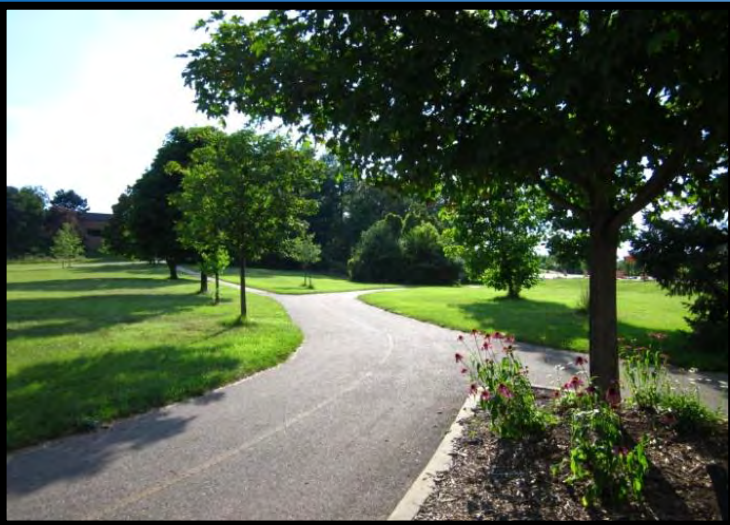

CITY OF NORTHVILLE

NON- MOTORIZED PLAN



Final Draft for City Council Consideration
December 2013

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VISION, GOALS AND OBJECTIVES

In communities across Michigan and the nation, there is a growing need and responsibility to provide options that give people the opportunity to walk and bike to more places and to feel safe while doing so. The benefits of walking and bicycling whether for utilitarian or recreational purposes can be framed in terms of improved environmental and individual health. A community that encourages walking and bicycling can experience reduced traffic congestion and improved quality of life. There are also economic benefits that are more difficult to measure, but are associated with the increased economic vitality of communities that promote pedestrian mobility.

PURPOSE OF THE PLAN

The purpose of the City of Northville Non-Motorized Plan is to articulate a vision for a *walkable* and *bikable* Northville. The Plan provides a framework for a city-wide non-motorized system and a clear direction for the implementation of sidewalks and bikeways throughout the City.

The plan is intended to guide pedestrian and bicycle facility planning, design, and construction for the City. It is implementation-oriented and is also intended to serve as a basis for future grant applications and funding requests.

A Steering Committee including community stakeholders and City staff helped guide the development of this Plan through numerous meetings which took place from May to December 2013.

The plan includes the following elements:

- A review of current and past initiatives related to non-motorized transportation planning,
- A review of existing conditions,
- An overview of the regulatory and legal context,
- The determination of routes that present opportunities, and
- The formulation of a plan providing strategies for implementing the city-wide vision addressing routes, design, phasing, and funding.

VISION, GOALS, AND OBJECTIVES

The City of Northville's vision for non-motorized transportation is:

To make it safer and easier for more people to walk and bike in Northville.

Four principal goals are identified to achieve this vision:

1. Network development
2. Regulations and maintenance
3. Education, encouragement, and enforcement
4. Funding, coordination, and implementation

Goal 1. Network Development

Develop an interconnected network of pedestrian and bicycle facilities to support bicycling and walking as viable transportation modes.

- Provide safe travel to key destinations including residential areas, schools, parks, downtown, and community facilities.
- Provide a well-defined separation of pedestrians, bicycles, and cars on major streets with the use of designated bicycle facilities including off-the-road and on-the-road pedestrian and bicycle accommodations.
- Coordinate the provision of pedestrian and bicycle facilities such as bike lane striping during road resurfacing or reconstruction work.
- Create a bike rest area/plaza in proximity to the downtown to promote Northville as a bicycle hub

Goal 2. Regulations and Maintenance

Incorporate the Non-motorized Plan recommendations into Northville's planning processes, ordinances, and plans.

- Incorporate the Non-motorized Plan into a new Northville Complete Streets ordinance.
- Incorporate the Non-motorized Plan into Northville's Master Land Use and Parks and Recreation Master Plans.
- Review and modify sidewalk and street standards to accommodate pedestrian, bicycle, and vehicular uses and to meet guidelines.
- Incorporate bicycle parking requirements into zoning ordinance regulations for non-residential development.
- Develop a uniform signage and way finding system for the non-motorized network to identify pedestrian and bicycle facilities as well as destinations and community facilities.
- Identify and designate pedestrian and bicycle routes and create a map for distribution.

Goal 3. Education, Encouragement, and Enforcement

Promote bicycling and walking in the Northville area by improving awareness of bicycle and pedestrian facilities and opportunities.

- Develop a safety and education campaign targeting pedestrians, bicyclists, and motorists to raise awareness of the system and encourage its appropriate use.
- Coordinate with the Northville Parks and Recreation Department and community organizations to develop and/or strengthen pedestrian and bicycle education programs which would teach safety skills such as bike rodeos, bike classes, and individual training.
- Promote bicycling as transportation to and from schools.
- Support and encourage participation by all Northville Area Schools in the federal Safe Routes to School Program.
- Work with the Northville Police Department to raise awareness of the non-motorized plan and encourage enforcement of pedestrian, bicycle, and vehicular laws.
- Promote existing bicycle registration system.
- Make bicycling and walking resources available through the City of Northville website.
- Apply to the Promoting Active Communities (PAC) program to upgrade Northville's current award.
- Apply to become a Bicycle Friendly Community (BFC) through the League of American Bicyclists' award program.

Goal 4. Funding, Coordination, and Implementation

Ensure implementation of this plan.

- Convene a standing Northville Non-motorized Transportation Advisory Committee to focus on Plan implementation and obtain funding for projects and programs.
- Communicate and coordinate non-motorized projects and efforts with adjacent communities and county agencies.
- Seek grant funding or other funding sources.
- Monitor and evaluate the effectiveness of non-motorized facilities.
- Consult the Non-motorized Plan with all transportation projects.

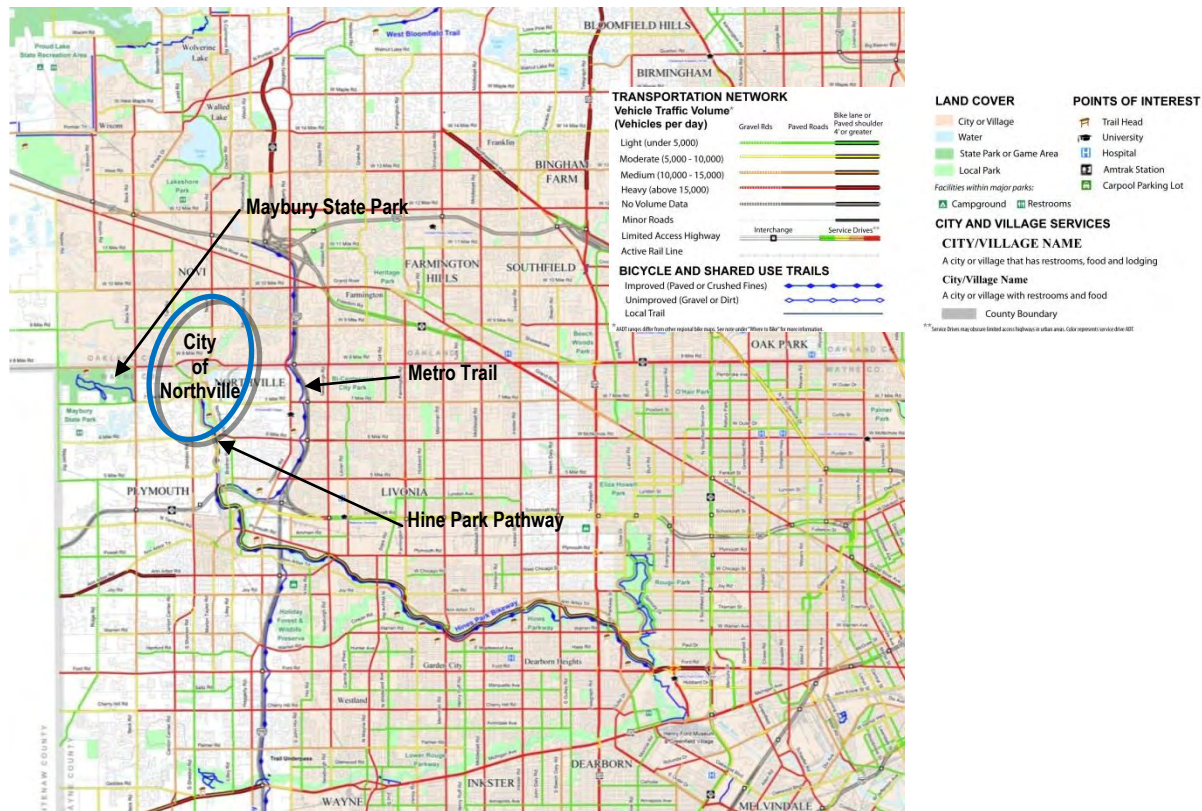
EXISTING CONDITIONS

Northville is a "sidewalk community" where most of the downtown and older neighborhood streets have sidewalks. The City requires sidewalks with new development and ensures that neighborhoods have a complete pedestrian network. There are a few bicycle facilities in Northville which include some share-use paths. However, other than the recently built bike lanes on Taft Road and unmarked lanes on Griswold Street, there are currently no on-street bicycle accommodations in Northville. While bicyclists are still found on City streets, many residents perceive the major arterials of 8 Mile Road, 7 Mile Road, and Center Street as unsafe and challenging because of the volume and fast traffic flow.

REGIONAL SETTING

Regionally, Northville is a prime destination for bicyclists because of its location at the terminus of the Hines Park pathway, a 17-mile shared-use pathway which begins in Dearborn. Northville is also located in proximity to Maybury State Park and the Metro Trail located along the I-275/M-5 highway corridors.

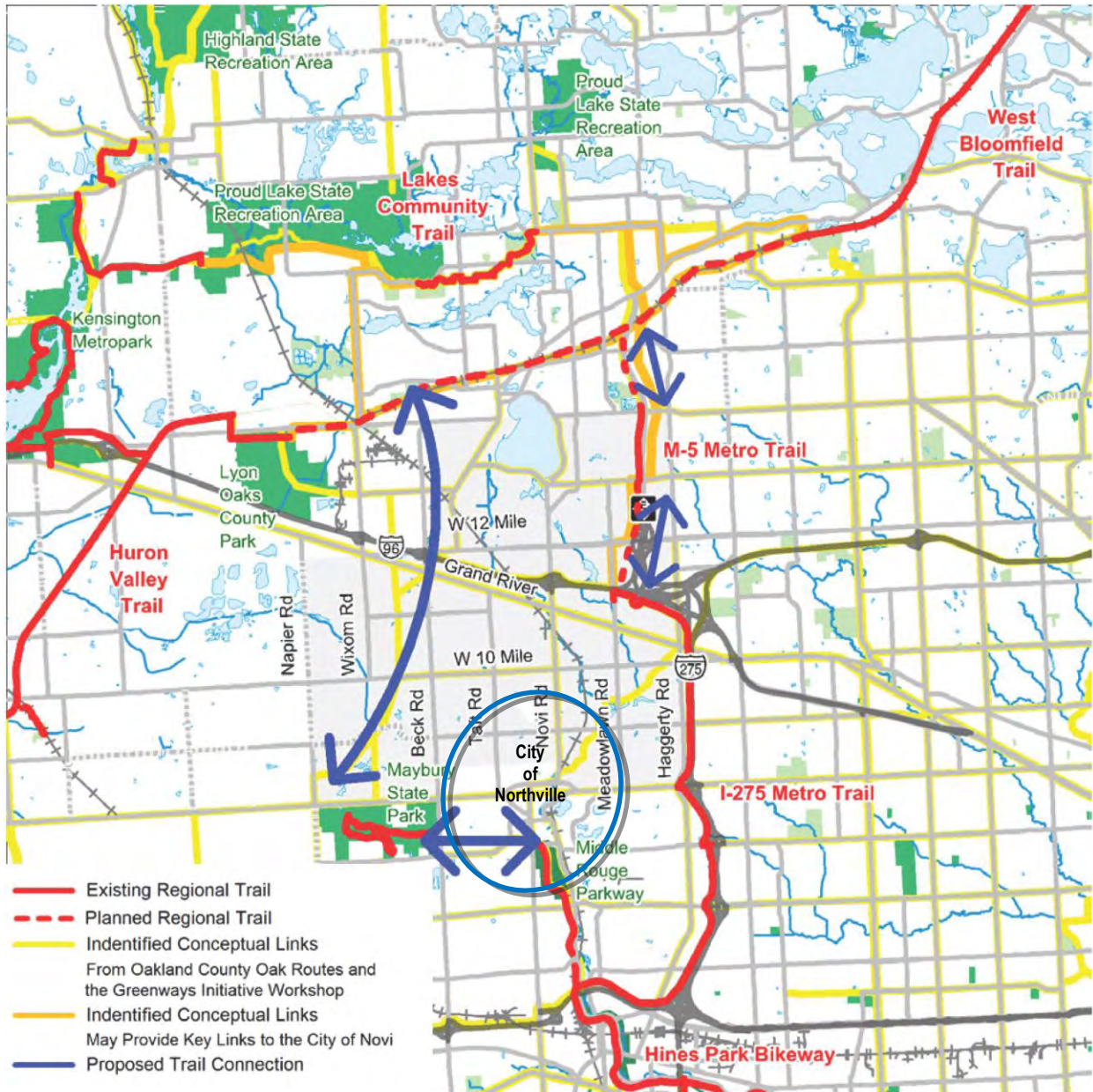
Figure 1. Location Map



Source: MDOT Metro Region Road and Trail Bicycling Guide, 2009

Future connections could bolster Northville as a prime regional bicycle hub. The City of Novi, as shown on Figure 2, is currently working on two major regional connections including the Metro Trail connector, which is planned to connect the I-275 and M-5 Metro Trails, and a connection from Maybury State Park north through a community park and eventually to 9 1/2 Mile Road by means of an ITC corridor. This route would eventually connect north to Huron Valley Trail, Kensington Metropark, and to an extensive system of pathways in Oakland County.

