WHAT MOVES YOU BERRIEN AND CASS COUNTIES: HOW WILL WE ARRIVE IN 2040?

Niles-Buchanan-Cass Area Transportation Study

Long Range Transportation Plan

2013-2035

ACKNOWLEDGEMENTS

Photographs courtesy of the following

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INTRODUCTION

The 2040 Niles-Buchanan-Cass Area Transportation Study (NATS) Long Range Transportation Plan will explain how the communities in the planning area will address their transportation needs, what their priorities include, and how federal, state, and local dollars will be used to address highway, transit, airport, bikeway, and pedestrian walkway infrastructure needs.

This plan provides guidance to the area's local officials as they plan for the present and future development of their communities. The plan contains the planning framework and other necessary information to assist sound decision-making for the improvement of local transportation systems. It is revised every four years to maintain a consistent, twenty-five year look at the issues and needs of the NATS Urban Area. The Plan will also reference other local or regional agency plans as part of the NATS region's effort to coordinate community-wide multi-modal services.

There are two primary reasons to develop a comprehensive transportation plan.

The Chapin House in the City of Niles and former city hall until 2012.

1. **The 3 C's of Transportation Planning: Cooperative, Continuing, and Comprehensive**
   Decisions are better when the decision makers, working in cooperation, have as much information as possible, and base their policy choices on a comprehensive analysis. Although the process of gathering information for analysis is always beneficial, it becomes even more important when investment decisions are expensive and the consequences long-lasting. Such is the case in transportation system infrastructure improvements; a great deal of money is spent on various transportation system improvements such as adding lanes to roads, repaving or reconstruction, or building pedestrian/bicycle facilities. These are expensive projects but are necessary to the economic and social life of a community.

2. **Federally-Mandated Transportation Planning Process for Urbanized Areas**
   NATS was established in 1973, following federal guidelines dictating that urban areas above certain population densities and an expectation of urban development must plan their transportation infrastructure together. The MPO is charged with maintaining a continuing, comprehensive, and cooperative transportation planning process to accommodate the federal obligation. At a minimum, the jurisdictions within the defined planning boundaries shall collaborate to set regional priorities for all modes of movement in the transportation system and determine their formula for producing the local, non-federal match required for federal assistance in planning and transportation-related activities.

STUDY AREA OVERVIEW

Berrien County

Berrien County is located in Michigan's southwest corner. The southern border of the County abuts Indiana's northern State line. The cities in the southern portion of the County are strongly influenced by the population and economics of the Indiana cities that lie in close proximity including South Bend, Mishawaka, and Michigan City. Chicago is also a powerful influence on many aspects of life in southwest Michigan. The strong links between Chicago and Berrien County include economic, environmental (both are within the Lake Michigan Watershed Basin), social, as well as transportation. A few towns in the far southwest portion of the County are even within the farthest reaches of the Chicago commutershed. It is widely accepted that a Chicago "Mega-Region" includes Berrien County. Berrien County comprises a total area of 580 square miles and is bordered by Michigan's Cass County to the east and Van Buren County to the north and Indiana's LaPorte and

The City of Niles if known as the four flags city for the four different nations that flew their flag in the area.

St. Joseph Counties to the south. The western edge of the County comprises a portion of Michigan's Lake Michigan western "sunset" coastline. All told, Berrien County contains 42 miles of Lake coastline.

Cass County

Cass County is the first county to the east of Berrien in Michigan's southwest corner. The southern border of the County abuts Indiana's northern State line. The cities in the southern portion of the County are strongly influenced by the population and economics of the Indiana cities that lie in close proximity including South Bend, Mishawaka, and Michigan City. Chicago is also a powerful influence on many aspects of life in southwest Michigan. Cass County comprises a total area of 508 square miles and is bordered by Michigan's Berrien County to the west, Van Buren County to the north, and Indiana's St. Joseph and Elkhart Counties to the south.

MPO STUDY AREA

The Niles-Buchanan-Cass Area Transportation Study (NATS) is the Michigan portion of the South Bend, Indiana, urbanized area as designated by the United States Census. The NATS area is defined by an area that includes communities in both Berrien and Cass Counties. The 2010 Census changed the urbanized area for the NATS study area. The change has occurred within Cass County. Mason Township will become the newest member to the NATS committees. A discussion of the committees can be found on page 15 of this planning document.

The current jurisdictions within the study area which include: Cities of: Niles, Buchanan, Village of Edwardsburg, Townships: Bertrand, Buchanan, Howard, Mason, Milton, Niles, and Ontwa

Map 1 - MPO Study Area

PARTNERS IN INDIANA

The Michiana Area Council of Governments (MACOG) service area shares the northern Indiana border with Berrien and Cass Counties. The NATS study area is the Michigan piece of the South Bend, Indiana, urbanized area as designated by the United States Census. Coordination of transportation projects and planning documents are coordinated with the transportation staff at MACOG. www.macog.com/.

GOVERNANCE OF THE MPO

Southwest Michigan Planning Commission Governing Board

The Southwest Michigan Planning Commission (SWMPC) is one of 14 Regional Planning and Development Regions created in 1968 by Governor George Romney. This step was taken in response to a growing number of federal programs (housing, water quality, economic development, and transportation) that recognized the area-wide nature of many problems. The regional boundaries were established as a consistent geographic area upon which not only planning activities, but also the delivery of services could be based. Berrien, Cass, and Van Buren Counties were established as "Planning and Development Region IV." The full history of the SWMPC can be viewed at http://www.swmpc.org/history.asp. The Southwest Michigan Planning Commission (SWMPC) provides the staff for the MPO.

The SWMPC Governing Board reviews and affirms decisions of the NATS MPO Policy Committee. The SWMPC Governing Board reviews and approves the following documents that are produced by the MPO staff:

1. **Long Range Transportation Plan** (LRP)-which covers a twenty-five year period and is revised every four years.
2. **Unified Planning Work Program** (UWP)-describes the planning work to be accomplished in the fiscal year.
3. **Transportation Improvement Program** (TIP)- a four-year document which prioritizes all transportation improvement projects in the four-year period.
4. **Public Participation Plan** (PPP) - documents the standard expectations and procedures for public involvement in this region's transportation planning process.

In addition, the MPO may produce other documents, policies, or initiatives that may be determined to advance the efficient and effective use and development of the regional transportation system. In these instances, the SWMPC Governing Board is not obligated to review and affirm these decisions.

The MPO Committees

The MPO has two Committees which oversee and direct the MPO staff on a variety of topics, such as meeting preparation, public outreach, and document preparation. The two committees are the Technical Advisory Committee and the Policy Committee.

NATS Technical Advisory Committee

The NATS Technical Advisory Committee (TAC) is comprised of planners, transit operators, engineers, managers, and operators of transportation agencies, local units of government, the MDOT, the Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA) and provides technical assistance to the MPO staff on transportation issues. They make recommendations to the Policy Committee on potential actions. Current representatives from the following agencies make up the membership of the Committee:

TAC Committee Members:

* Non-Voting member

Berrien County Community Development
Berrien County Road Commission
Bertrand Township
Buchanan Dial-A-Ride
Buchanan Township
Cass County Planning Commission
Cass County Road Commission Engineer
City of Buchanan
City of Niles Community Development
*Federal Highway Administration - Michigan Division
Four Flags Area Chamber of Commerce
*Federal Transit Administration
Howard Township
Michiana Area Council of Governments
Milton Township
*Michigan Department of Environmental Quality- Air Quality Division
*Michigan Department of Transportation - Multi-Modal
Michigan Department of Transportation - Southwest Region
Michigan Department of Transportation Statewide Planning
Michigan Department of Transportation- Transportation Service Center, Coloma
* Michigan Department of Transportation - Travel Demand
Niles Charter Township
Niles Dial-A-Ride
Ontwa Township
Pokagon Band of Potawatomi Indians
Southwest MI Economic Growth Alliance
*Southwest Michigan Planning Commission
Village of Edwardsburg

NATS Policy Committee

The NATS Policy Committee is composed of elected officials of local government, board members of transportation-related agencies, and designated officials from the MDOT, the FHWA, and the FTA. These officials are responsible for establishing local transportation policies, overseeing the planning process, and providing a forum for cooperative decision-making. The Policy Committee provides technical advice through the expertise of the TAC. Current representatives from the following agencies make up the membership of the Committee:

Policy Committee Members

* Non-Voting member

Berrien County Community Development
Berrien County Road Commission
Bertrand Township
Buchanan Dial-A-Ride
Buchanan Township
Cass County Planning Commission
Cass County Road Commission Engineer
City of Buchanan
City of Niles, 3 representatives
*Federal Highway Administration - Michigan Division
Four Flags Area Chamber of Commerce (2)
*Federal Transit Administration
Howard Township
Michiana Area Council of Governments
Milton Township
*Michigan Department of Environmental Quality- Air Quality Division
*Michigan Department of Transportation - Multi-Modal
Michigan Department of Transportation - Southwest Region
Michigan Department of Transportation Statewide Planning
Michigan Department of Transportation, Transportation Service Center, Coloma
*Michigan Department of Transportation - Travel Demand
Niles Charter Township
Niles Dial-A-Ride
Ontwa Township
Pokagon Band of Potawatomi Indians
Southwest MI Econ. Growth Alliance
*Southwest Michigan Planning Commission
Village of Edwardsburg

Bi-State Coordinating Committee

The Bi-State (Michigan/Indiana) Coordinating Committee consists of representatives from the Niles and South Bend areas. Its function is to ensure the coordination of regionally significant activities across the state line and to resolve conflicts as they arise. Current membership is as follows:

Table 1 - Bi-State Coordinating Committee

Michigan		Indiana
Commissioner, Berrien County		Commissioner, Elkhart County
Commissioner, Cass County		Commissioner, St. Joseph County
Mayor, City of Niles		Mayor, City of Elkhart
Supervisor, Bertrand Township		Mayor, City of Mishawaka
Supervisor, Howard Township		Mayor, City of South Bend
Supervisor, Milton Township		Councilman, City of Elkhart
Supervisor, Niles Township		
Supervisor, Buchanan Township		
Supervisor, Ontwa Township		
Ex Officio		
Michigan Department of Transportation		
Indiana Department of Transportation		
Federal Officials (as necessary)		

LEGISLATION

Moving Ahead for Progress in the 21st Century (MAP-21) constitutes the governing rules for transportation planning and decision making. New concepts and requirements originate from this legislation and therefore the MPO will be held responsible for implementing the changes. MAP-21 was signed into law by President Barack Obama on July 6, 2012. MAP-21 is a 27 month authorization that ends on September 30, 2014. MAP-21 continues the MPO and statewide transportation planning process established in previous federal transportation legislation. Some notable changes include the following:

- **Restructuring of Core Program-under MAP-21 (there are 5 program areas)**
    1. National Highway Performance Program
    2. Congestion Mitigation and Air Quality Program
    3. Surface Transportation Program

4. Highway Safety Improvement Program
5. Metropolitan Planning

- **Programs Eliminated**
  1. National Scenic Byways
  2. Transportation Enhancements
  3. Transportation, Community and System Preservation
  4. High Risk Rural Road Program
  5. Safe Routes to School
  6. Job Access Reverse Commute
  7. Railway-Highway Crossing Hazard Elimination in High Speed Rail Corridors
- **Performance Based Planning**-Continues the 3C process (continuing, cooperative, and comprehensive) and establishes and uses a performance based approach to decision making.
- **National Highway Performance Program**-Supports the National Highway system by reviewing the condition and performance of the system, makes progress toward performance goals, and tracks new facility construction.
- **Transportation Alternatives**-Consolidates Transportation Enhancements, Safe Routes to School and Recreation Trails Programs. It can also fund environmental mitigation and minor road construction. MPOs must run a competitive process for this funding source.
- **Transit**-Formula grant programs include urban areas, rural areas, elderly and disabled, bus and bus facilities, state of good repair and high density.
- **National Freight Policy**-Establishment of a national freight policy of mainly highway assets and creates a national freight network designated by critical rural freight corridors.
- **Environmental Streamlining Processes**- It is in the national interest to expedite delivery of surface transportation projects by substantially reducing the average length of the environmental review process.

A summary of MAP-21 can be found by visiting:

FHWA http://www.fhwa.dot.gov/map21/summaryinfo.cfm

FTA http://www.fta.dot.gov/legislation_law/about_FTA_14937.html

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HISTORY OF THE STUDY AREA

Fort St. Joseph Museum in Niles, MI

Berrien County

Rene' de LaSalle arrived in Berrien County in 1679 and built Fort Miami at the mouth of the St. Joseph River. This would become the base for many explorations into the Mississippi River Valley. Toward the end of the Seventeenth Century, subsequent French explorers built Fort St. Joseph farther up the river at the present city of Niles, Michigan. The County officially organized in 1831 and was named after U.S. Attorney General John M. Berrien. At that point, the County saw population increases during the 1830s. In 1834, settlers started to take advantage of the moderating affect of Lake Michigan on Berrien County's climate and of its sandy soils, which provided a perfect environment for agriculture, including a breadth of fruits and vegetables. Berrien County's fruit production continued to grow as did its population.

Fort St. Joseph - Niles

French explorers built Fort St. Joseph around the end of the seventeenth century, upriver from the mouth of the St. Joseph River at what is now the City of Niles. Fort St. Joseph was heavily utilized until the French left the area around 1763; the British then held the fort until it was captured by the Spanish in 1781. This international history provided Niles with the distinction of being a town of four flags. The original site of the fort is marked by a huge boulder with an historical marker that recounts the history of the fort. Today the history of the Fort is told at the Fort St. Joseph Museum. The Museum has many outstanding exhibits highlighting the Fort's unique history.

Cass County

Cass County was named after Lewis Cass who was the territorial governor of Michigan from 1813 to 1831. Early settlers came from the west, using Niles and Berrien County as the doorway to the east. Those early settlers included New Englanders, Southerners, and a large African-American and Native American population. The Potawatomi Indians had been long-time residents of Cass County prior to the arrival of white and African-American settlers. The Potawatomi were gradually forced off their land. Some Native Americans resisted and in 1837 were able to purchase 1,000 acres of land in Silver Creek Township. Descendants of the Potawatomi still make their homes in Silver Creek Township today.

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An Indian trail that crossed the state from Detroit in the east to Chicago in the west is now the US-12 Heritage Trail. The trail had historically linked animal migratory habitat, Native American territory, first generation settlements, commerce routes, and cultural corridors.

McCoy Creek Trail
Courtesy of Google Images

The African-American story is particularly rich in Cass County. The county was a haven for many African-Americans migrating north during the mid-nineteenth century. Their migration was aided by Quakers who had also left the South because of their opposition to slavery. The Quakers helped slaves escape through the Underground Railroad, the route ran about two miles east of Cassopolis. The primary station for the Underground Railroad route in Cass County is the William Jones House.

