



NON-MOTORIZED TRANSPORTATION PLAN

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Midland Area Transportation Study
Metropolitan Planning Organization

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Introduction

In 2015 the Midland Area Transportation Study completed its first Non-motorized Transportation (NMT) Plan. Now 6 years later, much more information is available regarding the state of NMT in the MATS area. In addition, some facilities have been constructed, some have been delayed, and area municipalities have updated their plans, programs, and projects. All of this led to the conclusion that the MATS Non-motorized Transportation Plan needed to be revised and updated.

This Non-Motorized Transportation Plan (NMT Plan) is an endeavor by MATS to provide a structured way of enhancing non-motorized transportation within its boundaries and promoting development of an NMT system that is comprehensive, connected, usable and safe.

In order to accomplish this, our NMT Plan is comprised of eight elements:

1. Definitions

In this section we will explain the various terms and types of NMT facilities.

2. Importance of Non-Motorized Transportation

The importance of NMT facilities in a broad range of areas will be explored in this section. It will be shown that there is a wide consensus as to the societal benefits of incorporating NMT facilities and NMT planning into the greater framework of transportation options.

3. MATS NMT Goal

Here we present the basis of, and rationale for, the MATS NMT Goal that ultimately serves as the foundation of this document.

4. MATS Policies and Planning Framework

In this section we present the MATS Complete Streets Policy, as well as the planning framework that utilizes the MATS Long Range Plan and the 4-year Transportation Improvement Program (TIP).

5. Existing Conditions Related to Non-Motorized Transportation

When planning for NMT facilities it is useful to have information such as accident locations and frequency, as well as average daily traffic volumes, and other factors. These are presented in this section.

6. Existing Non-motorized Transportation Facilities

An inventory of Non-motorized facilities that are currently in place was investigated and mapped to aid in the identification of network deficiencies and opportunities for improvement. Mapped elements include paved and unpaved shared use paths, dedicated and marked bicycle lanes, roadway segments with paved shoulders greater than 4 feet, and signed US Bicycle Routes or designated regional corridors. However, it should be noted that this plan does not document all areas that have sidewalks, dedicated cross walks, and that any information contained herein should be used for planning purposes only.

7. MATS Proposed NMT Projects

The results of a broad discussion regarding future projects is presented in this section of the plan. Proposed future improvements, facilities, and designations were sought from the MATS area municipalities, i.e. county road commissions, cities, villages, townships and the State of Michigan. Some of these agencies will have the ability to implement aspects of this plan involving construction or modification of the NMT network. However, there may, or may not be specific funding amounts or sources associated with these proposed projects, as they vary greatly in the time frame for their intended completion.

8. Non-motorized Transportation Funding Options, and Implementation

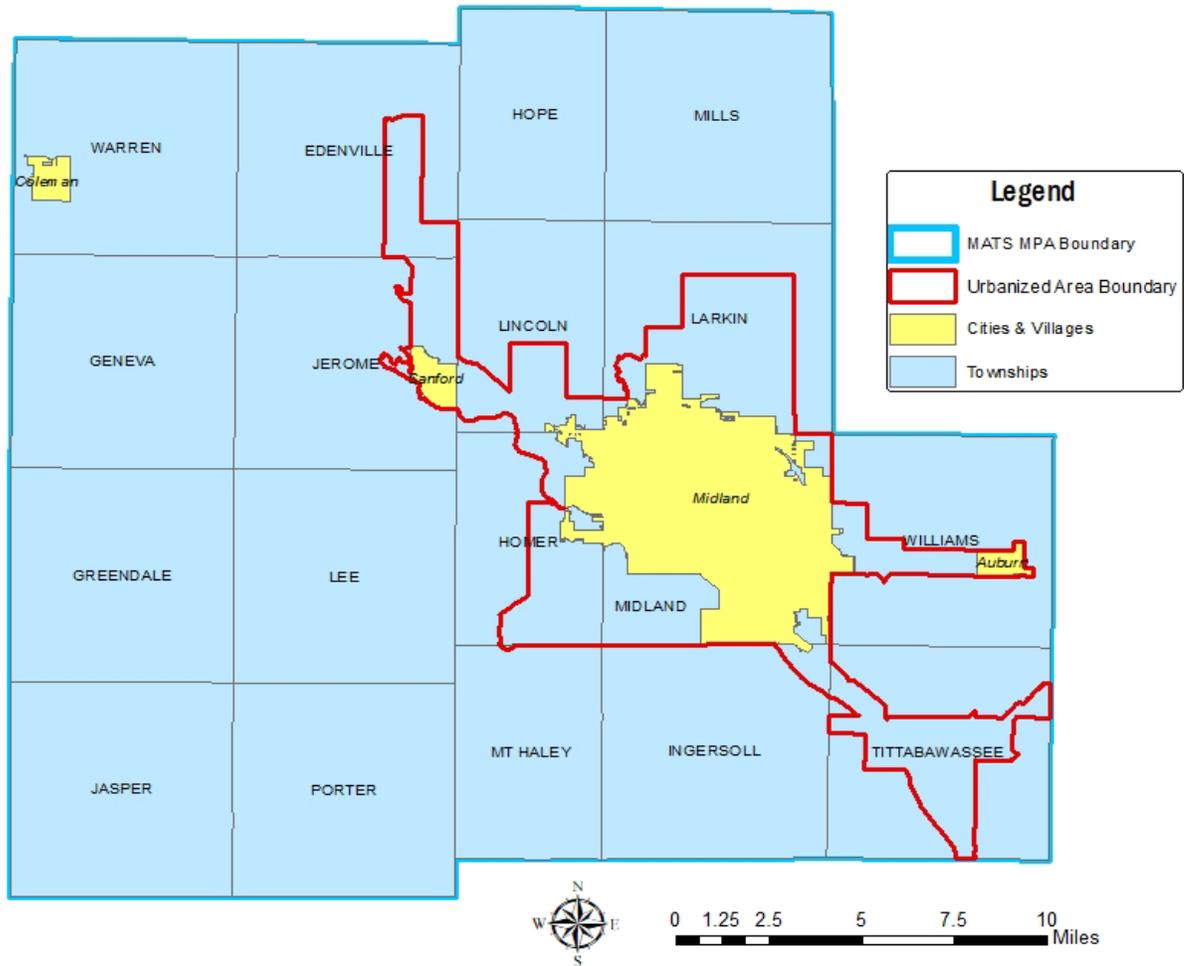
Research into the various opportunities for Non-motorized transportation funding was conducted to provide a resource to local agencies dealing with the challenges of securing funding for Non-motorized infrastructure. Included in this section is a discussion of the implementation process and its significance.

What is MATS?

Recognizing that many transportation actions and their impacts are by nature regional in scope, the transportation planning process is aimed at creating a forum in which local, State and Federal agencies responsible for developing transportation improvements can act in a coordinated manner. This approach facilitates comprehensive and orderly development of transportation facilities and services. Every urbanized area with a population of more than 50,000 must have a designated Metropolitan Planning Organization (MPO) for transportation to qualify for federal highway or transit assistance. The United States Department of Transportation (USDOT) relies on the MPOs to ensure that highway and transit projects that use federal funds are products of a credible planning process and meet local priorities. USDOT will not approve federal funding for urban highway and transit projects unless they are on the MPO's program. Thus, the MPO's role is to develop and maintain the necessary transportation plan for the area to assure that federal funds support these locally developed plans. The MPOs have also been given the responsibility to involve the public in this process through expanded citizen participation efforts. *The Midland Area Transportation Study (MATS) is the MPO for the Midland Urbanized area, designated by Governor Snyder on January 8, 2013, and redesignated to the current boundary on May 2, 2018.*

The MATS metropolitan planning area is defined as all of Midland County, the City of Auburn and Williams Charter Township in Bay County, and Tittabawassee Township in Saginaw County. MATS' goal is to assist in the development and preservation of a safe, effective, well-maintained, efficient, and economical transportation system for the Midland metropolitan area while minimizing negative impacts on the physical and social environments and related land uses. Its primary role is regional planning in coordination with local agencies, programming and administration of transportation projects utilizing federal funding. The agency ensures participation from the public and the affected agencies in the area to further develop and improve the planning process. MATS recognizes its responsibility to provide fairness and equity in all of its programs and activities, including NMT, and that it must abide by and enforce federal and state legislation related to transportation.

Midland Area Transportation Study (MATS) Jurisdiction



Definition of terms related to NMT facility types

When we refer to non-motorized facilities, what exactly are we describing? What are the various types of non-motorized facilities, routes, or systems? In order to understand the mapped resources throughout this plan it is critical to make distinctions between the different types of non-motorized facilities.

In 2014, The Michigan Department of Transportation released a “Bicycle and Pedestrian Terminology” booklet. Below are some commonly used terms and definitions, largely taken from the MDOT booklet, but also from other sources.

Bicycle Boulevard - A segment of street, or series of contiguous street segments, that has been modified to accommodate through-bicycle traffic and minimize through-motor traffic. Another common term for a bicycle boulevard is a Neighborhood Greenway.



Bicycle-Friendly - A roadway not designated by directional and informational markers, striping, signing or pavement markings for the preferential or exclusive use of bicyclists, but containing appropriate bicycle-friendly design standards, such as wide curb lanes and bicycle-safe drain grates.

Bicycle Lane or Bike Lane - A portion of roadway that has been designated for preferential or exclusive use by bicyclists with pavement markings and signs, if used. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane, unless designed as a contraflow lane.

Paved Shoulders - The addition of paved shoulders can often be the best way to improve a rural road for non-motorized usage. As a side benefit, paved shoulders can also extend the life of the road for vehicular traffic. To accommodate bicycle travel, a paved shoulder should be at least 4 feet wide, wider when speeds exceed 50 mph, where truck volumes are high or where high bicycle usage is expected.



Rail Trail - A shared-use path, either paved or unpaved, built within the right of way of a former railroad, generally for two-way travel. Usually, designed to accommodate multiple forms of non-motorized transportation including walking, running, biking, and skating.

Right of Way - A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes.



Roundabout - Circular intersections which direct traffic counter-clockwise around a center island. Roundabouts offer a solution to the traditional intersection problems of delays, capacity and safety. Since everyone is traveling in the same direction and at lower speed, crashes are reduced. Left-turn, right-angle and head-on crashes are virtually eliminated. Roundabouts make efficient use of space and increase the capacity of an intersection. They also reduce delay, emissions and fuel consumption.

Sharrows - also known as Shared Lane Marking – refers to a pavement marking that assist bicyclist in improving their position on the road without presence of actual bike lanes. Sharrows reduce aggressive motorist behavior, encourage correct bicycling behavior and increase the comfort of (and therefore the number of) bicyclists on shared roads.



Shared Use Path – an off road facility designed to accommodate multiple forms of non-motorized transportation including walking, running, biking, and skating. These paths tend to be 10 feet to 14 feet wide to allow for two bicycles to pass in opposite directions safely.



