	Beck	West side of Beck south of 9 Mile	165 LF	SKS-023583
8	Shared Use Path	Beck	South side of 12 Mile between Beck and Park	1668 LF	SKS-201189
9	Shared Use Path	Beck / 12 Mile	East side of Beck north of Grand River	2803 LF	SKS-023466
10	Shared Use Path	West Park	West side of West Park between West and Pontiac Lake	628 LF	SKS-023422
11	Shared Use Path	West Park	West side of West Park between West and Pontiac Lake	1780 LF	SKS-023424
12	Shared Use Path	West Park	West side of West Park between West and Pontiac Lake	1020 LF	SKS-023421
13	Shared Use Path	West Park	West side of West Park between West and Pontiac Lake	417 LF	SKS-023425
14	Shared Use Path	Napier	East side of Napier south of 12 Mile	2626 LF	SKS-023456
15	Shared Use Path	Grand River	South side of Grand River between Wixom and Beck	188 LF	SKS-023462
16	Shared Use Path	Grand River	South side of Grand River between Wixom and Beck	186 LF	SKS-023463
17	Shared Use Path	Grand River	North side of Grand River between Wixom and Beck	402 L	SKS-023464

Spreadsheet (page 1 of 4)

Map ID	Type	Street Name	Location	Length	Asset ID
18	Shared use Path	Grand River	North side of Grand River between Wixom and Beck	681 LF	SKS-023461
19	Shared use Path	Grand River	South side of Grand River between Novi and Main	293 LF	SKS-023509
20	Shared Use Path	Grand River	South side of Grand River East between Fountain Park and Meadowbrook	463 LF	SKS-023512
21	Shared Use Path	Grand River	North side of Grand River between Town Center and Meadowbrook	677 LF	SKS-023510
22	Shared Use Path	Grand River	South side of Grand River between Meadowbrook and Joseph	1965 LF	SKS-023504
23	Shared Use Path	Grand River	South side of Grand River between Joseph and Bashian	290 LF	SKS-023503
24	Shared Use Path	Grand River	South side of Grand River between Karim and Haggerty	383 LF	SKS-023501
25	Shared Use Path	Grand River	North side of Grand River between Meadowbrook and Seely	1038 LF	SKS-023499
26	Sidewalk	Haggerty	West side of Haggerty between 12 Mile and Ruston	1019 LF	SKS-201060
27	Sidewalk	Haggerty	West side of Haggerty between 12 Mile and Ruston	1112 LF	SKS-023494
28	Shared Use Path	12 Mile	South side of 12 Mile between M-5 and Haggerty	335 LF	SKS-023124
29	Shared Use Path	12 Mile	South side of 12 Mile between Meadowbrook and Haggerty	3430 LF	SKS-023493
30	Sidewalk	12 Mile	North side of 12 Mile Road between Meadowbrook and Haggerty	100 LF	SKS-023443
31	Sidewalk	12 Mile	North side of 12 Mile Road between Taft and Dixon	349 LF	SKS-023452
32	Sidewalk	12 Mile	North side of 12 Mile Road between Park and Taft	1838 LF	SKS-023453
33	Sidewalk	12 Mile	North side of 12 Mile Road between Meadowbrook and Haggerty	3611 LF	SKS-023444
34	Sidewalk	12 Mile	North side of 12 Mile Road between Novi and Meadowbrook	2613 LF	SKS-023445
35	Sidewalk	12 Mile	North side of 12 Mile Road between Novi and Meadowbrook	2021 LF	SKS-023447

Spreadsheet (page 2 of 4)

Map ID	Type	Street Name	Location	Length	Asset ID
36	Sidewalk	12 Mile	North side of 12 Mile Road between Carlton and Novi	1000 LF	SKS-023450
37	Sidewalk	12 Mile	North side of 12 Mile Road between Dixon and Carlton	329 LF	SKS-023451
38	Shared Use Path	Novi	West side of Novi between 12 Mile Road and Oaks Drive	683 LF	SKS-023474
39	Shared Use Path	Novi	West side of Novi between 12 Mile Road and Oaks Drive	663 LF	SKS-023597
40	Sidewalk	Novi	East side Novi between 12 Mile and I-96	683 LF	SKS-023477
41	Sidewalk	Novi	East side Novi between 12 Mile and I-96	308 LF	SKS-201077
42	Shared Use Path	12 Mile	South side of 12 Mile Road between Taft and Novi	1476 LF	SKS-023472
43	Shared Use Path	12 Mile	South side of 12 Mile Road between Park and Taft	1453 LF	SKS-024425
A	Rectangular Rapid Flash Beacon with Island	Beck Road	North side of intersection at Hickory Street	N/A	N/A
B	Rectangular Rapid Flash Beacon with Island	West Park	North side of intersection at Gateway Rd	N/A	N/A
C	Rectangular Rapid Flash Beacon with Island	13 Mile	East side of intersection at Hemingway Dr/Plateu Dr	N/A	N/A
D	Rectangular Rapid Flash Beacon with Island	13 Mile	East side of intersection at Lenox Park Dr	N/A	N/A
E	Pedestrian Hybrid Beacon with Island	12 Mile	Coordinate with existing signal at Cabaret Dr - coordinate with transit stops	N/A	N/A
F	Pedestrian Hybrid Beacon with Island	12 Mile	Coordinate with existing signal at12 Oaks Mall Rd - coordinate with transit stops	N/A	N/A
G	High Visibility Crosswalk	12 Mile	Incorporate crosswalk into existing signals at Cabot Drive - coordinate with transit stops	N/A	N/A
H	Pedestrian Hybrid Beacon with Island	Grand River	East side of intersection at Providence Parkway - coordinate with transit stops	N/A	N/A
I	Pedestrian Hybrid Beacon with Island	Grand River	West side of intersection at Clark St - coordinate with transit stops	N/A	N/A

Spreadsheet (page 3 of 4)

Map ID	Type	Street Name	Location	Length	Asset ID
J	Pedestrian Hybrid Beacon with Island	Grand River	West side of intersection at Fountain Park Dr - coordinate with transit stops	N/A	N/A
K	Pedestrian Hybrid Beacon with Island	Grand River	Upgrade existing marked crosswalk west of Seely Road intersection - coordinate with transit stops	N/A	N/A
L	Pedestrian Hybrid Beacon with Island	Grand River	West of Karim Blvd - coordinate with transit stops	N/A	N/A
M	Rectangular Rapid Flash Beacon	Taft	North side of White Pines Drive	N/A	N/A
N	Rectangular Rapid Flash Beacon	Meadowbrook	South side of Chattman St - coordinate with new pathway construction through Village Wood Lake Park	N/A	N/A
O	Rectangular Rapid Flash Beacon	9 Mile	Between Plaisance Blvd and N Center St	N/A	N/A
P	Rectangular Rapid Flash Beacon with Island	9 Mile	Between Ennishore Dr and Chase Dr	N/A	N/A
Q	Rectangular Rapid Flash Beacon with Island	Beck	North side of Casa Loma Ct	N/A	N/A

Spreadsheet (page 4 of 4)


STOP

Specific Areas

This section directs our attention to specific areas within the city that hold significant potential for transformation, emphasizing the creation of a vibrant and pedestrian-friendly community.

East Lake Drive and South Lake Drive play pivotal roles as essential routes for both bicyclists and pedestrians. However, they currently lack dedicated facilities for both bicyclists and pedestrians, leading to safety concerns. This section presents feedback on preliminary plan alternatives and outlines the necessary steps to address safety issues and incorporate bicycle and pedestrian infrastructure effectively.

Additionally, how the anticipated City West district, a proposed urban area situated near the intersection of I-96 and Beck Road is integrated into the nonmotorized network is explored. This section focuses on coordination efforts with the City West Design Guide, emphasizing the integration of non-motorized solutions into this proposed district.