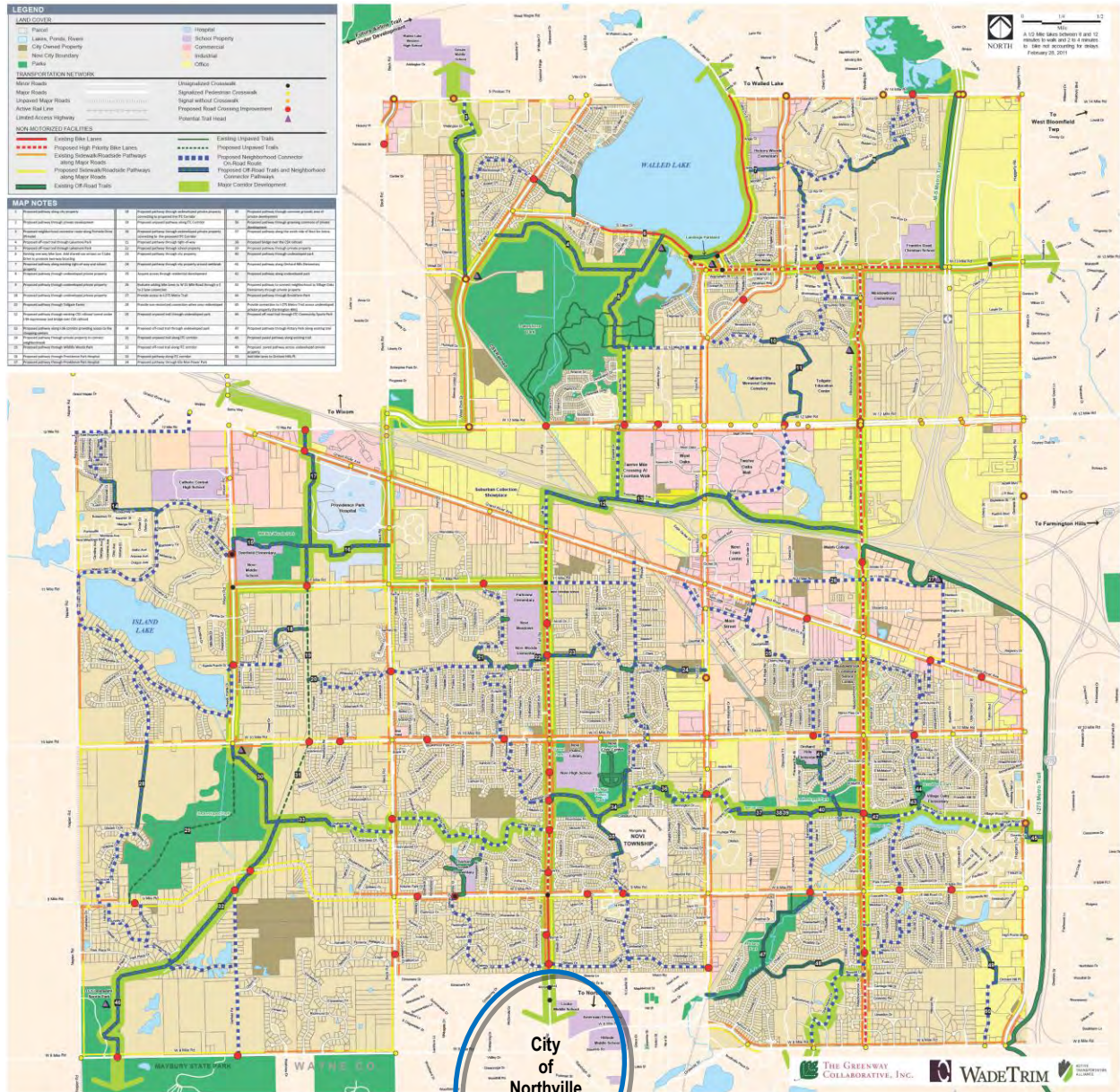
Figure 2. Regional Connections



Source: City of Novi Non-Motorized Plan, 2011

Both the City of Novi and Northville Township have planned for non-motorized transportation. Novi's Non-motorized Plan, adopted in 2011 and depicted on Figure 3, guided the construction of a number of sidewalks and pathways. Novi plans to develop its major corridors as cross-city bike/pedestrian routes. This includes Taft Road, a north-south corridor which connects the City of Northville to Novi, and proposed to include off the road shared-use pathways, on the road bike lanes, and a pathway connection over I-96.

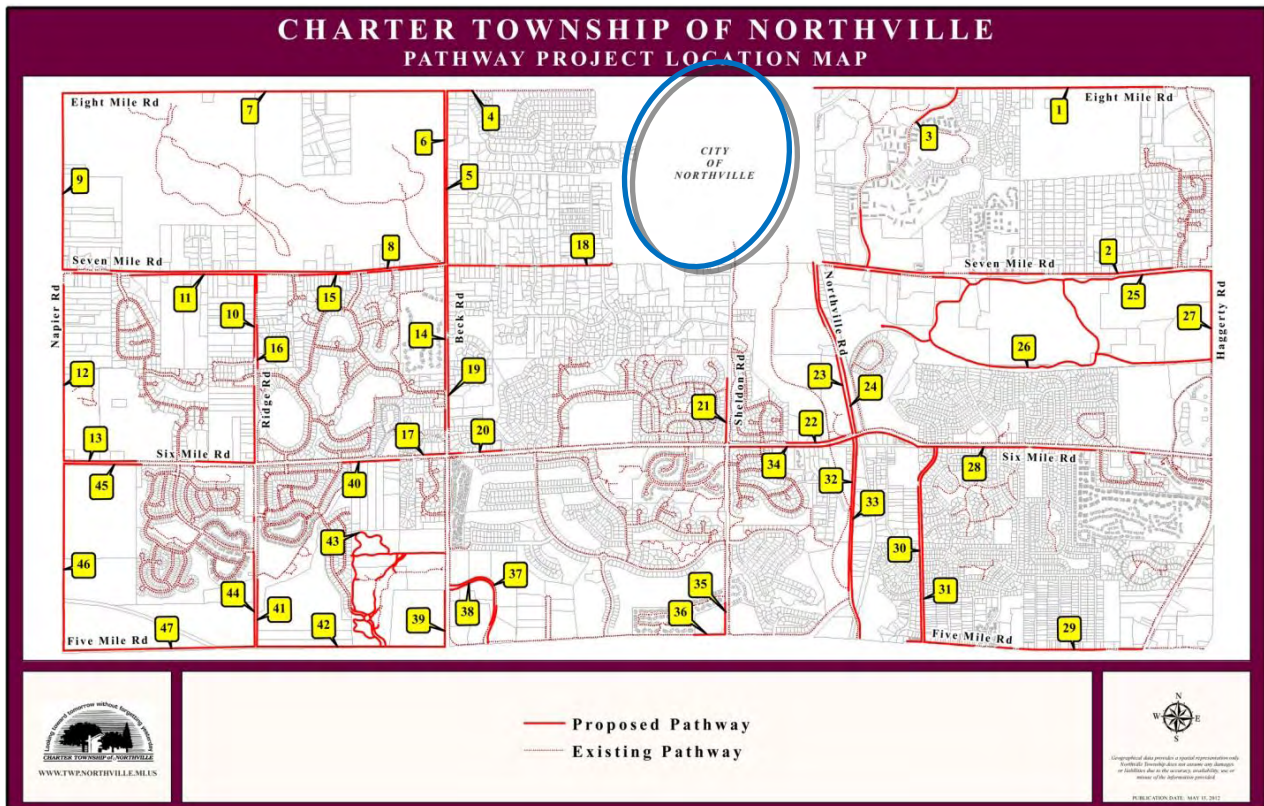
Figure 3. City of Novi Non-Motorized Plan



Source: City of Novi Non-Motorized Plan, 2011

Northville Township is also planning to build off-road pathways along most of its major road arteries. In the vicinity of the City, the 2012 pathway plan (Figure 4) includes planned pathways along both 8 and 7 Mile Roads as well as Northville Road, which are linking to the City of Northville. The Sheldon Road pathway was just completed recently and provides pedestrians and bicyclists a connection from the City of Northville to 5 Mile Road and south to Plymouth.

Figure 4. Northville Township Pathway Map



Source: Charter Township of Northville, 2012

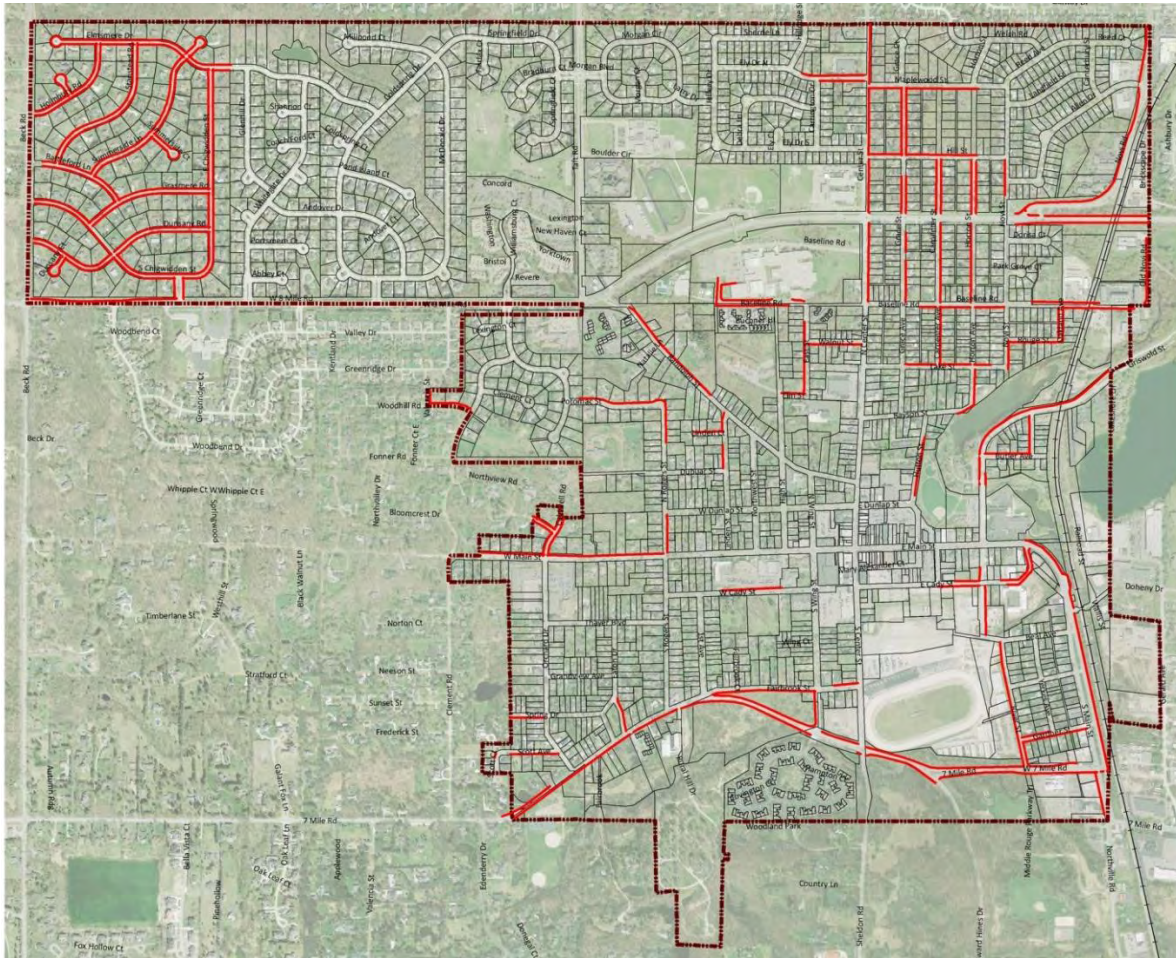


Sheldon Road Pathway During and After Construction

EXISTING SIDEWALKS AND BIKEWAYS

In the City of Northville, most residential neighborhoods have sidewalks on both sides of their streets with a few exceptions. Figure 5 highlights the existing sidewalk gaps in the City. The newer neighborhoods in the northwest and northeast corners of the City exhibit the most gaps. The remaining gaps are observed where right-of-way space is limited or topographic constraints are present. They are observed along 7 Mile Road, Main Street along the railroad right-of-way, River Street, portion of Griswold Street, and along other roadways.

Figure 5. Sidewalk Gaps



Current bikeways in Northville include off the road shared-use pathways which include the Hines Park pathway and the Sheldon Road path, as well as a shared-use path along 8 Mile Road from Center Street to Taft Road which connects Hillside Middle School and the School's sports fields across 8 Mile Road. In addition, bike lanes were recently established along Taft Road from 8 Mile Road north to the City of Novi and along Center Street from 7 Mile Road to Cady Street.

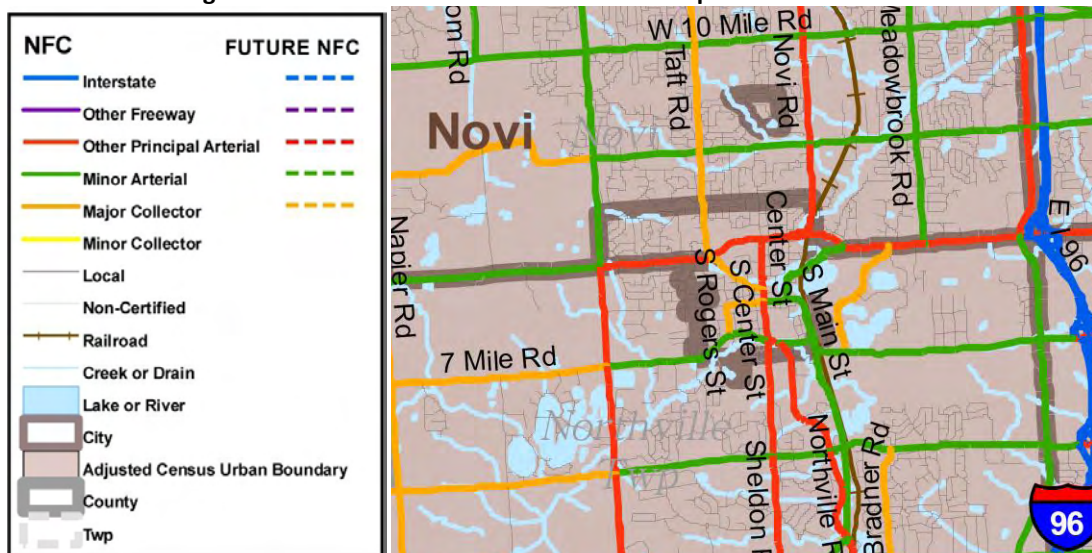
EXISTING ROAD NETWORK

Assessing the suitability of the road network for safe pedestrian or bicycle use involves the consideration of many factors including traffic volumes, car speeds, presence of on-street parking, traffic mix such as presence of trucks, sight distances, and number intersections and entrances.