Shoulder - The portion of the roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use, and lateral support of sub-base, base, and surface courses. Shoulders, where paved, are often used by bicyclists.

Sidewalk - That portion of a street or highway right of way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians.



Importance of Non-Motorized Transportation

Non-motorized transportation facilities can improve the attractiveness and livability of the community and give its citizens a choice in their mode of transportation. By providing expanded bicycle- and pedestrian-oriented infrastructure, both recreational and transportation needs of the MATS area will be enhanced, while realizing social, environmental, economic and health benefits – all positive effects. Another benefit is the fact that NMT Planning lends support and justification for funding requests by local units of government; NMT projects that are part of or connect with regional non-motorized network in an adopted plan are looked upon in a favorable light by funding agencies from state and federal programs.

A significant note is that NMT facilities are frequently categorized as merely leisure or recreational facilities. However, the focus and intent of this plan is on the use of these facilities for utility travel in addition to recreational or related uses, as they provide transportation opportunities for all types of non-motorized users for all types of purposes. There is a wide range of skills and speeds between various cyclists, from toddlers to fast, skilled and regular commuters.

United Nations Environment Programme (UNEP) reports:

“Non-Motorized Transport (NMT) has immense benefits for individual users, as well as society at large, through improvements to physical health, air quality, the environment, climate change, personal finance, accessibility, mobility and the empowerment of vulnerable groups. Therefore, NMT infrastructure -particularly well-planned, high quality facilities in a comprehensive network is essential to achieving economic and social equity, especially for the urban poor in developing countries.”

Transportation Demand Management ([TDM](#)) Encyclopedia:

“Walkability improvements provide economic savings and benefits, which are reflected in higher property values in more walkable communities. Cortright (2009), evaluated the effects of walkability on housing prices using the (used) Walkscore (www.walkscore.com) and 95,000 real estate transactions, controlling for house (size, number of bedrooms and baths, age) and neighborhood characteristics (proximity to the CBD (*Note: Central Business District*), income, and accessibility to jobs). He found that walkability had a statistically significant, positive impact on housing values. In a typical metropolitan area, each Walkscore point increase was associated with a \$700 to \$3000 increase in home values, after controlling for other observable factors, so for example, that all else held constant, shifting from a 50th to a 75th percentile Walkscore increases a house’s value between \$4,000 and about \$34,000, depending on the market. The researchers conclude that these results reflect the value consumers attach to walkable neighborhoods, which tend to be denser, mixed use neighborhoods with good accessibility, including transit service.

However, non-motorized travel is often overlooked and undervalued. Many conventional travel surveys indicate that only a few percent of total travel is by non-motorized modes, which implies that it is unimportant, and improving non-motorized conditions can do little to solve transport problems. But such surveys tend to undercount non-motorized travel because they ignore short trips, non-work travel, and travel by children, recreational travel, and non-motorized links. Actual non-motorized travel is usually three to six times greater than these surveys indicate (Brog, Erl and James 2003; Litman 2003 and 2010). For example, U.S. Census commute data indicates that only 2.8% of commuters walk and only about 0.5% bicycle, since only trips entirely by these

modes are counted (bike-bus and drive-walk trips are not included). The National Survey of Bicyclist and Pedestrian Attitudes and Behavior (Gallup 2008) indicates that about half of walking and cycling trips are purely recreational and about half are for transport, and only about 5% are for commuting, so for each non-motorized commute trip there are probably about nine other utilitarian non-motorized trips, and about ten recreational trips.

Conventional transport planning assumes that society is better off if somebody spends 5 minutes driving for an errand than 10 minutes walking or cycling, since it applies an equal or greater cost value to non-motorized trips than motorized trips, only considers vehicle operating costs (vehicle ownership costs, and external impacts such as congestion and parking costs are ignored), and no value is assigned to the health and enjoyment benefits of non-motorized travel. Such assumptions tend to skew countless planning decisions toward motorized travel at the expense of non-motorized travel. For example, it justifies expanding roadways to increase vehicle traffic capacity and speeds, requiring generous amounts of parking at destinations, and locating public facilities along busy suburban roadways, in order to facilitate automobile transportation although each of these tends to reduce walking accessibility.

Non-motorized travel tends to be stigmatized. Some people consider walking and cycling outdated, unsophisticated and unexciting compared with motorized modes, or even as symbols of poverty and failure.

- It provides affordable basic mobility. Non-motorized modes are often critical for trips that society considers particularly valuable, such as access to essential services, education, employment, and social activities by people who are transportation disadvantaged.
- They are resource-efficient travel modes (i.e., they consume minimal road and parking space, impose minimal costs on consumers and the environment) that support the objectives of Transportation Demand Management.
- They are a primary component of Universal Design (transportation systems that accommodate people with disabilities and other special needs).
- They provide Transportation Choice and consumer savings.
- They provide Healthy Exercise and enjoyment.
- They help create more Livable Communities.
- They provide access to Public Transit and so are critical to efforts to make transit more practical and popular.
- They allow and encourage more efficient development (Smart Growth, New Urbanism, Location Efficient Development and Transit Oriented Development).

MATS NMT Goal

“Roadways and other Transportation Facilities should be designed and constructed to provide appropriate access and connectivity for motorized and non-motorized users.”

Goals, being broad in nature and often comprised of abstract ideas, are immensely valuable for setting direction and elucidating a vision. It is with this framework that the MATS non-motorized transportation goal was developed.

The MATS NMT goal considers as self-evident the hypothesis that non-motorized transportation is a sustainable mode of transport, and realizes that many municipalities have started to appreciate the need for more NMT planning and implementation. To develop this overall NMT Goal that is a guiding feature of this document, MATS reviewed the Federal Planning Factors, as well as the MATS Long Range Transportation Plan Objectives that were related to NMT.

Federal Planning Factors (NMT-related):

1. Increase the safety of the transportation system for all motorized and non-motorized users.
2. Increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and non-motorized users.
3. Increase accessibility and mobility of people and freight.
4. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns.
5. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
6. Enhance travel and tourism.

MATS Long Range Transportation Plan NMT Objectives:

1. Support transportation infrastructure improvements for all modes.
2. Promote system continuity across the region.
3. Increase access to the transportation system for people with special needs, undeserved or disadvantaged.
4. Increase access to specialized services like health care facilities.
5. Reduce conflicts between modes to minimize accidents.
6. Enhance the safety of non-motorized users.
7. Implement the Complete Streets Program; promoting transit and non-motorized travel options.
8. Encourage public and non-motorized transportation as well as ride-sharing.
9. Promote cost effective transportation improvements that maximize long-term benefit.

In developing this document, the Federal Planning Factors and the MATS Long Range Transportation Plan were essential to the creation of the overall goal. The NMT goal, as it is turned into planning, programming and constructing projects, promotes the planning factors and objectives of the long range plan in turn.

MATS Policies and Planning Framework

The principal mechanism for implementation of the NMT plan in an ongoing basis is the MATS Complete Streets Policy and resulting program.

Complete Streets Policy & Program

Persons who walk, cycle, skate, use wheelchairs or mobility devices, or animal-drawn transport are all NMT users. When designing NMT networks, facilities and infrastructure, the capabilities and limitations of all road users must be taken into consideration.

As defined by Michigan law (Michigan Public Act 135 of 2010), roadways must be planned, designed, and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot, or bicycle. Part of PA 135 requires all road projects to address the complete streets policies. *Citation found at MCL 247.660p.*

Below, for the purposes of comprehensiveness, is the amended Complete Streets Policy for MATS, as adopted by the MATS Policy Committee on September 10th, 2019.

Preamble:

Public Act 135 of 2010 defines *Complete Streets* as “...roadways planned, designated, and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot, or bicycle.”

The Complete Streets Policy is a guide in adopting effective and efficient approaches to incorporating the needs of all road users in the planning, design and implementation of transportation projects. In addressing the travel needs of all community members, the policy should fit local community contexts, reflect local values and bolster environmental, aesthetic, historic and economic qualities of the community, all the while addressing the primary concern of improving safety and mobility. To meet these aspirations, a Complete Streets approach requires careful multi-modal evaluation for transportation corridors and projects, combined with planning principles that prioritize the well-being of all road users.

Goals:

The aim of Complete Streets Policy is to:

1. Ensure that the safety and mobility needs of all users of transportation system are accommodated;
2. Recognize the diverse needs of different transportation users;
3. Create a comprehensive and connected transportation network that promoted integrated, sustainable development and attractive and economically vibrant communities;
4. Ensure the use of best design standards and guidelines, encouraging the appropriate use of a range of non-motorized facility types to improve the ease of mobility for those users;
5. Ensure that planning and design solutions fit in within their local contexts.

Policy:

The Midland MPO (MATS) was designated in January 2013 to program and manage the allocation of federal funds to multi-modal transportation projects within the MPO boundaries. MATS supports the concept of *Complete Streets* and will implement a Complete Streets Program, considering provision of non-motorized facilities during review of proposed transportation projects within its planning area, keeping with the goal of accommodating all forms of travel (including automobiles, bicycles, pedestrians, personal mobility devices, transit and freight). All road projects (including new, reconstruction, resurfacing, and restoration) are subject to this policy.

The guiding principle for the MATS' Complete Streets Program is to promote, program and fund projects that provide safe and convenient access for all users. An array of non-motorized transportation facilities and amenities, such as: 1) sidewalks, 2) bike lanes, 3) Non-motorized paths, 4) ADA Accessible crosswalks and ramps, 5) pedestrian crossings at signalized intersections, 6) mid-block crossings, 7) improved signals and signs, 8) bicyclist and pedestrian way-finding, 9) improved lighting, 10) traffic calming measures, 11) bridges with non-motorized access, and 12) road diets, among others, should be considered while planning road projects. The best and latest complete street design standards and guidelines are to be utilized, encouraging the appropriate use of a range of non-motorized facilities and a host of other mechanisms to improve the ease of mobility for all road users.

Complete Streets and their viability can be impacted by planning and permitting as well as infrastructure. MATS will work with local governments to encourage thoughtful planning and permitting that supports the goals and objectives of *Complete Streets*. MATS recognizes the long-term nature of transportation investment and will promote non-motorized facilities in response to not only the current transportation demand, but also likely future uses as well.

Process:

MATS requires that all projects proposed for inclusion in TIP (Transportation Improvement Program) submit a form indicating the extent that the project will accommodate Complete Streets intent and goals, or that the project should be considered exempt. The MATS Technical Committee will review project proposals, grant approvals and exemptions, and recommend non-motorized improvements as appropriate. As part of project review, MATS will consider:

1. Local context and recognize that needs vary according to regional urban, suburban, and rural settings;
2. The functional classification of the roadway, as defined by the Federal Highway Administration;
3. The safety and varying mobility needs of all legal users of the roadway, of all ages and abilities, as well as public safety;
4. The cost of incorporating complete streets facilities into the project and whether that cost is justifiable based on overall project cost, as well as proportional to the current or future need or probable use of the complete streets facility;
5. Whether additional funding needed to incorporate the complete streets facility into the project is available from federal, state, local, or private sources.