Lastly, this section discusses multi-jurisdictional coordination with the City of Northville's Riverwalk Vision.

- East Lake Drive and South Lake Drive
- City West
- Northville's Riverwalk Vision

East Lake Drive & South Lake Drive

East Lake Drive and South Lake Drive, tracing the southern and eastern shores of Walled Lake, serve as crucial routes for both bicyclists and pedestrians. East Lake Drive features two lanes with bike lanes in both directions, while South Lake Drive consists of two lanes with a segment of pathway connected by a narrow one-way bike lane. Neither road consistently provides sidewalks for pedestrians, leading to pedestrians walking in the bike lane and on the roadway. Also, many pedestrians and bicyclists travel in groups that spill out into the motor vehicle lanes from narrow bike lanes. Both roadways experience significant non-motorized use. Major challenges include a highly variable right-of-way and many physical constraints.

To address the safety concerns of bicyclists and pedestrians along this corridor, alternative solutions for incorporating dedicated bike and pedestrian facilities were initially presented in the preliminary plan. Feedback from the community underscored their primary concerns include excessive speeding of motorized traffic, high motorized traffic volumes, through truck traffic, and aggressive driving including passing where prohibited. The community indicated that they are willing to explore potential remedies beyond those presented, including the implementation of one-way traffic flow and/or traffic diverters.

It is important to recognize the contrasting perceptions of what these corridors represent. From a planning perspective, these roads are classified as Major Collectors, which ties adherence to specific standards to eligibility for Surface Transportation Program funds. Conversely, residents view these corridors as local residential roads and seek measures to reduce speeds and traffic volumes. South Lake Drive is also a key route for emergency vehicles traveling from the fire station on 13 Mile Road to areas along West Park Drive.

Solving the details of this corridor are beyond the scope of this project. A comprehensive traffic study is recommended to thoroughly examine this corridor and include more focused public engagement. Such a study will yield insights into traffic patterns, safety concerns, and the required infrastructure adjustments to effectively meet the needs of bicyclists and pedestrians.

Based on initial community feedback, the study should investigate the feasibility of transforming these roads into one-way routes, with East Lake Drive becoming northbound and South Lake Drive becoming westbound, while reallocating any available right-of-way to benefit dedicated bicycle and pedestrian facilities.

The following pages showcase the feedback collected on the alternatives presented during the preliminary planning phase.

Preliminary Plan Existing Conditions Map

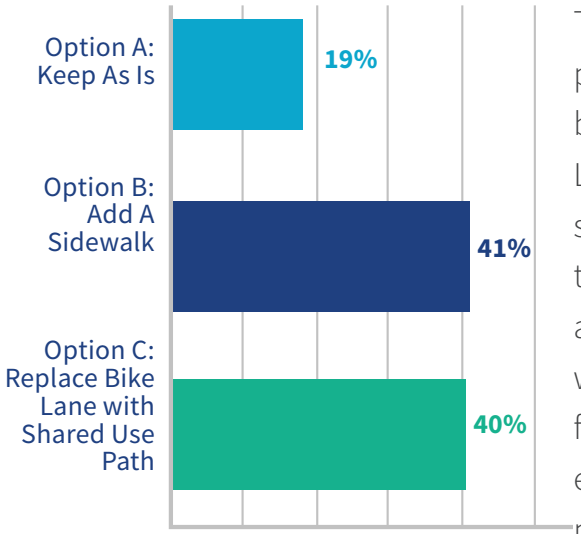
- 66’ Right-of-way
- 35’ Right-of-way
- 50’ Right-of-way
- Existing Sidewalks and Pathways

Preliminary Plan Feedback For South Lake Drive

Preliminary Plan Alternatives were developed for South Lake Drive to work within the general framework of the existing roadway. Minimal bicycle and pedestrian facilities were proposed due to lack of available right-of-way and the location of utilities. Based on the survey, over 80 percent of respondents expressed a desire for non-motorized improvements along this corridor.

Specific concerns were raised regarding safety where the Shared Use Path from Lakeshore Park meets the east bound bike lane on South Lake Drive and further to the east where the one-way bike lane abruptly transitions back to a Shared Use Path. The elevation change and curve of the roadway limits sight-lines at these transitions adding to the safety concerns. There is significant pedestrian and bicycle activity going in both directions in the single narrow east-bound bike lane.

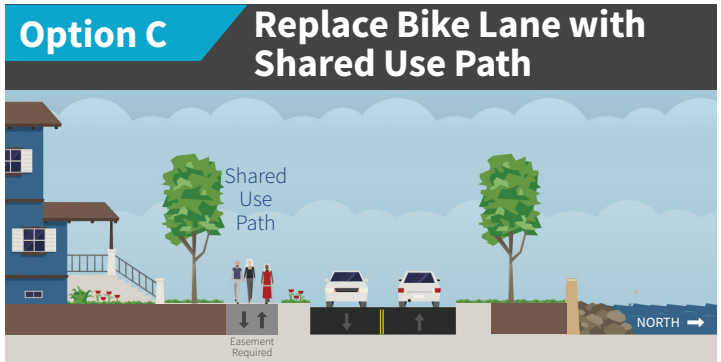
While some adjacent property owners were willing to provide additional ROW to accommodate bicycle and pedestrian facilities, an approximately equal number were adamantly opposed to any expansion of the roadway width. Many of the residents saw the benefits of a one-way conversion outweighing the drawbacks.



There was also interest expressed in providing a non-motorized connection between South Lake Drive to West Lake Drive. This is the only natural shoreline of the entire lake. It includes the structures that set the lake level and many wetlands. Any connection would need to respect both the natural features as well as the functional elements. The City is discussing potential solutions with EGLE.

- Existing one-way bike lane along the south side of the road
- No existing sidewalks

- Add narrow sidewalk along north side of curb
- Keep existing one-way bike lane on south side
- Existing right-of-way available
- A few easements may be required
- New crosswalk at Lakeshore Park



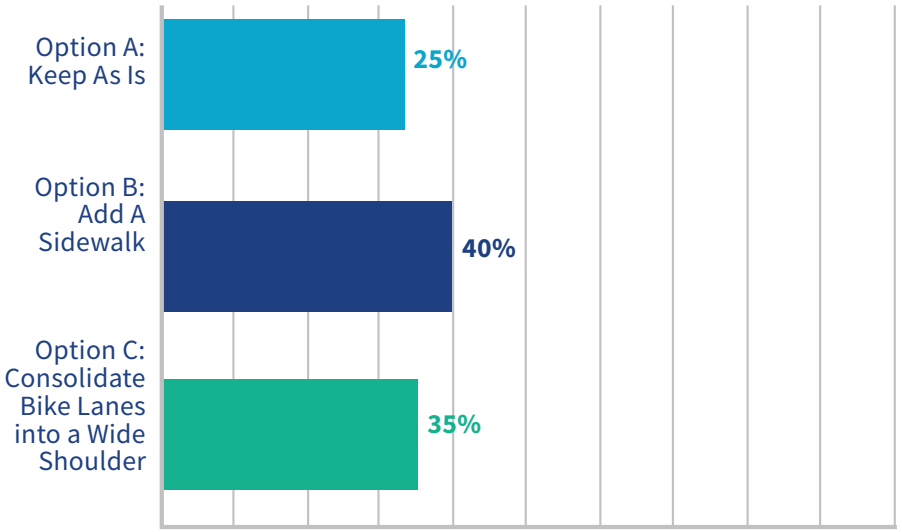
- Replace one-way bike lane with new Shared Use Path for bicycles and pedestrians
- Right-of-way not available, would required easement from residents
- Need to work around utility poles and mailboxes