Michigan roadways are classified by the Michigan Department of Transportation (MDOT) according to a hierarchical functional system which determines whether a road is eligible for federal aid. This road classification also corresponds to roadway traffic volumes. Federal aid roads include all principal arterials, minor arterials, and urban collectors (Figure 6). Northville's road network includes four classes of roads as described below.

- **Principal arterial roads** run relatively long distance and service travel movements to important traffic generators. Eight Mile Road, Center Street (south of 8 Mile Road), Sheldon Road, Hines Drive, and Novi Road belong to this category.
- **Minor arterial roads** are similar but with trips being carried shorter distance to lesser traffic generators. They include 7 Mile Road, Main Street (east of Center Street), Northville Road, and Griswold Street.
- **Major collector roads** funnel traffic from residential areas to arterial roads, with some providing direct access to residences. They include Randolph Street, Taft Road, Main Street (Center to Rogers Streets), and Rogers Street (south of Main Street).
- **Local roads** are neighborhood streets that provide access to residences and include all other streets in Northville.

Figure 6. National Functional Classification Map



Source: Michigan Department of Transportation

While there are differences over the suitability of dedicating on-street bicycle facilities such as bike lanes in a given set of circumstances, there is general agreement that traffic volumes and speeds are the top-most considerations that influence whether dedicated on-street bicycle facilities are suitable on a given roadway. In general, according to a study comparing bicycle facility selection (King, 2002), traffic volumes ranging anywhere from 1,800 to 10,000 or greater daily trips on streets with speed limits less than 35 mph would call for dedicated on-street bike lanes. Speed limits over 35 mph on roads with traffic volumes greater than 500 daily trips would also suggest development of on-street bike lanes. Dedicated bike lanes offer greater separation and safety between bicyclists and motorists and may be the most suited bicycle improvement on roads that are not only busy but that also see frequent crashes.

The Southeast Michigan Council of Governments (SEMCOG) maintains a database of traffic counts and crash records for the southeast Michigan region. According to these records, the highest volumes of traffic in excess of 10,000 daily trips in Northville are found on the arterial roads: 8 Mile Road closely followed by 7 Mile Road. Traffic counts for other arterial, collector, or local roads amount to 1,350 daily trips or less.

Northville's high-frequency car crash intersections, between 2008 and 2012, included 8 Mile Road at Center Street, 8 Mile Road at Novi Road, 7 Mile Road at Main Street, Center Street at Hines Drive, and 8 Mile Road at Randolph Street/Taft Road. The top high crash road segments included 8 Mile Road from Center Street to Novi Road, 8 Mile Road from Taft to Beck Roads, Center Street from Hines Drive to Main Street, 8 Mile Road from Randolph to Center Streets, and Main Street from Center to Griswold Streets. The crashes that involved pedestrians and bicyclists during the same time period occurred at the busy intersections of Main/Wing Streets, Center Street/Hines Drive, Center/Main Streets, Center/Baseline Streets, 8 Mile Road/Center Street, Griswold/Main Streets, Center/Dunlap Streets, Coldspring Drive/McDonald Street, Center/Randolph Streets, Main/Griswold Streets, Main/Rodgers Streets, and 8 Mile Road/Randolph Street.

Based on Northville's existing road network including traffic counts and crash data, it would seem appropriate to improve bicycle travel safety on Northville's arterial and collector roads as well as at busy and problematic intersections. As part of this Plan, these streets and roadways were evaluated to determine their feasibility for non-motorized facility development. The data collected included the roadway bed width, presence of parking lane, speed, and other measurements. This analysis was recorded and is attached in Appendix to this report.

EXISTING POLICIES AND LAWS

What are Complete Streets?

Complete Streets provide facilities that allow all users, irrespective of their age or abilities, to use the street as a mode of transportation.

A Complete Street allows pedestrians, bicyclists, transit users and those with disabilities to easily and safely use roads in their community.

Communities with Complete Streets policies help to ensure that roadways accommodate all users, not just motorists.

In 2010, the State of Michigan legislature signed into law the Complete Streets amendments to the State Trunkline Highway System Act (Act 51 of 1951) and the Planning Enabling Act (Act 33 of 2008). The law provides an approach to transportation planning and design that considers *all* street users – pedestrians as well as motorists and bicyclists of all ages and abilities – during the various planning and design stages of a transportation project. It also requires that the Michigan Department of Transportation (MDOT) and local municipalities consider the community’s goals and desires for road projects within their boundaries.

The Complete Streets law gives new project planning and coordination responsibilities to city, county and state transportation agencies. It also requires local units of government to address transportation needs of all legal users (including pedestrians and bicyclists) in their community master plans.

The Complete Streets legislation specifically requires that MDOT works with cities in all phases of the planning and design of roads and non-motorized facilities projects. The amendments to the State Trunkline Highway System Act (PA 51 of 1951):

- Requires counties, cities, villages, and MDOT to consult with one another when planning a non-motorized project affecting a transportation facility that belongs to another road agency;
- Identifies non-motorized facilities contributing to complete streets as eligible for funding;
- Requires the State Transportation Commission (STC), within two years, to adopt a Complete Streets policy for MDOT, and to make model Complete Streets policies available to municipalities and counties;
- Requires state and local road agencies to consult with each other and agree on how to address Complete Streets for projects that affect a roadway under another road agency’s jurisdiction;
- Allows MDOT to provide technical assistance and coordination to local agencies in the development and implementation of their policies;
- Requires MDOT to share expertise in non-motorized and multi-modal planning in the development of projects within municipal boundaries;

-
- Allows agencies to enter into agreements with one another to provide maintenance for facilities constructed to implement a Complete Streets policy; and
 - Creates a 16-member Complete Streets Advisory Council within MDOT, to advise the STC and local agencies in the development, implementation, and coordination of Complete Streets policies.

The law requires Complete Streets policies be sensitive to the local context, and consider the functional classification of roadways, cost, and the mobility needs of all legal users. The primary purpose of this new law is to encourage the development of Complete Street infrastructures or facilities as appropriate to the context and cost of a project. Examples of complete streets facilities include curb ramps, well-marked crosswalks, longer crossing times, smooth sidewalks, and bike lanes that are free of obstacles.

The Architectural and Transportation Barriers Compliance Board (Access Board) published new and revised accessibility standards for public right-of-way in the Federal Register in 2010. These new guidelines cover pedestrian access to sidewalks and streets, including crosswalks, curb ramps, street furnishings, pedestrian signals, parking, and other components of public rights-of-way. These standards have now been adopted by the U.S. Department of Justice and the U.S. Department of Transportation.

The City of Northville Municipal Code contains provisions for sidewalk and bike path construction and repair. Sidewalks are to be built by property owners and located one foot inside the public road right-of-way line. Chapter 74-Article III of the Northville Code of Ordinances describes the procedures involved in sidewalk construction and repair. Chapter 82-Article III includes provisions regarding the operation of bicycles in the City.

The City's policy regarding sidewalk improvements is to coordinate sidewalk reconstruction with street improvement projects. Any new construction is designed to meet the most recent requirements of the American with Disabilities Act for newly constructed and reconstructed sidewalks and curb ramps. Existing facilities are being brought into compliance with improvement projects. A budget of \$35,000 per year is designated for the regular maintenance and new construction of sidewalks. The City also has a 10-year street improvement schedule.

ENCOURAGEMENT PROGRAMS

There are a number of advocacy and social or health organizations whose mission is encourage walking and bicycling. Some of these organizations offer incentives and programs for communities such as Northville.

Promoting Active Communities

The Michigan Department of Community Health along with the Governor's Council on Physical Fitness, Sports, and Health, Michigan State University, and the Prevention Research Center of Michigan, sponsors the Promoting Active Communities (PAC) program. The PAC program is an online assessment and award system that is part of a state initiative on physical activity to help Michigan communities make changes to their policies, promotion strategies, and the physical design of their communities to make it easier for community residents to be physically active.



The PAC assessment is a self-assessment tool that enables communities to examine their policies, programs, and built environments. The assessment, which requires teamwork between community leaders and citizens, generates ideas for community improvements. Upon completion, every community is eligible to earn one of five award levels from the Governor's Council and Michigan Department of Community Health, based on their assessment score.

Since 2000, more than 144 communities from 57 Michigan counties have completed the PAC assessment and received an award at least once. In addition, 55 communities have completed the assessment more than once and most of those have made enough improvements in their community to move up the awards ladder. Northville received level 3 (with level 4 being the highest level) in 2005.

Bicycle Friendly Communities

Similarly, the League of American Bicyclists, through their bicycle friendly community program, offers awards of national recognition for communities that provide safe and plentiful bikeways, access to safe and convenient bike parking, and encourage "share the road" programs for non-cyclists. The list of recognized communities includes cities like Portland, Oregon and Boulder, Colorado. A few Michigan communities, including Ann Arbor, Lansing, Grand Rapids, Houghton, Midland, Portage, Traverse City, and Marquette, are currently recognized.



OPPORTUNITIES AND CONSTRAINTS

Northville has many opportunities for improving bicycling and walking conditions in the City, but is also faced with a number of challenges. They are summarized below.

- Hines Park pathway, a regional path, converges in Northville, connecting the path to the nearby Maybury State Park and to the Oakland County regional pathways could bolster Northville as a bicycling and hiking hub for Southeastern Michigan.
- Linking Hines Park pathway to Maybury State Park through the downtown could also boost local businesses.
- The wide arterial streets including 7 Mile Road, 8 Mile Road, and Main Street outside of the downtown area can easily be retrofitted to accommodate bicycle facilities.
- The City of Northville has a nearly complete sidewalk network in its downtown and older neighborhoods.
- The existing narrow streets within downtown are difficult to accommodate bicyclists on separate pathways.
- Suburban-style residential developments in newer neighborhoods in the northwest and northeast part of the City lack sidewalks, a grid street pattern, and possible connectivity.
- Some of the busy streets and intersections in the City's center such as Center, Cady, Dunlap, and Main streets are difficult to safely cross whether on foot or bicycle.

USER TYPES AND DEMAND

The needs and preferences of bicyclists vary depending on a bicyclists' skill level and the type of trip the individual wishes to take. Northville's Plan aims to provide more comfortable and direct bicycling routes for existing bicyclists and to encourage other residents and visitors to ride for transportation and for recreation. Addressing the concerns of casual and inexperienced riders as well as more experienced riders will encourage more people in Northville to bike in their daily lives.

TYPES OF USERS

Studies have shown that bicycle users and pedestrians share destinations and trip purposes common to other road users and, as a result, use all types of streets. Therefore, it would seem logical to add some bicycle and pedestrian improvements to all City streets. Different types of users, however, generally prefer different types of streets. The American Association of State Highway Transportation Officials (AASHTO, 2012) recognizes different types of riders which are described in the margin to the right. Casual and less confident riders often prefer quiet neighborhood streets or recreational pathways. On the other hand, serious commuting and experienced riders can generally be found on major roads.

National studies have shown that on-road bicycle facilities for experienced riders and casual adult riders are generally safer than a sidewalk because they provide greater driver visibility. This is especially true at intersections and driveways, where conflicts with vehicles are most likely to occur.

Since bicyclists vary in skill and experience, the emphasis must be on establishing minimum standards which accommodate a full range of users while optimizing safety for all. The selection of non-motorized route corridors and facility development depends on a combination of several factors including the existing road network as well as potential destinations, scenic, and recreation amenities.

Experienced and confident riders generally use their bicycles as they would a car. They ride for convenience and speed and want direct access to destinations with a minimum of detour or delay. They are typically comfortable riding alongside a car; however, they need sufficient operating space on the traveled way or shoulder to eliminate the need for either them or a passing car to shift position. While comfortable on most streets, some prefer on-street bike lanes, paved shoulders, or shared use paths when available. Experienced riders avoid riding on sidewalks, which have speed and sight line limitations.

Casual or less confident riders may also use their bicycles for transportation purposes, for example, to get to the store or to visit friends, but prefer to avoid roads with fast and busy car traffic unless there is ample roadway width to allow easy overtaking by faster cars. Thus, casual riders are more comfortable riding on neighborhood streets and shared-use paths and prefer designated facilities such as bike lanes on busier streets. If no on-street facilities are available, they may opt to ride on sidewalks, which can be problematic, particularly in city centers.

DESTINATIONS

Northville's downtown, parks, schools and businesses are the primary destinations which generate the pedestrian/bicycle trips. Destinations include:

Schools:

- Amerman Elementary School
- Hillside Middle School and Sports Fields
- Hillside High School

Community Parks/Trails:

- Ford Field Park
- Mill Race Village
- Cady St. Dog Park
- Fish Hatchery Park
- Maplewood Park
- Maybury State Park
- Hines Park pathway
- I-275/M-5 Metro Trail



Community Facilities

- City Hall
- Library
- Post Office

Businesses and Services

- Downtown businesses



DEMAND FOR NON-MOTORIZED CONNECTIONS

Planning for pedestrians and bicyclists has been recognized as a priority for the community. This is evident in Northville's 2008 Master Plan Update, the 2006 Downtown Strategic Plan, and the 2007-2011 Community Parks and Recreation Master Plan.

Based on the review of the previous plans, desired connections and improvements for the Northville area include the following.