A roadway project may be deemed exempt from the Complete Streets requirements if any of the following conditions are met:

1. The project involves a roadway that bicyclists and pedestrians are prohibited by law from using;
2. There are extreme topographic or natural feature constraints;
3. When factors indicate an absence of need for non-motorized facilities presently and in the 20-or-more year horizon;
4. A reasonable and equivalent alternative already exists;
5. The costs of including non-motorized accommodations can be demonstrated to be greatly disproportional to the projected benefits from their inclusion.

The Local Implementing Agency and its governing body shall retain the final authority over their road projects with respect to non-motorized facilities (build/not build decisions and design choice decisions).

Addendum 1 to MATS Complete Streets Policy:

Rural NMT Routes/Loops¹

As seen on the accompanying map (MATS Proposed NMT Loops), these routes are proposed for inclusion in the updated MATS NMT Plan; and

Routes included should connect to existing and regional routes where feasible; and

Routes should include standardized signage for routes and loops where feasible.

Policy Regarding Shoulders

1. If a route has an ADT of less than or equal to 2000 vehicles per day, and is part of an identified NMT Loop or Route in the MATS area, then share the Road Signage should be provided if feasible.
2. If a route has an ADT of greater than 2000 per day and
 - a. the segment is part of a corridor identified as having significant safety issues;
 - b. maintenance of gravel shoulders is an ongoing issue;
 - c. there is meaningful bike and pedestrian usage of the shoulders; thenA paved 3' shoulder should be provided if feasible. If not feasible, then share the Road Signage should be provided.
3. If a route meets the criteria for 2 above, and is part of an identified NMT Loop or Route in the MATS area then a paved 4' shoulder should be provided if feasible.

The infeasibility of providing the 3' or 4' paved shoulder needs to be documented by governing agencies, and transmitted to MATS.

¹ Subsequent to the approval of Addendum 1, Rural NMT Loops have been renamed Urban/Rural Trails.

Larger Planning Framework via the TIP and LRP Processes

The planning and development of non-motorized facilities is integrated fully into both the Transportation Improvement Program (TIP) development process and the Long Range Planning (LRP) process. These processes, and the fact that an NMT Plan was developed, contribute to the likelihood of success in the conception of NMT projects and seeking funds for those projects.

The [Transportation Improvement Program](#) is a prioritized listing/program of transportation projects covering a period of four years that is developed and formally adopted by a Metropolitan Planning Organization (MPO) as part of the metropolitan transportation planning process, consistent with the metropolitan transportation plan, and required for projects to be eligible for funding under Title 23 U.S.C. and Title 49 U.S.C. Chapter 53. The major purpose of the TIP is to identify and prioritize Federal-Aid projects and programs in local urbanized areas. An equally important objective of the TIP is to ensure that scheduled transportation improvements are consistent with current and projected financial resources. A TIP developed in consideration of the purposes mentioned above provides for the efficient use of available financial resources in addressing the area's transportation needs in an orderly and efficient manner.

The [Long Range Transportation Plan](#) helps pinpoint and address the future transportation related needs of our region by identifying issues and deficiencies within the system, and recommending strategies to mitigate those issues. The plan is projected over a 25-year horizon and is updated every 5 years thereafter in accordance with changing needs and new transportation related legislation.

The [MATS 2045 Long Range Transportation Plan](#) serves as a decision-making guide for the Midland MPO, stakeholders, funding agencies, and other transportation partners. The plan prioritizes funding allocations; directs the transportation improvement program; and focuses on the relationship between the transportation network and regional land uses. Guidance for developing the LRTP is derived from the Fixing America's Surface Transportation (FAST) Act which strives to create a continuous, performance-based process. Issues the FAST Act addresses include safety, infrastructure condition, congestion reduction, system reliability, economic vitality, environmental sustainability, reduced project delivery delays, transit safety, and transit asset management.

The Long Range Plan is updated every 5 years, and the next update is scheduled to be completed in 2022. Included in the Long Range Plan is an overview of the current status of the NMT network and the various facilities, and a summary of the conclusions of this plan. The list of proposed projects is then reviewed with local agencies, developed further if needed, and prioritized for presentation in the plan. For those prioritized projects, particular attention is paid to the feasibility and potential to be funded.

Existing Conditions related to Non-Motorized Transportation

In the development of any plan, existing conditions and the context for those conditions forms an important element of the document. It provides information useful in identifying opportunities for guiding development, areas that should be avoided, and gives direction to possibilities for improvement of those existing conditions.

As can be seen on the following pages, a great deal of information regarding future NMT routes was considered and evaluated such as accident locations and frequency, location of paved shoulders and bike lanes, detailed mapping of traffic volumes, and existing route connections. Here is a brief explanation of each of the resulting graphics:

Figure 1. Geography of NMT Crashes 2014-2019 for the MATS Area. As can be seen here in this summary of NMT-related crashes over the 6 year period, the vast majority of bicycle and pedestrian incidents occur either in the City of Midland, or on higher volume routes located outside the city. Very few crashes seem to be occurring on lower volume roadways outside of the urbanized boundary (in red on the map). This needs to be taken into consideration when laying out potential routes or proposed projects.

Figure 2. Daily Number of NMT Crashes 2014-2019. This figure illustrates 78 bicycle crashes by day of week and year of occurrence. While there appears to be a downward trend over the 6 year period, from 14 crashes in 2014 to 11 in 2019, the trend does not meet the usual criterion for statistical significance and may be due to normal variation. Future data may shed light on whether this trend is significant. For the weekly variation, the differences from Sunday to Friday appear to be normal variation. Saturday crashes, with only 3 crashes over the 6 year period, appear to be a significant deviation from the mean with only a 1% probability of having 3 or few crashes. Contributing factors may be lighter vehicular traffic and more recreational bicyclists on Saturdays. It is not clear why Sundays do not show the same decline.

Figure 3. Average Daily Traffic greater than 2000 in Midland County. Also factored in the decisions related to NMT routes is the level of traffic currently in existence on a given road segment. As noted in the Complete Streets Addendum, this may be a consideration when determining whether to add or expand paved shoulders on a route, as they are more useful to riders on higher ADT routes. Routes with ADT's lower than 2000 may not need shoulders as they can be utilized by riders with no decrease in either safety or comfort.

Figure 4. NMT & Paved shoulders in Midland County. In this map, we can see the distribution of roadway segments that have a 4' or greater paved shoulder, and therefore may be candidates for non-motorized usage and designation as part of a formal route.