TRANSPORTATION PLANNING: HOW WE GOT HERE

- The increased usage of automobiles in the early 1900s was what first sparked the coordinated planning of motorized highways and the transportation system more broadly.
- The Federal-Aid Highway Act of 1927, the introduction of national roadway standards and funding allotments in the 1920s the Act allowed highway construction to begin connecting the nation's population centers.
- In 1941-1945, highway expansion stopped and transit system ridership reached an all-time high. Streetcars, rail systems, and buses served as significant means of travel for Americans. The post-war period saw a huge demand for new vehicles and space for homes as soldiers came home.
- The Federal-Aid Highway Acts of 1944 and 1956 significantly increased funds for road building. Bolstered by housing policies that promoted a move to the suburbs, automobile-oriented planning came to dominate American transportation.
- Planners began using tools to make their study of transportation more relevant, such as travel studies, and forecasting for future travel patterns. In addition, organizations such as the American Association of State Highway and Transportation Professionals (AASHO) published manuals on conducting cost-benefit analysis of transportation projects. Planners and engineers coordinated with business leaders to use transportation planning as a tool not just to move people, but to encourage economic development in target areas.
- The 1960s saw a balanced highway and transit investments approach. The Federal-Aid Highway Act of 1962 mandated a continuous planning process that brings together stakeholders from the federal government, the state, and local communities to update transportation plans. The Urban Mass Transportation Act of 1964 was the first federal effort to encouraging the planning and area-wide mass transportation systems. These two Acts placed an emphasis on coordinating regional

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transportation planning with land use and taking into account the environmental and social costs that highway and transit projects impose on communities. It was during this time period, that the framework for Metropolitan Planning Organizations (MPOs) came into being.

- The start of the new millennium has reinvigorated regional transportation system planning with a new focus on multi-modalism and less emphasis on private automobile infrastructure. Even with this new focus however, private automobiles continue to dominate transportation planning. Mounting concerns about the impacts of the automobile on climate change and air quality, as well as an aging national population have led transportation planners to renew their focus on balancing automobile infrastructure with planning for transit and non-motorized facilities. As U.S. Secretary of Transportation Ray LaHood said in 2010, "This is the end of favoring motorized transportation at the expense of non-motorized."[1] This new call for a system that supports all modes and all abilities is particularly timely for the southwest Michigan region, where an aging, diffuse population requires a diverse array of transportation options.

CURRENT TRANSPORTATION ASSETS

Roadways

As of 2013, Berrien County has 749 miles of federal-aid eligible roads. In particular, Interstate 94 plays a prominent role in connecting Berrien County to the rest of Michigan and the nation. I-94 connects Berrien County with Detroit and Ontario, Canada to the east, and Chicago, Milwaukee, Madison, and Minneapolis-St. Paul to the West. I-196 also vectors north from I-94 and connects the Benton Harbor-St. Joseph area with Holland and Grand Rapids. In addition, US-31 is a divided highway that directly connects Berrien County to South Bend. US-12 provides an east-west connection across the state in the southern portion of Berrien and Cass counties. In addition M-139, M-63, and Red Arrow Highway serve as north-south connectors and business corridors in the Berrien County. More detailed information about roadways can be found in the **Intermodal Considerations** section of the plan.

As of 2013, Cass County has 373.1 miles of federal-aid eligible roads. There are no Interstates that run through the county but there are several Michigan highways that provide connections within and outside of the County. M-40 and M-51 serve as the north-south connectors while M-60 and M-62 serve as the west-east connectors. US-12 provides an east-west connection across the state in the southern portion of the County.

[1] Vestel, Leora Broydo. "Transportation Department Embraces Bikes, and Business Groups Cry Foul." *The New York Times.* March 26, 2010. <http://green.blogs.nytimes.com/2010/03/26/transportation-department-embraces-bikes-and-business-groups-cry-foul/>.

Rail

Amtrak has two corridor passenger services in the NATS region including the Wolverine, and the Blue Water that focus on providing rail service between Detroit, Michigan and Chicago, Illinois.

- **The Wolverine** passenger service is a 304 mile line that offers three daily round trips from Chicago, IL to Pontiac, Michigan, with a stop in Niles, Michigan. The Wolverine operates over tracks owned by Norfolk Southern Railway, Amtrak, Conrail, and Canadian National Railway.
- **The Blue Water** is the second service that makes a daily stop in Niles, Michigan, from Chicago, IL to Port Huron, Michigan. The Blue Water operates on a 319-mile line that includes sections owned by Norfolk Southern Railway, Amtrak, and Grand Trunk Western Railroad. The 97-mile segment between Porter, Indiana and Kalamazoo, Michigan, is the longest segment of track owned by Amtrak outside of the northeast corridor.

The Amtrak station located in Niles is the only passenger rail service in the study area.

In addition, the South Shore Line provides commuter service to Chicago, with 14 daily departures from Michigan City and 7 from South Bend. Each of these departure points is just a few miles from the Michigan-Indiana state line. More details about rail service can be found in the **Intermodal Considerations** section of the plan.

Transit

The NATS planning area is served by 3 transit agencies those being Berrien Bus (county wide system), Buchanan Dial A Ride (serving City of Buchanan and Buchanan Township), and Niles Dial A Ride (serving City of Niles and Niles Charter Township). Cass County only has one transit provider within the study area and that is the Cass County Public Transit Authority. More details about transit service can be found in the Intermodal Considerations section of the plan.

Non-Motorized Facilities

NATS supports major regional efforts to improve facilities for non-motorized transportation and trails. NATS is part of the MDOT Southwest Region 9-County Non-Motorized Plan, which set out a 9 county regional vision of what the non-motorized transportation system in southwest Michigan should be. In addition, jurisdictions within NATS are closely linked to the ever expanding system within the MACOG area. More information about non-motorized facilities can be found in the Intermodal Considerations section of the plan.

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Aviation

Southwest Michigan Regional Airport is the only public airport in Berrien County and is located in Benton Harbor. The airport has runways capable of handling jets. The airport handles executive travel, air courier, the Coast Guard, and some freight activity. In 2011, the airport completed safety upgrades to further lengthen the runways and accommodate more aircraft. The other airport is the Jerry Tyler Memorial Airport, owned and operated by the City of Niles. The airport services as a general utility airport with no commercial flight operations. More information about aviation facilities can be found in the Intermodal Considerations section of the plan.

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PUBLIC PARTICIPATION

Federal Guidance on Participation

Building off the Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation, the transportation reauthorization bill Moving Ahead for Progress in the 21st Century (MAP-21) continues to support previous federal public participation guidelines. The provisions that were set forth in SAFETEA-LU are as follows:

1. Representatives of users of pedestrian walkways, bicycle transportation facilities, the disabled are specifically added as parties to be provided with the opportunity to participate in the statewide and metropolitan planning processes.

2. To enhance the public participation process, the State department of transportation (DOT) and MPO should conduct public meetings at convenient and accessible locations at convenient times; employ visualization techniques to describe plans; and make public information available in an electronically accessible format such as on the Web.

3. The MPO is to develop a participation plan in consultation with interested parties that provides reasonable opportunities for all parties to comment.

SWMPC's Commitment to Public Participation

1. Public involvement is an important element of a high quality transportation planning process;
2. Effective transportation planning must include the participation of those whose everyday lives are critically affected by how they are able to get to work, home, school, shopping, and services;
3. It is essential to ask for public participation, not just wait for it. It is essential to respect and seriously consider input that is received, not just collect it;
4. Informing and educating the public about transportation planning issues and the transportation planning process is key to obtaining good quality public input; and
5. Additional emphasis should be placed on involving persons and groups typically under-represented in transportation planning or with special transportation needs, including low-income, minority, elderly, and disabled populations.

NATS intends to use the standards set forth in SAFETEA-LU, now MAP-21, as the basis for its public participation program, expanding on them to better meet the needs of the residents in the Niles-Buchanan-Cass Area Transportation Study.

MPO Commitment to Public Participation

The MPO is committed to engaging the public in varied and useful ways to garner as much public feedback as possible. The purpose of the Public Participation Plan (PPP) is to set forth the standard expectations and procedures for public involvement in this region's transportation planning process. This document similarly presents opportunities for the MPO to expand and enhance public engagement as needed to support our decision making processes. The success of any effort to develop plans for the maintenance and

improvement of the transportation system is directly related to the general public support given to the development of the system. Individuals must be given the opportunity to put their beliefs, opinions, and values into the overall plan. As representative bodies, the NATS committees must actively solicit the ideas and comments of the people they serve.

NATS Public Participation Plan

The NATS MPO updated its Public Participation Plan in April of 2012. This document is available online at http://www.swmpc.org/participation.asp or by contacting SWMPC staff for a hard copy (contact information is found below). The Public Participation Plan outlines the methods staff will use to publicize activities and to seek input and comments on all the major transportation documents, including the LRTP, TIP, UWP, and the Public Participation Plan itself. The following is a partial list of those means:

- Regular MPO Committee meetings
- Special meetings held by the MPO
- SWMPC quarterly meetings
- SWMPC website
- Presentations to local organizations
- Newspaper advertisements and articles
- Direct mailings
- Radio broadcasts
- Bi-weekly transportation email updates from the MPO

In general, the NATS transportation planning process is designed to be open to the public. Each month, on the fourth Tuesday, the TAC and Policy Committees meet at 1:30 and 2:30 p.m., respectively, to discuss projects and other items related to transportation in the region. Both committees meet at the City Council Chambers located at **1345 E. Main St., Niles, MI 49120**. The Committee meetings are always open to the public and provide for routine public comment on the agenda.

Agenda packets and announcements for regularly-scheduled NATS meetings are distributed to all members approximately seven calendar days before the meeting. Bi-weekly email messages are sent to Committee members, interested citizens, and other identified members of the public that transportation would impact. Meeting information is also posted on the SWMPC website at http://www.swmpc.org/nats.asp or by contacting the SWMPC at:

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Southwest Michigan Planning Commission
185 East Main Street, Suite 701
Benton Harbor, Michigan 49022
Phone: (269) 925-1137
Fax: (269) 925-0288
www.swmpc.org/transportation.asp

In the event that a member of the public is unable to attend a meeting, the transportation staff at the SWMPC is available to discuss transportation issues by e-mail, letter, telephone, or in person.

Other general outreach activities include sending announcements and notices of proposed local transportation actions, MDOT public meetings, and other transportation-related events to local governments, local media, libraries, and town halls and posting them on the SWMPC website. In addition, the SWMPC publishes a quarterly newsletter (e-mailed and mailed to over 900 contacts) that includes NATS transportation news. Transportation staff members are also available to speak at community organization meetings or related functions throughout the year. Environmental justice regulations ensure the inclusion of a number of partners in touch with under-represented populations, and these efforts are further described in the Environmental Justice section of this document.

LONG RANGE TRANSPORTATION PLAN PUBLIC PARTICIPATION PROCESS

A LRTP is a long-term look at the priorities and objectives for the region, and is updated every four years in non-attainment and maintenance areas (such as NATS). According to the 2011 Public Participation Plan, the SWMPC must obtain public input on the list of goals and objectives, on the list of proposed priority projects, and on the draft document as a whole. Efforts to acquire this input are described below.

Long Range Plan Development

- **Public Participation Plan** – The plan was reviewed, amended, and adopted in 2011, with specific attention paid to the development of a targets for the MPO to achieve in the area of public participation and engagement. Table 2 outlines the targets set by the MPO.

- Table 2, *Public Participation Plan Goals Matrix*, outlines the strategy that the MPO staff have in place to improve participation by the public. The table highlights those areas that the MPO staff will complete in the next 12-24 months (High), 24-36 months (Medium), and 36-48 months (low).

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Table 2 - Public Participation Plan Goals

1. Visibility – Raise the awareness of the MPOs and their role in regional transportation planning.		
Priority	*Activity*	*Measures*
High	1.1 Build contact list of the following: a. Area churches in the MPO planning region, with specific focus on environmental justice region. b. Human service agencies and organizations c. Senior centers/agencies d. Disability groups e. Schools in the planning region	• Check to see if lists are created. • Check the lists for accuracy and completeness.
High	1.2 Create a display explaining the role of MPO transportation planning to place in locations throughout the region.	• Count the number of communities the display in. • Count the number of public comments received before and after the placement of displays
High	1.3 Partner with agencies/organizations at community events to discuss transportation planning with the public	• County the number of agencies and organizations partnered with and the number of different events at which MPO transportation materials are presented and discussed.

***2. Engagement* – Continuously involve the public in the transportation planning process.**		
Priority	*Activity*	*Measure*
High	2.1 Issue frequent press releases to area newspapers regarding the efforts of the MPOs.	• Count the number of press releases sent and printed.
High	2.2 Send twice-monthly emails regarding the efforts of the MPOs to a complete transportation contacts list, which should include all interested individuals.	• Verify the transmission of twice-monthly emails. • Check the email contact list for accuracy and completeness.

High	2.3 Produce flyers and other publications regarding the efforts of the MPOs.	• Count the total number of flyers or other publications produced. • Count the number of locations flyers are distributed in, paying special attention to organizations like churches and senior centers.
High	2.4 Maintain the MPOs' websites, ensuring accurate meeting notices, MPO work program timelines, and notification of events and public input opportunities.	• Check the website at least monthly, making sure that all information is accurate and complete.
High	2.5 Respond to public comments received via email, phone, and written message.	• Check for timely response, made in the same form as the message was received (i.e., phone calls are returned, emails are replied to, and written messages are sent a return letter).
High	2.6 Maintain the SWMPC Facebook page by posting transportation related articles or opportunities of interest at least once weekly.	• Check the frequency of transportation-related Facebook updates. • Monitor the number of Facebook followers, and check for growth.
Medium	2.7 Utilize civic /community/religious present information to with their memberships and to gain feedback.	• Count the total number of presentations and input meetings held at such organizations. • Count the number of organizations reached out to and partnered with.
Medium	2.8 Develop procedure for responding to official public input that is transparent and can be recorded.	• Check that public input is compiled and prominently displayed on the SWMPC website • Check that press releases and/or emails are sent, explaining how public input has been incorporated into transportation documents.

3. Notification **– Notify the public when key decisions are being made and provide opportunities for comment.**		
Priority	*Activity*	*Measure*

High	3.1 Utilize displays, flyers, the official website, personal invitations, and emails to provide notification of important events.	• Keep sign in sheets to track number of attendees at events. • Use Google Analytics to track the total number of website views on transportation pages. • Keep track of the total number of flyers printed and distributed.
High	3.2 Display all meeting materials, such as agendas, minutes, and handouts, on the appropriate SWMPC website no less than 5 days in advance of the meeting date.	• Monitor the date of important events, and make note of whether meeting materials have been posted appropriately.

4. Communication **– Engage with citizens about transportation topics in ways that are informative and understandable.**		
Priority	*Activity*	*Measure*
High	4.1 Ensure that all communications and MPO plans are presented in a format understood by citizens, with written materials that do not surpass an eighth grade reading level.	• Encourage feedback from citizens about their ability to understand material, and note their difficulty.
Medium	4.2 Create standing citizen-involved subcommittees that focus on transportation topics such as freight, rail, and bicycling/walking.	• Make note of the number of subcommittees created.
Low	4.3 Create public service announcements or informational videos regarding various transportation topics.	• Make note of the number of announcements or videos created.
High	4.4 Continue to utilize Facebook postings to communicate with people regarding various transportation topics.	• Count the number of Facebook postings, as well as the number of interactions within postings.
High	4.5 Use maps, graphs, and other pictorial representation techniques to communicate various transportation issues more clearly to citizens.	• Track the number of informational displays made available to the public.