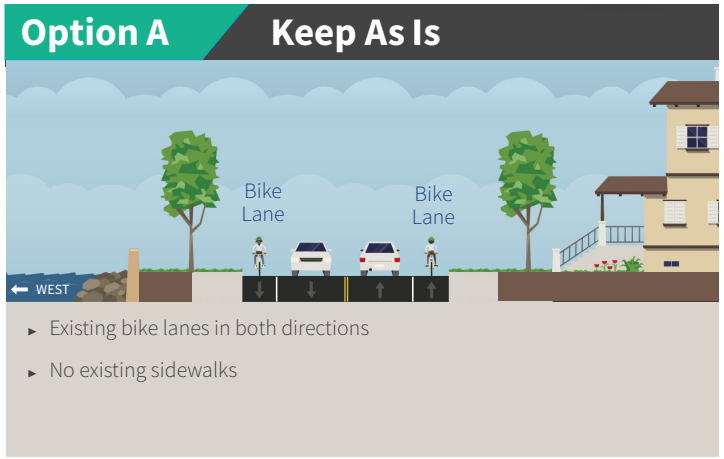
Preliminary Plan Feedback For East Lake Drive

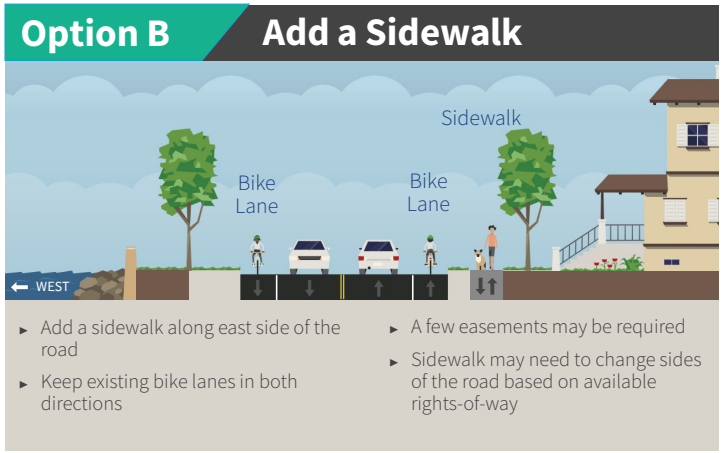
Preliminary Plan Alternatives were developed for East Lake Drive to work within the general framework of the existing roadway. Although East Lake Drive offers more available space than South Lake Drive, the proposals for facilities were constrained by limitations in right-of-way and the location of utilities. Based on the survey, 75 percent of respondents expressed a desire for non-motorized improvements along this corridor.

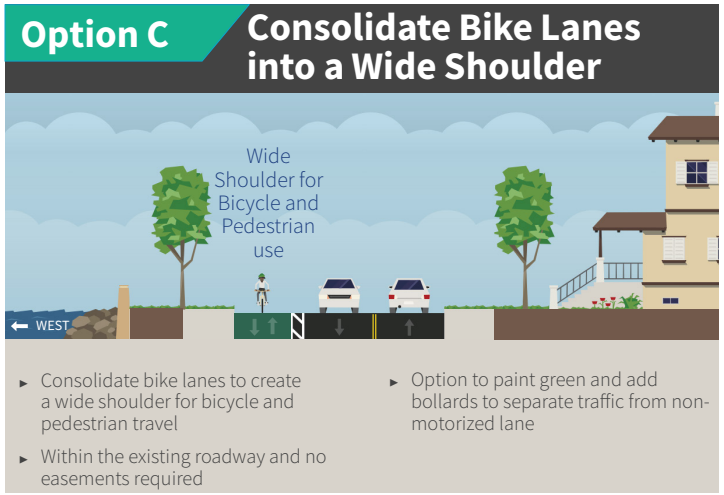
Specific concerns were raised about widening the roadway or shifting motor vehicle traffic any closer to the residences along the roadway. There was also resistance to the idea of obtaining any additional ROW for a sidewalk or expansion of the bike lanes. There were also concerns that widening the roadway to make more room for bicyclists and pedestrians would increase motor vehicle speeds.

Given the proximity of Novi Road and Paramount Street, many of the residents saw the inconvenience of a one-way conversion as minimal and more than offset by benefits of reducing cut-through traffic, reducing speeding, and providing facilities for pedestrians and bicyclists.









City West

The anticipated City West district, located southeast of the I- 96 and Beck Road intersection along Grand River Avenue, holds immense potential as a vibrant, mixed-use urban area. The City West Design Guide, introduced in 2023, emphasizes the creation of a high-density, walkable environment with a strong focus on pedestrian-friendly spaces, building orientation, and outdoor amenities, all aligned with design guidelines. To fully realize this vision, the seamless integration of bicycle and pedestrian infrastructure is imperative. This integration becomes particularly crucial as it supports the implementation of new transit routes along Grand River Avenue and ensures convenient access for all residents and visitors.

In light of the area's layout, frequent pedestrian road crossings will be essential to provide safe non-motorized access to the site. To address this, the incorporation of pedestrian hybrid beacons with crossing islands at mid-block locations emerge as key safety measures. While pedestrian bridges are an option, it's important to acknowledge that they pose challenges, including a large footprint to accommodate ADA ramps and that many individuals will be hesitant to use the ramps and will still cross at street level. If the developer desires a pedestrian bridge over the Grand River, a more successful approach involves integrating a covered pedestrian bridge with the buildings, making them more accessible and appealing to users, as was done in the Somerset Collection Mall in Troy.

City West Design Guide Recommendations

Pedestrian Circulation:

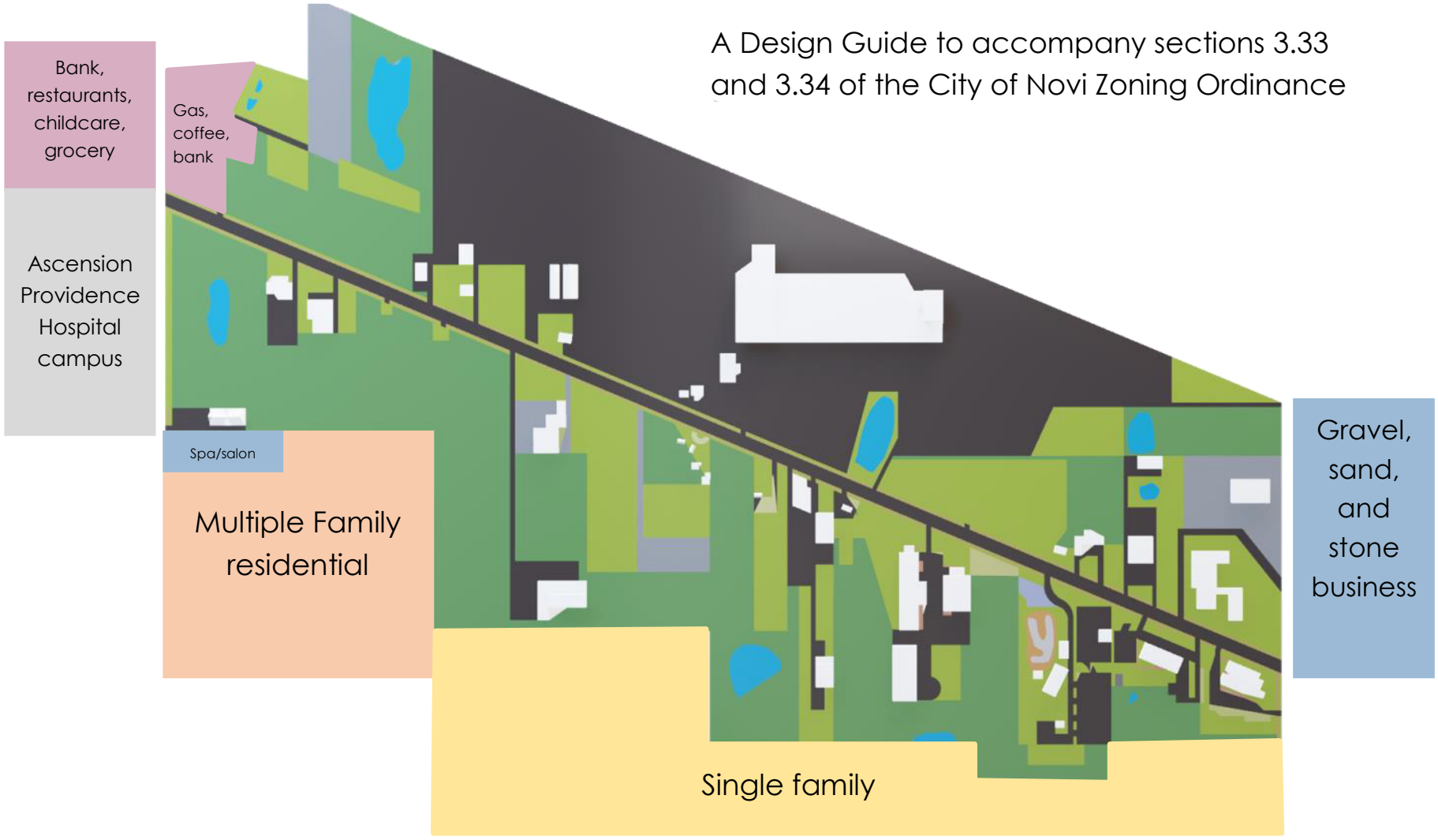
- Create pedestrian-friendly spaces with outdoor amenities.
- Place parking to the side or rear of buildings.
- Consolidate driveways on major streets.
- Allow on-street parking on secondary streets.
- Align buildings parallel to pedestrian streets.
- Use attractive colors and materials for entrance doors.
- Add plazas, seating, lighting, and other amenities.
- Use clear signage for pedestrian routes.

Bicycle Amenities:

- Provide bicycle parking meeting or exceeding standards.
- Consider adding bicycle fix-it stations.

City West Design Guide

A Design Guide to accompany sections 3.33 and 3.34 of the City of Novi Zoning Ordinance

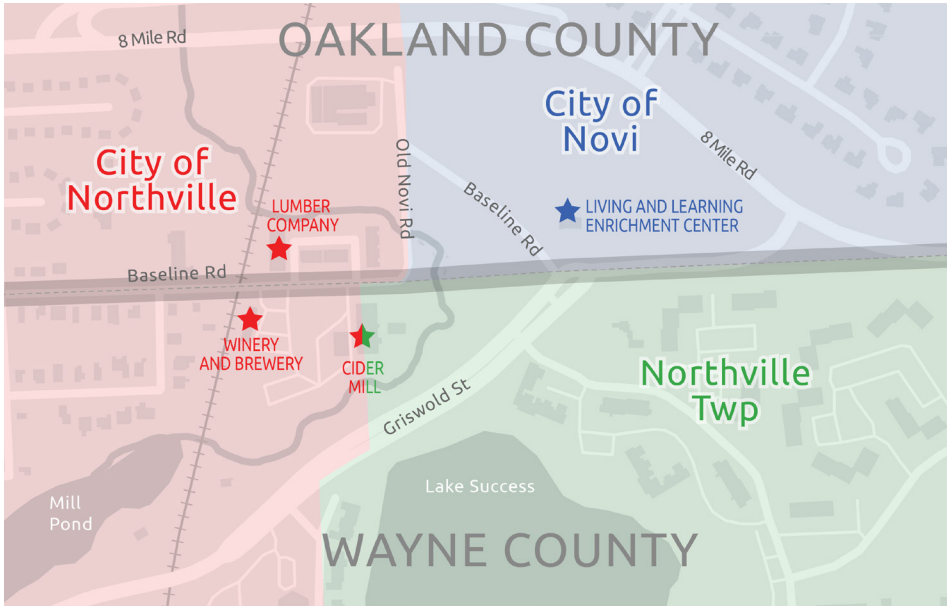


Northville's Riverwalk Vision

Northville's Riverwalk Vision is a long-term project aimed at connecting parks and destinations within the community by tracing segments along the Middle Rouge River. One of the primary objectives is to establish a connection between the City of Northville and Rotary Park in Novi. However, this route presents several challenges, including issues related to available rights-of-way, infrastructure costs, environmental considerations, and the necessity for coordination with external organizations.

Recognizing that some parts of the Riverwalk Vision will take several years to implement, alternative near-term routes have been identified in the Northville Non-motorized Plan 2023 Update. These routes also fulfill the purpose of addressing everyday non-motorized mobility.

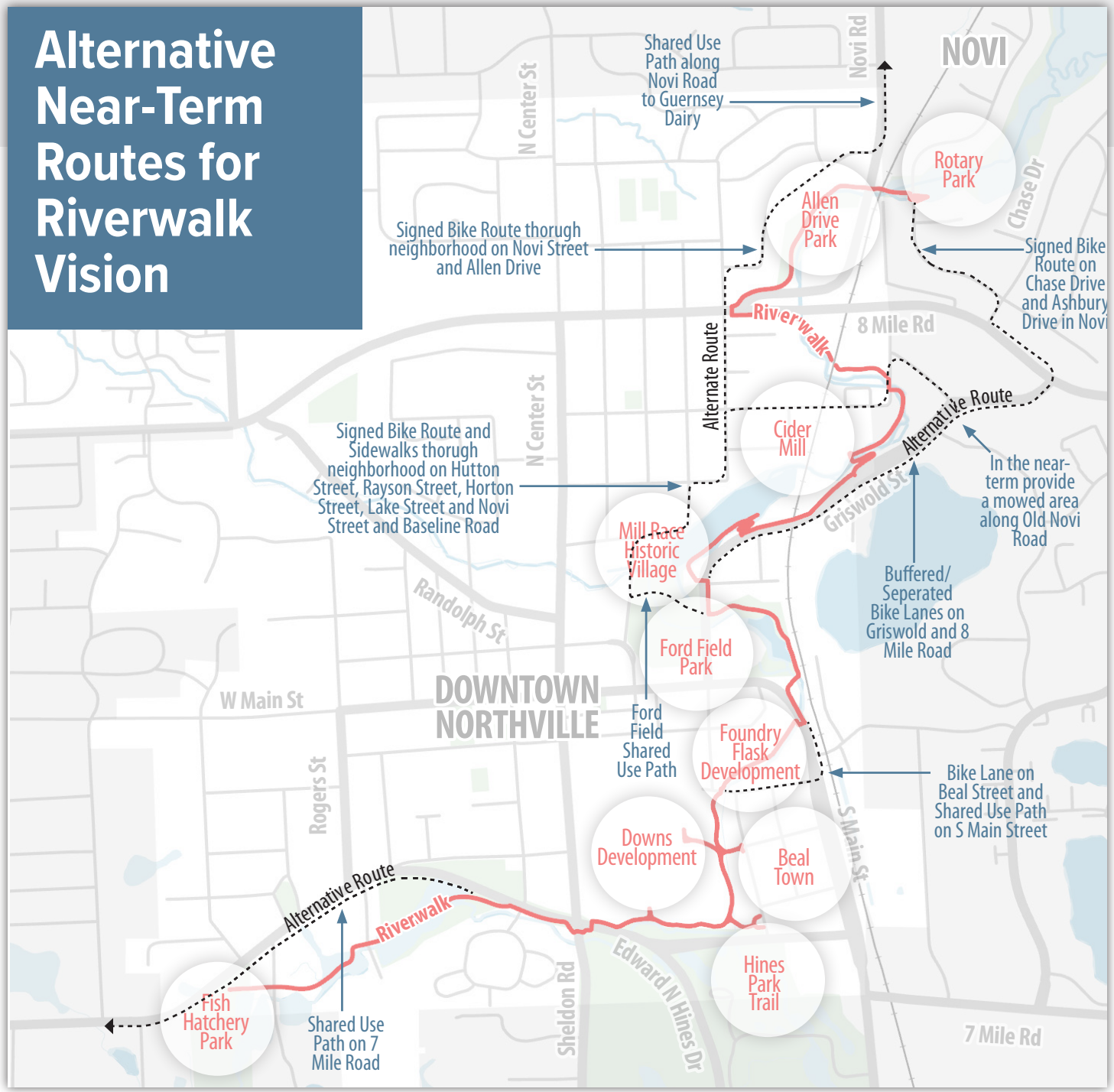
Successful realization of the Riverwalk Vision will require collaboration with multiple entities, including the Oakland County Road Commission, Wayne County Road Commission, City of Northville, City of Novi, and Northville Township. Coordinating actions and planning on Griswold Road, Old Novi Road, Baseline Road and 8 Mile Road is essential due to the complexity of transportation issues involving these various jurisdictions.