- Linkages between the downtown and the residential neighborhood areas as well as the commercial corridors.
- Linkages with Ford Field and the Middle Rouge River.
- Improved connections to Ford Field and Mill Race Village.
- Additional pedestrian cut-throughs in the downtown.
- Development of a non-motorized transportation master plan for the City of Northville.
- Working with MDOT and other agencies to improve and maintain the regional pathway along I-275.
- Working with Northville Township and Wayne County to develop pathways over the existing Six Mile Bridge, west of Northville Road.

There are a number of bicycle and walking/hiking groups which are based in the Northville area. They include:

- *BS Hiking*
- *Fredericjames LLC*
- *Michigan Bicycle Racing Association*
- *Midwest Cycling Club*
- *Wolverine Sports Club*

NON-MOTORIZED PLAN

The Non-motorized Plan for Northville articulates strategies and actions that are based on existing conditions and input from the Steering Committee. The Plan also identifies non-motorized routes and connections, considers current standards for the development of non-motorized facilities, and recommends facility design treatments that are appropriate to Northville's circumstances.

NON-MOTORIZED ROUTES AND CONNECTIONS

Providing a network of pedestrian and bicycle facilities throughout Northville is essential to the success of this Plan. Figure 7, on the next page, depicts the existing facilities and the proposed non-motorized routes and connections for Northville. While most of these routes currently have existing sidewalks, there is a need to establish facilities to accommodate bicycle travel. Two neighborhood bypass connections are highlighted. They depict bypass routes which, although will not be improved, exhibit a high level of comfort for casual bicyclists.

The plan represents a long-term vision and is intended to serve as a guide for future funding, design, and implementation. It proposes several routes for the establishment of non-motorized facilities. While a route has been selected for short-term development, other routes are also proposed for long-range implementation to provide additional connections within the City and to connect to adjacent communities. The proposed routes and connections are labeled in terms of priorities as follows:

1. **Priority 1**, colored in orange, includes the route connecting Hines Park pathway to Maybury State Park and Taft Road through 7 Mile Road, Center Street, Cady/Wing Streets, Randolph Street, and 8 Mile Road. This is the priority route for short-term implementation.
2. **Priority 2**, colored in yellow, is a route selected for mid-term implementation. It connects Hines Park pathway to 8 Mile Road through the east part of the City along River Street, Griswold Street, and 8 Mile Road, to connect back to the existing shared-use path by the school at Center Street and 8 Mile Road. It will facilitate better connections to Northville Township via 8 Mile Road and provide connection to the I-275 Metro Trail.
3. **Priority 3** and all other proposed improvements are scheduled for long-term implementation. Priority 3, colored in green, includes the connection of Northville Road to Downtown Northville through Main Street up to Griswold Street, as well as a small segment along

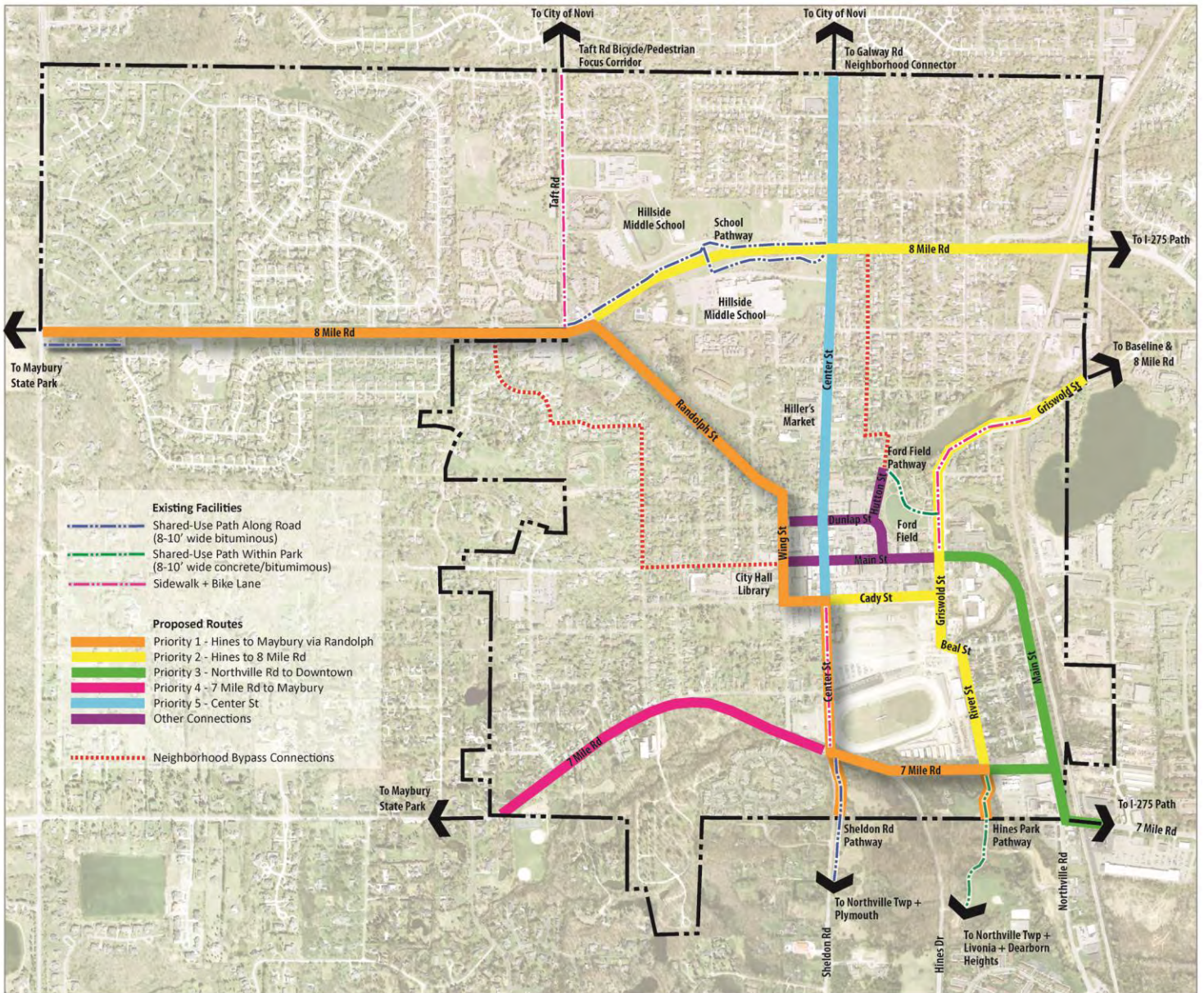
Implementation Schedule:

- *Short-Term: 2 to 4 years (Priority 1)*
- *Mid-Term: 5 to 10 years (Priority 2)*
- *Long-Term: 10 years or longer (Priority 3 through 6)*

7 Mile Road which connects to Route 1.

4. **Priority 4**, colored in magenta, includes the remainder of 7 Mile Road, from Center Street to City limits, which would eventually provide another connection to Maybury State Park.
5. **Priority 5**, colored in blue, includes Center Street from Cady Street to 8 Mile Road. This is also planned for long-term implementation.
6. Finally, the remaining connections, colored in purple, focus on establishing on-street bicycle and intersection improvements within the downtown area.

Figure 7: Non-Motorized Transportation Routes and Connections



NON-MOTORIZED FACILITIES

A variety of bicycle and pedestrian facilities are recommended to form the proposed Northville interconnected network. Based on the review of current standards for non-motorized facility development, there are five types of facilities that are appropriate for the City of Northville:

1. Sidewalks for pedestrian use
2. On-street shared lane markings for bicycle use
3. On-street bicycle lanes for bicycle use
4. On-road paved shoulders for bicycle use
5. Off-road shared-use pathways for pedestrians and bicyclists
6. Pedestrian refuge islands and other features

Each of the facilities has its place in Northville as a part of an overall non-motorized strategy. A description of each facility follows.

1. Sidewalks

Sidewalks are for pedestrians and are located within road rights-of way. They consist of concrete pavement and are separated from the roadway by a landscape strip or buffer area. Ideally, a buffer of 5 to 6 feet is preferred. In Northville, older existing sidewalks are 4 feet wide. Any new sidewalk construction must comply with current ADA standards which require a 5-foot minimum width as well as ramps at roadway intersection. City sidewalks should be widened depending on the number of pedestrians who are expected to use the sidewalk at a given time. Generally, recommended widths for sidewalks are:

- 5 feet on local streets
- 6 to 8 feet on arterial streets
- 8 to 12 feet in downtown
- 8 to 10 feet in parks or schools

2. On-Street Shared Lane Markings

Bicyclists sharing roadways with cars are appropriate for most local roads having low daily volumes or speeds (FHWA, 1994). Most local streets in Northville are currently suitable for shared roadway bicycling with no additional improvements necessary.

Shared roadways are also appropriate on roadways having higher traffic volumes and moderate speeds with provision of an increased shared lane

The primary references for establishing the standards for non-motorized facility development are:

- *Guide for the Planning, Design, and Operation of Pedestrian Facilities (AASHTO, 2010)*
- *Guide for the development of Bicycle Facilities (AASHTO, 2012)*
- *Michigan Manual on Uniform Traffic Control Devices (MMUTCD) (MDOT, 2005)*
- *Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA, 1994)*
- *Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG) (Architectural and Transportation Barriers Compliance Board, 2011).*
- *Urban Bikeway Design Guide (NACTO, 2012)*

width and/or shared lane markings. Shared roadways and lane markings are desirable in locations where the road right-of-way is limited or where it is not feasible to add pavement at the edge of a roadway to create a bike lane.



Example of a Shared Lane Marking

A **sharrow** is used to mark the shared lane. Sharrows are chevrons pointing in the direction of vehicle traffic to indicate where a bicyclist would ride. They provide a visual cue that bicycles are expected on the roadway and indicate the zone bicyclists should ride on. They are typically used on roadways where there is not enough space for bicycle lanes or which connect gaps between other bicycle facilities.

Introduced in San Francisco in 2004, sharrows have been adopted by many cities across the U.S. such as New York City, Portland, Seattle, Chicago, and Los Angeles. They have been incorporated in the new editions of the federal MUTCD and the AASHTO guidelines.

3. On-Street Bicycle Lanes

Bicycle lanes include designated lanes on roadways that incorporate striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. They are one-way and a minimum of five feet wide. A minimum of three feet rideable surface should be provided where the joint between the gutter pan and pavement surface is smooth. If the joint is not smooth, four feet rideable surface should be provided. Similarly, bicycle lanes should be a minimum of four feet wide on streets without curbs.

According to the Federal Highway Administration (1994), bicycle lanes are appropriate on roadways having daily volumes that exceed 10,000 or car speeds that exceed 30 mph.

Where parking is permitted, bicycle lanes should always be placed between the parking lane and the motorized vehicle lane. The recommended lane width for this location is five to six feet (AASHTO, 2012). An important consideration in the design of bicycle lanes is the location of bicycle lanes at intersections. Guidance for pavement markings and signs at intersections is contained in the Michigan Manual on Uniform Traffic Control Devices (MMUTCD).



Example of a Bike Lane



Example of a Bike Lane with Parking Lane

4. On-Road Paved Shoulders

A paved shoulder is the part of the roadway that is adjacent and contiguous to a regular vehicle travel lane. Paved shoulders can be used by bicyclists and can also accommodate stopped vehicles, emergency use, and pedestrians. Paved shoulders are appropriate bicycle facilities along

roadways that do not have curb and gutter and have open drainage. Paved shoulders intended for bicyclist use are at least four feet wide and the pavement should be smooth. When motorist speeds exceed 35 mph, additional width is recommended. A 2-foot buffer adjacent to a bike lane or paved shoulder will provide greater distance between cars and bicyclists thereby increasing safety and appealing to a wider cross-section of users.



Example of a Paved Shoulder and a Buffered Paved Shoulder

5. Off-Road Shared-use Pathways

Off-road shared-use pathways are physically separated from car traffic. The path may be within the road right-of-way or within a park or easement. Contrary to on-road bike lanes or paved shoulders, shared-use paths are normally two-way facilities. The AASHTO recommended pavement width is 10 feet, but 8 feet may be considered where path usage is low, where space is limited, or where pathways are located on both sides of a roadway. Similarly, 12 feet may be considered more suitable where path usage is expected to be high, such as in an urban situation or within a central business district. A minimum of a 2-foot clear zone needs to be maintained along both sides of a pathway, with an 8 foot vertical clearance.



Example of a Shared-Use Pathway along a Road

6. Pedestrian Refuge Islands and Other Features

Refuge islands are one option to improve the safety of pedestrians and bicyclists crossing streets. These islands are raised longitudinal spaces placed in the center of a roadway, separating opposing lanes of traffic, and slotted along the pedestrian path. They reduce pedestrian crossing distances, act as a traffic calming feature, and increase the visibility of the crosswalk to motorists.



Example of a Pedestrian Refuge Island

Providing amenities such as bike stations/rest areas along non-motorized routes can make the system more inviting to users. Basic amenities may include a bicycle rack, shade structure, benches, trash receptacle, and a water fountain. Additional amenities can include a bicycle repair station including an air pump, kiosk displaying a map of the area, sheltered bicycle rack, restrooms, shower/changing facilities, bicycle lockers, and a fenced area with restricted access.