5. Cultivation **– Educate incoming MPO board members and advisory committee members about MPO functions, responsibilities, and programs; educate regional high school-aged children about the internal function of MPOs.**		
Priority	*Activity*	*Measure*

Low	6.1 Create a manual for MPO board members detailing the workings of MPOs and their specific responsibilities	• Make note of the steps to create a manual (such as the formation of a subcommittee in charge of its guidance), as well as the existence of a finished manual.
High	6.2 Contact high school students regarding opportunities for internships with the MPO.	• Make note of inquiries from prospective interns. • Make note of number of regional outreach efforts.

6. Facilitation **– Make it easy for all citizens to get involved in transportation activities and to be heard.**		
Priority	*Activity*	*Measure*
Low	6.1 Create of a citizen advisory committee that looks at barriers to public participation and possible solutions.	• Check for the existence of such a committee.
High	6.2 Encourage MPO member organizations to advertise dates and locations of transportation-related meetings through websites, newsletters, flyers, emails.	• Count the organizations that regularly post this information • Keep track of the methods by which organizations advertise events
Low	6.3 Have citizen representatives on the MPO Policy Committees	• Track the number of citizen representatives holding voting positions on the committees
Low	6.4 Make meetings available to citizens through recordings or webcast	• Track the number of meetings made available in video or audio form, either live or recorded on displayed on the SWMPC website.

7. Accessibility **– Hold meetings at convenient times and accessible locations.**		
Priority	*Activity*	*Measure*
High	7.1 Develop list of potential meeting locations that are on fixed bus routes and accessible by people who may walk or bike.	• Check that list is generated, and that it is accurate and complete
Medium	7.2 Partner with agencies holding community events to provide information and gain input in accessible places.	• Assess the transportation accessibility at partnered events.

Medium	7.3 Hold transportation meetings and other input sessions at a variety of times, both daytime and evening	• Track the times of public transportation events.

***8. Compliance* – Meet or exceed the spirit, intent, and requirements of MPO and other local, state, and federal statutes and regulations.**		
Priority	*Activity*	*Measure*
High	9.1 Annually review the public participation plan for effectiveness.	• Check that annual review has been completed.
Low	9.2 Distribute a public survey every other year to help determine what works with the public participation plan and what needs improvement.	• Check that surveys have been distributed. • Count the number of survey responses and tally the results.

- **Goals and Objectives** - SWMPC staff conducted an initial review of the goals and objectives contained in the 2035 LRTP, there were two public input sessions with members of the public held on October 12, 2011 and October 19, 2011, continuous discussions at MPO Committee meetings were held in 2012 and 2013, which are open to the public, noticed by a yearly legal notice, and are also communicated via bi-weekly email communications to over 700 transportation stakeholders, staff reviewed federal regulations and state transportation documents for changes in policy, and the NATS Policy Committee approved the goals and objectives in January 2013.
- **Base Year and Future Year Socioeconomic Data –** Base year data was reviewed in 2011 as the U.S. Census information was released. A careful and detailed review of the three primary factors (population, employment, and households) were done with assistance from MDOT and Committee members. Future SE data review was done throughout 2012 with the same assistance as the base year data.
- **Plan Sections –** Once the goals and objectives were approved, SWMPC staff began drafting sections of the plan and brought those sections of the plan to the Committee members each month. The sections were conditionally approved until the final version of the plan was presented to the Committee members.
- **Public Input –** Public input was sought throughout the entire plan development.
    - Monthly MPO meetings provided one regularly scheduled means for which the public could comment on the plan development.
    - Three open house forums were held during the months of March, April, and May of 2013. Legal notices were sent regarding these forums.
    - Staff encouraged participation by various means throughout the process by utilizing bi-weekly emails to over 700 interested people, legal notices, flyers and postcards mailed to schools and community churches in the MPO area.

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- In February 2013, a legal notice was sent to local media indicating that public comment was sought on the Goals and Objectives, Introduction, and Multi-Modal sections of the long range plan (See Appendix _____ for copy of all long range plan legal notices). This cycle was repeated throughout the planning process, to allow the public additional notice of their opportunity to comment on planning sections and other opportunities for them to comment at regularly scheduled meetings, or by providing comments via mail, fax, or email to the MPO staff. Until the plan is approved by FHWA, FTA, and MDOT, the MPO continued to accept public comments on the plan.

LRTP PROJECTS

Notices indicating a public comment period for the LRTP projects were sent via e-mail, postal mail, and Facebook (see Appendix _____ for copy of notices) to local media, local governments, schools, human service organizations, and members of the general public, all from the SWMPC contacts database. The formal comment period began April 20-April 29, 2013. The notice to the public contained detailed dates, times, and locations of the meetings at which public comment on the LRTP projects would be accepted, and described how to comment on the LRTP projects if meeting attendance was not an option. The public had the opportunity to comment in person at a special meeting held on April 19, 2013 where the projects were put out for the official public comment period. The public also had an opportunity to provide comments at the NATS Joint TAC and Policy Committee meeting held on April 30, 2013 at 1:30 p.m. at the Niles City Council Chambers or by submitting an email, phone call, fax, or mail to Transportation Staff at the SWMPC.

The table below lists the current LRTP projects and Illustrative List of Projects. The Illustrative List highlights those projects in the region that are still important to the MPO but did not receive funding through the 2014-2017 Transportation Improvement Program cycle.

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Table 3 – 2014-2017 Project Listing

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Table 4 - Illustrative Listing of Projects

FY	County	Responsible Agency	Project Name	Limits	Length	Primary Work Typ	Project Description Summary	Phase	Advance Construct	Federal Amount	Federal Fund Source	State Amount	Local Amount	Local Fund Source	Total Project Cost
2017	Cass	CCRC	Mason Street	Calvin Center Road to Porter Township Line	3.8	Restore & rehabilitate	HMA Overlay, partial Maintenance partial Structural	CON	No	353,290	STP - Urban Areas > 200,000 Population	0	78,340	Other Local Funds (CCRC)	$ 431,630
2015	Berrien	City of Buchanan	River Street	Enterprise drive to the bridge over the St. Joseph River.	0.2	Resurface	HMA base crushing and shaping and resurfacing of River Street a distance of 1,000', including miscellaneous curb and gutter replacement, and subgrade under drains. The roadway through this area is experiencing moderate transverse cracking and minor subbase failures.	CON	No	$ 135,200	Surface Transportation Program (STP) - Any Area	0	$ 33,800	Local - City (City of Buchanan)	$ 208,300
2015	Cass	CCRC	Bertrand Street	Batchelor Road to Gumwood Road	1	Resurface	HMA Overlay with Shoulders and Striping	CON	No	$ 81,293	STP - Urban Areas > 200,000 Population	0	$ 18,027	Other Local Funds (CCRC)	$ 99,320
2017	Cass	CCRC	Redfield Street	Batchelor Road to Gumwood Road	1	Resurface	HMA Overlay with Shoulders and Striping	CON	No	$ 85,975	STP - Urban Areas > 200,000 Population	0	$ 19,065	Other Local Funds (CCRC)	$ 105,040

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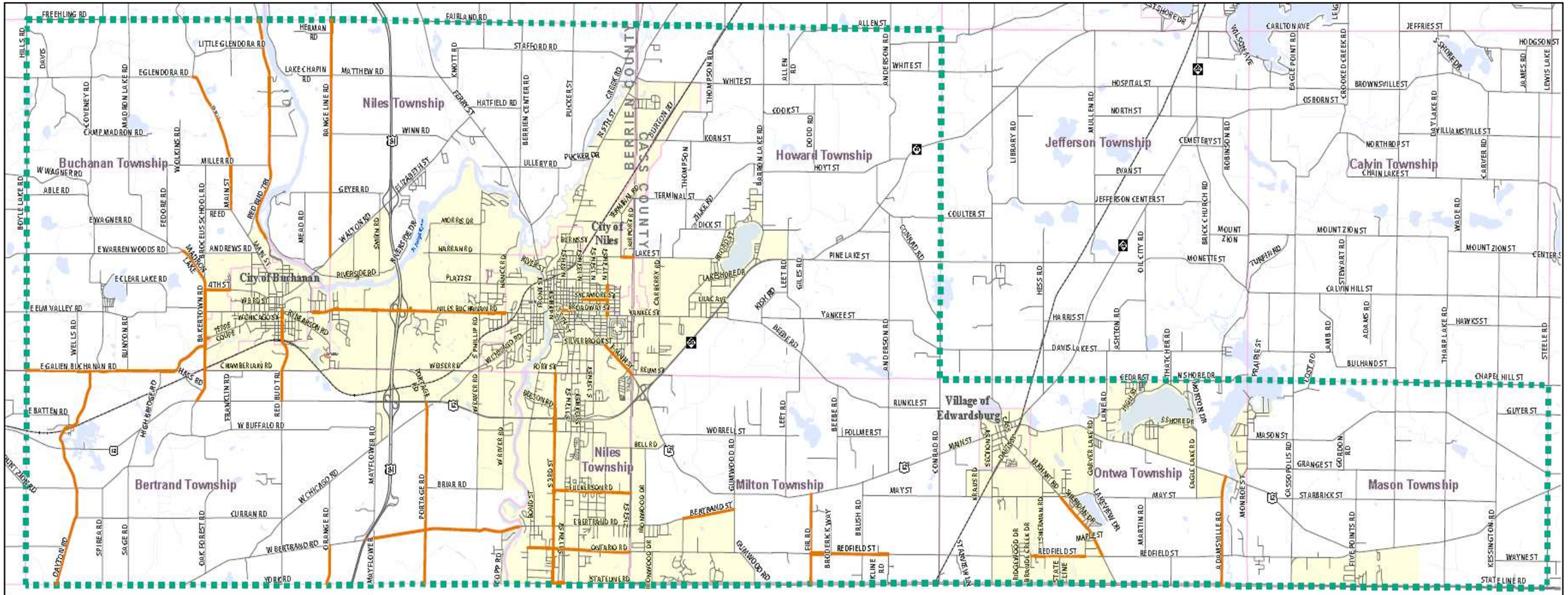
Map 2 - FY 2014-2017 TIP Projects



Legend

- Proposed NATS Study Area
- Proposed Urban Area (2012)
- Municipal Boundary
- County
- Transportation Infrastructure Project (TIP)

TRANSPORTATION IMPROVEMENT PROJECTS (TIP)

Niles-Buchanan-Cass Area Transportation Study (NATS)

Southwest Michigan Planning Commission
www.swmpc.org

0 0.5 1 1.5 2 2.5 3 Miles

Data Sources
Base Layers: Michigan Geographic Framework: Berrien County, Version 10a
TIP: Southwest Michigan Planning Commission, 2013

The use of this map is for general reference purposes. It is not a legal document.

April 23, 2013 1310_NATS_TIP_PageSt

LRTP DRAFT

Notices indicating a public comment period for the LRTP draft were sent via e-mail and postal mail (see Appendix E for copy of notices) to local media, local governments, schools, human service organizations, and some members of the general public, all from the SWMPC contacts database. The formal comment period began March 2, 2009 and ended on March 24, 2009. The notice to the public contained detailed dates, times, and locations of the meetings at which public comment on the LRTP draft would be accepted, and described how to comment on the LRTP draft if meeting attendance was not an option. The public had the opportunity to comment in person at the regular NATS TAC meeting on March 24, 2009 at 1:30 p.m. at the Niles City Council Chambers or by submitting an email or letter using the following contact information:

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GOALS AND OBJECTIVES

The goals and objectives of the NATS LRTP are to guide the development of the 2040 LRTP, the NATS Transportation Improvement Program (TIP), and the overall transportation planning processes in the planning area. A brief explanation of these terms is provided below:

- Goals-Generalized statements which broadly relate the physical environment to values
- Objectives-Specific, measurable statements related to the attainment of goals

MAP-21

Under MAP-21, Congress has begun to outline a more performance based transportation system that will make State DOTs, MPOs, and local road agencies more accountable for the development and maintenance of the federally funded transportation system. What this means for the NATS MPO local agencies, is that any federal funds used on roadways, bridges, transit systems, in the NATS MPO will need to develop MPO performance targets in relation to the national performance measures set by US DOT. The following timeline has been developed and is important to outline to the reader to understand that as agencies set forth their measures, the NATS MPO will need to amend their planning documents to conform to the new regulations.

- US DOT - will have **18 months** after the start of the MAP-21 in October 2012 to develop national performance measures.
- State Performance Target - Within **one year** of the US DOT final rule on performance measures, States will set performance targets in support of those measures. States may set different performance targets for urbanized and rural areas. To ensure consistency each State must, to the maximum extent practicable
    - Coordinate with an MPO when setting performance targets for the area represented by that MPO; and
    - Coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO.
- MPO Performance Targets - Within **180 days of States** or providers of public transportation setting performance targets, MPOs are to set performance targets in relation to the performance measures. To ensure consistency, each MPO must, to the maximum extent practicable, coordinate with the relevant State and public transportation providers when setting performance targets. The targets are required in the Long Range Transportation Plan according to §1201; 23 USC 134(i)(2)(B)]. Performance Measures will be addressed in the next sections of this plan.

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As of the completion of this plan, US DOT had not released national performance measures but has released the MAP-21 Planning Factors and National Performance Goals which must be incorporated into the development of the plan and most notably in the Goals and Objectives.

NATS REGIONAL VISION

By 2040, the NATS regional transportation system will make progress to provide for a safer, and more efficient movement of people and goods to support a robust and growing local and regional economy. The transportation system will offer a variety of mode choices to all people for intra- and inter-regional travel. Consideration of the impact of these modes on the natural and built environment must be well-balanced with the provision of an acceptable level of mobility and accessibility. A multimodal system conserves natural resources and helps promote the integrity of neighborhoods and the entire region.

The NATS transportation network of roads, bridges, transit systems, rail lines, and trails, are the visible components of the work that transportation planning encompasses. The other areas that are more difficult to see are coordinating land use planning, economic development, environmental planning, safety, and congestion reduction. The goals and objectives seek to combine the visible and less visible components of transportation planning into a fully functioning system. Accordingly, NATS seeks to provide the transportation infrastructure and modes necessary to produce the highest quality of life and opportunities for its residents. This section will focus on the MAP-21 Planning Factors, National Performance Goals, and how the NATS Goals and Objectives align with these factors.

The goals and objectives that follow were developed using the following process:

- An initial review of the goals and objectives contained in the 2035 LRTP by MPO staff
- Conducting 2 public input sessions with members of the public held on October 12, 2011 and October 19, 2011
- Continuous discussions at MPO Committee meetings held in 2012 and 2013
- Review of federal regulations and state transportation documents
- NATS Policy Committee approval in January 2013
- Public Comment sought on Goals and Objectives in February 2013

It is important to note that the NATS goals and objectives are in no particular order.

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GOAL 1 – Enhance Economic Vitality of Southwest Michigan

Objective: Improve competitiveness of the regional economy by expanding efficient and improved multi-modal facilities, modes, and linkages, promoting reliable and timely access to employment and service centers for workers, and preserving and strengthening the existing economic base.

GOAL 2 – Produce a Regional Transportation System that Connects People Safety with Their Destinations

Objective: Provide a system that contributes to access to a variety of destinations such as: cultural attractions, recreational facilities, open spaces, employment, and housing to fulfill needs for a healthful, satisfying living environment.

MDOT working to rebuild trunkline roadways.