While there is a strong desire for a pedestrian connection along Old Novi Road to the Cider Mill Area, the challenging terrain, including steep grades, tight curves, and truck traffic, currently limits viable options. Additionally, the Living and Learning Enrichment Center offers an opportunity for non-motorized access. In the short term, it is recommended to establish a cleared/mowed area alongside the road to facilitate access. A long-term bike-ped connection between Old Novi Road, Baseline Road and Griswold Road should be actively pursued.

Alternative Near-Term Routes for Riverwalk Vision

Refer to the **Northville Non-motorized Plan 2023 Update** for details on the Riverwalk Vision and specific corridor recommendations for Griswold Street and 8 Mile Road.




STOP

Implementation

The successful realization of an active mobility plan hinges upon the effective execution of proposed strategies and the availability of adequate funding mechanisms. While the planning stages lay the foundation, the true transformation occurs during implementation. As financial resources play a critical role in shaping the feasibility and sustainability of any project, this chapter addresses the diverse avenues of funding that can be harnessed to support the implementation of the plan.

- Implementation Framework
- Funding Strategies
- Maintenance

Implementation Framework

Whenever any improvement is made to a roadway for motorized traffic, it is an opportunity to economically implement active mobility improvements. Guidelines for resurfacing, restoration, and rehabilitation projects recommend addressing safety concerns as part of the project even if it is outside of the scope of primary purpose of the improvement such as resurfacing the roadway. Given the 20-to-25-year life-span of a typical roadway reconstruction project, this is the only way to create a complete street network.

On many road segments in Novi, the most basic pedestrian and bicycle facilities and safety measures are absent. To improve or expand facilities for motorized traffic while neglecting the safety of active mobility users is unconscionable and flies in the face of complete streets policy. In general, Novi has done a good job of integrating elements such as sidewalks and sidepaths into roadway projects but there is room for improvement. The following is a measured approach to incrementally implementing the major road guidelines as part of roadway projects. This will require close coordination with the Road Commission for Oakland County, Wayne County Road Commission and MDOT.

Pavement Marking

Depending on the nature of the pavement markings (paint vs. thermoplastic) these improvements are made at least once a year or at least every three years. Often pavement marking is simply a repeat of what is currently in existence. But standards have changed over time and there are markings that should be reconfigured or upgraded. For example, there are places where the bike lane is to the right of a designated right-turn lane. The first step would be to evaluate all current pavement markings to see if they comply with current best practices. Then based on that evaluation the following improvements should be incorporated into all pavement marking projects:

- **Bike Lanes and Paved Shoulders.** Place bike lanes appropriately, using pocket bike lanes between through and designated right-turn lanes. Narrow travel lanes to 11' wide to maximize the width of paved shoulders / bike lanes. Use dashed bicycle intersection crossings with green paint as per the guidelines. Add Bike Boxes and Two-Stage Turn Queue Box at intersections as per the guidelines.
- **Crosswalks.** Upgrade parallel line marked crosswalks to high-visibility ladder style crosswalks with 1' bars and 2' spacing.

Source: FHWA Crosswalk Visibility Enhancements

Resurfacing, Restoration, and Rehabilitation (3R) Projects

These projects are done throughout the 20-to-25-year lifespan of a typical roadway. These projects should incorporate the most pressing safety measures. Add all safety elements within the road ROW including:

- **Bike Lanes.** In many cases some combination of narrowing the travel lanes and widening the shoulder will be necessary. Buffered bike lanes using pavement markings and delineator posts may be used as an interim measure where separated bike lanes are called for in the long-term plan. Incorporate appropriate safety and regulatory signage.
- **Completing Sidewalk and Sidepaths.** Gaps should be filled based on the guidelines but the existing facilities do not necessarily need to be brought up to current standards. If though, the existing Sidewalk or Sidepath is also in need of repair, those facilities should upgraded as per the guidelines. Incorporate appropriate safety and regulatory signage.
- **Mid-block Crosswalks.** In most cases, this will require widening the roadway and/or removing by-pass or acceleration/deceleration lanes. The mid-block crosswalks should be constructed as per guidelines. Incorporate appropriate safety and regulatory signage, beacons, and signals.
- **Intersections.** Depending on the active mobility facilities approaching the intersection, upgrade the intersection to accommodate the intersection treatments as per the guidelines. Incorporate appropriate safety and regulatory signage.

If roadway lighting is a part of the 3R projects, address the lighting at crosswalks and intersections. Evaluate the feasibility of incorporating solar based lighting at intersections and mid-block crosswalks.

Roadway Widening

All facilities and other key elements should be incorporated into the project.

Safety Projects

Any spot or corridor based motorized safety improvements should also incorporate all active mobility safety facilities within the road ROW as outlined under the 3R projects. Address lighting at crosswalks and intersections.

New Construction / Reconstruction (4R) Projects

All facilities and other key elements should be incorporated into the project.

Capital Improvement Plan (CIP) Projects

Standalone active mobility CIP projects should prioritize implementation of facilities identified in the Near-term Network. Other non-transportation-related CIP projects such as underground utility work that will require the removal of existing active mobility infrastructure, the active mobility infrastructure should be replaced as per the guidelines. When non-transportation related CIP utility projects clear a linear path within a road right-of-way where a Sidewalk or Sidepath is proposed, the utility project should include the construction of the sidewalk or Sidepath as per the guidelines.

CIP projects are also an appropriate place to address lighting, landscaping, amenities, and wayfinding projects.

Funding Strategies

To be eligible for non-motorized grants, most projects must align with AASHTO guidelines, ensuring safety and design standards. Wealthier communities, like Novi, are often expected to provide an over match in funding due to their higher socioeconomic status and lower percentage of at-risk populations. This entails a more substantial contribution to projects.

MDOT Transportation Alternatives Program (MDOT TAP):

- Funds projects that improve pedestrian and bicycle facilities like sidewalks, bike lanes, and trails. It also supports streetscape enhancements, historic preservation, safe routes to school, and other initiatives promoting active transportation and community livability. Local agency safety funds may also be available through MDOT. MDOT local safety funds may also be available.

SEMCOG Transportation Alternatives Program (SEMCOG TAP):

- Finances projects that enhance pedestrian and bicycle infrastructure, trails, streetscape improvements, and safe routes to school initiatives. While similar to the MDOT TAP, the SEMCOG TAP is more regionally focused and aligns with local priorities, fostering community-driven improvements that cater to the unique needs of the Southeast Michigan area.