Figure 1
 NMT Crashes 2014-2019 for the MATS Area

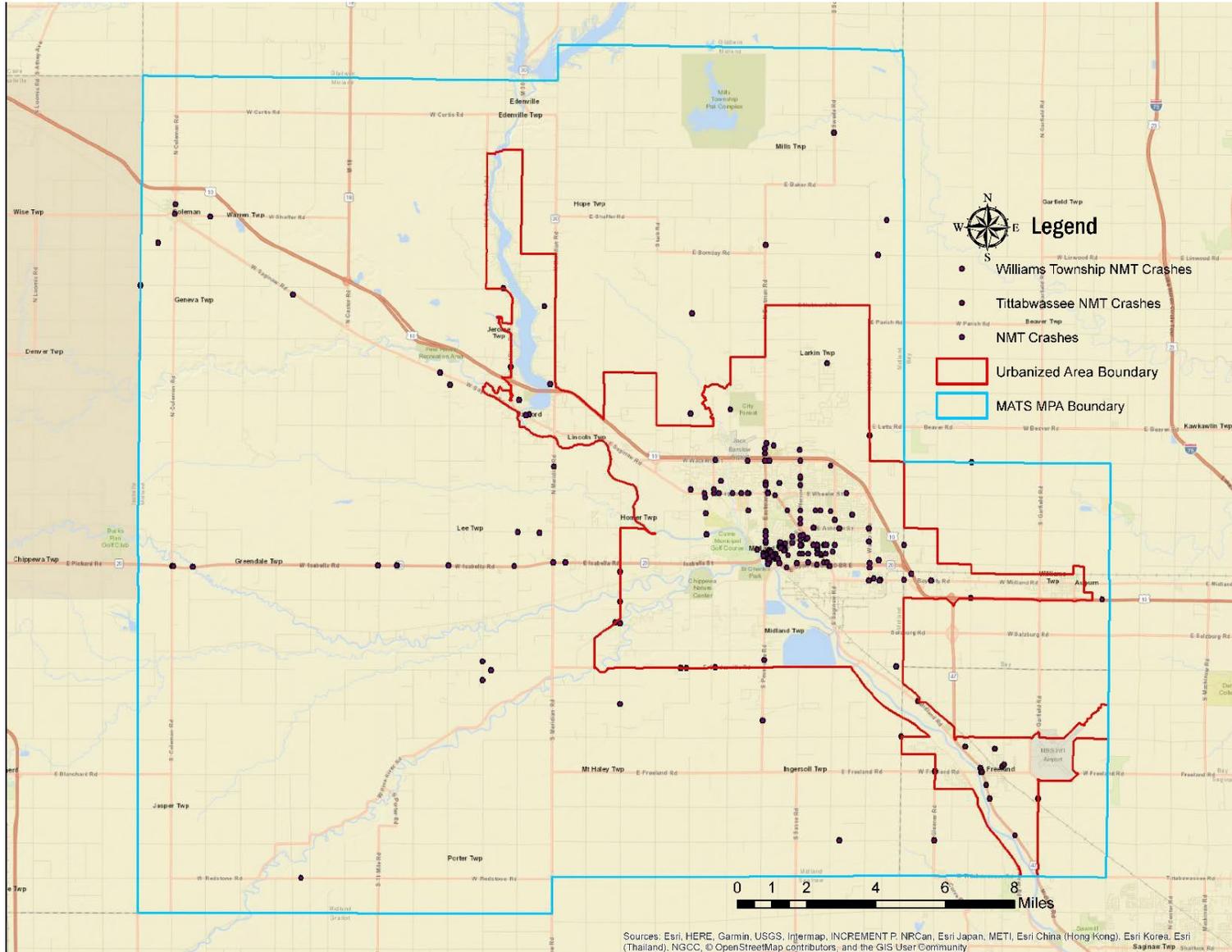


Figure
MATS Area NMT Crashes 2014 - 2019

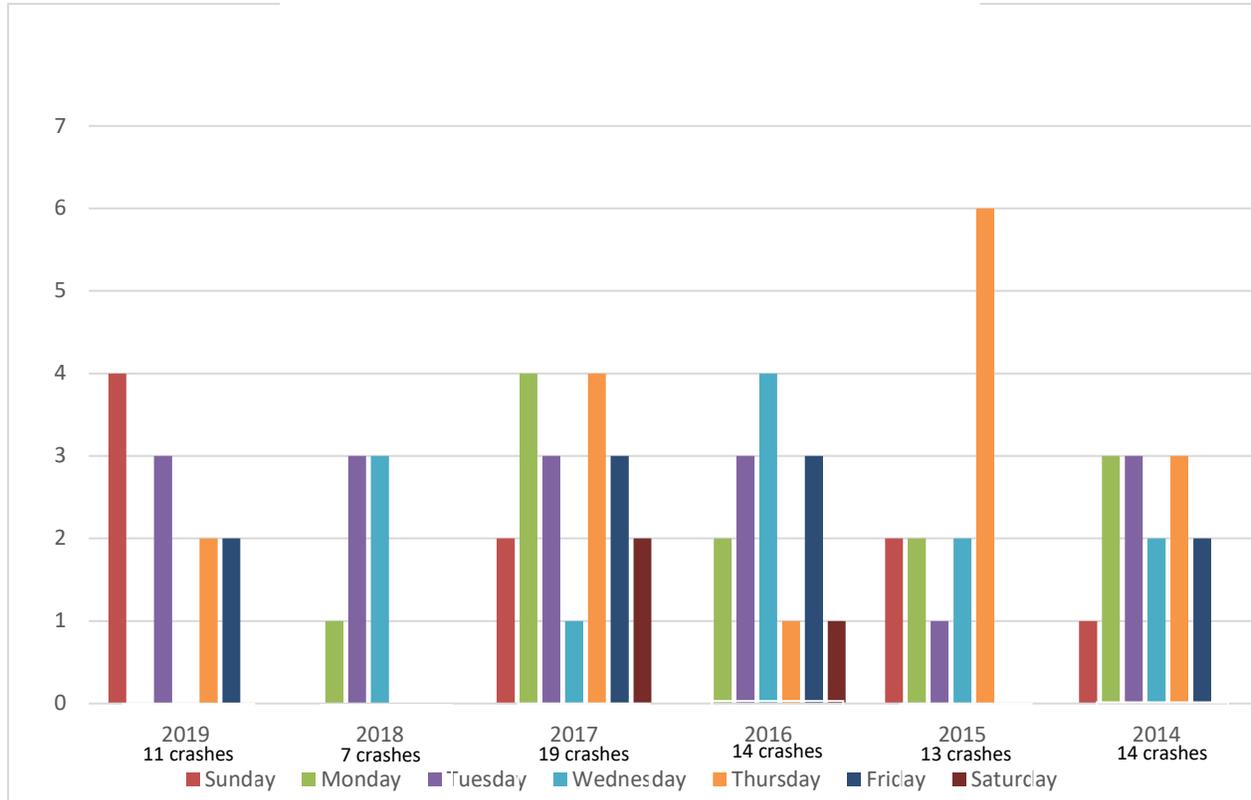


Figure 3

MATS Area Existing 4' Paved Shoulders

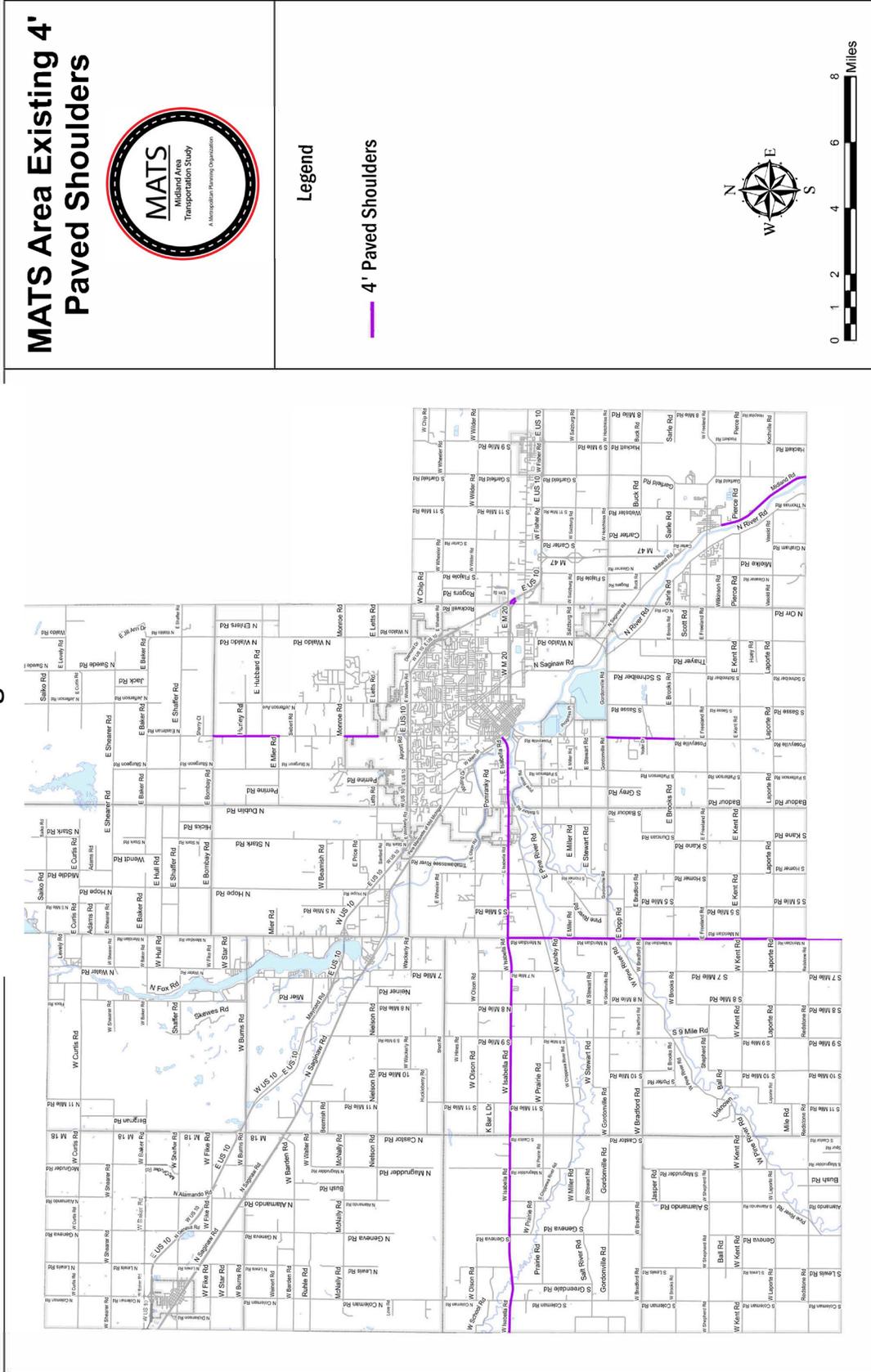
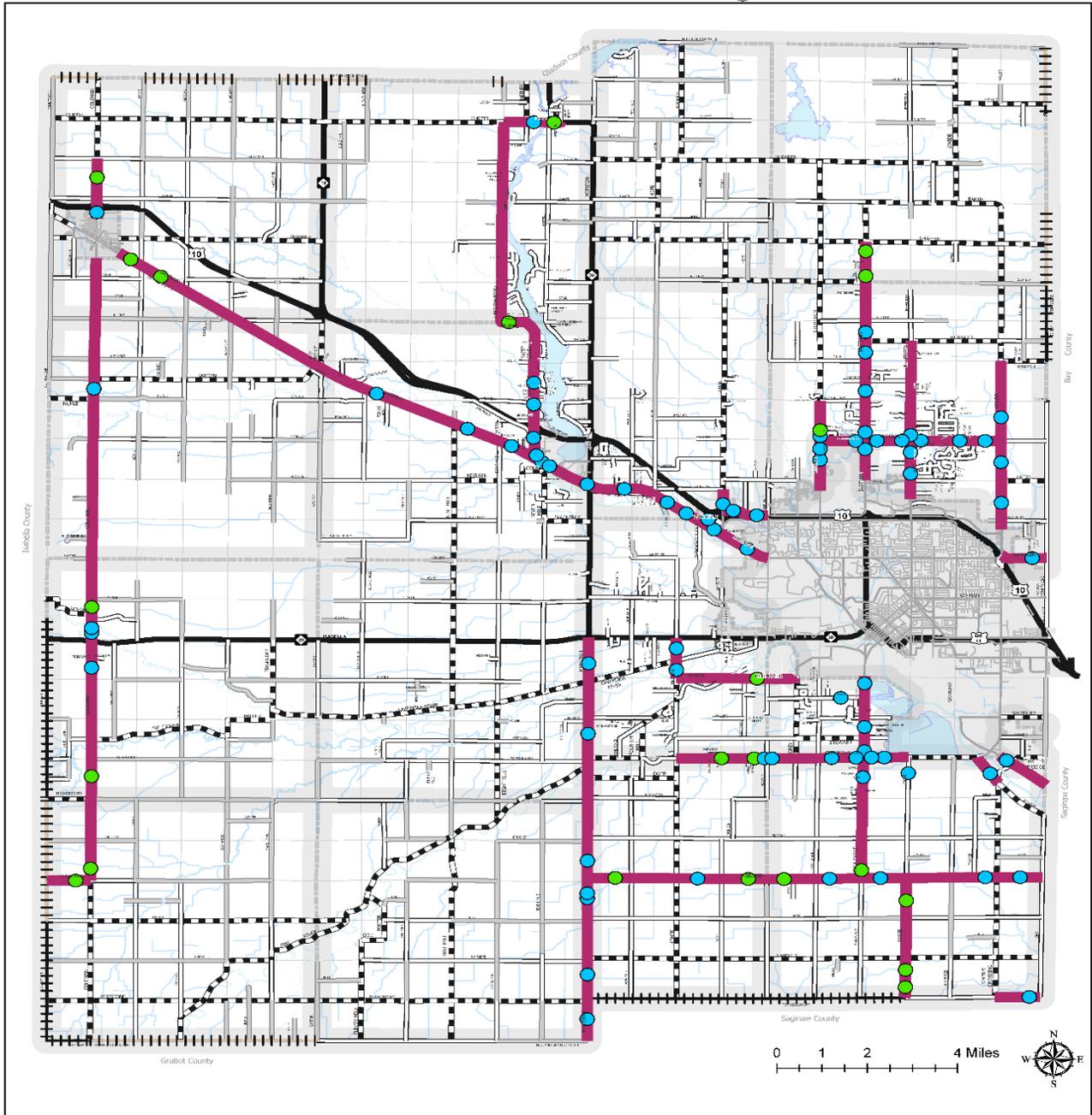


Figure 4

Average Daily Traffic Greater than 2000 in Midland County



- 2018 - 2019
- Traffic Count Locations**
- ADT > 2500
 - ADT = 2000-2499
- Roads with ADT > 2000**
- Roads
- Roads**
- STATE HIGHWAY
 - PRIMARY
 - COUNTY LOCAL - PAVED
 - COUNTY LOCAL - UNPAVED
 - ADJACENT COUNTY - PAVED
 - ADJACENT COUNTY - UNPAVED
 - CITY MAJOR
 - CITY MINOR

Existing Non-motorized Transportation Facilities

From a regional perspective, the Great Lakes Bay Region contains a multitude of non-motorized facilities including a portion of the proposed Iron Belle Trail. The DNR describes it as “Michigan’s showcase trail that touches hundreds of municipalities and crosses through 48 different Michigan counties. Using existing trails, networks and new connections, the trail extends more than 2,000 miles from the far western tip of the Upper Peninsula to Belle Isle in Detroit, with a route of bicycling, and a route of hiking.”