GOAL 3 – Provide an Environment that Promotes Livable Communities and Environmental Responsibility

Objective: Produce a transportation system that contributes to an attractive, convenient living that minimizes air and water quality impacts.

GOAL 4 – Maintain Existing Transportation Assets

Objective: Maximize the quality of transportation system through sound long-term maintenance strategies, operational improvements, and technology.

GOAL 5 – Produce a Safe Transportation System

Objective: Support projects that reduce crashes for motorized and non-motorized users and produce a transportation system where people have safe transportation choices.

GOAL 6 – Ensure the Equitability and Accessibility of the System

*Objective***:** Promote greater accessibility to transportation for individuals of all backgrounds and all abilities.

To ensure that the MPO is aligning itself with the federal focus areas on transportation, the MPO staff completed Table 5 to highlight the integration of the federal focus areas in the MPO study area.

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Table 5 - Aligning NATS MPO Goals with MAP-21 Planning Factors

MAP-21 Planning Factors	NATS Goals
Support the economic vitality of the metropolitan area, especially by enabling global competiveness, productivity, and efficiency.	1, 2, 6
Increase the safety of the transportation system for motorized and non-motorized users.	5
Increase the security of the transportation system for motorized and non-motorized users	5, 6
Increase the accessibility and mobility of people and for freight.	2, 6
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.	1, 2, 6
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.	1, 2, 5
Promote efficient system management and operation.	1, 2, 4
Emphasize the preservation of the existing transportation system.	4

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PERFORMANCE MEASURES

A key feature of MAP-21 is the establishment of a performance-and outcome-based transportation program. This is a significant change from the previous transportation legislation SAFETEA-LU. The objective of this performance and outcome based program is for States and MPOs to invest resources in projects that collectively will make progress toward the achievement of national goals. The SWMPC began preliminary discussions with the Committee members regarding this topic once MAP-21 legislation was passed. SWMPC found it prudent to take a step back from the process and develop a listing of those areas in which further investigation and data collection would be beneficial to the member agencies. SWMPC staff will wait for federal regulations to be released and then proceed with formal selection and review of performance measures for the region based on those regulations. . The following section will provide information on the focus of measures in MAP-21 legislation and then a review of factors that the MPO may want to further investigate after release of US DOT national measures and state targets.

NATIONAL PERFORMANCE MEASURES

MAP-21 requires the U.S. Secretary of Transportation, in consultation with States, MPOs, and other stakeholders, to establish national performance measures. MAP-21 establishes national performance goals for the Federal-aid highway program in seven areas:

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Table 6 - National Performance Goals

Goal area	National goal
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
Infrastructure condition	To maintain the highway infrastructure asset system in a state of good repair
Congestion reduction	To achieve a significant reduction in congestion on the National Highway System
System reliability	To improve the efficiency of the surface transportation system
Freight movement and economic vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
Environmental sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment
Reduced project delivery delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices

The U.S. Department of Transportation (DOT) is to establish such measures within **18 months of** enactment of MAP-21. The timeline for completion would be March 2014.

The MPO is currently coordinating with the local agencies in order to prepare for the implementation of the national performance goals listed above in Table 2.

1. **Safety –** The MPO is currently working with the local road and transit agencies to identify problematic areas in the region to better understand how the MPO could improve safety for motorists and non-motorized transportation users.
2. **Infrastructure condition** – The MPO is working has been working with local road agencies in the identification of PASER ratings that help to identify when preventative maintenance work should be done.
3. **Congestion reduction** – As there are little to no areas of congestion in the study area, those areas that have been identified in this plan will be discussed further in the implementation of the plan through a subcommittee.
4. **System reliability –** As the MPO areas continues to recover, the MPO will monitor areas with development pressure and will be proactive in discussions with local road and transit agencies on how to ensure that the movement of people can continue efficiently.
5. **Freight movement and economic vitality** – The MPO continues to monitor and gain information regarding the movement of freight commodities within the region.

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6. **Environmental sustainability** – the MPO is continuously working with local watershed and environmental groups to reduce the potential impacts to species and environmentally sensitive areas identified in the Environmental Mitigation section of this plan.
7. **Reduced project delivery delays** – MPO staff continue to work with MDOT and other agencies to ensure that projects move forward following regulatory changes at the state and federal levels that would slow down project delivery.

STATE PERFORMANCE TARGETS

Within one year of the US DOT final rule on performance measures, states will set performance targets in support of those measures. States may set different performance targets for urbanized and rural areas. The timeline for completion would be March 2015. To ensure consistency each state must, to the maximum extent practicable:

- Coordinate with an MPO when setting performance targets for the area represented by that MPO;
- Coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO.

MPO PERFORMANCE TARGETS

Within 180 days of states or providers of public transportation setting performance targets, MPOs are to set performance targets in relation to the performance measures. The timeline for this to be complete would be September 2015. To ensure consistency, each MPO must, to the maximum extent practicable, coordinate with the relevant State and public transportation providers when setting performance targets. The targets are required in the Long Range Transportation Plan according to §1201; 23 USC 134(i)(2)(B)].

- Reporting on progress-Requires states to report on the condition and performance of the NHS; the effectiveness of the investment strategy document in the state asset management plan for the NHS; progress toward achieving performance targets; and the ways in which the state is addressing congestion at freight bottlenecks. [§1203; 23 USC 150(e)]. States and MPOs will report to DOT on progress in achieving targets.

- Performance Measures- the use of evidence (data) to determine progress toward specific defined objectives.

As the SWMPC and NATS Committee members watch the development of these actions, we will incorporate changes into the long range plan to meet the newly developed federal and state measures. It should be noted that the current MAP-21 legislation expires on September 30, 2014, well before these requirements can be fulfilled.

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FACTORS FOR FURTHER INVESTIGATION

As SWMPC staff began to navigate through the concepts of performance measures, it became clear that SWMPC and the Committee members wanted to identify issues of importance for the MPO to investigate. SWMPC along with NATS Committee members decided to only focus on the factors that the MPO can impact directly through the MPO committee structure. It is the hope that the review of the factors that the MPO can directly impact factors will help in determining baseline conditions then measurement can begin once it is clear what the MPO will be tasked with measuring. As federal regulations from the FHWA and FTA are released, the SWMPC will update this section of the LRP to reflect the changes that have been implemented.

Each factor listed below highlights information regarding: Why the issue is important, How SWMPC plans to measure the factor/gather information, and how the MPO process can impact this (if at all)

NATS MPO FACTORS

1. **Review the number of signals that could be optimized throughout the study area**
    - **a.** Optimized signals reduce travel time, allowing people to get to their destinations more efficiently and have the potential for assisting in economic activity. In addition, there are air quality benefits that arise when cars do not have to start and stop constantly.
    - **b.** SWMPC will use average daily traffic information to see the highest traveled roadways and look use the Transportation Improvement Programs to see when signal projects had been done.
    - **c.** The MPO has direct review authority on the development of signal projects, as local STP and CMAQ funds can be used for these types of projects.

2. **Preserve agricultural and commercial economies by ensuring that transportation projects enhance and do not prevent the long term movement of products to local and regional markets.**
    - **a.** The agricultural market is integral to the local economic health of the region and the tourism industry.
    - **b.** SWMPC will gather information on the total amount of agricultural products being produced in the NATS region and how they are transported to local and regional markets. SWMPC will work with farm cooperatives, MSU Extension, and others to acquire this information.
    - **c.** The MPO has direct review authority on federal aid roadways where long distance travel would happen for the distribution of agricultural products.

3. **Review and inventory infrastructure connections (such as sidewalks, bus stops, bicycle lanes, paved shoulders) to key destinations identified by community members and local officials.**
    - a. Providing non-automobile access to destinations throughout the region is important due to the aging demographics of Michigan and specifically the study area.

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b. SWMPC will inventory key destination areas that are highly sought after, as identified by transit ridership logs, community outreach efforts, and discussions with local government agencies.

c. The MPO has review authority on the allocation of federal highway and federal transit funds. When projects are proposed, SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. A greater emphasis can be placed on creating connections within the transportation network.

4. **Identify and inventory the NATS environmental justice populations that can access fixed route transit within a ¼ miles walking radius.**
    a. Providing non-automobile access to destinations throughout the region is important due to the aging demographics of Michigan and specifically the study area.
    b. SWMPC will inventory key destination areas that are highly sought after as identified by transit ridership logs, community outreach efforts, and discussions with local government agencies within the environmental justice populations.
    c. The MPO has review authority on the allocation of federal highway and federal transit funds. When projects are proposed, SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. A greater emphasis can be placed on creating connections within the transportation network.

5. **Identify roadways in the region that receive traffic volumes under design capacity and conduct studies on roadway redesigns.**
    a. As the population and average daily traffic count of roadways have decreased, the excessive capacity of roadways has not changed. Redesigning the roadways with pedestrians in mind will help to ensure that the transportation system meets the needs of all users. This policy would be in line with the State of Michigan's Complete Streets Policy.
    b. Identify roadways that have excessive capacity, in number of lanes or lane width that could be restriped to provide a complete street. Use Volume/Capacity ratios to determine roadways that have excess capacity.
    c. The MPO has review authority on the allocation of federal highway funds. When projects are proposed, SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. A greater emphasis can be placed on creating connections within the transportation network.

6. **Reduce passenger vehicle miles traveled by providing alternative modes of transportation.**
    a. Allowing people to travel by different means such as by walking, biking, rail or using transit have been identified as priorities by the public and the NATS Committee members to ensure an interconnected transportation system.

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b. SWMPC staff will develop an inventory of the total miles traveled by modes of transportation (rail, transit, biking, walking, and passenger cars) in the region. Sources used will include but not limited to commuting data from MDOT, Census Transportation Planning Package (CTPP), Rideshare, Schools, review train travel along the Blue Water and Wolverine lines.

c. The MPO has review authority on the allocation of federal highway funds. When projects are proposed SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. A greater emphasis can be placed on creating connections within the transportation network.

7. Identify and inventory bicycle and pedestrian crash hot spots.

a. Making our entire transportation system safe for all users can help people more easily reach their daily activities safely, whether they are able to use an automobile or not.

b. SWMPC will inventory crash statistics from asset management database, MI state policy crash reports, MDOT, identified by community outreach efforts, and discussions with local government agencies.

c. The MPO has review authority on the allocation of federal highway funds. When projects are proposed, SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. SWMPC staff could encourage greater participation in the preliminary engineering and design of projects near the identified hot spots.

8. Identify and inventory the number of traffic crash injuries/fatalities.

a. Making our entire transportation system safe for all users can help people more easily reach their daily activities safely, whether they are able to use an automobile or not. According to the National Highway Traffic Safety Administration (NHTSA)'s National Center for Statistics and Analysis, rural fatal crashes accounted for 57 percent of all traffic fatalities.

b. SWMPC will inventory crash statistics from asset management database, MI state policy crash reports, MDOT, identified by community outreach efforts, and discussions with local government agencies.

c. The MPO has review authority on the allocation of federal highway funds. When projects are proposed, SWMPC transportation staff can provide data and other supplemental information to the Committee members before a project is approved. SWMPC staff could encourage greater participation in the preliminary engineering and design of projects near the identified hot spots.

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RESOURCES FOR PERFORMANCE MEASURES

SWMPC will continue to participate in learning opportunities and discussions as more information regarding performance measures becomes available. There are several resources that Committee members and SWMPC staff can utilize to gain more knowledge. What follows is a brief listing of some of those resources.

- Federal Highway Administration (FHWA) http://www.fhwa.dot.gov/MAP21/
- Federal Transit Administration (FTA) http://www.fta.dot.gov/map21/
- National Association of Regional Councils (NARC) http://narc.org/issueareas/transportation/
- National Association of Development Organizations (NADO) http://www.nado.org/
- Association of Metropolitan Planning Organizations (AMPO) https://www.ampo.org/

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SOCIOECONOMIC DATA

This section discusses long-term trends in population, housing, and employment within the NATS region. It presents relevant data from past and present U.S. Census datasets to provide a snapshot of how the population, housing and employment situation in the NATS area arrived at its current state. The Travel Demand Model and Deficiency Analysis follows this section by projecting these trends, and observations from local officials, to anticipate future transportation needs.

A LOOK AT THE REGION'S PAST AND PRESENT SOCIOECONOMIC TRENDS

Information from various datasets shown in the graphics here draws from SWMPC's Data Extract, a regional profile which will be available by the summer of 2013. The Extract uses the County and municipality, rather than the MPO, as its unit of analysis. Still, examining trends in demographics and housing throughout Berrien and Cass Counties and at the municipal level can help explain conditions at the MPO level. The extract also often compares Berrien and Cass Counties to economically similar counties throughout the United States to examine whether particular trends reflect national patterns.

POPULATION

Census data on total population between 1950 and 2010 show clearly that Berrien County has experienced a net loss in total population since 1980, although there was a slight increase in county population between 1990 and 2000. Figure 1 shows the share of the county population living in townships increased substantially between 1950 and 2010, while the share living in incorporated cities and villages declined. This shift of the population towards the townships has not been uniform however, and some townships even experienced a notable decline in population between 2000 and 2010.

In contrast, Figure 2, the graphic of Cass County's population trends shows that the County's population continued to increase between 1990 and 2010, in addition to the significant growth that occurred between 1950 and 1980. Like Berrien County, the share of Cass County's population living in townships has increased substantially, while the share living in cities and villages has declined. Of particular note to the NATS study area, Mason, Milton, and Ontwa Townships saw significant growth in population between 2000 and 2010.