Example of a Bicycle Rest Area

RECOMMENDATIONS FOR NORTHVILLE

The Non-Motorized Plan for Northville recommends a variety of design treatments using and combining the facilities described in the previous section. Recommended treatments to fit the conditions found in Northville include:

- Shared lane markings for bicycle use + sidewalks for pedestrian use
- Bike lanes for bicycle use + sidewalks for pedestrian use
- Paved shoulders for bicycle use + sidewalks for pedestrian use
- Paved shoulders for bicycle use + shared-use paths for both bicycle and pedestrian use

Shared Lane Markings + Sidewalks

Shared lane markings and sidewalks is the treatment recommended for Northville's downtown. Shared lane markings are proposed on the streets 4 feet away from the street curb along non-

Figure 8. Shared Lane Markings + Sidewalks



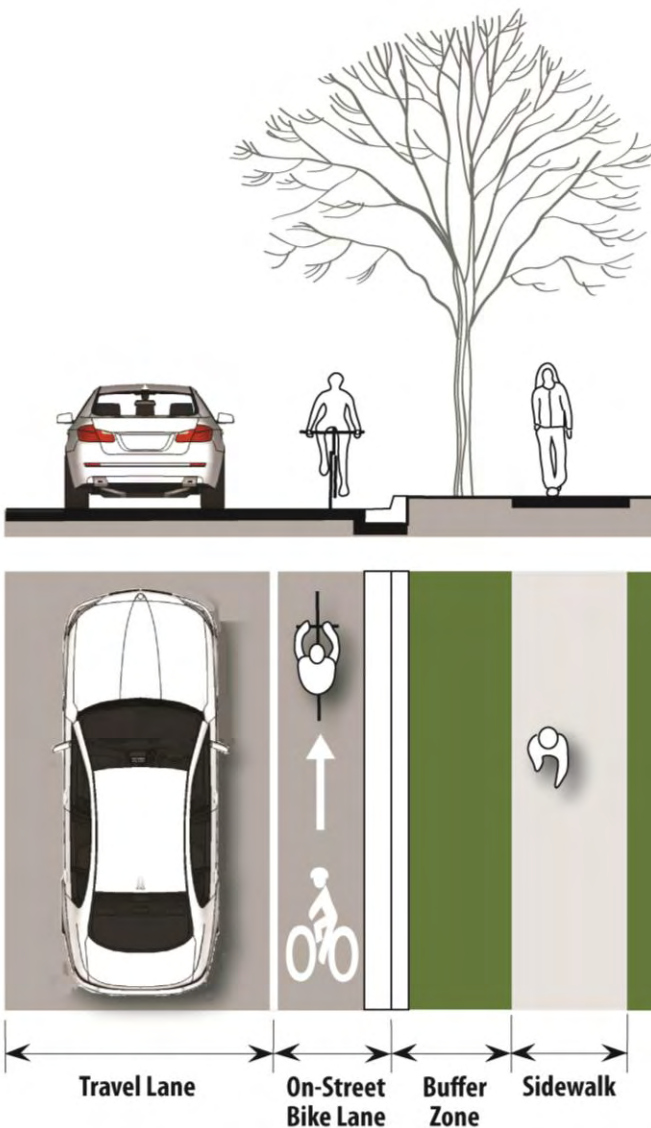
motorized routes and connections to encourage bicyclists to ride on the street in a specific zone and to alert motorists of the possible presence of bicyclists on the road. Five-foot minimum sidewalks are also proposed for the use of pedestrians.

This design treatment is recommended where the street right-of-way is limited, where parking lanes are desired, and at intersections as needed.

Bike Lanes + Sidewalks

Bike lanes and sidewalks is the preferred design treatment recommended for Northville's major streets where space allows. Five-foot minimum bike lanes are proposed whenever feasible within the existing roadway bed and along the non-motorized routes and connections to accommodate bicyclists. They may be constructed at a future date, as road improvement projects are implemented. Five-foot minimum sidewalks are also proposed for the use of pedestrians.

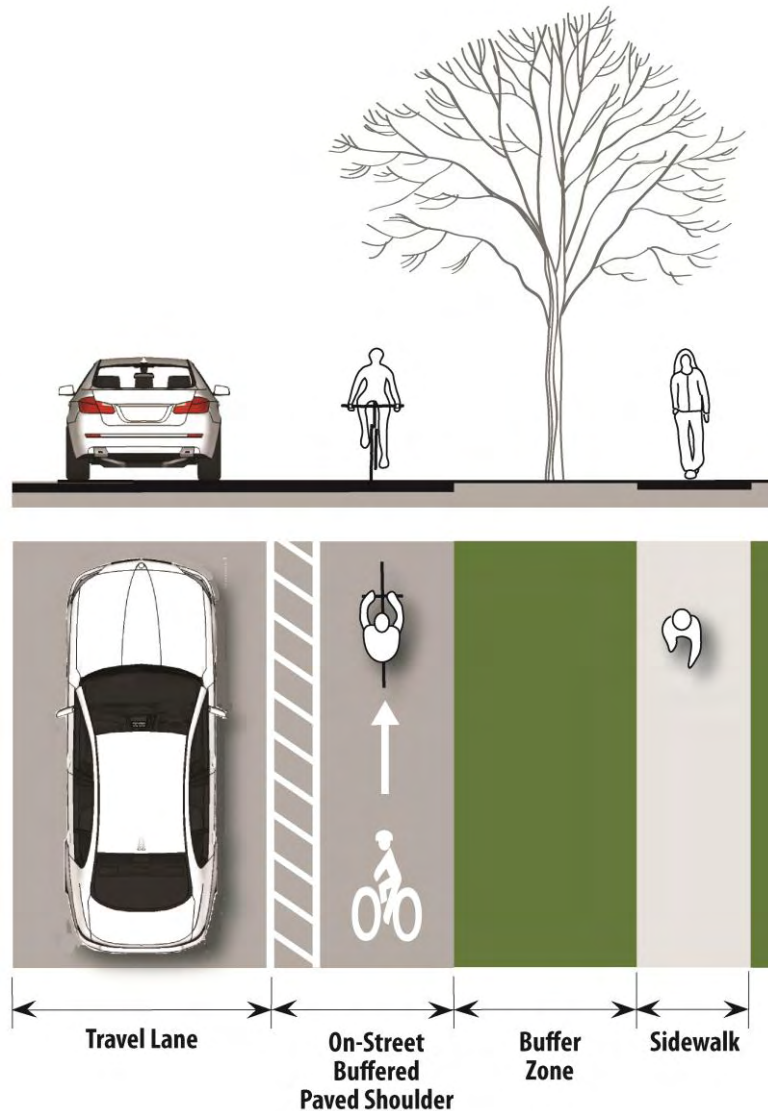
Figure 9. Bike Lanes + Sidewalks



Paved Shoulders + Sidewalks

Paved shoulders and sidewalks is the preferred treatment for portions of 7 Mile Road and 8 Mile Road. Because of the greater traffic speed, on-road paved shoulders are proposed to be 6 feet wide with an additional 2-foot striped buffer. Five-foot minimum sidewalks are also proposed for the use of pedestrians.

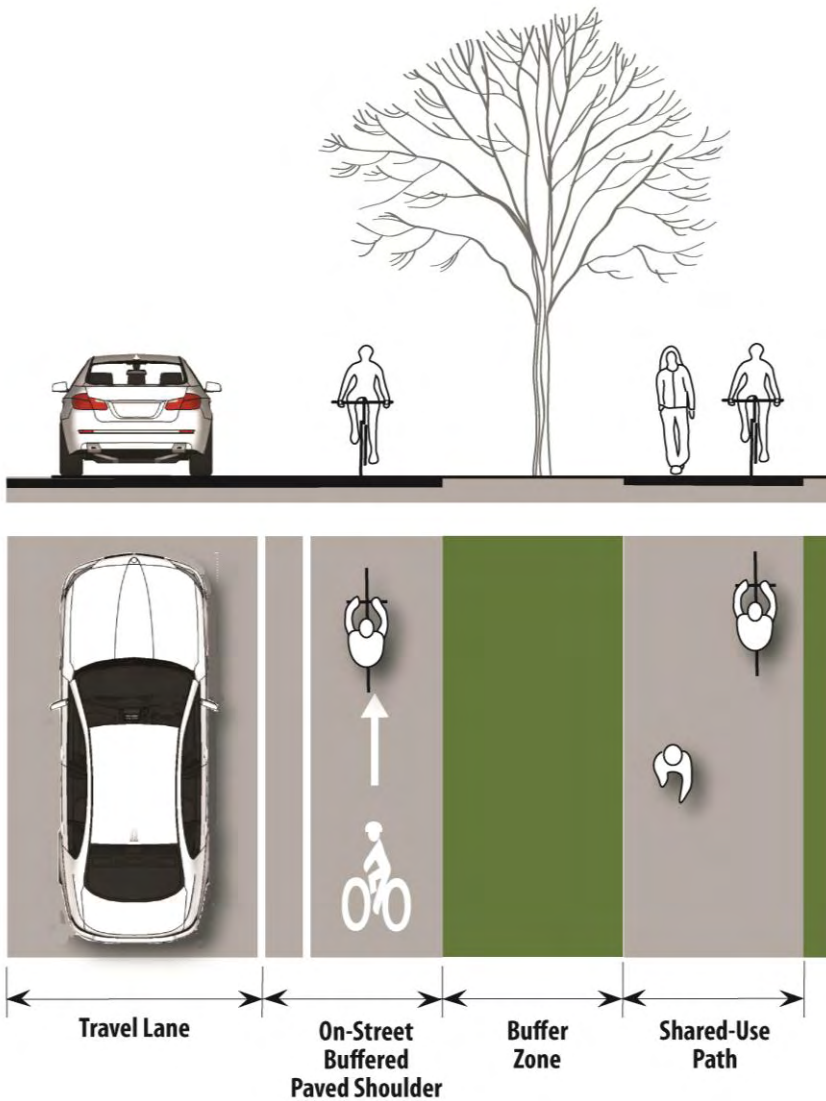
Figure 10. Paved Shoulders + Sidewalks



Paved Shoulders + Shared Use Paths

Paved shoulders and shared-use paths is the preferred treatment for portions of 8 Mile Road. Again, because of the greater traffic speed, on-road paved shoulders are proposed to be 6 feet wide with an additional 2-foot striped buffer. Shared-use paths, a minimum of 8 feet wide, are also proposed for portions of 8 Mile road to accommodate casual bicyclists and pedestrians along the busy road corridor.

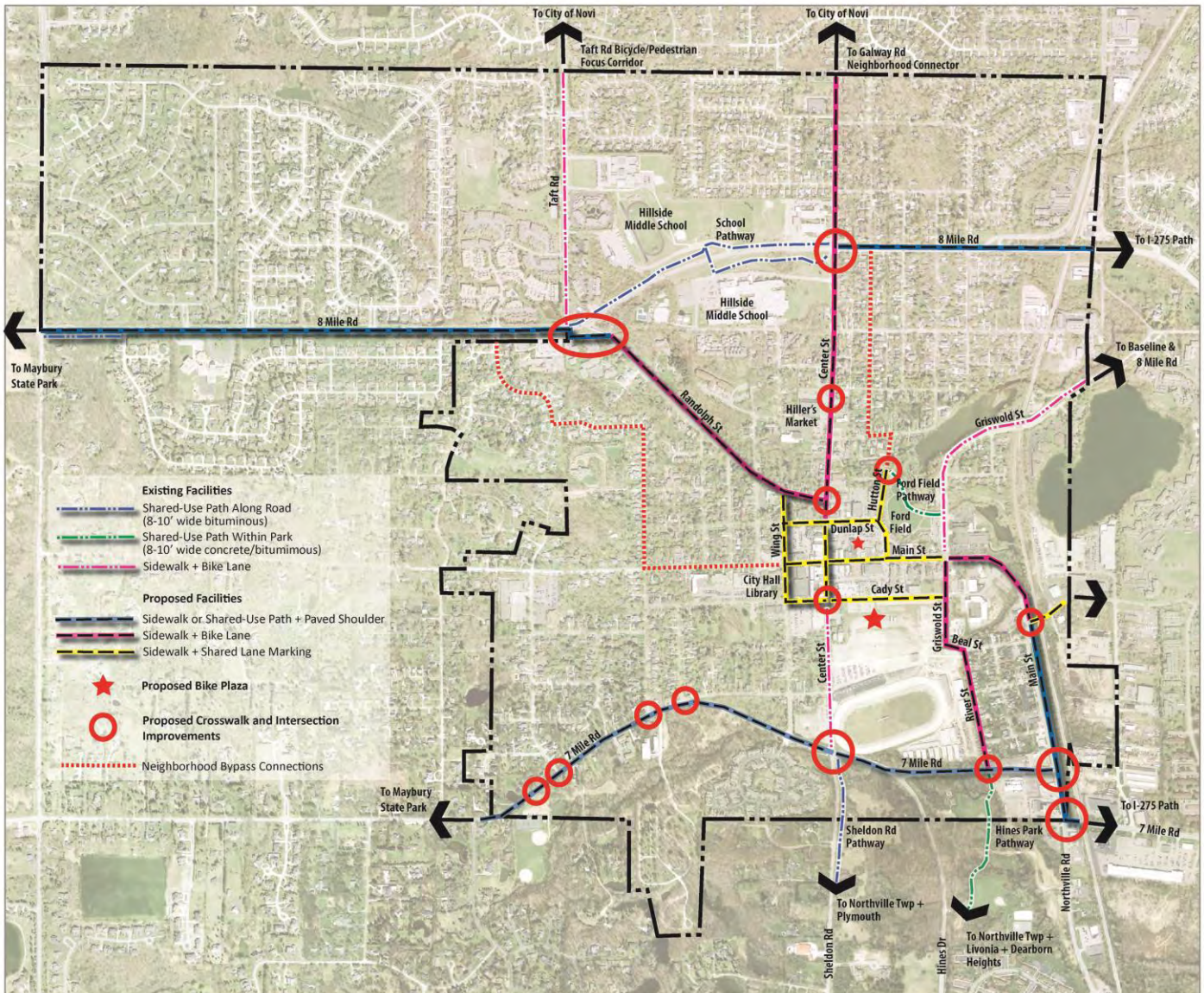
Figure 11. Paved Shoulders + Shared-Use Paths



NON-MOTORIZED PLAN FOR NORTHVILLE

The Non-Motorized Plan, illustrated below on Figure 12, depicts the proposed non-motorized routes and connections along with the recommended design treatment. The on-the-road and off-the-road facilities proposed will require additional evaluation before implementation. Additional analysis including detailed measurements of available space and other considerations such as traffic and engineering will help determine the optimum design for each location.

Figure 12. Northville Non-Motorized Plan



The recommended treatments are based on the desire to accommodate the non-motorized facilities on the existing roadway bed. Roadway widening should be kept at a minimum or reserved for intersection improvements. Strategies to modify existing roadways and accommodate the recommended improvements include:

- Narrowing the travel lanes through restriping from 12 feet to 10 or 11 feet and striping bike lanes or shared lane markings;
- Removing a travel lane and stripe bike lanes; this is appropriate by converting four-lane roadways to roadways with two-travel lanes, one center turning lane, and two bike lanes;
- Narrowing or removing the center turning lane where low left-turn movements exist and striping bike lanes;
- Removing on-street parking lane where it is possible and feasible with coordination with impacted property owners and striping bike lanes; and
- Adding pavement width to construct bicycle lanes.