Safe Routes 2 School (SR2S):

- Focuses specifically on improving the safety and accessibility of routes that students take to school. Funding can be used for projects that enhance sidewalks, crosswalks, bike lanes, traffic calming measures, and educational initiatives to encourage walking and biking to school.

Michigan Resources Trust Fund (Trust Fund):

- Supports projects that enhance outdoor recreation and natural resources, including recreation trails, trail amenities and property acquisition. Funding from this source contributes to improving pedestrian and cyclist access to natural areas and recreational facilities.

Act 51 Sec. 10k:

- Funding focuses on projects that enhance pedestrian and bicycle safety within transportation corridors, including planning, education and construction. This funding opportunity supports improvements like crosswalk upgrades, sidewalk enhancements, and traffic calming measures that prioritize non-motorized safety.

Ralph C. Wilson, Jr. Foundation:

- Provides funding to enhance parks and trails, creating vibrant spaces for community engagement. This includes investments in pedestrian and bicycle infrastructure, trail development, and amenities that promote active lifestyles and accessible outdoor spaces.

General Fund, Mileages, TIFA/DDA:

- General funds, special assessments, tax increment financing authorities (TIFA), and Downtown Development Authorities (DDA) can be used to fund a wide range of non-motorized elements. These funding sources can be may support initiatives like sidewalk improvements, bike lane installations, streetscape enhancements, and other pedestrian-friendly amenities.

Foundations & Business:

- Foundations and businesses contribute to non-motorized projects by providing grants and sponsorships for infrastructure development, community engagement, and safety initiatives. These funds can support a variety of non-motorized elements, but typically have specific criteria and special purpose funds can be created.

Maintenance

Maintenance of non-motorized facilities is crucial to ensure the safety, accessibility, and aesthetics of public spaces. Scheduled preventative maintenance is generally more cost effective as well as easier to budget for than relying on reactionary maintenance. The City should establish a detailed maintenance plan that specifies standards, schedules, and quality control based on best practices.

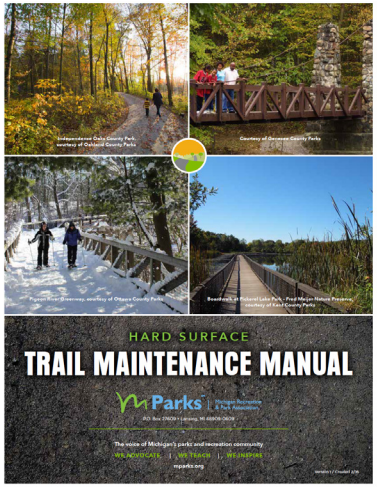
To better address unscheduled maintenance needs that arise from storms, vandalism, crashes, etc., The city should expand awareness of the request assistance text program by including information about the program on signs along key non-motorized facilities.

The following pages outline key yearly and proactive maintenance tasks to be performed on and along non-motorized facilities and associated amenities.

Trail Maintenance Resources

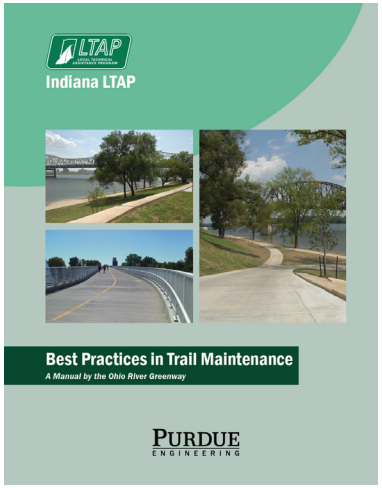
- **Michigan Recreation and Parks Association Hard Surface Trail Maintenance Manual**

  This Michigan specific document for trail managers is designed to help develop a detailed plan and budget for ongoing and long-term trail management.



- **Indiana Local Technical Assistance Program Best Practices in Trail Maintenance**

  This manual, prepared for the Ohio River Greenway, includes information on prioritizing maintenance needs and quick reference for commonly encountered maintenance needs.



Winter Maintenance Resource

- **Toole Design Resource Guide on Winter Maintenance**

  Information on approaches to snow and ice removal on non-motorized facilities that address environmental concerns, equipment, transit, and ADA requirements.


TOOLE DESIGN

RESOURCE GUIDE // 01

Winter Maintenance

TOOLEDESIGN.COM

December 2019

Maintenance Cost Resource

- **Rails-to-Trails Conservancy's Yearly Routine Rail-Trail Maintenance Costs Per Mile**

  This document, typically updated yearly, provides costs per mile based on six trails in different contexts from around the country.


Yearly Routine Rail-Trail Maintenance Costs Per Mile

rails-to-trails conservancy

	Armstrong Trail	MoPac Trail West	Northern Rail Trail	Panhandle Pathway	Sammamish River Trail	Schuylkill Banks
Location	Western Pennsylvania	Lincoln, Nebraska	Central New Hampshire	Northern Indiana	Seattle, Washington	Philadelphia, Pennsylvania
Trail Surface	Stone Dust-Rural	Concrete-Suburban	Stone Dust-Rural	Asphalt-Rural	Asphalt-Suburban	Asphalt-Urban
Visitation	69% increase from 2019 to 2020	N/A	2019: 150,000 average total	N/A	2018: 572,832 Total (278,735 Peds, 294,097 Bikes)	2019: 1,726,215 user trips
Primary Maintenance Performed By	Nonprofit staff and volunteers	Park district staff	State staff and volunteers	All volunteer	County staff	City and nonprofit staff
Length Studied	36 miles	5 miles	34 miles	23 miles	10 miles	1 mile
Total Yearly Cost Per Mile	$2,377	$679 (not including trailheads)	$1,330	$967	$7,819	$102,322
Volunteer Hours	1,938	32	355	681	0	1,228
Surface and Structures	2468-foot tunnel and seven bridges	Six bridges inspected on a five-year rotation	Winter sanding a safety challenge at crossings	One 230-foot bridge	No bridges	Trail located between active tracks and river
Vegetation	Emerging high-tree canopy over trail	No tree canopy reduces costs significantly	Japanese Knotweed overtaking native species	Controls root damage by trenching	Trenching not allowed per archeology	Extensive grass areas and plantings
Level of Amenities	Low	Low	Low	Low	High, with one fixed toilet and three temporary	Very high and very rich level of design
Cleanliness and General Comments	"Pack it in, pack it out" policy	Removes snow after 2 inches	Most significant impact is from beavers	Occasional dumping of tires/mattresses	Has 18 trash receptacles at trail heads	Trash receptacles emptied daily, floods annually

Created 2019. Updated 2022

railstotrails.org

Thank you to the Pennsylvania Department of Conservation and Natural Resources for their financial support

pennsylvania

Seasonal Scheduled Maintenance

Spring

Sidewalks and Shared Use Pathways:

- Sweep pathways of all debris accumulated over the winter
- Collect trash & recyclables weekly

Boardwalks:

- Sweep boardwalk of all debris accumulated over the winter
- Inspect railings and repair any winter damage

Mid-Block Crossings

- Sweep Crossing Islands of all debris accumulated over the winter

Roadways:

- Scrape excess soil and vegetation from shoulders and bike lanes
- Sweep paved shoulders and bike lanes monthly
- Update painted pavement markings

Amenities:

- Clear debris from seating/rest areas
- Turn on water faucets and repair any damage
- Clear out trash and debris from planting beds and rain gardens
- Mulch planting beds and plant annuals
- Refill pet waste bags every other week
- Inspect path and intersection lighting
- Replace pump gaskets and replace any missing tools in bike repair stands
- Mow grass every two weeks