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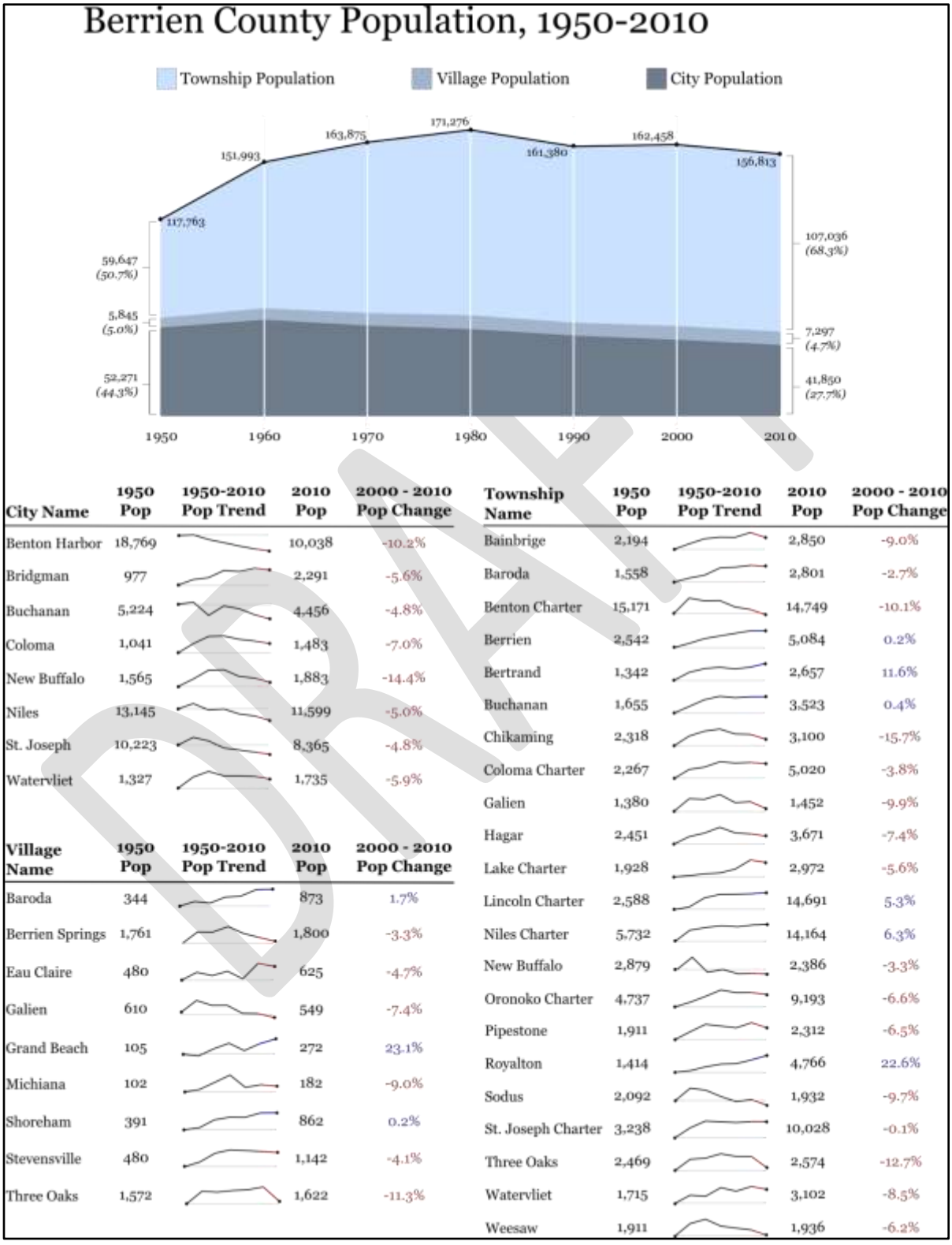
Figure 1 - Berrien County Population, 1950-2010



City Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Benton Harbor	18,769		10,038	-10.2%
Bridgman	977		2,291	-5.6%
Buchanan	5,224		4,456	-4.8%
Coloma	1,041		1,483	-7.0%
New Buffalo	1,565		1,883	-14.4%
Niles	13,145		11,599	-5.0%
St. Joseph	10,223		8,365	-4.8%
Watervliet	1,327		1,735	-5.9%

Village Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Baroda	344		873	1.7%
Berrien Springs	1,761		1,800	-3.3%
Eau Claire	480		625	-4.7%
Galien	610		549	-7.4%
Grand Beach	105		272	23.1%
Michiana	102		182	-9.0%
Shoreham	391		862	0.2%
Stevensville	480		1,142	-4.1%
Three Oaks	1,572		1,622	-11.3%

Township Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Bainbrige	2,194		2,850	-9.0%
Baroda	1,558		2,801	-2.7%
Benton Charter	15,171		14,749	-10.1%
Berrien	2,542		5,084	0.2%
Bertrand	1,342		2,657	11.6%
Buchanan	1,655		3,523	0.4%
Chikaming	2,318		3,100	-15.7%
Coloma Charter	2,267		5,020	-3.8%
Galien	1,380		1,452	-9.9%
Hagar	2,451		3,671	-7.4%
Lake Charter	1,928		2,972	-5.6%
Lincoln Charter	2,588		14,691	5.3%
Niles Charter	5,732		14,164	6.3%
New Buffalo	2,879		2,386	-3.3%
Oronoko Charter	4,737		9,193	-6.6%
Pipestone	1,911		2,312	-6.5%
Royalton	1,414		4,766	22.6%
Sodus	2,092		1,932	-9.7%
St. Joseph Charter	3,238		10,028	-0.1%
Three Oaks	2,469		2,574	-12.7%
Watervliet	1,715		3,102	-8.5%
Weesaw	1,911		1,936	-6.2%

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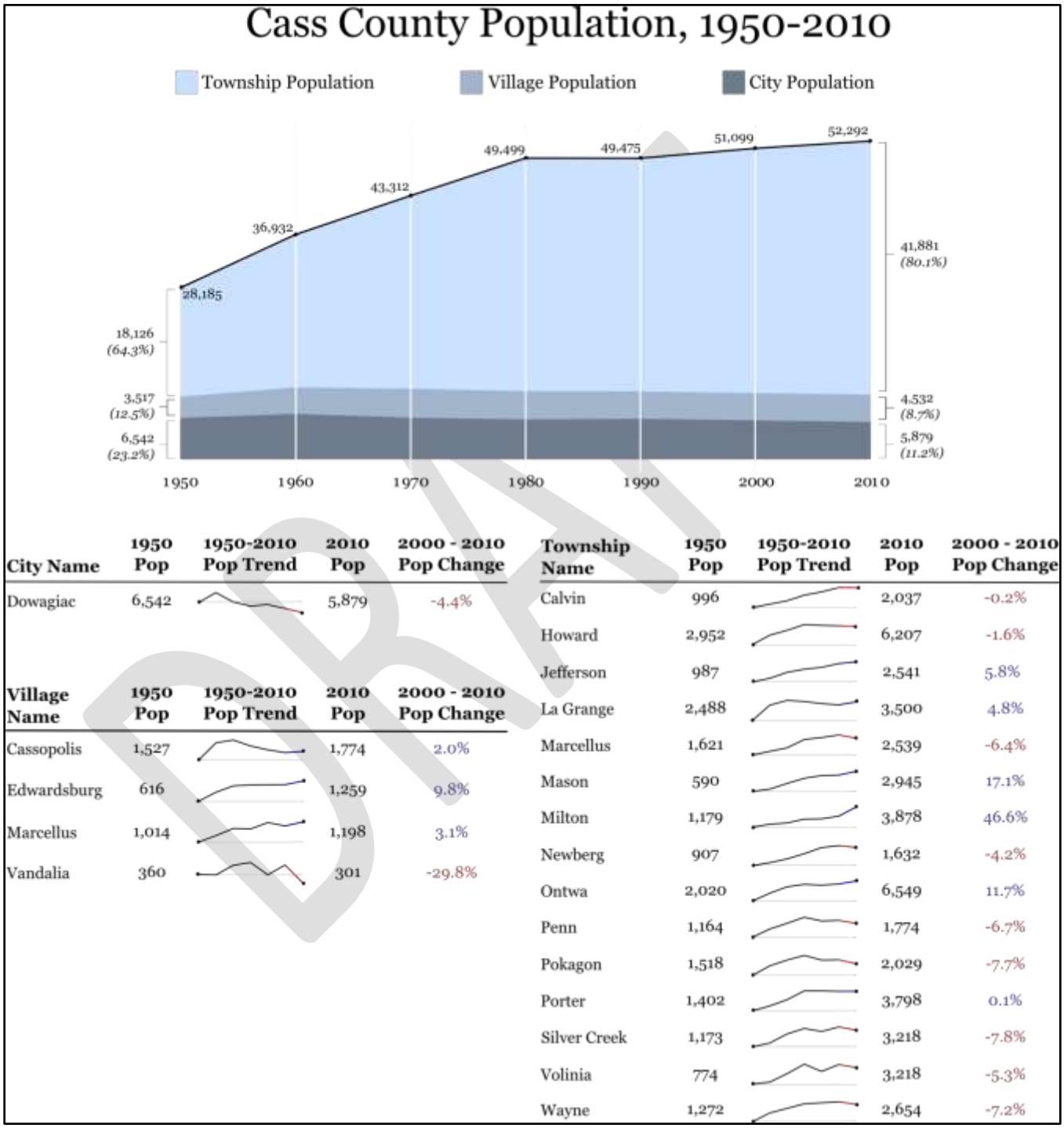
Figure 2 - Cass County Population, 1950-2010



City Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Dowagiac	6,542		5,879	-4.4%

Village Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Cassopolis	1,527		1,774	2.0%
Edwardsburg	616		1,259	9.8%
Marcellus	1,014		1,198	3.1%
Vandalia	360		301	-29.8%

Township Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Calvin	996		2,037	-0.2%
Howard	2,952		6,207	-1.6%
Jefferson	987		2,541	5.8%
La Grange	2,488		3,500	4.8%
Marcellus	1,621		2,539	-6.4%
Mason	590		2,945	17.1%
Milton	1,179		3,878	46.6%
Newberg	907		1,632	-4.2%
Ontwa	2,020		6,549	11.7%
Penn	1,164		1,774	-6.7%
Pokagon	1,518		2,029	-7.7%
Porter	1,402		3,798	0.1%
Silver Creek	1,173		3,218	-7.8%
Volinia	774		3,218	-5.3%
Wayne	1,272		2,654	-7.2%

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Regardless of whether the population lives in townships, cities, or villages, however, Berrien and Cass Counties have been experiencing significant demographic changes that will affect desired travel destinations and transportation needs.

In particular, Figures 3 and 4 illustrates the share of the total population that is aged 65 and over is higher in Berrien County and in Cass County than in the nation as a whole and many other economically similar counties.

Figure 3 - Berrien County, Population Age 65 and Over, 2010

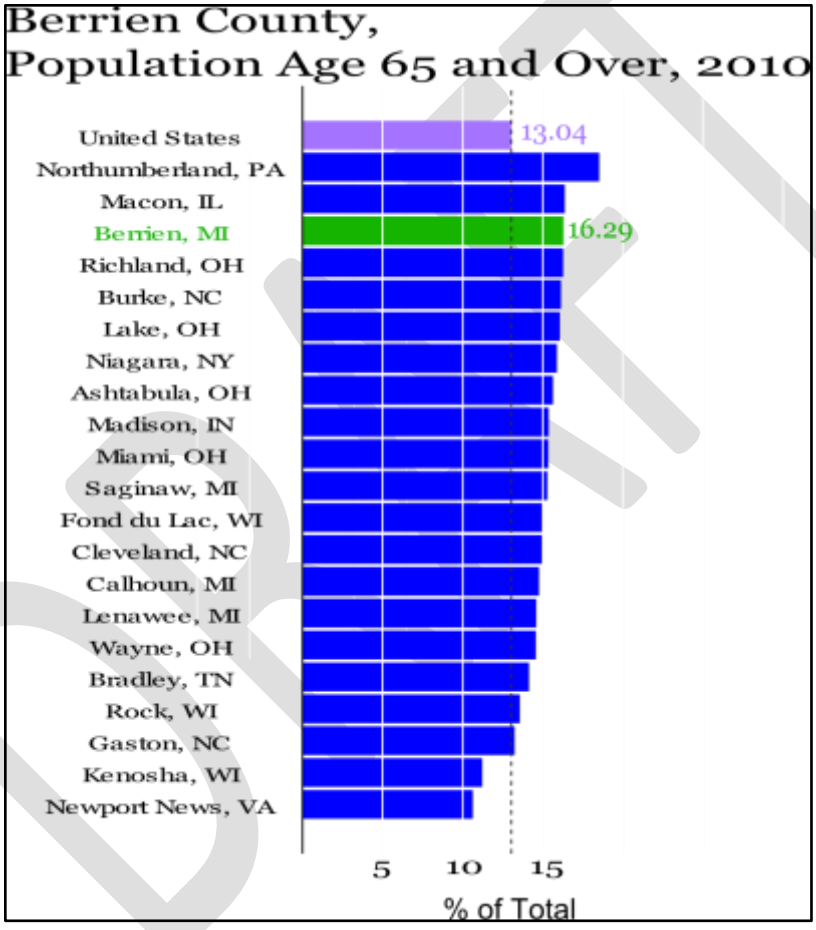

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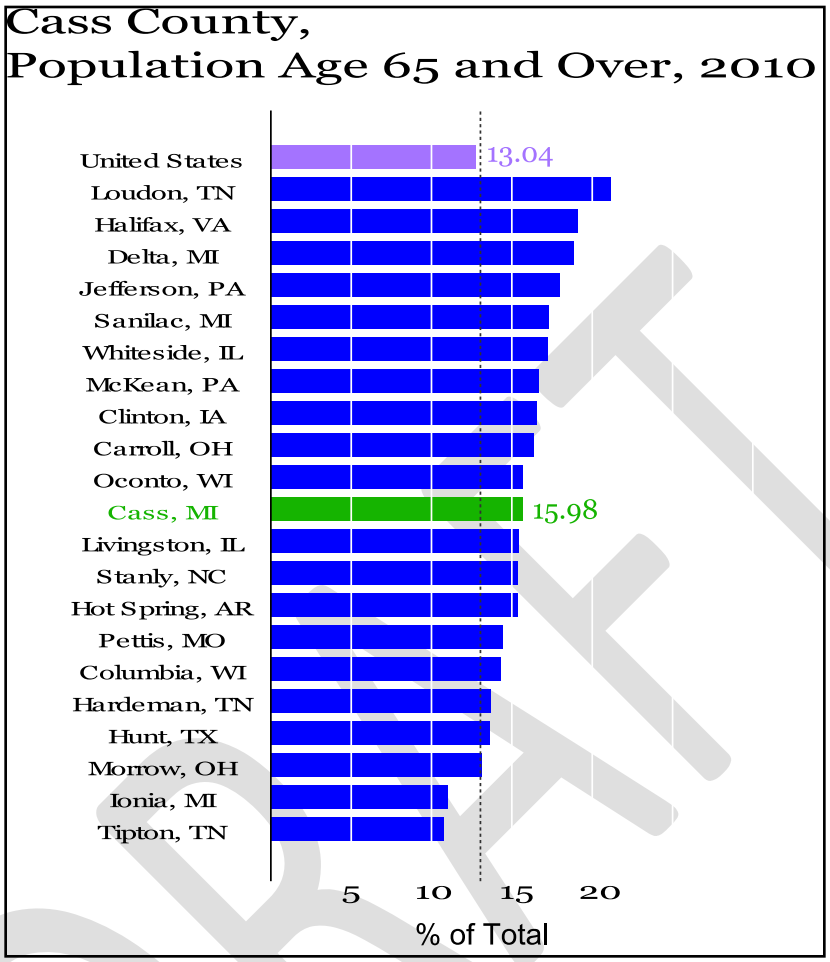
Figure 4 - Cass County, Population Age 65 and Over, 2010



This share of the population aged 65 and over represents an increase from 2000. Indeed, Berrien and Cass County's population in older age groups continues to increase, while its population aged 25-44, often considered the prime demographic group for new employment, declines. Figures 5-6, Berrien and Cass Counties population tree graphics show that the changes in age distribution of the population in Berrien County and Cass County from 2000-2010 mirror national trends towards an older population.