The Plan also identifies a need for improving the safety of pedestrians and bicyclists crossing at roadway intersections, particularly at the high frequency crash intersections identified in the previous section. The enhancements and features at each crossing will need to be determined based on various factors including: crossing width, traffic volume, pedestrian and bicycle traffic volumes, and sight lines. The enhancements may include pedestrian refuge islands, pedestrian signals, and pavement markings. The following intersections are recommended for improvements:

- Hines Park pathway/River Street and 7 Mile Road
- 7 Mile Road and Center Street
- Cady and Center Street
- Randolph Street and 8 Mile Road/Taft Road
- 7 Mile Road intersections at Northville Road, Main Street, Fairbrook Street, Rogers Street, Orchard Drive, and Fish Hatchery Park
- Center Street intersections at Randolph Street, Hiller's Market, and 8 Mile Road
- Hutton Street intersection with Ford Field Park entry

In addition, bike rest areas or plazas are proposed in the Cady Street parking lot and by the Marquis Theater to provide access to downtown. Initially, a bike rack should be installed within the Cady Street parking structure which would help determine the need for additional amenities.

Other features should be considered with the implementation of non-motorized facilities throughout Northville. They include pavement markings, signage, and maintenance.

The standard pavement marking symbol for bike lanes is a bicycle and a directional arrow (MMUTCD, 2005). They are placed at the beginning and ending points of bike lanes as well as at regular intervals of about 750 feet. Bike lane signs should be placed at about the same location of the pavement markings.

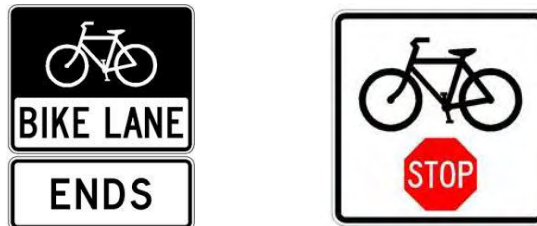
Additional signs may be located along designated non-motorized routes. They are four types of signs:



1. Route signs, which identify the non-motorized route;
2. Warning signs, which advise bicyclists and motorists of facilities and crossings;



3. Regulatory signs, which inform bicyclists of specific traffic laws and regulations such as *Bike Lane Ends*; and



4. Directional and way finding signs, which direct bicyclists to desired places and destinations; they may be placed along the non-motorized routes and at key locations in the City.



Non-motorized facilities, whether on- or off-the-road, need to be maintained regularly to remain safe. Pavement surfaces should be free of irregularities such as gaps in longitudinal paving joints, potholes, and debris.

IMPLEMENTATION

This section of the plan details the manner in which the network of non-motorized facilities may be implemented. It includes preliminary designs for Route 1, the identification of both short-term and long-term projects, a project schedule with suggested improvements, and an overview of funding opportunities.

Implementing the first route may serve as a demonstration project and can be used to evaluate the effectiveness of the recommended design treatments and monitor public reaction and support for future projects.

PRIORITY ROUTE 1

Priority Route 1 connects Hines Park pathway with Taft Road and Maybury State Park. The route uses different design treatments along each road segment:

- 7 Mile Road: paved shoulders + sidewalks
- Center Street: bike lanes + sidewalks
- Cady and Wing Streets: shared lane markings + sidewalks
- Randolph Street: bike lanes or shared lane markings + sidewalks
- 8 Mile Road: paved shoulders + shared-use pathways

Additional improvements include crosswalk pavement markings at each road intersection as well as route signage. The 8 Mile Road and Randolph Street intersection presents the most challenging circumstances for pedestrians and bicyclists with different options available for the different types of users:

- Pedestrians travelling west are expected to follow the sidewalk on the west side of Randolph Street and merge with the shared-use path along the south side of 8 Mile Road;
- Pedestrians travelling east are expected to follow the sidewalk on the west side of Randolph Street and cross 8 Mile Road at the intersection traffic light to connect to the shared-use path along the north side of 8 Mile Road;
- Bicyclists travelling west and wanting to use the 8 Mile Road paved shoulders are expected to remain on the road, as motorists would, and connect to the 8 Mile Road paved shoulders at the intersection; signs will need to be posted at the exit from the gas station located on the north side of 8 Mile Road to warn motorists

of the presence of bicyclists; a bike box or area at the head of the traffic lane at the intersection may also be designated and marked to better accommodate left-turning bicycle traffic;

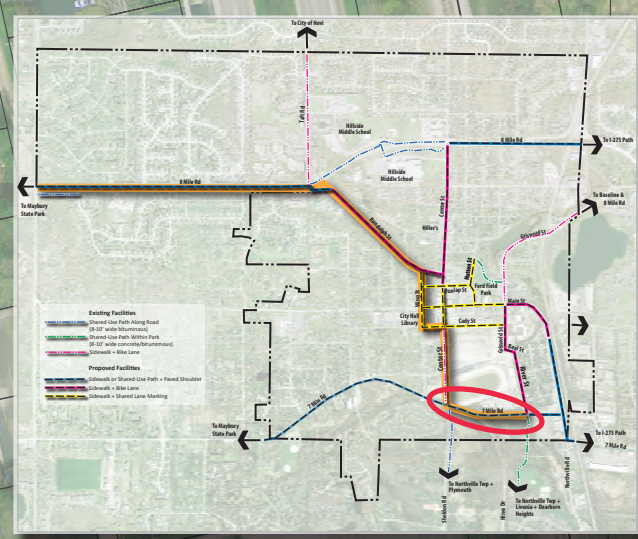
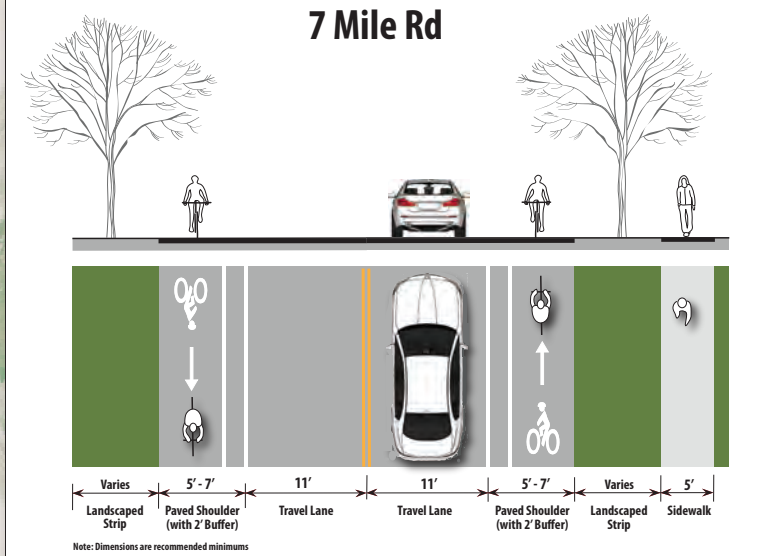
- Bicyclists travelling west and wanting to use the shared-use path along 8 Mile Road can cross Randolph at the intersection traffic light or may be able to cross Randolph before the median with appropriate warning lights and signs;
- Bicyclists travelling east need to cross 8 Mile Road at the intersection traffic light to reach the existing shared-use path along the north side of 8 Mile Road.

Further study of the Randolph Street/8 Mile Road intersection will be needed to determine adequate safety features at that intersection. This will include a more in-depth examination of the roadway configuration, pedestrian volume, vehicle speed, traffic flow and volume, sight distance, vehicle mix, and any other relevant engineering aspects. Features and enhancements may include rapid flash beacons, in-street *yield to pedestrians* signs and flashers, refuge island, bike box, and warning signs and pavement markings.

The next pages detail the preliminary designs proposed for each segment.

Center St

7 Mile Rd



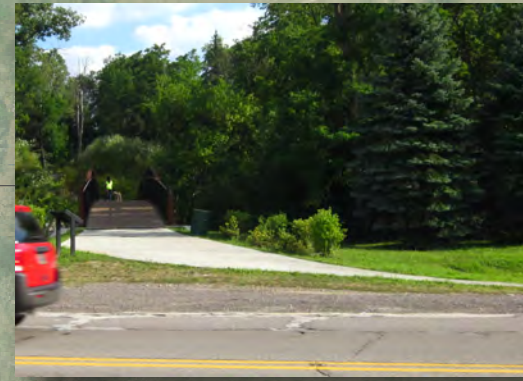
7 Mile Rd

Left-Turn Markings for Bicycle Route

- Bike Lane
- Shared-use Lane - Sharrow Markings
- Paved Shoulder
- Shared-use Path
- Sidewalk
- Crosswalk

Sheldon Rd

Existing Sheldon Rd Side Path



Hines Dr

Existing Hines Park Bikeway



7 Mile Rd Segment Concept Plan Priority Non-Motorized Route

City of Northville, Michigan



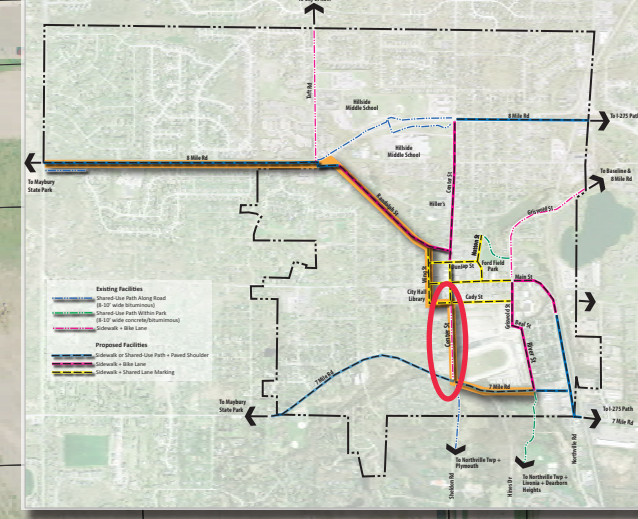
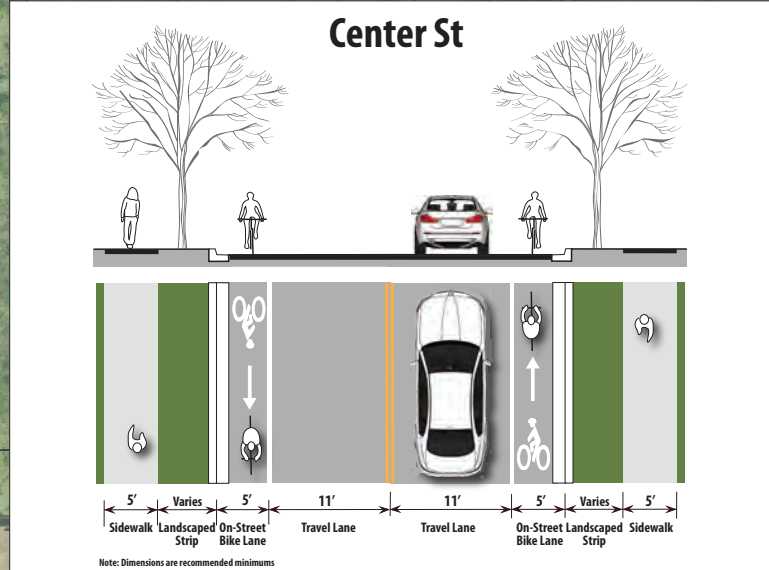
Cady St

Left-Turn Markings for Bicycle Route

Wing St

Center St

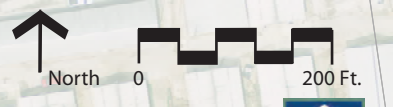
7 Mile Rd

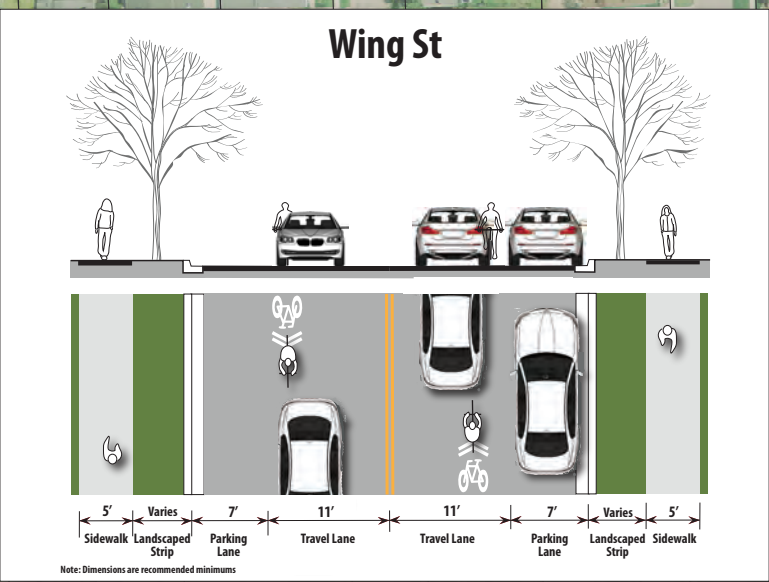
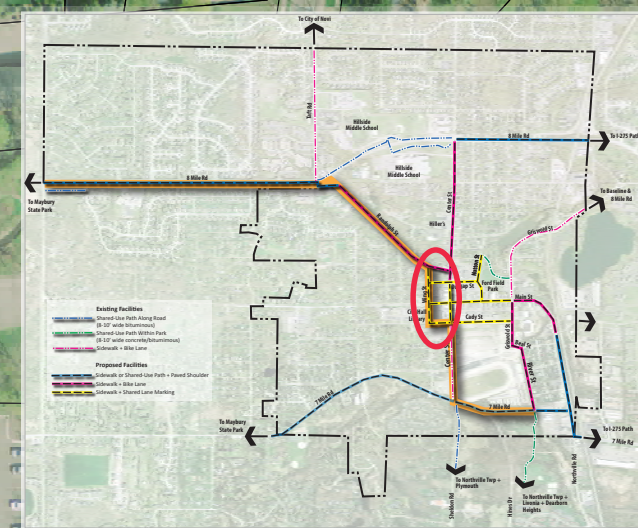