Summer

Sidewalks and Shared Use Pathways:

- Remove encroaching soil and grass/vegetation from the trail surface
- Trim overhead and adjacent vegetation
- Sweep pathways monthly

Boardwalks:

- Trim encroaching overhead and adjacent vegetation

Mid-Block Crossings

- Inspect and maintain/replace signage and delineator posts as necessary

Roadways:

- Sweep paved shoulders and bike lanes monthly

Amenities:

- Mow as needed
- Weed planting beds and rain gardens
- Refill pet waste bags every other week
- Collect trash & recyclables weekly
- Replace any missing tools in bike repair stands
- Mow grass every two to three weeks as neccessary

Fall

Sidewalks and Shared Use Pathways:

- Clear pathway of fallen leaves mid-fall and end of season

Boardwalks:

- Clear boardwalks of fallen leaves mid-season and end of season

Mid-Block Crossings

- Clear mid-block crossings of debris

Roadways:

- Sweep paved shoulders and bike lanes monthly

Amenities:

- Weed planting beds and rain gardens
- Plant annuals
- Shut off water faucets and blow out water lines
- Refill pet waste bags every other week
- Collect trash & recyclables weekly
- Replace pump gaskets and replace any missing tools in bike repair stands
- Mow grass every two weeks

Winter

Sidewalks and Shared Use Pathways:

- Clear snow accumulations over 1/2" from all paved off-road trails, sidepaths, and sidewalks along primary roads
- Salt/sand as necessary for ice control
- Collect trash & recyclables every two weeks or as necessary

Boardwalks:

- Clear all snow accumulations over 1/2"
- Sand as necessary for Ice Control (avoid salt over wetland areas and waterway crossing if possible)

Mid-Block Crossings

- Clear all snow accumulations over 1/2"
- Salt/Sand as necessary for Ice Control

Roadways:

- Clear bike lanes and paved shoulders of all snow accumulations over 1/2"
- Salt/Sand as necessary for Ice Control

Amenities:

- Update wayfinding signs as necessary based on new construction
- Refill pet waste bags every other week
- Clear snow from all Bus Stops

Proactive Scheduled Maintenance

Every Two Years

Address 1/2 of the City Each Year

Sidewalks and Shared Use Pathways:

- Clean out culverts and ditches
- Repair potholes and broken pavement
- Crack seal pathways
- Update thermoplastic pavement markings

Boardwalks and Bridges:

- Inspect and repair any loose wood decking
- Clean wood decking of mold/mildew to assure good traction
- Inspect gaps at abutment and adjust trail grade as necessary
- Conduct structural engineering inspection and perform any neccessary critical repairs

Mid-Block Crossings

- Inspect all signs, signals, and delineator posts and repair or replace as necessary

Roadways:

- Crack seal bike lanes

Amenities:

- Inspect and repair site furnishings as necessary

Every Five Years

Address 1/5 of the City Each Year

Sidewalks and Shared Use Pathways:

- Inspect and rate surface condition
- Inspect for positive drainage of surface
- Repair surface defects
- Grind uneven concrete joints
- Sealcoat asphalt pathways

Boardwalks and Bridges:

- Inspect and repair wood decking and railings
- Sealcoat boardwalk decking and railings

Mid-Block Crossings

- Inspect and repair curbs and walkways

Roadways:

- Sealcoat asphalt paved shoulders and bike lanes

Amenities:

- Inspect and replace plantings as necessary
- Inspect and repair kiosks and interpretive signage as necessary

Every Ten Years

Address 1/10 of the City Each Year

Sidewalks and Shared Use Pathways:

- Perform an ADA assessment and address any critial issues
- Resurface asphalt pathways

Boardwalks and Bridges:

- Inspect and repair concrete decking
- Repaint all metal elements

Mid-Block Crossings

- Replace signs as necessary to meet reflectivity standards
- Upgrade beacons as necessary to meeting current standards

Roadways:

- Resurface asphalt shoulders and bike lanes

Amenities:

- Inspect and replace site furnishings as necessary
- Inspect and replace bike repair stations as necessary

Every Twenty to Twenty Five Years

Sidewalks and Shared Use Pathways:

- Reconstruct asphalt pathways

Boardwalks and Bridges:

- Reconstruct boardwalks and bridges, repairing or replacing abutments and pilings as neccessary

Mid-Block Crossings

- Reconstruct mid-block crossing curbs and pavement

Roadways:

- Reconstruct intersections

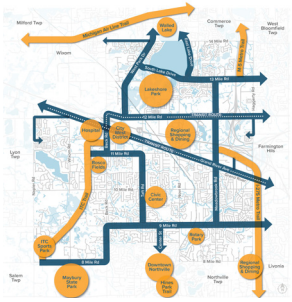
Amenities:

- Replace kiosks and interpretive signage

Active Mobility Network Map

Complementary to the Active Mobility Plan Report, the Active Mobility Network Map provides a comprehensive visual depiction of the plan's components. This poster-sized map offers an overarching perspective, illustrating how all elements converge and can serve as a valuable tool for steering future planning discussions. Furthermore, the Geographic Information Systems (GIS) underpinning this map can be integrated with the city's existing database, enhancing data accessibility and utilization.

Active Mobility Plan 2023



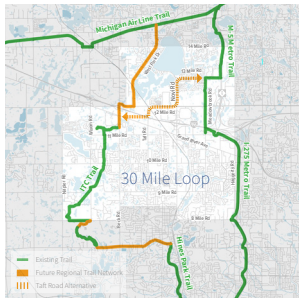
Near-Term Network

The Near-Term Network is a set of projects within public areas, requiring minimal road changes, aimed at creating a continuous network for reaching key destinations and trails in the city. It emphasizes walking and biking using existing facilities and consists of three main components:

Neighborhood Greenway Network
A seamless walking and biking path with added features for a better experience.

Connecting to Transit
Making it safe and easy for pedestrians and cyclists to reach new transit routes.

Improved Access to Shopping and Dinning
Creating a friendly environment that lets people easily walk or bike to businesses from the street.



Regional Trail Network

The Active Mobility Plan aims to connect Novi to the broader regional trail network, potentially creating a 30-mile trail loop. These connections include creating a trail link across the I-96 interchange at Beck Road with Wixom, closing sidepath gaps along West 12 Mile and West Park Drive to West Pontiac Trail, and collaborating with Walled Lake to connect to the Michigan Air Line Trail. Additionally, coordination with Maybury State Park and support for pathway connections along 7 Mile Road to Hines Park Trail are emphasized, along with actively seeking opportunities for non-motorized connections across I-96 at Taft Road with future development.