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Figure 5 - Berrien County Population Tree

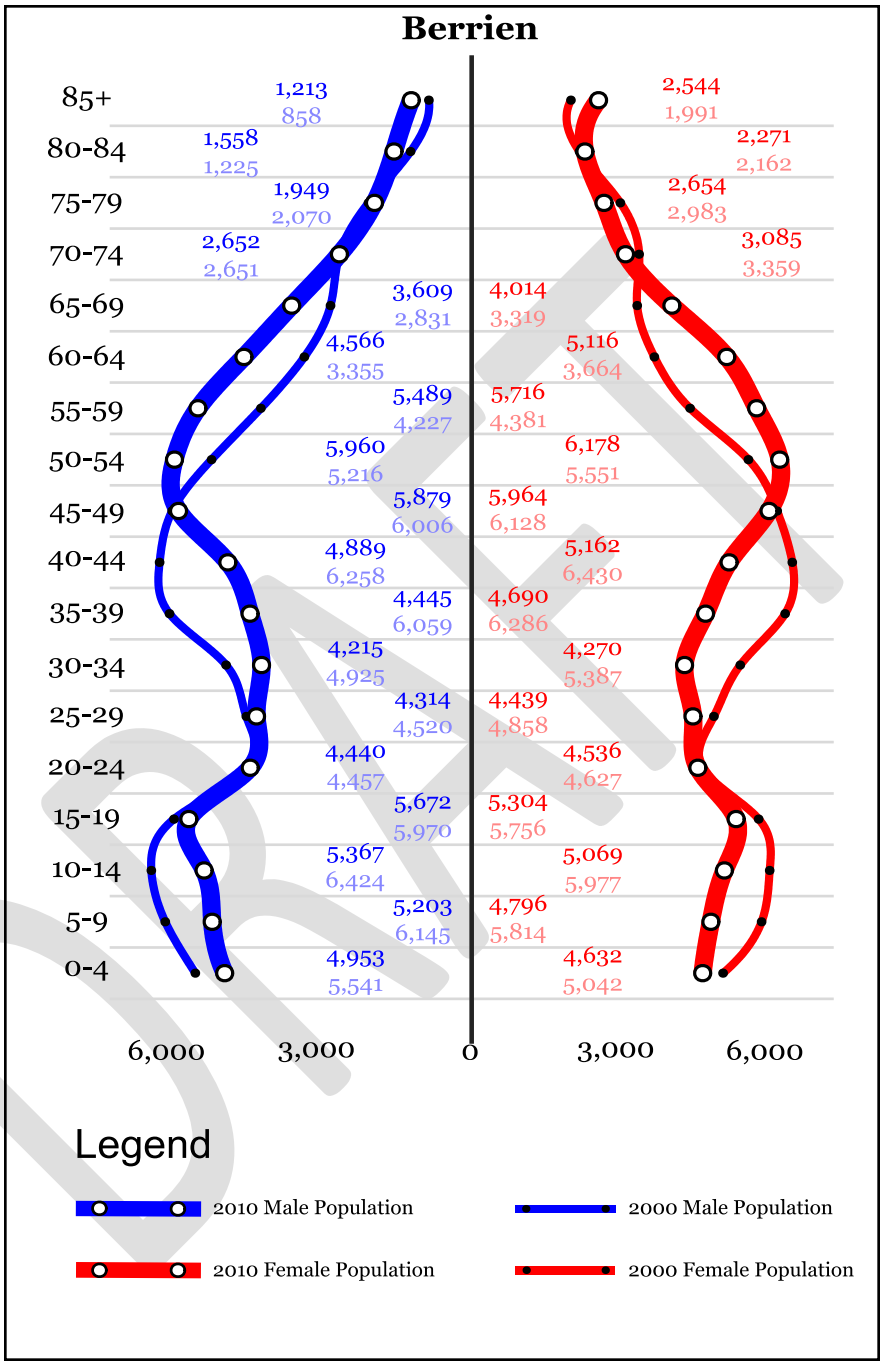

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Figure 6 - Cass County Population Tree

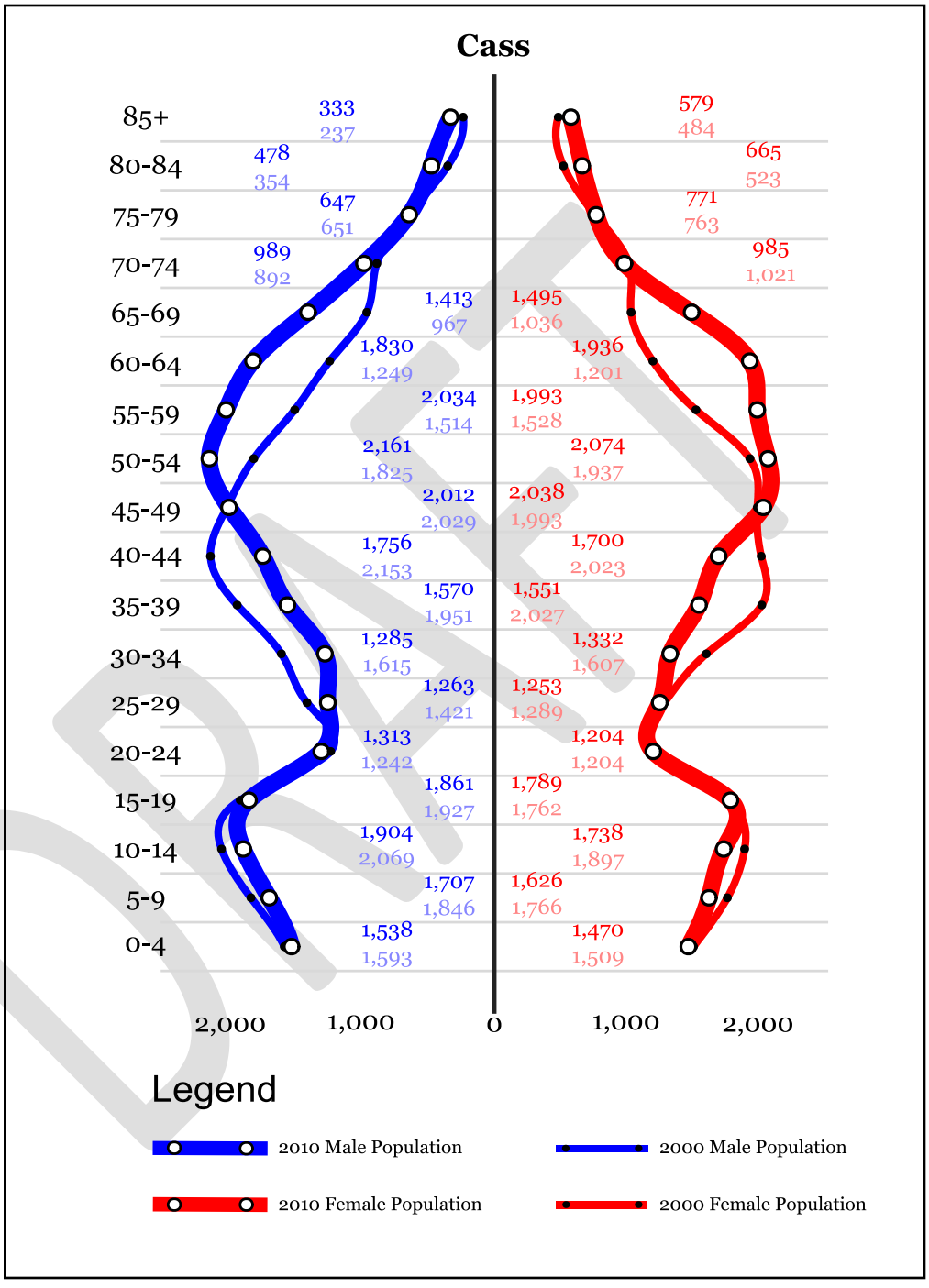

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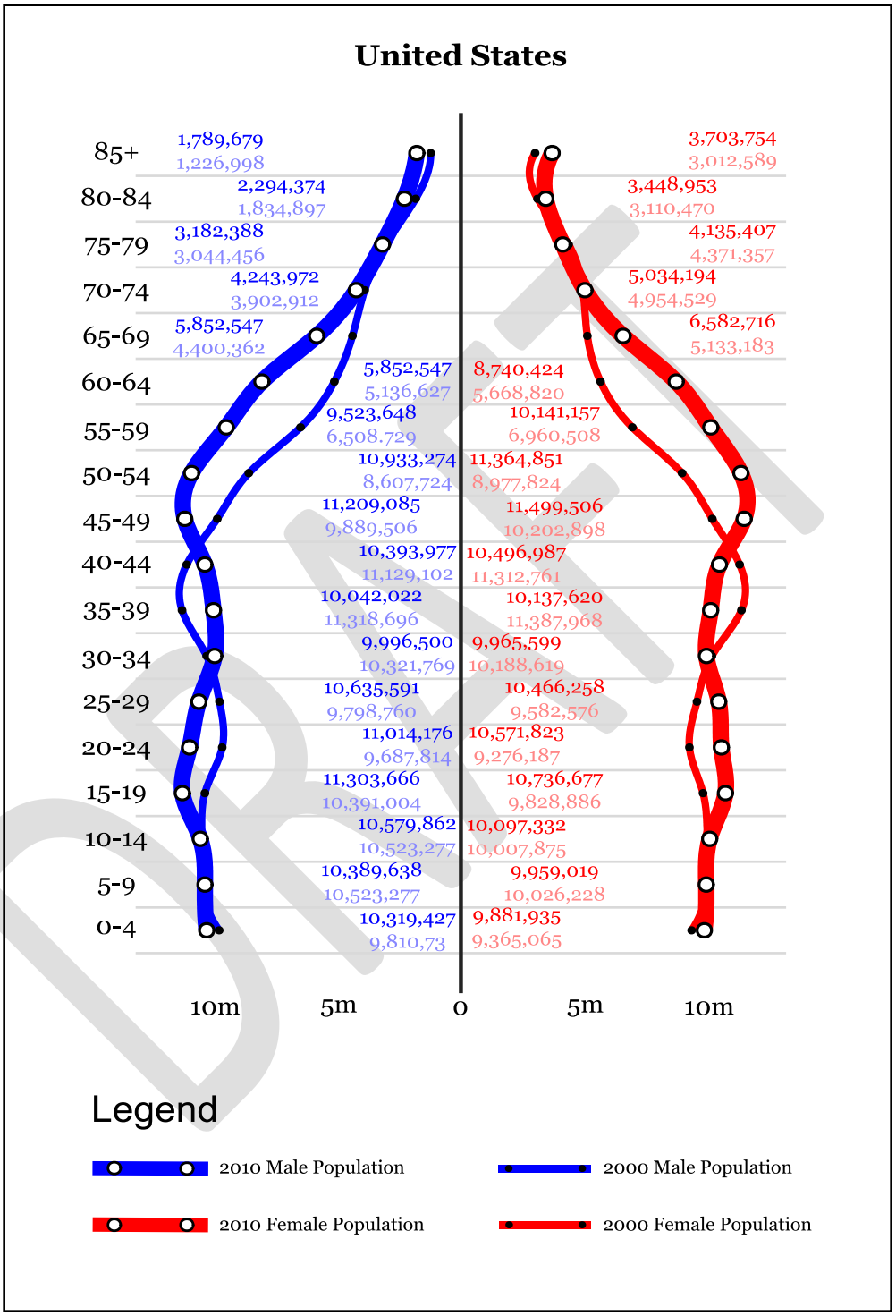
Figure 7 - United States Population Tree



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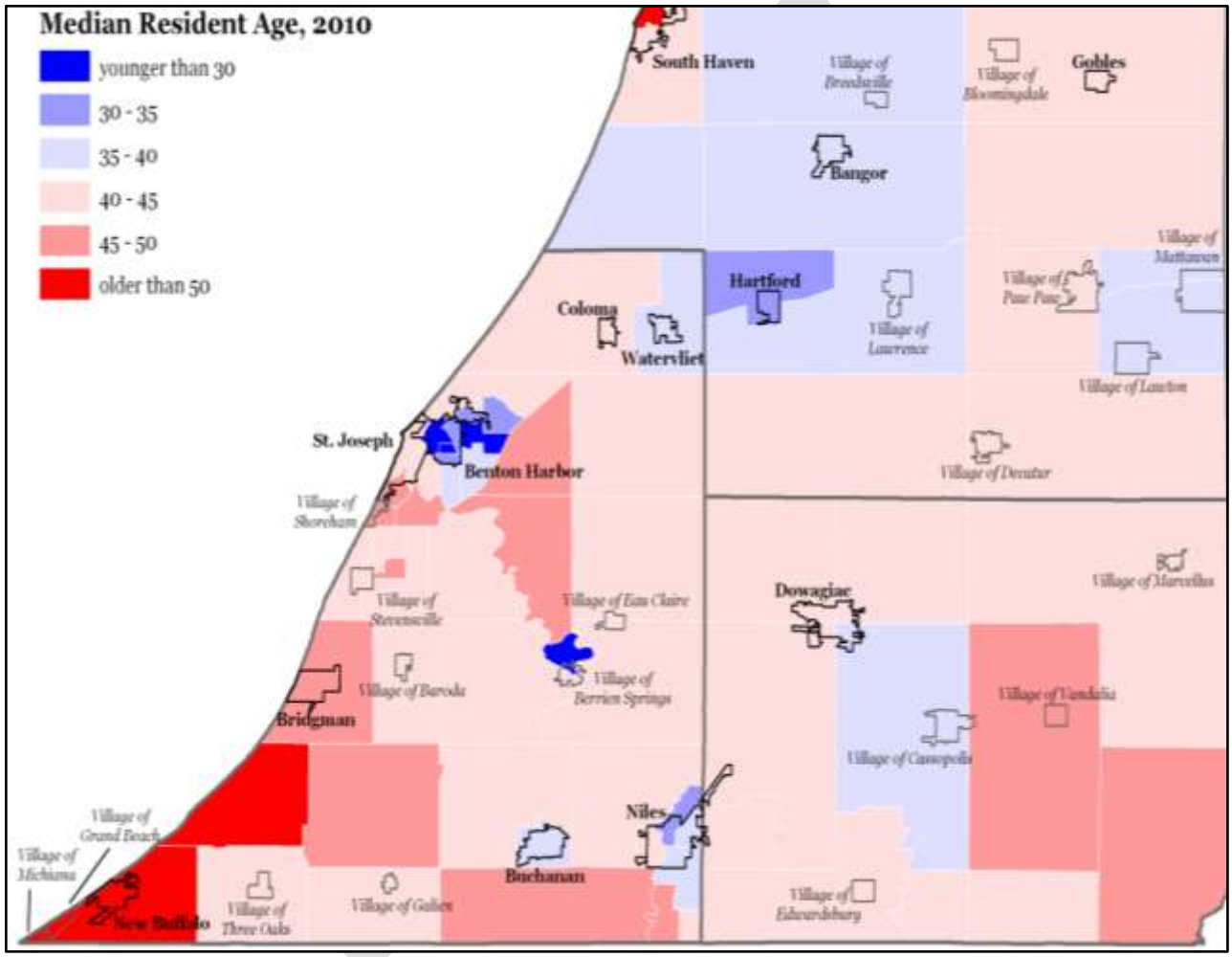
This age distribution is not uniform throughout all the cities, villages, and townships of Berrien and Cass Counties. Map 3 shows the median age in each Census Tract of the SWMPC planning area. Berrien County still has a high level of age diversity among its communities. While municipalities in Cass County tend to have a generally older population, both counties will continue to require a variety of transportation solutions to truly service the entire NATS and Southwest Michigan regions.

Map 3 - Median Resident Age, 2010



HOUSEHOLDS AND HOUSING TRENDS

Census data between 1970 and 2010 shows a continuous decline in household size in Berrien County, mirroring national trends towards smaller families and more single-person households. The graphics below shows household size over time in Berrien County and Cass County, along with economically-similar counties, and the United States as a whole.