The Iron Belle Trail is a 791-mile bicycle route which connects various existing multi-use trails across the entire state of Michigan, extending from Belle Isle Park near downtown Detroit to Ironwood in the western part of Michigan’s Upper Peninsula. This extensive trail does not run directly through the MATS area, however it is proposed to run through Bay City just to the east. Having the Iron Belle Trail in close proximity allows potential connections to the MATS non-motorized network in the future. This can be seen on the Iron Belle Trail map, Figure 5, **Iron Belle Trail Statewide Map**. This map depicts the current status of, and interconnections with, the Iron Belle Trail system. Shown in gold are the key connectors in the MATS area.



Other non-motorized facilities within the Great Lakes Bay Region can be seen in Figure 6, the **Bay Region Non-motorized Map**, illustrating the larger picture of current and potential interconnectedness. This map was originally prepared by the East Michigan Council of Governments. The priorities and desired connections in each county are at various stages - some are merely in the discussion phase while others have been fully vetted with detailed feasibility studies and cost estimates completed.

Also visible on Figure 6 is the Pere Marquette Rail-Trail, a regional multi-use trail stretching from downtown Midland northwest to Clare County and beyond. The Trail was re-purposed in the early 1990s from what used to be the Pere Marquette Railroad. In 2001, the trail was extended an additional 8.25 miles completing the 30-mile stretch between Midland and Clare. Today, the trail is barrier-free and opened to all non-motorized transportation modes. Not only is it an important amenity to the MATS area, but it also promotes the development of other similar non-motorized pathways. The Pere Marquette Rail Trail is a major route for all types of non-motorized users, extremely successful since its creation.

The MATS metropolitan area has a variety of non-motorized facilities, amounting to over 100 miles in total. Midland County alone has 57 miles of existing non-motorized facilities (not including sidewalks), including 13 miles of paved shoulders (4 feet in width or greater), more than 34 miles of shared use paths, and 9 miles of bike lanes. In addition, there are facilities in both Williams and Tittabawassee Townships.

The MATS non-motorized infrastructure was constructed primarily by local municipalities with the help of the Midland/Bay/Saginaw Road Commissions, City of Midland, Michigan Department of Transportation (MDOT), and Michigan Department of Natural Resources (DNR). The MATS area’s

network serves a wide-array of users including those who utilize the pathways for recreation, commuting to work or school, or long-distance travel. Our diverse non-motorized facilities include the following:

- Pere Marquette Rail Trail (portion of)
- Chippewa Nature Trail
- Pine Haven Recreation Area
- Midland-Mackinac Trail (portion of)
- Midland City Trail
- City Forest Park and Trails
- Stratford Woods Park and Trails
- Tittabawassee Township Pathway
- Freeland-Kochville Trail West
- Freeland M-47 Pathway
- U.S. Bicycle Route 20 (portion of).

Various non-motorized pathways, including designated bicycle routes, shared bike lanes and a network of sidewalks, have been developed over time within the City of Midland boundaries. These facilities link multiple destinations within the downtown and across the City providing safe travel routes for bicyclists, pedestrians and other non-motorized users; providing connections to parks, schools, shopping districts, and other destinations. Currently, there is an on-going effort to fund additional trails and pathways to provide even greater non-motorized connectivity throughout the City of Midland.

The Freeland-Kochville Trail West project, completed in 2020, created a 10-foot wide, 2.69-mile non-motorized pathway in Tittabawassee Township that travels primarily within existing utility right-of-way, extending from the Freeland Sports Zone east to Hospital Road. The Freeland-Kochville Trail West is Tittabawassee Township’s portion of the larger Freeland-Kochville Trail project that is collaboratively pursued by both Tittabawassee and Kochville Townships. This trail will connect Tittabawassee Township to Kochville Township, Saginaw Township, Saginaw Valley State University, and the existing trail infrastructure in Saginaw County. This trail system will also be a part of the future Great Lakes Bay Regional Trail which will connect Midland, Saginaw, and Bay City. This can be seen in Figure 7, **Bay City - Midland - Saginaw Trail System**, prepared for a recent grant application for the Midland County Road Commission’ Smiths Crossing Bridge Project, which gives an idea of the recent growth in NMT facilities in the Great Lakes Bay Region, and the accompanying need for connectivity with the new facilities.

In summary, we can see from Figure 8, **MATS Area Existing NMT Facilities** that a well-established framework of NMT facilities exists currently. Please note that the depicted network consists of various types of NMT facilities, including marked bike lanes, wide paved shoulders, separated multi-use paths, and shared lane markings.