- Bike Lane**
- Share-use Lane - Sharrow Markings**
- Paved Shoulder**
- Shared-use Path**
- Sidewalk**
- Crosswalk**

**Center St. Segment
Concept Plan
Priority Non-Motorized Route**

City of Northville, Michigan





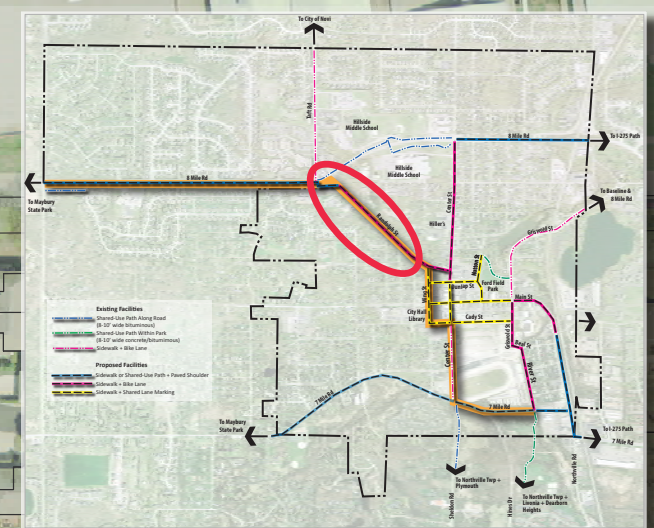
- Bike Lane
- Shared-use Lane - Sharrow Markings
- Paved Shoulder
- Shared-use Path
- Sidewalk
- Crosswalk



**Cady-Wing St. Segment
Concept Plan**
Priority Non-Motorized Route

City of Northville, Michigan





Bike lane on north side and shared-use markings on south side (to maintain a parking lane)

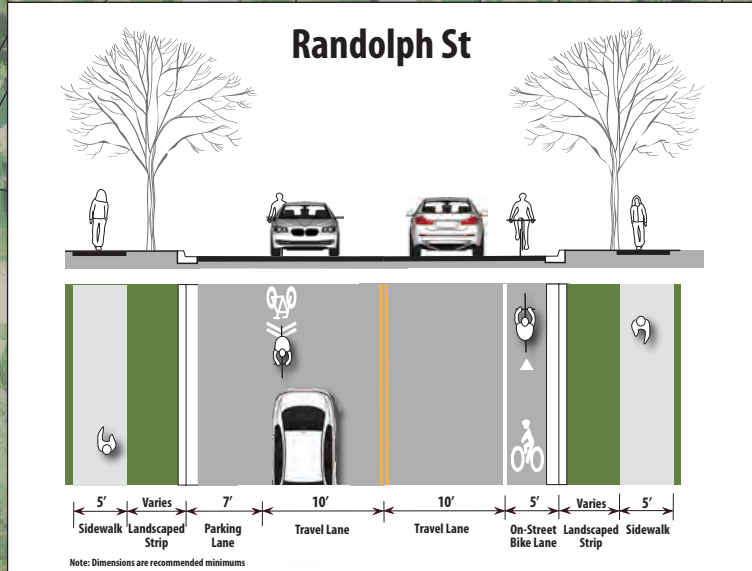
Beginning of parking lane

Randolph St. Segment Concept Plan
Priority Non-Motorized Route
 City of Northville, Michigan

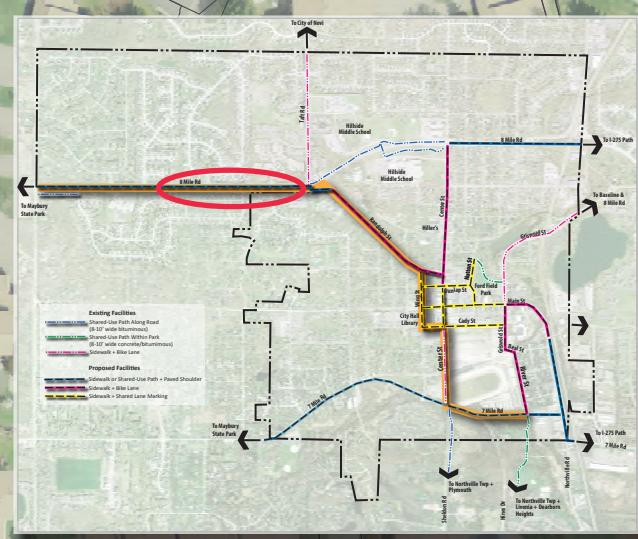
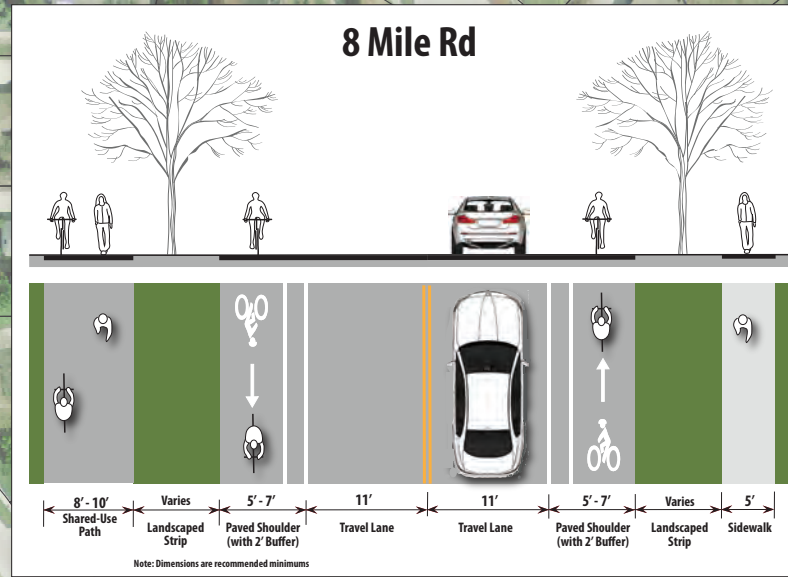
North ↑

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Carlisle/Wortman Associates
 November 2013



- Bike Lane
- Shared-use Lane - Sharrow Markings
- Paved Shoulder
- Shared-use Path
- Sidewalk
- Crosswalk



8 Mile Rd

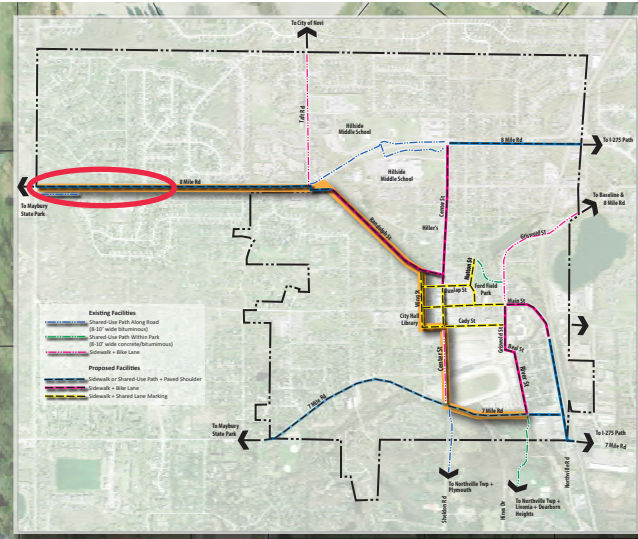
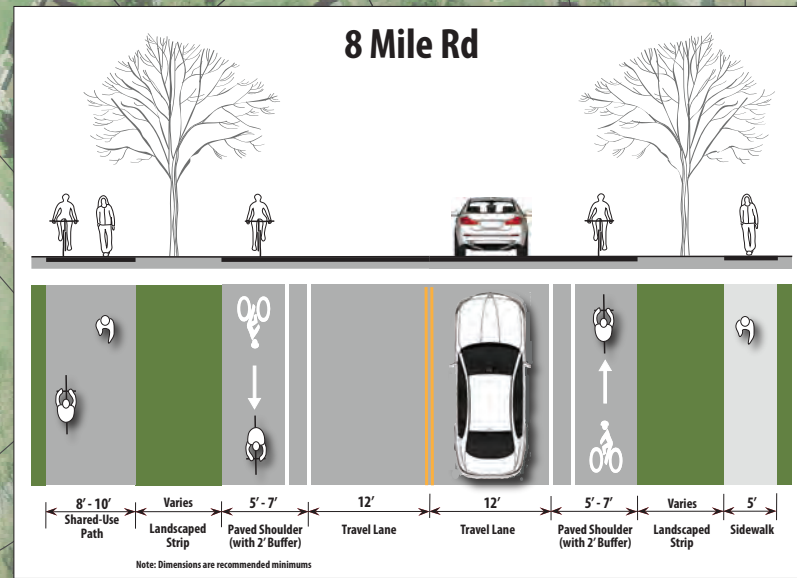


- Bike Lane
- Shared-use Lane - Sharrow Markings
- Paved Shoulder
- Shared-use Path
- Sidewalk
- ▬▬▬▬▬ Crosswalk

8 Mile Rd Segment - Part 1 Concept Plan Priority Non-Motorized Route

City of Northville, Michigan





**Newly Built
8 Mile Bike Lanes**

8 Mile Rd

**Newly Built
8 Mile Shared-Use Pathway**

- **Bike Lane**
- **Shared-use Lane - Sharrow Markings**
- **Paved Shoulder**
- **Shared-use Path**
- **Sidewalk**
- ▬▬▬▬▬ **Crosswalk**

**8 Mile Rd Segment - Part 2
Concept Plan
Priority Non-Motorized Route**

City of Northville, Michigan



IMPLEMENTATION SCHEDULE

Table 1 details the estimated costs for implementation of Route 1. Table 2, on the next page, lists the remaining proposed improvement projects.

Although implementation will be dependent on a variety of factors such as street project schedules, grant opportunities, and funding, priorities were based on access to community destinations, link to existing non-motorized routes, institutional support, and ease of construction.

Table 1. Priority Route 1 Cost Estimates

Road Segment and Proposed Improvements	Quantity	Unit	Unit Price	Cost Estimate
7 Mile Rd - Hines Park Pathway to Center St				
Sidewalk - North Side (2,070')	10,350	SF	\$4	\$41,400
Paved Shoulders – North Side (2,000')	1,556	SY	\$50	\$77,800
Paved Shoulder Line Marking - North Side (2,000')	2,000	LF	\$.35	\$700
Paved Shoulder – South Side (2,300')	1,789	SY	\$50	\$89,450
Paved Shoulder Line Marking - South Side (2,300')	2,300	LF	\$.35	\$805
Bike Lane Symbol Markings	7	EA	\$200	\$1,400
Center St - 7 Mile Rd to Cady St	-	-	-	-
Cady St - Center St to Wing St				
Shared Lane Symbol Markings (420')	4	EA	\$250	\$1,000
Wing St - Cady St to Randolph St				
Shared Lane Symbol Markings (1,165')	8	EA	\$250	\$2,000
Randolph St - Wing St to 8 Mile Rd				
Bike Lane Line Marking - North Side (2,930')	2,930	LF	\$.35	\$1,026
Bike Lane Symbol Markings	5	EA	\$200	\$1,000
Shared Lane Symbol Markings - North Side (260')	1	EA	\$250	\$250
Shared Lane Symbol Markings - South Side (3,020')	6	EA	\$25	\$1,500
8 Mile Rd - Randolph St to Beck Rd				
Paved Shoulder – North Side	4,597	SY	\$50	\$229,850
Paved Shoulder Line Marking -North Side (5,910')	5,910	LF	\$.35	\$2,069
Paved Shoulder – South Side	4,426	SY	\$50	\$221,300
Paved Shoulder Line Marking - South Side (5,690')	5,690	LF	\$.35	\$1,992
Bike Lane Symbol Markings	16	EA	\$200	\$3,200
Existing Concrete Sidewalk Removal (6,067'X5')	30,335	SF	\$1	\$30,335
Shared-Use Path - South Side (6,067' X 8')	5,393	SY	\$43	\$231,899
4-3 Lane conversion – 8 Mile Rd (Randolph-end 1,575')			Lump Sum	\$4,000
Crosswalks (37 @ average 30')	1,110	LF	\$12	\$13,320
Signs	40	EA	\$250	\$10,000
Total				\$966,296

Note: Cost estimates are for budgetary purposes only. Further investigations will be necessary to determine the engineers' probable cost opinions.

Assumed 7 feet width pavement added for paved shoulders; this may not be needed for the entire segment length as is current improvement plans for 8 Mile Road show. Pavement markings may simply be needed along portions of the newly reconstructed 8 Mile Road.

The priority routes are as follows:

- Priority Route 1: Hines Park Bikeway to Maybury State Park via Randolph Street
- Priority Route 2: Hines Park Bikeway to 8 Mile Road
- Priority Route 3: Northville Road/7 Mile Road to Downtown through Main Street
- Priority Route 4: Remainder of 7 Mile Road
- Priority Route 5: Center Street to 8 Mile Road
- Other Connections Downtown Area Improvements
- Other Amenities

Table 2. Improvement Schedule

Road	From	To	Type	Distance in Feet	Cost Estimate
Priority Route 2					
River St	7 Mile Rd	Beal St	Shared Lanes	1,630	\$1,000
Beal St	River St	Griswold St	Shared Lanes	260	\$500
Griswold St	Beal St	Main St	Bike Lanes	1,160	\$1,612
Griswold St	Main St	City Limits	Bike Lanes	3,490	\$3,630
8 Mile Rd	City Limits	Center St	Shared-Use Path	3,490	\$307,896
Priority Route 3					
Main St	7 Mile Rd	Doheny Dr	Bike Lanes	2,710	\$6,897
			Shared-Use Path	2,710	\$103,580
Main St	Doheny Dr	Griswold St	Bike Lanes	1,550	\$4,000
7 Mile Rd	Main St	Hines Park Pathway	Sidewalk	910	\$18,200
			Paved Shoulders	910	\$36,000
Priority Route 4					
7 Mile Rd	Center St	City Limits	Sidewalk	2,560	\$51,200
			Paved Shoulders	5,150	\$402,359
Priority Route 5					
Center St	Cady St	Dunlap St	Shared Lane	1,030	\$1,000
Center St	Dunlap St	8 Mile Rd	Bike Lane	3,665	\$7,700
Other Connections					
Dunlap St	Hutton St	Wing St	Shared Lane	1,290	\$1,000
Main St	Griswold St	Wing St	Shared Lane	2,120	\$1,500
Cady St	Griswold St	Wing St	Shared Lane	1,550	\$1,500
Hutton St	Main St	Ford Field Park Entry	Shared Lane	1,220	\$1,000
Other Features					
Bike parking - Inverted U rack				Each	\$240
Bike corral				Each	\$3,000
Locker				Each	\$2,000
Drinking Fountain - Incl. water service				Each	\$15,000
Trash Receptacle				Each	\$1,200
Bench				Each	\$1,000

Note: Cost estimates are for budgetary purposes only. Further investigations will be necessary to determine the engineers' probable cost opinions.