Households and Housing Trends

Census data between 1970 and 2010 shows a continuous decline in household size in Berrien County, mirroring national trends towards smaller families and more single-person households. The graphics below shows household size over time in Berrien County and Cass County, along with economically-similar counties, and the United States as a whole.

Figure 8 - Average Household Size, Berrien and Comparison Counties, 1970-2010

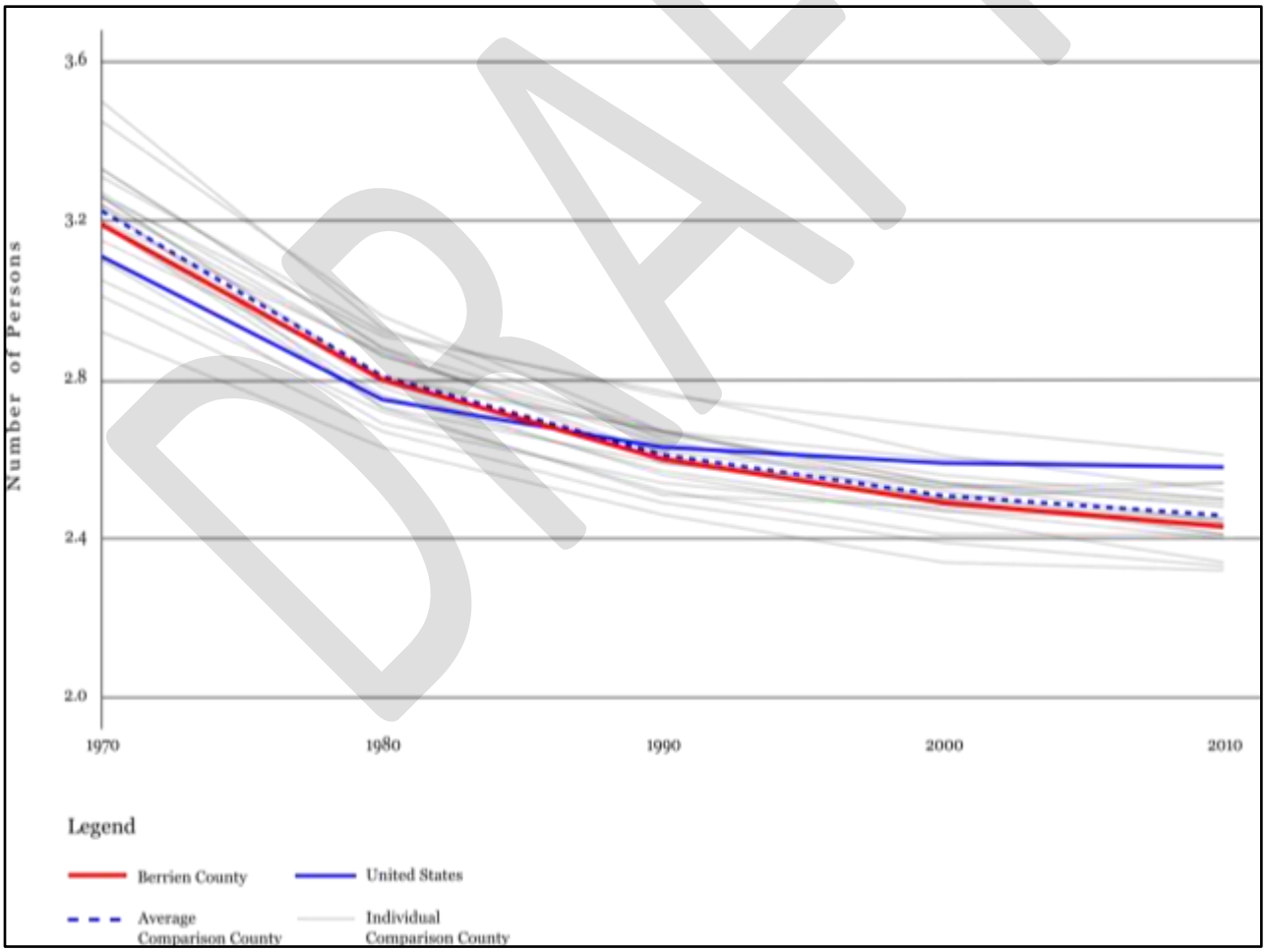


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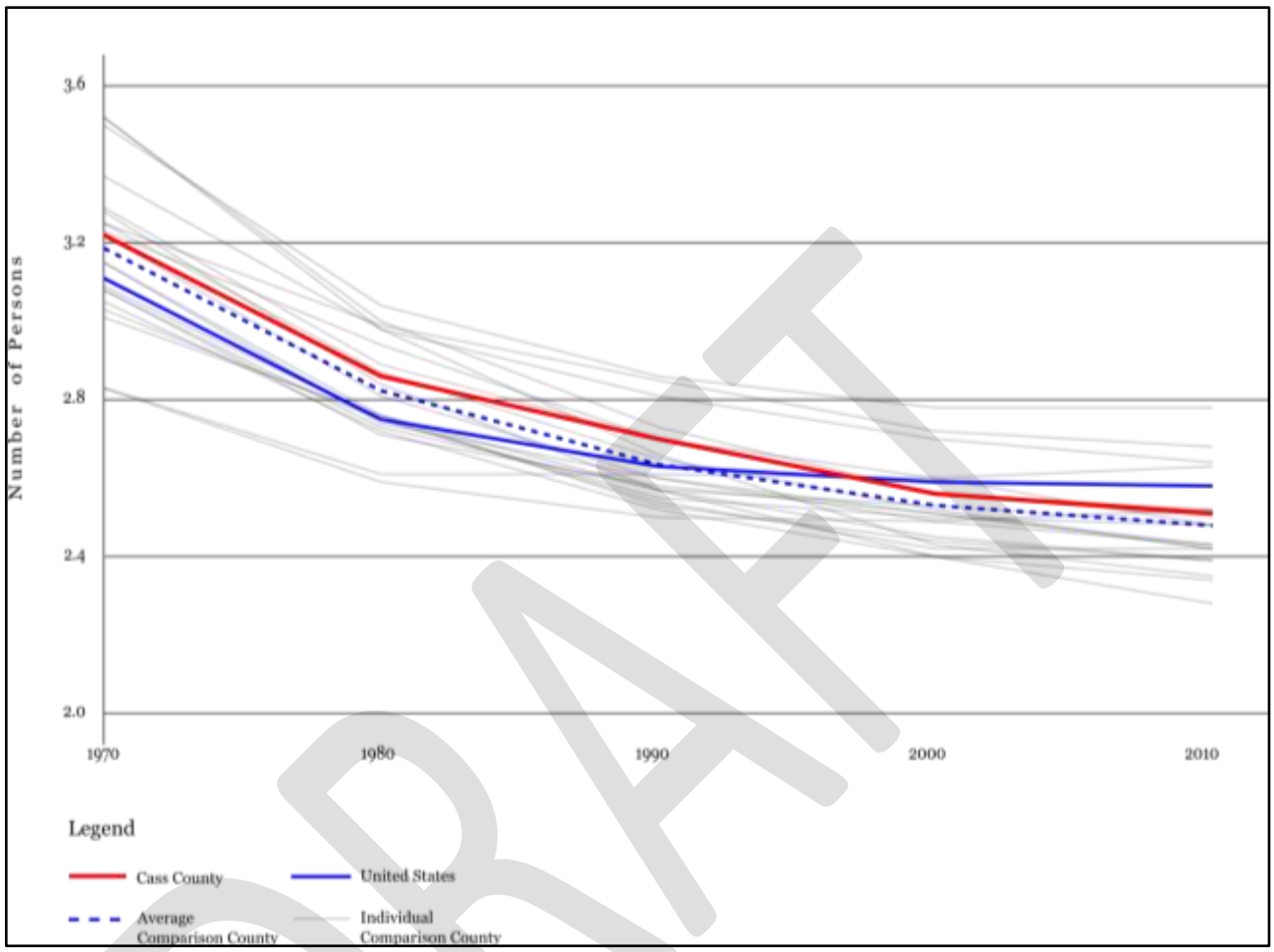
Figure 9 - Average Household Size, Cass and Comparison Counties, 1970-2010



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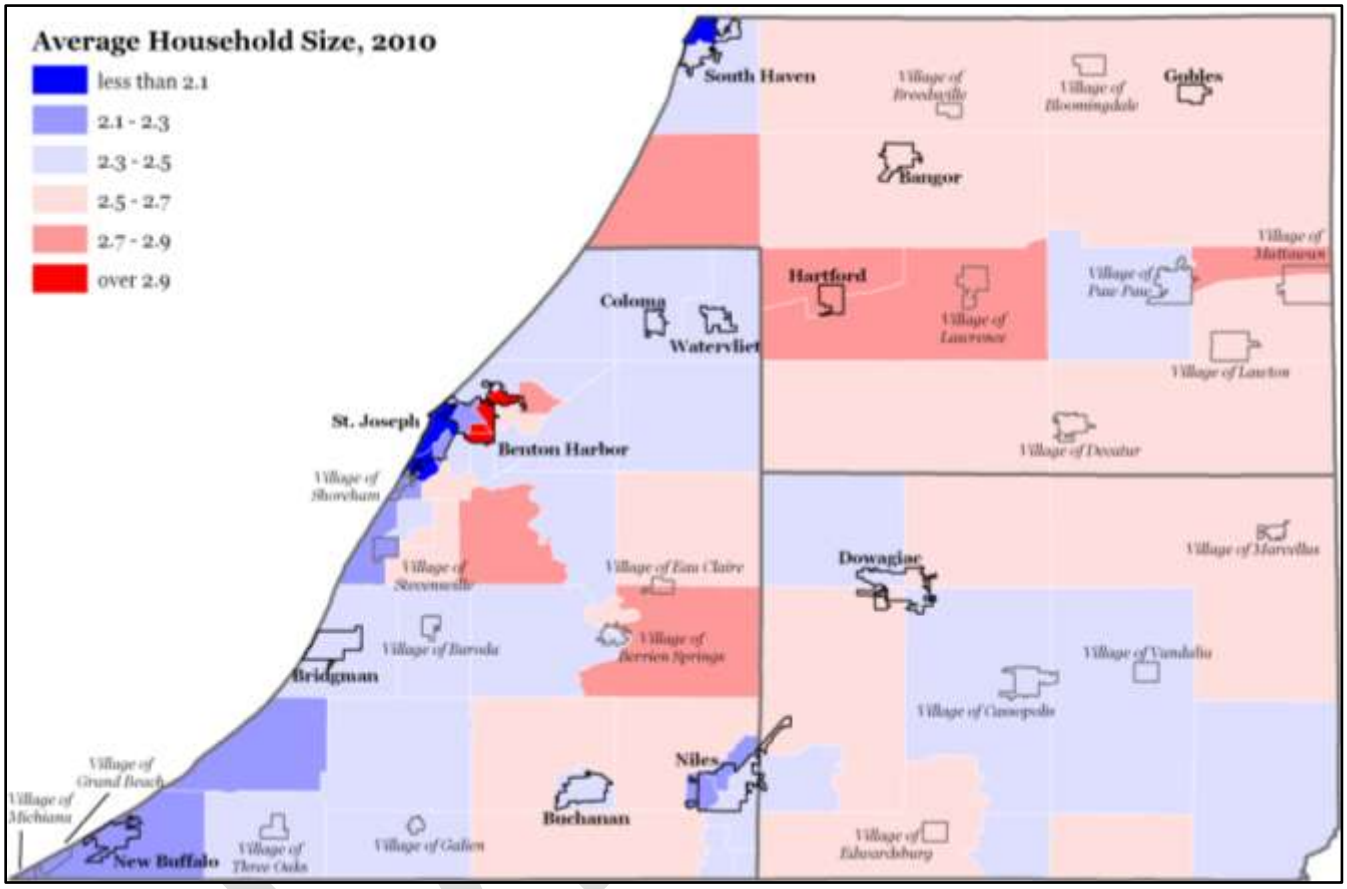
Throughout the NATS area, average household size appeared to be relatively uniform. However, on a regional level, household size still varied considerably. The Map 4, Average Household Size by Census Tract, shown below, illustrates the variety in household size throughout Southwest Michigan, indicating a need to provide a transportation network that supports families and single persons of all ages.

Map 4 - Average Household Size, 2010



Despite shrinking household size, new housing construction between 2000 and 2010 in Berrien and Cass Counties appears to have been predominantly single-family, mirroring the continued national trend. The graphic below illustrates new housing construction starts between 2000 and 2010, and the share of those starts that were single family for Berrien County and Cass County, as well as economically similar counties, and the United States as a whole.