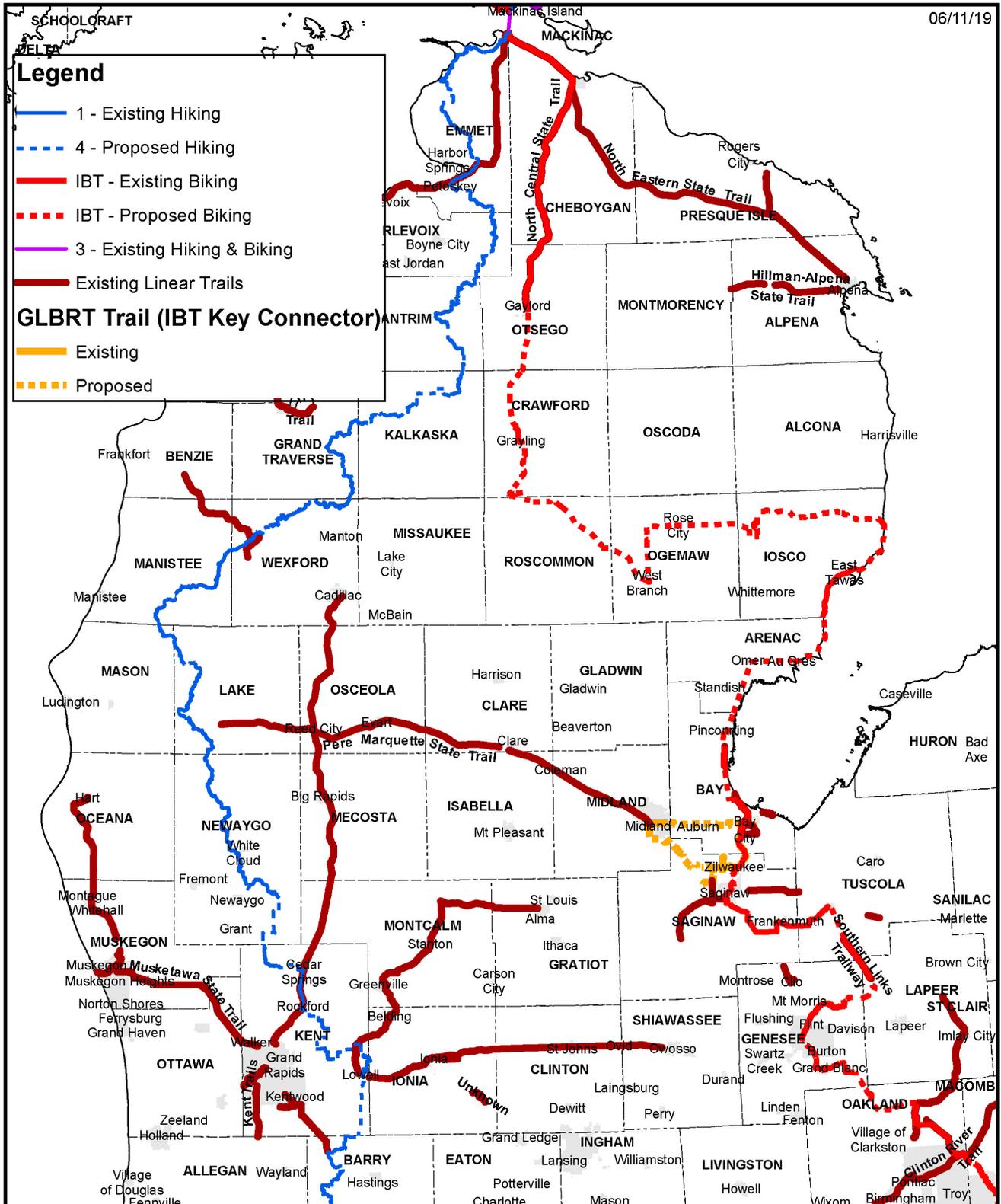


Figure 5

Iron Belle Trail Statewide Map



06/11/19



Figure

Bay Region Non-motorized Map

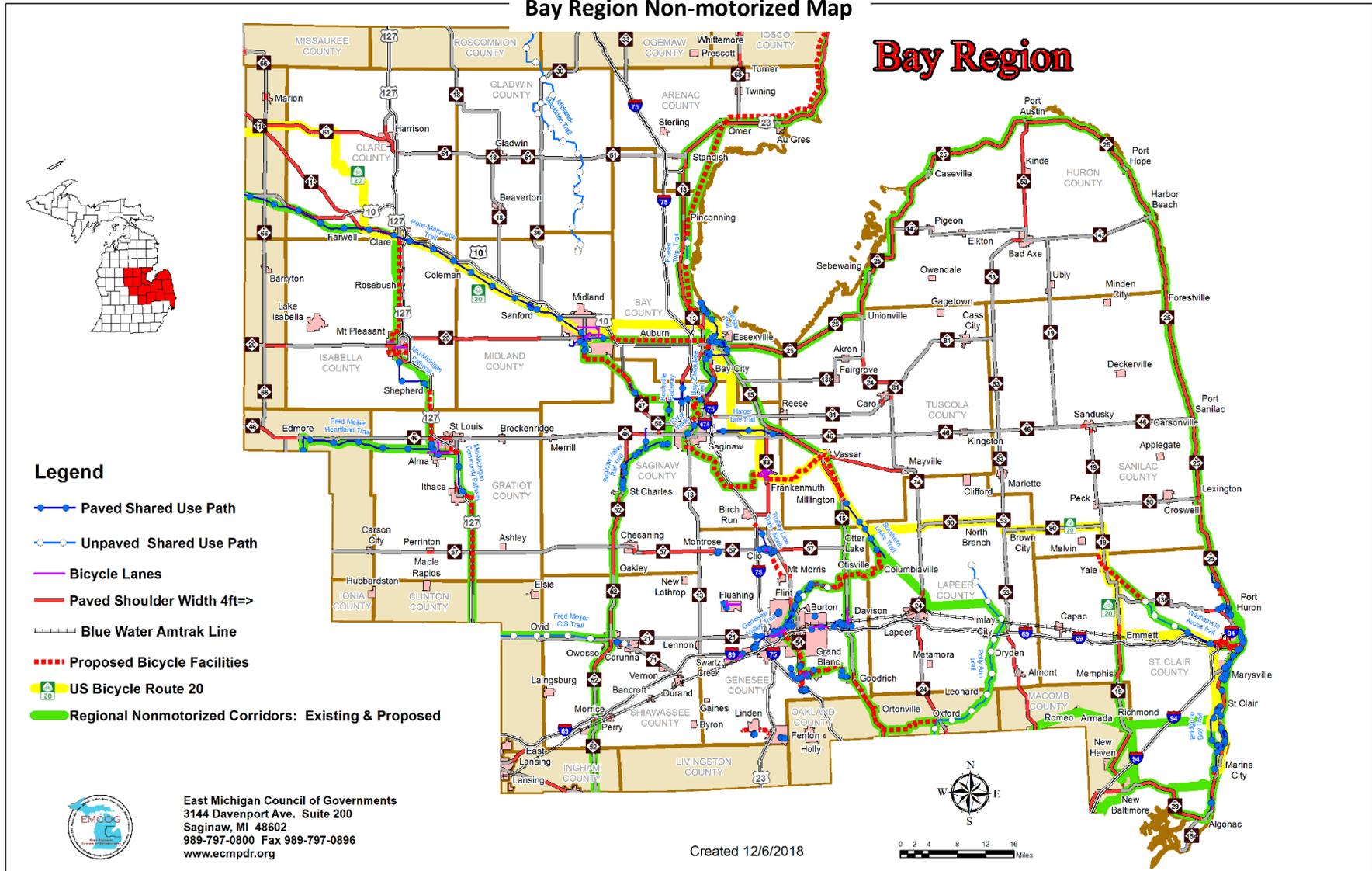


Figure 7

Bay City – Midland – Saginaw Trail System

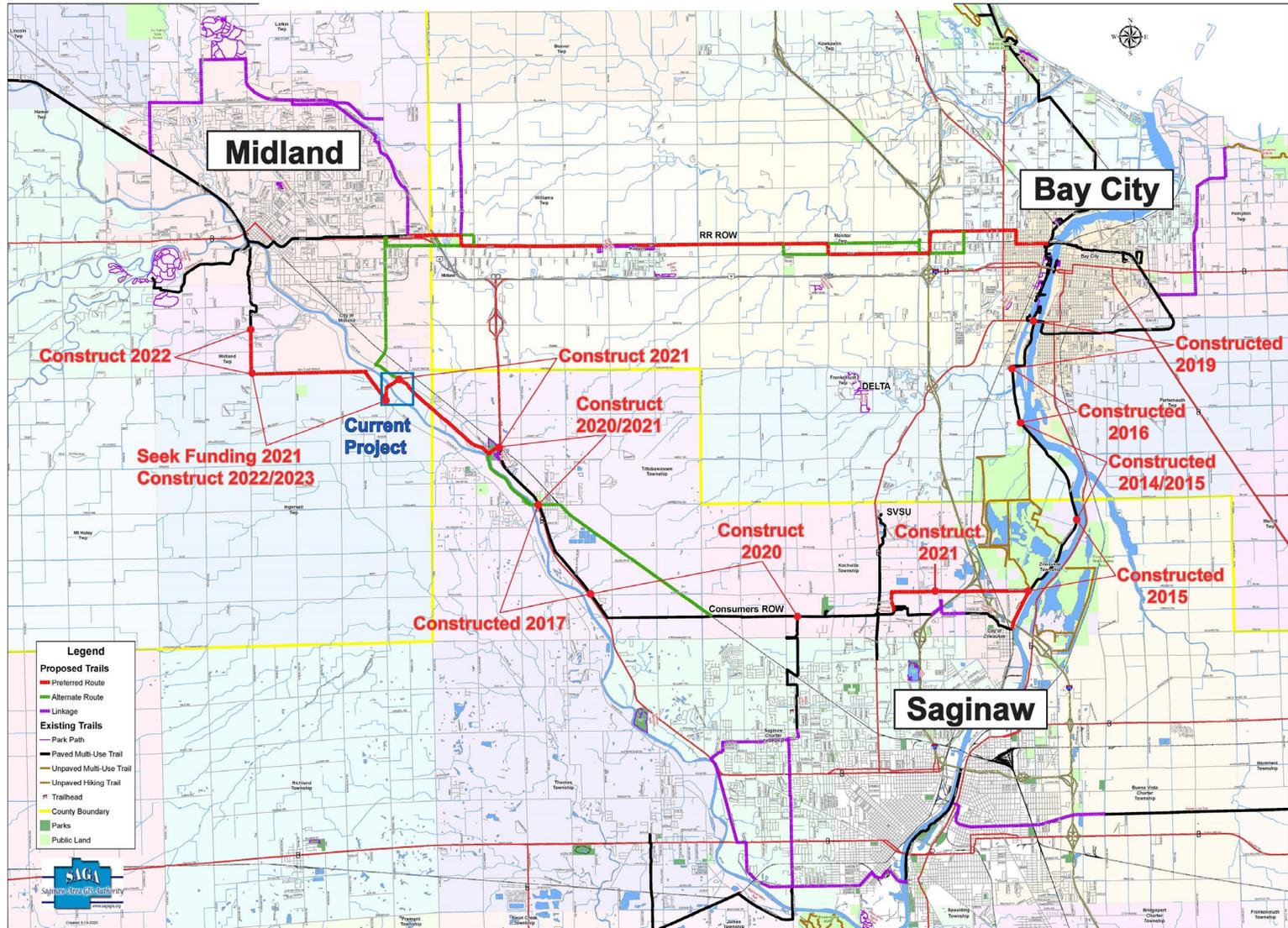
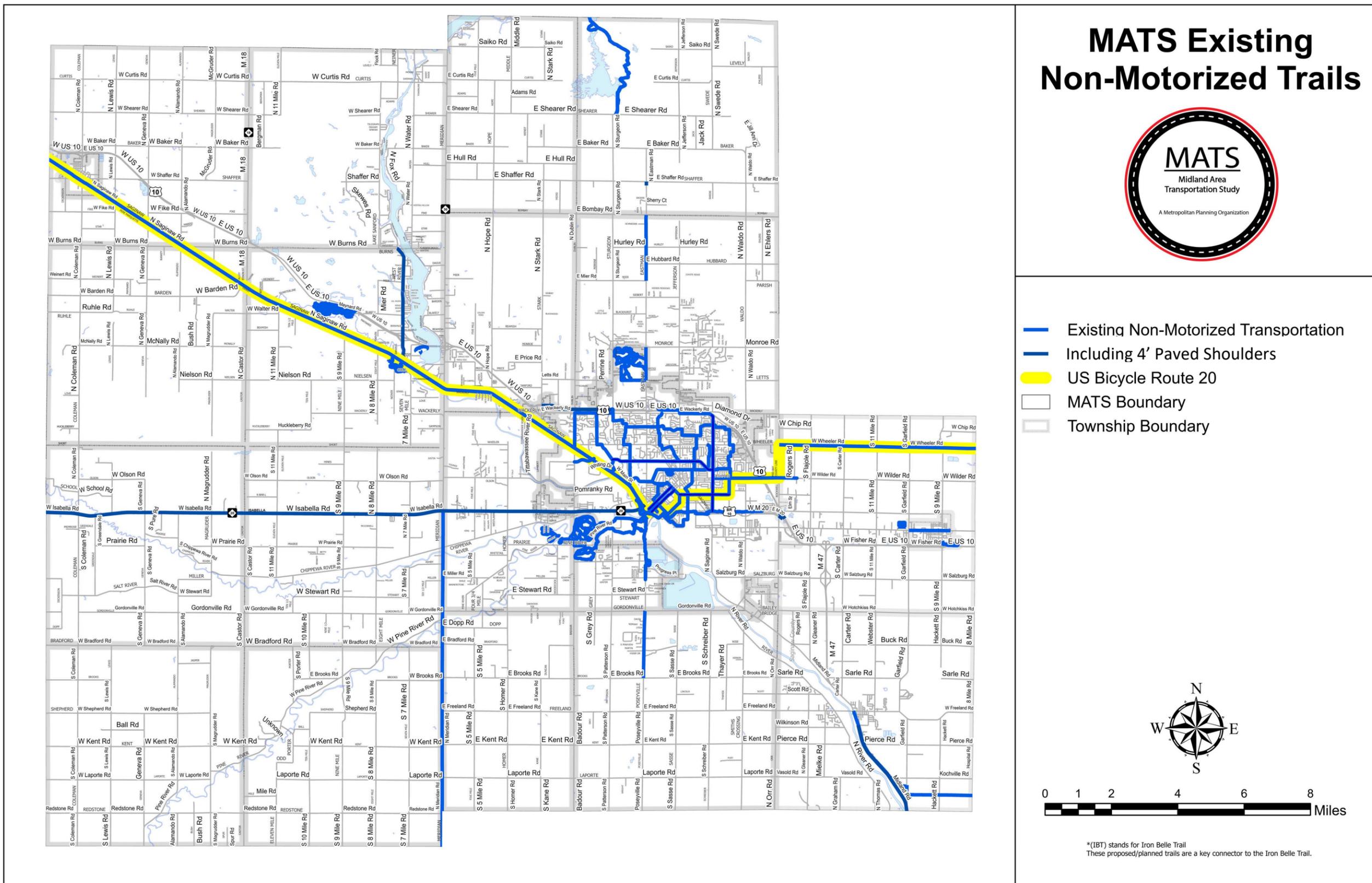


Figure 8
 MATS Existing Non-Motorized Trails



MATS Proposed NMT Projects

MATS local agencies were asked to identify future non-motorized project opportunities within their jurisdictions. The resulting extensive list of projects is presented on page 26, and mapped in Figure 9, **MATS Proposed Non-Motorized Projects**. The projects listed are in various stages of planning, and hence differing levels of detail are provided. Wide-ranging consultation was done in order to compile this list, which consists of projects submitted by the City of Midland, City of Auburn, Tittabawassee Township, Williams Township, and all three participating County Road Commissions.

As can be seen by the project list as a whole, specific attention has been paid to providing both local connectivity and linkages between various aspects of the regional network. The trail routes in particular (Project #s 12-16) provide a tremendous number of access points and interconnection nodes by virtue of their geographic coverage and looped design. This provides both access to recreational opportunities as well as opportunities for basic transportation. Lastly, several proposed projects (#s 5-11) provide access to growing residential and commercial areas in the City of Midland, as well as interconnection to other routes via projects on the list. Some of the proposed projects in this NMT plan will be key connectors to the statewide Iron Belle Trail (IBT). These projects include the Freeland-Midland Connector (#16 on the list of projects), the Tittabawassee Township Pathway (#20), and the Williams Township Connector (#3). In addition, other improvements may be conceived of in the future that will provide further connections between Clare and the Iron Belle Trail.