FUNDING OPPORTUNITIES

The following programs are potential funding opportunities for developing pedestrian and non-motorized transportation facilities. The type of projects allowed depend on the program, however, the categories range from planning and construction of pedestrian or bicycle facilities to design of public spaces, educational programs, research, and methods for reducing air pollution.

MAP-21: Transportation Alternatives Program & Safe Routes to Schools

MAP-21 (Moving Ahead for Progress in the 21st Century Act) is the most recent federal transportation funding law. It consolidates transportation funding programs that were available under the previous funding law including the Transportation Enhancement program, the Safe Routes to School program, and the Recreation Trails program into a program called Transportation Alternatives Program (TAP). This singular program is the largest federal source for trail funding.

Transportation Alternative activities are projects that "expand travel choices and enhance the transportation experience by integrating modes and improving the cultural, historic, and environmental aspects of our transportation infrastructure." Activities which may apply to the City of Northville include:

- Construction, planning, and design of on-road and off-road facilities for pedestrians, bicyclists, and other non-motorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act; and
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.

Transportation Enhancement and Safe Routes to School (K – 8th grade) funds are distributed through a partnership between SEMCOG and MDOT. Each project are jointly evaluated by SEMCOG and MDOT staff to determine eligibility, consistency with TAP program requirements, and how well the project meets SEMCOG's Creating Success goals.

Approximately \$5 million will be available to be distributed in the SEMCOG region in 2014. Applications must be submitted through the Michigan Department of Transportation's online grant system (MGS). A minimum 20 percent local match is required for proposed projects and applications are accepted online. Applications for 2015 are currently being accepted.

<http://www.semco.org/TAPCall.aspx>

Michigan Transportation Fund (Act 51)

Revenues from the Michigan Transportation Fund (MTF) are generated from state gas and value taxes. The funding is divided among MDOT, road commissions, cities, and villages. Each Act 51 agency is required by law to spend at a minimum an average of one percent of their Act 51 dollars on non-motorized improvements for 10 years subsequent to Act 51 award. This amounts to \$343,000 (based on June 2013 figures) for the City of Northville. This amount can be used to provide portion of a match for federal funds. The City spent over \$500,000 on non-motorized projects in the last 10 years.

Congestion Mitigation/Air Quality

This funding is provided to areas that are not in compliance with air quality standards or are in a maintenance area for air quality nonattainment issues. Congestion Mitigation/Air Quality (CMAQ) projects are awarded competitively and jointly between MDOT and the Southeast Michigan Council of Governments (SEMCOG). Applicants must demonstrate that they reduce emissions in order to be considered eligible for funding as determined by the Federal Highway Administration. Southeast Michigan is a designated non-attainment area.

http://www.michigan.gov/mdot/0,4616,7-151-9621_11041_60661---,00.html

Michigan Natural Resources Trust Fund

State grants are available to local units of government for acquisition and development of land and facilities for outdoor recreation such as shared-use paths. 2013 priorities were trails, wildlife/ecological corridors, and projects located within urban areas. The Michigan Natural Resources Trust Fund (MNRTF) provides funding for the purchase and development of land for natural resource based preservation and recreation. Goals of the program are to:

- Protect natural resources and provide for their access, public use and enjoyment,

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- Provide public access to Michigan's waters, particularly the Great Lakes and facilitate their recreation use,
 - Meet regional, county, and community needs for outdoor recreation opportunities,
 - Improve the opportunities for outdoor recreation in urban areas, and
 - Stimulate Michigan's economy through recreation related to tourism and community revitalization.

Grant proposals must include a local match of at least 25 percent of the total project cost. There is no minimum or maximum for acquisition projects. For development projects, the minimum funding request was \$15,000 and the maximum was \$300,000 in 2013. Applications are usually due in April.

http://www.michigan.gov/dnr/0,4570,7-153-58225_58301---,00.html

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) is a federal appropriation to the National Park Service, who distributes funds to the Michigan Department of Natural Resources for development of outdoor recreation facilities. The focus of the program has recently been on trailway systems and other community recreation needs such as playgrounds, picnic areas, athletic fields, and walking paths. Minimum grant requests were \$30,000 and maximum requests were \$75,000 in 2013. The match percentage must be 50 percent of the total project cost. Applications are usually due in April.

http://www.michigan.gov/dnr/0,4570,7-153-58225_58672---,00.html

Advocacy Advance Rapid Response Grant

Advocacy Advance is the partnership of the Alliance for Biking & Walking and the League of American Bicyclists. They work to boost local and state bicycle and pedestrian advocacy efforts. This grant is intended to help advocacy organizations take advantage of unexpected opportunities to win, increase, or preserve funding for biking and walking. These grants are available to non-profit groups; however, partnerships with local governments are encouraged. Eligible activities include campaigns centered around transportation bonds or ballot initiatives, campaigns to attain and spend public funding, campaigns to preserving existing allocations of public funding at risk of being cut, and development of specialized tools and materials to reach targeted audiences who may influence the decision for increased funding on biking and walking.

<http://www.advocacyadvance.org/grants>

DALMAC Fund

The goals of the DALMAC Fund are to expand and improve the bicycling environment in Michigan, increase bicycle safety, and promote goodwill toward bicycling in the community. Eligible activities include construction and design of bicycle facilities, bicycle education programs, bicycle promotion activities, purchase of bicycles and related equipment, and developing bicycle routes or maps. No specific match is specified and applications were due in March for 2013.

<http://www.biketcba.org/dfund.php>

PeopleForBikes Community Grant Program (formerly Bikes Belong)

The PeopleForBikes community grant program is funded by members of the American Bicycle Industry. Their mission is to put more people on bikes more often. The program funds projects in three categories: facility, education, and capacity building. Requests for funding can be up to \$10,000 for projects such as bike paths, trails, lanes, parking, transit, and safe routes to school. Applications are reviewed on a quarterly basis.

<http://www.peopleforbikes.org/pages/community-grants>

Small Grant Programs

Kodak, the National Geographic Society, and the Conservation Fund provide small grants to stimulate the planning and design of greenways. The grant program was instituted in response to the President's Commission on Americans Outdoors recommendation to establish a national network of greenways. The application period typically runs from March 1st through June 1st. Program goals are to develop new, action-oriented greenways projects, assist grassroots greenway organizations, leverage additional money for conservation and greenway development, and recognize and encourage greenway proponents and organizations. While the maximum grant amount is \$2,500, most grants range from \$500 to \$1,500.

<http://www.conservationfund.org/press-releases/newskodak-american-greenways-grant-2011/>










Other Sources and Local Support





Additional funds may be available through local economic development funds (DDA), and other sources, which can be used for match dollars. Public support for pedestrian and bicycle facility development will be crucial in determining non-motorized transportation success of Northville. A specific millage over a limited period could be considered in the future for particular projects such as bike lane marking, shared-use path development, or maintenance of the non-motorized facilities.

The City of Northville should investigate additional sources of funding. Seeking donations, attracting sponsors, holding fund-raising events, and seeking out other revenue sources are methods that should be pursued aggressively to raise funding for walk and bike way development.

APPENDIX

City of Northville Non-Motorized Plan – Street Analysis

REGIONAL CONNECTION – Priority Route from Hines Drive to Maybury State Park				
				
Road Segment	Hines Drive Pathway	River St 7 Mile to Beal	Beal St River to Griswold	Griswold Beal to Cady
Pavement Width*	8' 4"	2 lanes no curbs 21' 5"	2 lanes + curbs 27' 8" Bridge	2 lanes + parking lane + curbs 35' 1" Gutters paved over
On-Street Parking		Both sides	No parking	West side
Traffic Volume**		No AADT available Utility poles, tree line	No AADT available	No AADT available
Potential Improvements	Intersection improvements at 7 Mile Rd.	Shared lane markings first phase Future shared-use path along west side within an easement+ bike lanes	Shared lane markings	Bike lanes
				
Road Segment	Cady St Griswold to Hutton	Cady St Hutton to Center	Cady St Center to Wing	Cady St Bike Plaza
Pavement Width	2 lanes + parking lanes + curbs 38' 2"	2 lanes + curbs 25' 9"	2 lanes + parking lane + curbs 35" 30' bump out to curb- 7'9" parking lane	
On-Street Parking	Both sides w/bulb-outs 25' through roadway	Both sides	North side w/bulb-outs	
Traffic Volume	No AADT available	No AADT available	No AADT available	N/A
Potential Improvements	Shared lane markings Future bike lanes	Shared lane markings Future bike lanes	Shared lane markings Future bike lanes	Bike Parking Corral Drinking Fountain Shelter and Picnic Area
				
Road Segment	Wing St Cady to Main	Wing Street Main to Randolph	Randolph St Wing to 8 Mile	8 Mile Rd W of Randolph
Pavement Width	2 lanes + parking lanes + curbs 35' 6"	2 lanes + parking lanes + curbs 36' no gutter w side	2 lanes + parking lane + curbs 31' 5"	2 lanes + deceleration/ acceleration lanes + more at intersections Width varies No curbs except at subdivision entrances
On-Street Parking	Both sides	Both sides	South side	No parking
Traffic Volume	No AADT available	No AADT available	No AADT available Median at 8 Mile intersection	10,990 AADT (2012)
Potential Improvements	Share lane markings Future bike lanes	Shared lane markings Future bike lanes	Bike lanes or combination one bike lane + one shared lane marking	Paved shoulders/buffered bike lanes + shared-use path (priority on south side)/sidewalk
*:face to face of curb measurement ** AADT data from SEMCOG				

OTHER CONNECTIONS				
				
Road Segment	7 Mile Rd/Main/Northville Rd 7 Mile to 7 Mile	7 Mile Rd Main/Northville to Center	7 Mile Rd Center to Fairbrook	7 Mile Rd Fairbrook to City limits
Pavement Width	4 lanes +median No curb/gutter on outer edge 29' 15" (SB) 28' 10" (NB)	2 lanes no curbs 30' 6"	2 lanes no curbs 32'	2 lanes no curbs 21' 5"
On-Street Parking	No parking	No parking	No parking	No parking
Traffic Volume	No AADT available	6,920 AADT (2009)	10,040 AADT (2009)	7,455 AADT (2009)
Potential Improvements	Paved shoulders/bike lanes + sidewalks on east side + shared use path along west side+ left turn bike lane at 7 Mile Rd intersection	Paved shoulders/bike lanes + sidewalks	Paved shoulders/bike lanes + sidewalks	Paved shoulders/bike lanes + sidewalks
				
Road Segment	W Main St Wing to Rodgers	Rodgers St W Main to 7 Mile		
Pavement Width	2 lanes + curbs 36' (To be measured)	2 lanes + curbs 36' (To be measured)		
On-Street Parking	Both sides	Both sides		
Traffic Volume	No AADT available	No AADT available		
Potential Improvements	Bike lanes	Bike lanes		
				
Road Segment	N Center St Dunlap to Rayson	N Center St Walnut to Baseline	N Center St Baseline to 8 Mile	
Pavement Width	2 lanes + center turning lane 35' 3" + curb	2 lanes + median 13' 6"- curbs	2 lanes + center turning lane 35' 4"	
On-Street Parking	No parking	No parking	No parking	
Traffic Volume	No AADT available	No AADT available	No AADT available	
Potential Improvements	Bike lanes	Shared lane markings	Bike lanes	

				
Road Segment	E Main St Hutton to Griswold	E Main St Griswold to Beal	E Main St Beal to 7 Mile	
Pavement Width	2 lanes + parking lanes + curbs 38' 2" (?-To be measured)	4 lanes - no curbs 51' 8"	4 lanes +median No curb/gutter on outer edge 29' 7" (SB) 28' 13" (NB)	
On-Street Parking	Both sides w/bulb outs	No parking	Some parking east side	
Traffic Volume	No AADT available	No AADT available	No AADT available	
Potential Improvements	Shared lane markings	Bike lanes with road diet: 4 to 3 lanes	Paved shoulders/bike lanes + shared use path along west side+	
				
Road Segment	Dunlap St Hutton to Wing	Main St Hutton to Wing	Hutton St Main to Dunlap	Hutton St Dunlap to Rayson
Pavement Width	2 lanes + parking lanes + curbs To be measured	2 lanes + parking lanes + curbs To be measured	2 lanes + parking lanes + curbs To be measured	2 lanes + curbs 25' 10"
On-Street Parking	Both sides	Both sides	Both sides	No parking
Traffic Volume	No AADT available	No AADT available	No AADT available	No AADT available
Potential Improvements	Shared lane markings in downtown	Shared lane markings in downtown	Shared lane markings in downtown	Shared lane markings
				
Road Segment	Griswold St Cady to Main	Griswold St Main to bridge	Griswold St Bridge to City limits	E 8 Mile Rd
Pavement Width	2 lanes + parking lanes + curbs gutters paved 35' 1"	2 lanes + parking lanes + curbs gutters paved 35' 9"	Divided Roadway Varies	2 lanes + deceleration/ acceleration lanes + more at intersections Width varies No curbs except at subdivision entrances
On-Street Parking	West side	No parking	No parking	No parking
Traffic Volume	No AADT available	No AADT available	No AADT available	High speed 10,280 AADT (2004)
Potential Improvements	Bike lanes	Existing bike lanes	Existing bike lanes	Paved shoulders/bike lanes (buffered) + Shared-use paths