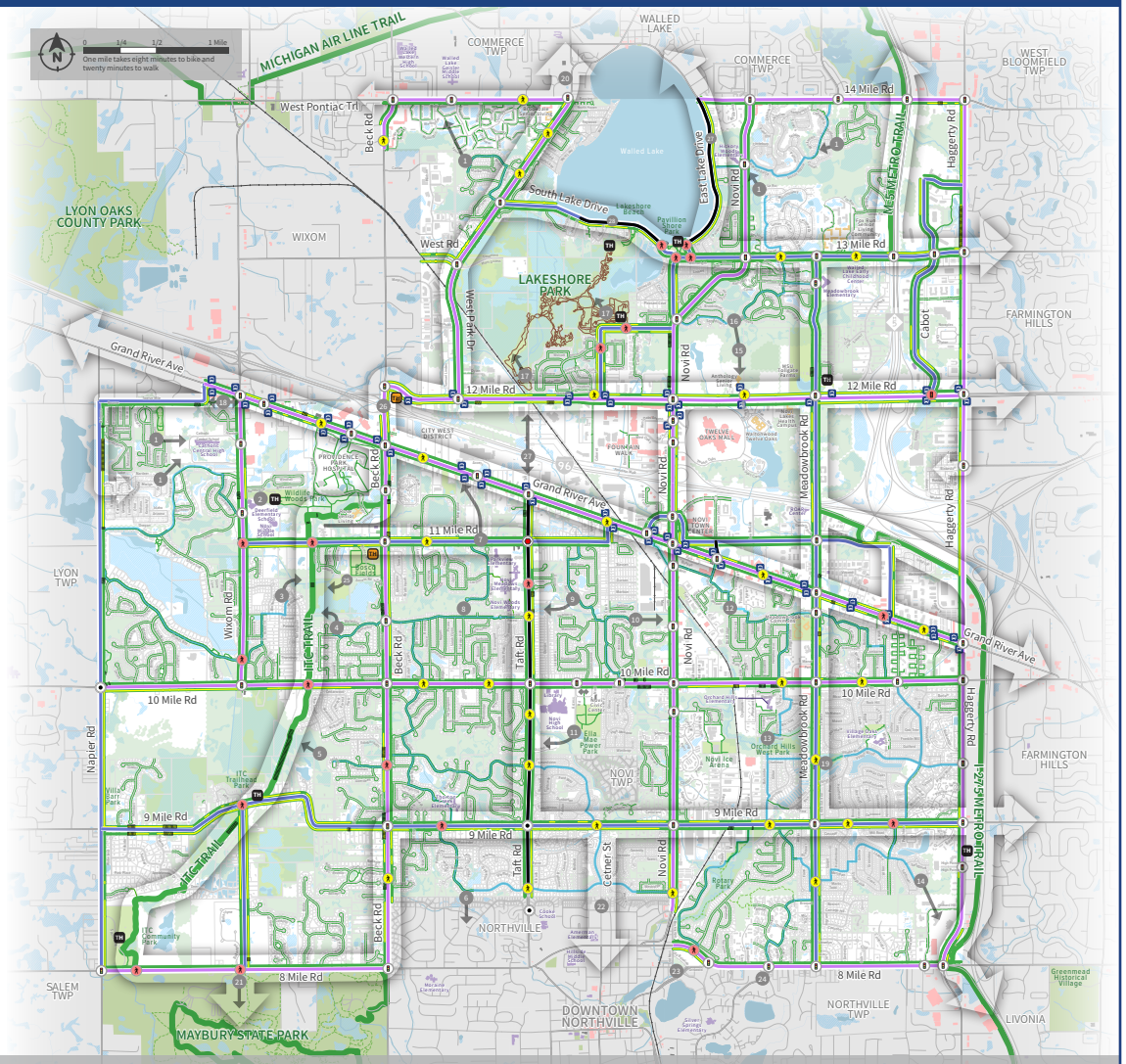
Major Corridor Classifications

Major Roadway Classifications help determine the features to enhance active mobility on different road types in Novi. They serve as a framework for applying current best practices to enhance safety and promote bicycle and pedestrian mobility. These classifications should be consulted when a road is undergoing reconstruction or widening to ensure that it operates as a complete street.

Crosstown Corridors
These roads have moderate speeds and traffic volumes, primarily providing access to residential areas.

Suburban Corridors
These roads are characterized by higher-speed and greater traffic volumes. They serve as access routes to a combination of local commercial and residential areas

Multi-Modal Thoroughfares
These are the highest-speed and highest-volume roads within the city, primarily serving as through routes and providing access to regional commercial areas.



Legend:

- Signalized Intersection
- Stop-controlled Intersection
- Roundabout
- Mid-block Crosswalk
- Upgrade Existing Crosswalk
- New Crosswalk Location
- Existing Trailheads
- Proposed Trailheads
- SMART Transit Stops
- Sidewalks and Pathways
- Regional Trails
- Mountain Bike Trails
- Hiking/Natural Trails
- Bike Lanes
- Boardwalk
- Sidewalk and Pathway Gaps
- Proposed Local Road Routes
- Proposed Bike Lane
- Proposed Separated Bike Lane or Shared Use Path
- Near - Term Network
- Retail and Dining
- Schools and Libraries
- Senior Living
- Government Buildings
- Wetlands
- Lakes, Rivers and Streams
- Woodlands
- Parks

Map Notes:

1. Provide direct pathway connections between adjacent neighborhoods and school.
2. Trail ends abruptly into parking lots at Deerfield Elementary and Wildlife Wood Park. Continue trail so it links into the City's pathway network.
3. Connect neighborhood to ITC Trail from Woodworth Drive through community open space.
4. Connect neighborhood to ITC Trail from Sandpiper Court.
5. Connect neighborhood to ITC Trail from Cheltenham Drive or Heartwood Street.
6. Connect adjacent neighborhoods between Galway Drive and Coldspring Drive.
7. Explore options for a direct pathway connection to anticipated City West district from 11 Mile Road.
8. Connect adjacent neighborhood between Arcadia Drive and Cider Mill Road.
9. Formalize pathway connection between Taft Road and Kent Court.
10. Add pathway through city owned parcel between Thatcher Drive and Novi Road.
11. Extend existing pathway all the way to Taft Road from Ella Mae Power Park.
12. Add pathway between Fountainpark Drive and Highland Drive.
13. Explore optional pathway through city owned parcel between Chatsman St/ Balcombe Dr to Mallott Drive.
14. Explore options for a direct pathway connection between neighborhoods and the commercial area at Light Mile Road and Haggerty Road.
15. Explore options for a direct pathway connection to Twelve Mile Road from Sandstone Drive and Steinbeck Glen.
16. Add pathway between Sandstone Drive and Steinbeck Glen.
17. Add pathway connection to Lakeshore Park Mountain Bike Trails from W 12 Mile Road and improve access from 12 1/2 Mile Road.
18. Extend sidewalk from 12 Mile Road to Wixom Road.
19. Add sidewalk connection from Meadowbrook to existing path in Village Wood Lake Park as part of upcoming CIP project.
20. Collaborate with Walled Lake to provide a trail connection to the Michigan Air Line Trail from Pontiac Trail and Wi Park.
21. Coordinate with Maybury State Park to provide trail connection at park entrance at 8 Mile Road.
22. Coordinate with the City of Northville to provide a safe route to Amerman Elementary and Downtown Northville.
23. Multi-jurisdictional coordination is required for Griswold Road, Old Novi Road, Baseline Road, and 8 Mile Road due to the complexity of transportation issues involving different jurisdictions and to plan for future connections to Northville's Riverwalk.
24. Coordinate with Northville Township to provide a connection to Legacy Park on 7 Mile Road following Silver Spring Drive.
25. Add pathway connection between ITC Trail and Bosco Fields.
26. Establish a trail connection across the I-96 interchange at Beck Road with the City of Wixom.
27. Recognizing the strong desire to establish a non-motorized connection across I-96 at Taft Road, linking the northern and southern parts of the city, it is recommended that the city actively seek opportunities for its construction as City West develops.
28. A traffic study is recommended for East Lake Drive and South Lake Drive to analyze traffic patterns, safety issues, and necessary infrastructure changes for bicyclists and pedestrians.

Appendix Materials

The project website, located at http://walkbike.info/novi, hosts an extensive digital appendix containing a wealth of information regarding the development of the plan and its supporting materials. The following appendix materials are available on the project website or can be obtained directly from the City of Novi:

Active Mobility Network Map

- Large Format Display Map of Plan

Inventory and Analysis

- Maps, Existing Plans and Economic Impact of Crashes

Public Engagement

- Meeting Materials, Presentations and Results

Geographic Information System

- Existing and Planned infrastructure

Active Mobility Plan 2023