Additionally, in Figure 10, **MATS Existing and Proposed Non-Motorized Trails** we present both existing facilities and proposed projects, in order to visualize the totality of connections, linkages, and routes ultimately available in both urbanized and rural portions of the MATS area. Thereby we towards the fulfillment of our NMT goal as presented on page 9, as well as ultimately improving the quality of life for all residents. This collection of proposed projects, when viewed in the context of existing NMT facilities, presents a remarkable opportunity to leverage all the benefits of non-motorized transportation for the MATS area. An enlarged network provides direct benefits to users from improved walking and cycling conditions, and various benefits to society from increased non-motorized travel activity, reduced automobile travel, and support for more compact land use development, as well as benefits to economically, socially, or physically disadvantaged persons.

Lastly, a transit project has been added that provides for the installation of 2-position steel bicycle racks on Midland Dial-A-Ride's light-duty cutaway buses, which will accommodate both adult and children's bicycles. By adding bicycle racks to the Dial-A-Ride bus fleet, passengers will have the ability to broaden their transportation options in Midland. The option to travel with their bicycle will allow them greater flexibility in travel throughout their day, and will particularly benefit a portion of the Midland population (seniors, people with disabilities and people with low incomes) that are traditionally disadvantaged. Besides broadening the transportation options available in Midland, this will help to promote the utility of cycling and Dial-A-Ride in the community, and enhance the overall well-being of city residents.

MATS Area Proposed Non-Motorized Projects

Map Key	Project Name/Route	Limits	Project Details	Agency
1	Pedestrian Walkways/Sidewalks in Williams Township	Midland Road from Eight Mile Road to Auburn City limits, Midland Road from Meadow Court to US-10, and Garfield Road (west side only) from US-10 to the Tri Cities Sports Complex.	These sidewalks will afford anyone walking along these most populated areas, a safe and direct route to both the Williams Township Park and the Auburn City Park. Access from most of the subdivisions in the township will be greatly enhanced and afford a more direct, safe route for those seeking exercise or simply out to see their community.	Williams Township in coordination with the Bay County Road Commission
2	Midland Road	Four Mile to Midland County Line	Eight (8') foot paved shoulders along both sides of Midland Road between Four Mile Road the eastern Auburn City Limit and Garfield Road to the Midland County Line. As Midland Road is reconstructed from Four Mile Road west to the Midland County Line, the BCRC intends to place eight foot paved shoulders on both sides of the road to facilitate non-motorized traffic. The road reconstruction for this corridor is anticipated to start in 2021 and be complete by 2028.	Bay County Road Commission
3	Williams Township Connector	Stratford Woods Conn to 4 Mile	North Union Rd/Garfield Rd/Midland Rd; Separated multi-use path	Bay County Road Commission
4	Stratford Woods Connector	Patrick Road MUP to Stratford Woods	The City of Midland has an existing multi-use path that ends at Patrick Road just east of Illinois Drive. There is a right-of-way that extends north from this end towards Stratford Park. Making this connection is important to connect Stratford Park into the City's NMT system.	City of Midland
5	Annual NMT Improvements throughout City of Midland	Various Locations	The City of Midland's Capital Improvement Plan calls for annual bike and walk improvement projects. These projects are finalized annually and typically include new bike paths/routes, sidewalk improvements, traffic signal intersection improvements for bikers, walkers and people with disabilities.	City of Midland
6	Eastman Multi-use Pathway	Midland Mall to Buttles	Separated multi-use path <i>OR</i> 5 ft. walkway west side	City of Midland
7	Northeast Mall Pathway	Jefferson Ave to Waldo Rd	Separated multi-use path	City of Midland
8	Mall Connector	Cinema Dr to Eastman Rd	Commerce Dr/Elisenal Dr/Mall Dr. Dedicated bike lane within roadway	City of Midland
9	Wackerly Street	Siebert St to Jefferson Ave	Shared road with bike signage	City of Midland
10	Sugnet Road	Northwood Dr to Main St	Dedicated bike lane within roadway	City of Midland
11	Downtown NMT Modifications	Ashman/Rodd/ McDonald/ Buttles/Indian	Downtown NMT Modifications	City of Midland
12	Lake Route	W. Curtis Rd: N. Lake Sanford to N. Water Rd. N. Water Rd: W. Curtis Rd to W. Dague Rd. N. Water Rd: W. Curtis Rd. to Heritage Park W. Dague Rd: N. Water Rd. to N. Meridian Rd. N. Meridian Rd: W. Dague Rd. to N. Saginaw Rd. W. River Rd: N. Saginaw Rd. to W. Burns Rd. W. Burns Rd: W. River Rd. to N. Lake Sanford Rd. N. Lake Sanford Rd: W. Burns Rd. to W. Curtis Rd.	4 ft. paved shoulders; bike route signage	Midland County Road Commission
13	Northeast Route	W. Shearer Rd: N. Water Rd. to N. Meridian Rd. N. Meridian Rd: W. Shearer Rd. to E. Shearer Rd. E. Shearer Rd: N. Meridian Rd. to Middle Rd. Middle Rd: E. Shearer Rd. to E. Curtis Rd. E. Shearer Rd: Middle Rd. to N. Sturgeon Rd. N. Sturgeon Rd: E. Shearer Rd. to Airport Rd. Airport Rd: N. Sturgeon Rd. to N. Stark Rd. N. Stark Rd: Airport Rd. to N. Saginaw Rd.	4 ft. paved shoulders; bike route signage; Trailhead connecting to Midland-Mackinaw Trail	Midland County Road Commission
14	Larkin Route	Monroe Rd: N. Sturgeon Rd. to N. Jefferson Rd. N. Eastman Rd: Commerce Dr. to E. Bombay Rd. E. Hubbard Rd: N. Eastman Rd. to N. Jefferson Rd. N. Jefferson Rd: E. Hubbard Rd. to Airport Rd.	4 ft. paved shoulders; bike route signage	Midland County Road Commission
15	Bullock Creek Route	S. Homer Rd: E. Isabella Rd. to E. Pine River Rd. E. Pine River Rd: S. Homer Rd. to S. 4 3/4 Mile Rd. S. 4 3/4 Mile Rd: E. Pine River Rd. to E. Dopp Rd. E. Dopp Rd: S. 4 3/4 Mile Rd. to S. 5 Mile Rd. S. 5 Mile Rd: E. Dopp Rd. to E. Brooks Rd. E. Brooks Rd: N. Meridian Rd. to Poseyville Rd. Poseyville Rd: E. Brooks Rd. to Pine River Rd. Pine River Rd: Poseyville Rd. to S. Homer Rd. S. Grey Rd: Pine River Rd. to E. Stewart Rd. E. Stewart Rd: S. Grey Rd. to S. Badour Rd.	4 ft. paved shoulders; bike route signage	Midland County Road Commission
16	Freeland-Midland Connector	E. Miller Rd: Poseyville Rd. to Consumers Energy Trail Consumers Energy Trail: E. Miller Rd. to Gordonville Rd. Gordonville Rd: Consumers Energy Trail to N. River Rd. N. River Rd: Gordonville Rd. to Smiths Crossing Rd. Smiths Crossing Rd: N. River Rd. to Proposed Tittabawassee River Trail Proposed Tittabawassee River Trail: N. River Rd. to Tittabawassee Township Pathway – North Extension	Note that the Midland County Road Commission has obtained a partial funding commitment for a segment of this particular route (bolded). This segment will become a Key Connector to the Iron Belle Trail, along with other noted segments in the Tri Cities area.	Midland County Road Commission
17	M-30 Rail Trail Connector	Pere Marquette Rail Trail to Meridian High	Separated multi-use path	Midland County Road Commission
18	River Rd	Freeland to Gordonville	4 ft. paved shoulders; bike route signage	Saginaw County Road Commission
19	Freeland Rd	Gleaner to M-47	4 ft. paved shoulders; bike route signage	Saginaw County Road Commission
20	Tittabawassee Township Pathway – North Extension	M-47 from Freeland Rd. to Tittabawassee Township Park	Separated multi-use path and 4 ft. paved shoulders; bike route signage	Tittabawassee Twp.
21	DART Bus Bike Racks	selected number of Dial a Ride Transportation buses	2 position steel bicycle racks to accommodate adult and children's bicycles	City of Midland

Figure 9
 MATS Proposed Non-Motorized Trails

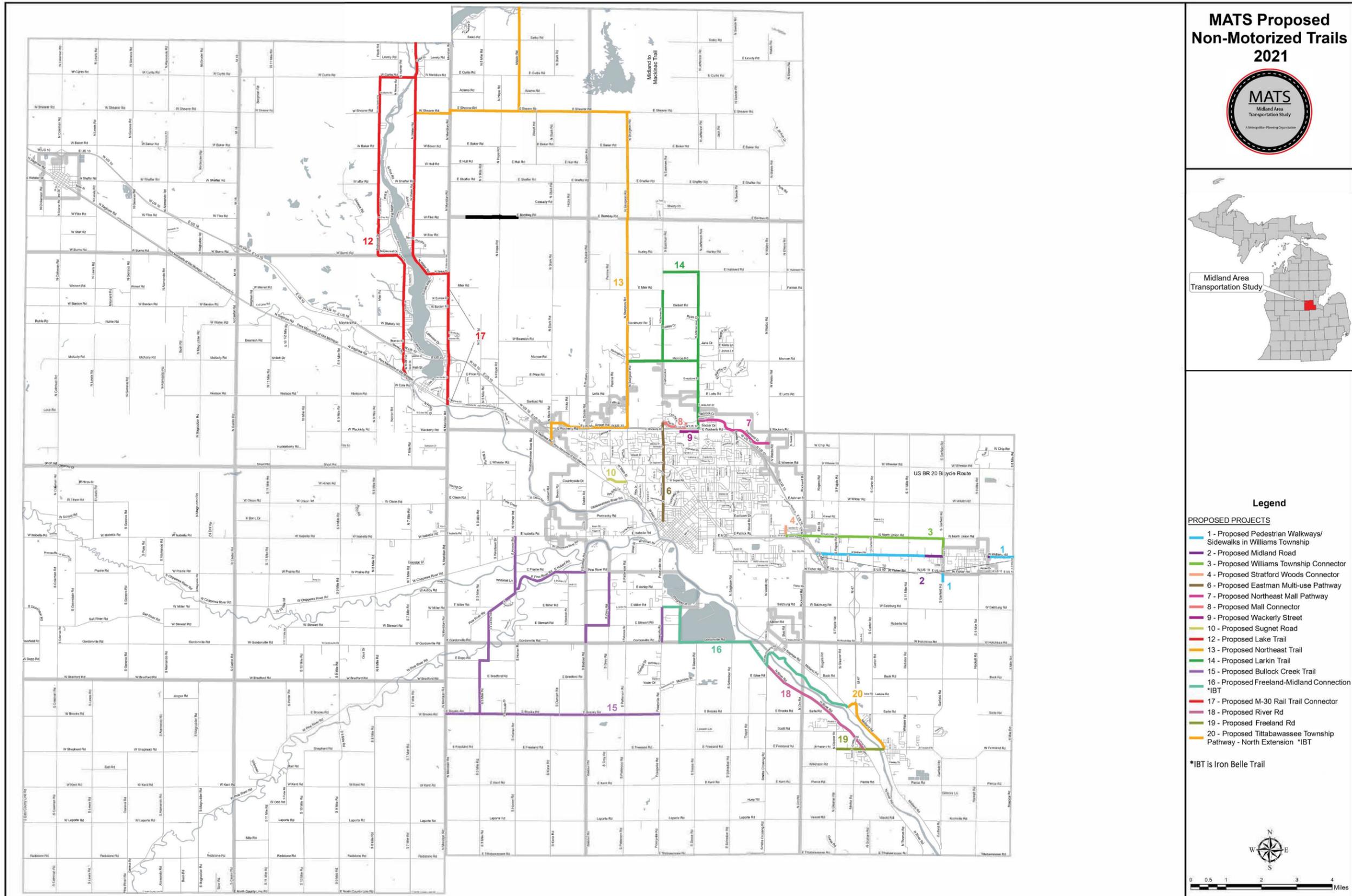
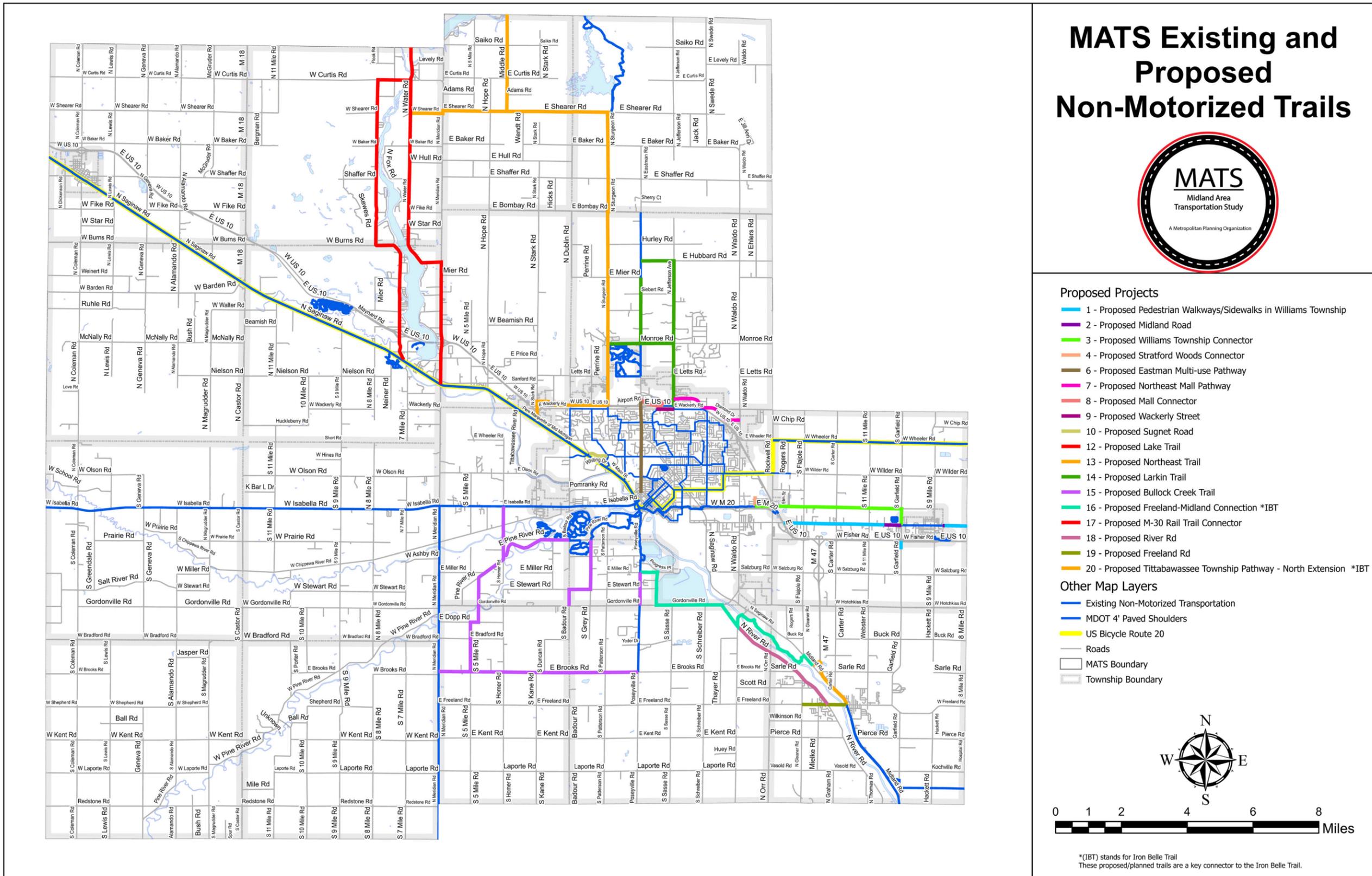


Figure 10
 MATS Existing and Proposed Non-Motorized Trails



Non-motorized Transportation Funding and Implementation

Funding

The FAST Act, Fixing America’s Surface Transportation Act (P.L. 114-94), was signed into law on Dec. 4, 2015, and authorizes funding for highway, transit, and rail programs through fiscal year 2020.

The bill follows closely on the heels of the last surface transportation authorization bill, MAP-21, which was approved in July 2012. MAP-21 made a number of transformative changes to the federal program, many of which have not been fully implemented. This includes transitioning highway and transit programs to become performance-oriented and placing new emphasis on studying, planning for, and facilitating the movement of freight.



It is important to note that, with few exceptions, provisions in the FAST Act do not repeal or replace the changes made by MAP-21. Rather, the FAST Act affirms and improves many of the reforms made by MAP-21.

Among the changes are the creations of the Surface Transportation Block Grant Program (STBGP). The STBGP took several previously individual programs, including the Transportation Alternatives Program (TAP), and turned them into set-asides within the STBGP. TAP remains a competitive grant program that uses federal transportation funds designated by Congress for specific activities that enhance the multi-modal transportation system and provide safer non-motorized transportation options. TAP funding is split 50/50 between state departments of transportation and large metropolitan planning organizations (Transportation Management Areas). Another FAST Act change affecting TAP is that non-governmental organizations are now eligible for transportation safety non-infrastructure (i.e., education) funding.

States and/or MPOs, as appropriate, will now be required to submit an annual report that documents the number of TAP project applications, the aggregate cost of the projects for which applications are received, the types of projects to be carried out expressed as percentages of the total apportionment of the state under this subsection, and the number of projects selected for funding for each fiscal year, including the aggregate cost and location of projects selected.

A new National Highway Transportation Safety Administration (NHTSA) 405 Safety Fund creates a non-motorized safety fund set-aside (5 percent) of the overall safety fund of about \$270 million. This results in about \$14 million in the first year for states where 15 percent or greater of traffic fatalities are bicyclists or pedestrians. Details on the funding distribution formula for the 405 Safety Funds are still under development by the U.S. Department of Transportation. It is expected that funds can be used for educating law enforcement on state laws affecting bicycle or pedestrian crashes, enforcement campaigns, and public education and awareness programs on laws for motorists, cyclists and pedestrians.

The MDNR Recreation Passport Grant Program was created by PA 32 of 2010. It established the Local Public Recreation Facilities Fund to be used for the development of public recreation facilities, including improvements to non-motorized trails for local units of government. Money for this fund comes from the sale of the Recreation Passport, which replaces the resident Motor Vehicle Permit (MVP), for state park entrance. The first \$12.73 million will be distributed to replace lost revenue from the elimination of the motor vehicle permit and boating access site permits, as well as to pay for administration by the Secretary of State. Ten percent of the remaining revenue will be used to fund the Recreation Passport Local Grant Program. Grant amounts range from \$7,500 to \$45,000. More information on the Recreation Passport is available on the MDNR website.

The Michigan Natural Resources Trust Fund (MNRTF) was established under the Kammer Recreational Land Trust Fund Act of 1976 to provide a permanent funding source for the public acquisition of land for resource protection and public outdoor recreation. Funding was provided by revenue derived from royalties on the sale and lease of state-owned oil, gas, and mineral rights. In 1984, the MNRTF was expanded to allow for the funding of acquisition and development of public land. In addition, a Michigan Constitutional Amendment approved in 2020 expanded the allowable funding definition to include both renovation and redevelopment rather than just new facilities.

Since its inception, the MNRTF has awarded more than \$1 billion in grants to local units of government and state agencies for projects throughout all 83 counties. Of this total, \$190 million has been invested in trails.

Implementation

Having been planned for by virtue of being included in this document, implementation of a non-motorized project essentially consists of programming and construction. More specifically, programming involves the implementing agency committing to designing the project, establishing or obtaining dedicated funding for the project, and navigating whatever additional processes are necessary for the eventual construction to take place. How local agencies pursue projects varies based on many factors. These may include available staff resources, competing local needs, limited local funds availability, and requirements of the internal design and procurement process. In the case of non-motorized projects, local priorities typically dictate that a funding package be composed of several different resources, only one of which might be Federal funds. These might include a number of the programs mentioned previously, and will typically include local funds as well. This will actually comprise the greatest portion of the efforts towards a viable project in many cases and may take some years to come to fruition. In light of this, it may also depend in large part on an agency's willingness to pursue a given project, as well as the resources at its disposal to continue that process. Given time, effort, and timing, a project can be brought about that is ready for construction.

As part of the programming process, projects for which federal funding has been established will be submitted to MATS, via the TIP process. The projects will be reviewed by MATS' Technical and Policy Committees while at the same time being made known to the public and taking into account public comments on those projects. Following an appropriate comment period as required by law, it is then the responsibility of the Policy Committee to take appropriate action on the project list that is included in the TIP. MATS staff is always available to assist in this process.

Plan Conclusion

From a regional perspective, a fully functioning NMT infrastructure is essential to creating a good, vibrant quality of life for residents and visitors alike. To create that infrastructure, it is necessary that a planning process based on current conditions and well thought-out goals be in place.

Just having a plan, however, does not create infrastructure. The creation or enhancement of NMT facilities requires both long-term thinking and constant attention to opportunities to access funding, create synergy, and promote cooperative efforts.

Using this plan as a part of a balanced strategy, implementing agencies can improve the likelihood of accessing funding and other resources available for creating that NMT infrastructure. The plan can help to build on the existing network for all types of users, creating a system that works to maximum advantage for both transportation and recreation, as shown in Figure 10, covering both the urbanized and rural portions of the MATS area. From that perspective, we hope that this plan serves not as an ending to a process, but as a beginning.