Figure 10 - Total and Single Family Housing Starts, Berrien County

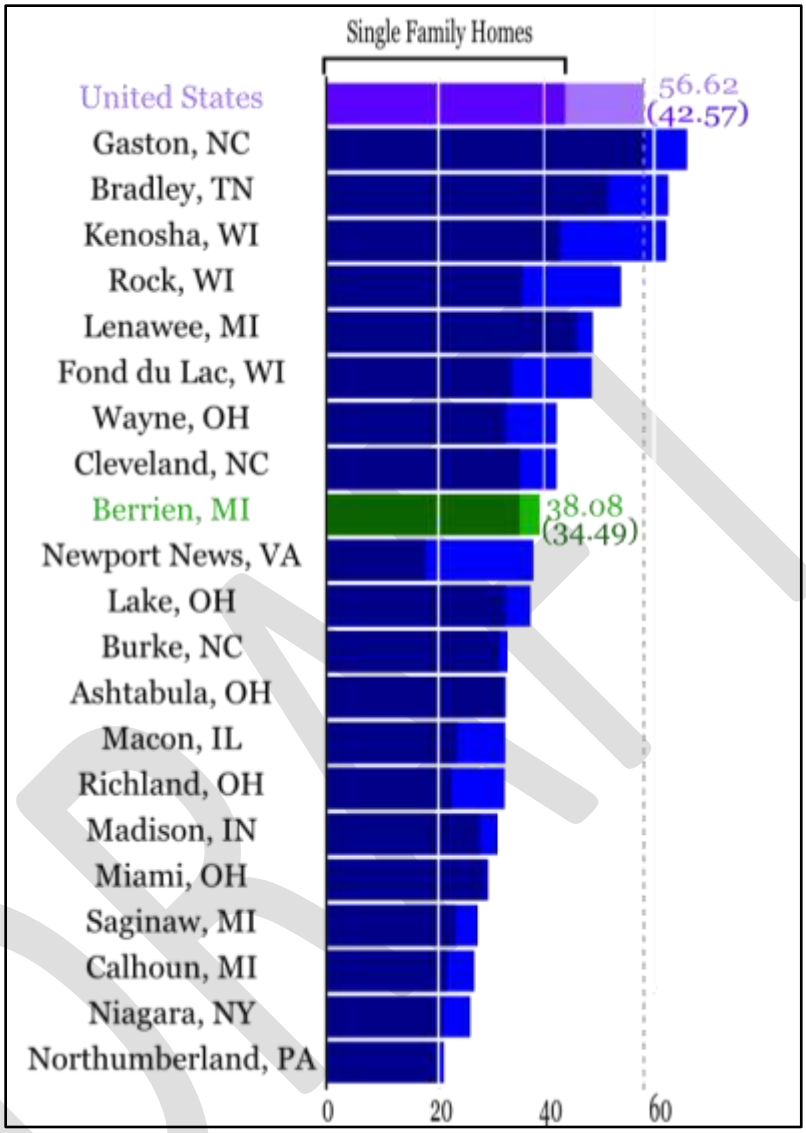


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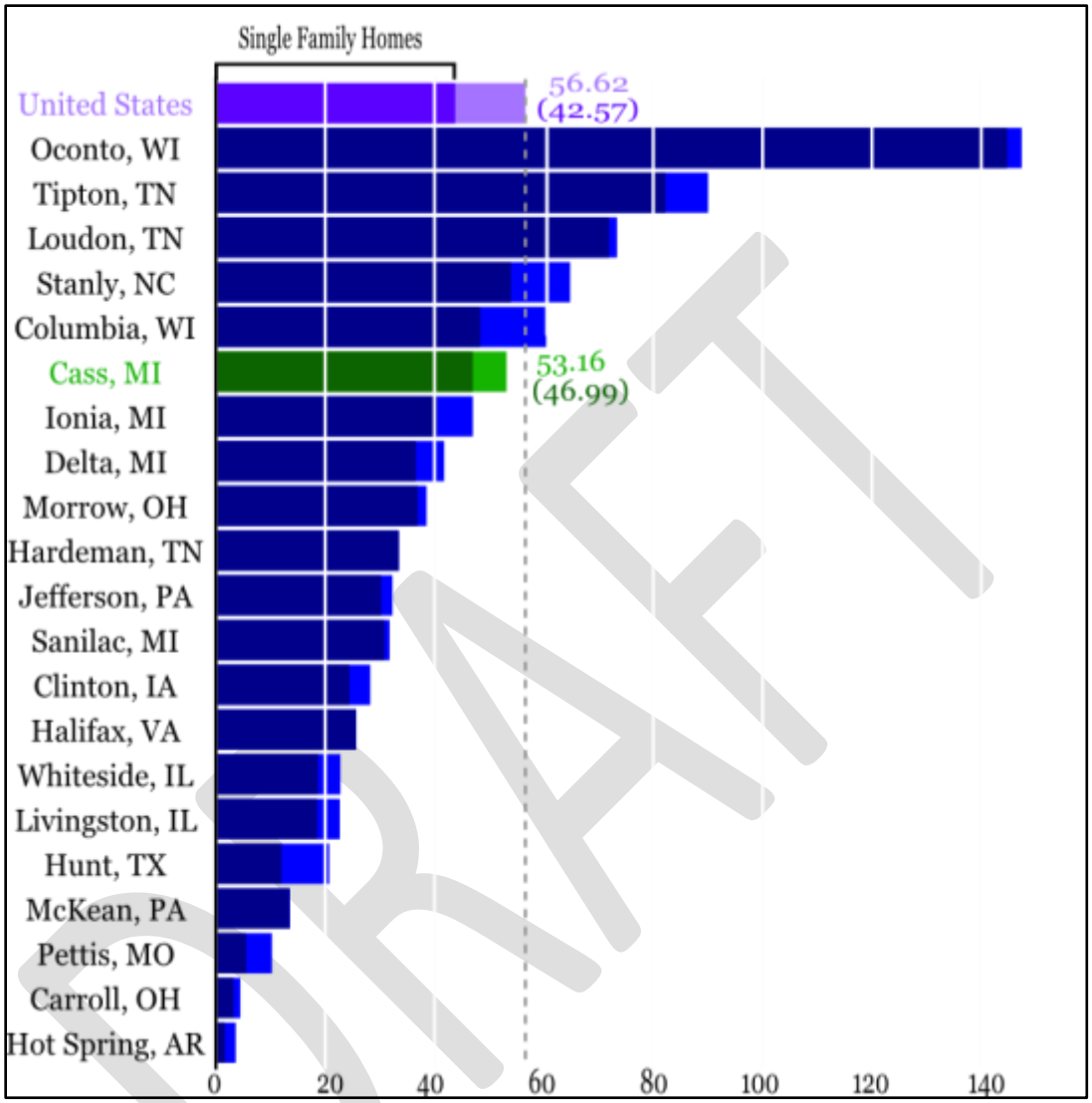
Figure 11 - Total and Single Family Housing Starts, Cass County



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EMPLOYMENT

Examining employment by economic sector in Figures 12 and Figures 13, Berrien County has continued to experience a decline in manufacturing jobs between 1998 and 2010. While the total number of workers in Berrien County has declined, the share of total employment that falls in both the healthcare and social assistance and the retail sectors has increased during that time. In Cass County, the number of workers in manufacturing has decreased most sharply out of all the sectors. However, unlike Berrien County, Cass County has not seen a significant increase in the share of employment in other sectors, and as such, total non-farm employment has declined far more steeply between 2006 and 2010.

This employment distribution would suggest that areas within the NATS region that have job opportunities in healthcare, social assistance, or retail might be poised to see an employment growth, and therefore, a potential increase in travel to these areas for work related purposes in the future. However, the total number of workers declined in Cass County continues to decline dramatically, indicating that movement of population towards some portions of the NATS area may be for residential purposes only.

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Figure 12 - Berrien County Non-Farm Employment by Industry, 1998-2010

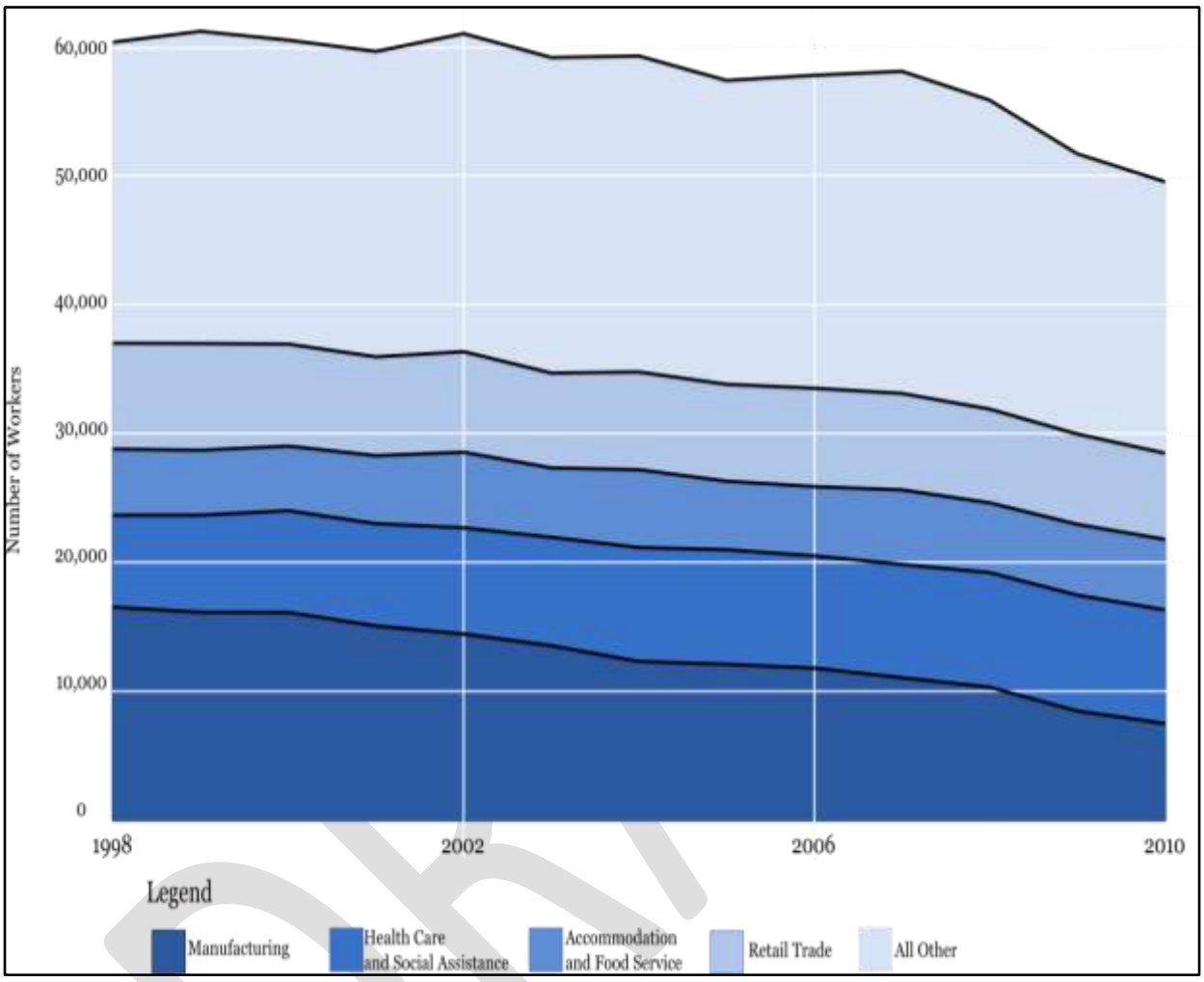

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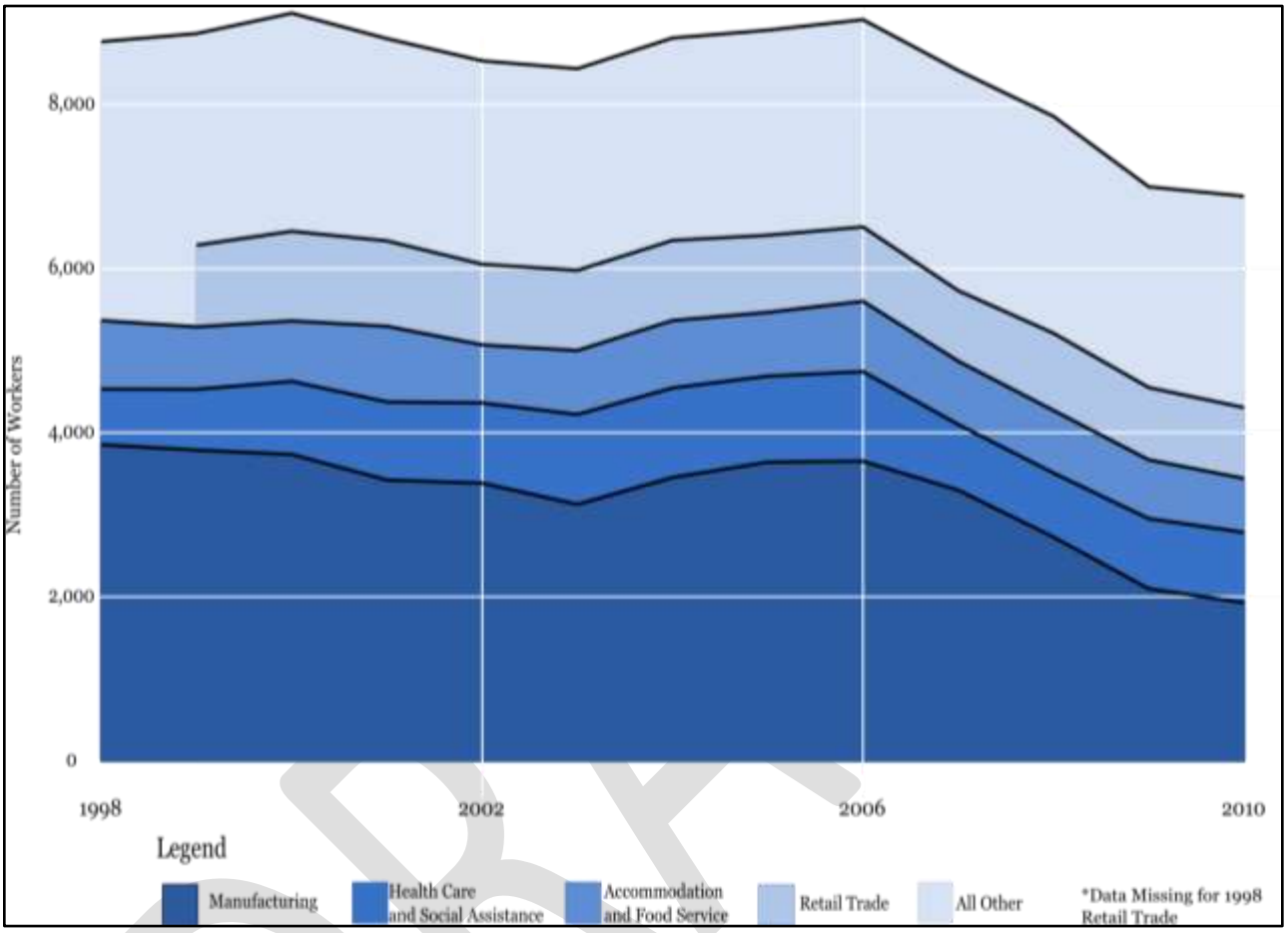
Figure 13 - Cass County Non-Farm Employment by Industry, 1998-2010



BUILDING A TRAVEL DEMAND MODEL AND DEFICIENCY ANALYSIS

This section has presented a brief snapshot of population, housing, and employment trends in Berrien and Cass Counties, based on observed data. In the section that follows, these data, along with information from local officials, are fed into a modeling process in order to forecast the location and volume of future travel demand throughout the NATS region.

TRAVEL DEMAND MODEL AND DEFICENCY ANALYSIS

A travel demand model is a forecasting tool used to assess travel supply and demand. The existing road networks represent the supply side of the metric. The demand side is the product of urban data to determine where trips are generated from, how they are distributed, and what the mode choice will be. Using existing verifiable information like population numbers tied to geographic zones and employers with validated employee populations, the model can be calibrated for accuracy. From that base, projections can be made that relate to changes anticipated within the planning horizon through 2040. With the new data inputs, the model will generate findings that identify trouble spots within the network where the existing design capacities of the road or transit network will be exceeded.

Travel demand modeling can aid in policy suggestions for long range planning and short range studies (corridor studies and sub-area studies) because the results highlight the imperfections and inadequacies that will need to be addressed.

The travel demand modeling process was a collaborative effort between the SWMPC, MPO Committee members, and the MDOT Statewide and Urban Travel Analysis Section. MDOT has taken the lead role in the travel demand modeling for "small MPO" areas throughout the state. Both entities collectively reach consensus on critical decisions in the development of the model with data largely generated and validated by the SWMPC.

MODELING AREA

The 2010-2040 travel demand model combined the TwinCATS MPO and NATS TMA areas into one regional model, while also encompassing the remainder of Berrien County outside the MPO areas. The modeling area consists of: all cities, villages and townships in Berrien County; and Village of Edwardsburg, Howard, Milton, Ontwa, Jefferson, and Mason Townships in Cass County. These additional areas have been included for three primary reasons.

1. Though not all of the communities modeled are within a defined MPO area, however, they currently have an important impact on the transportation characteristics to both of the urbanized areas.
2. It is a possibility that some of the jurisdictions may be included after the 2020 U.S. Census urban geographic definition.
3. The Villages of Grand Beach and Michiana, while part of the TwinCATS MPO, were previously not included in the model, and it was decided that they should be included in the urban travel demand model. They are not geographically contiguous to the rest of the TwinCATS study area.

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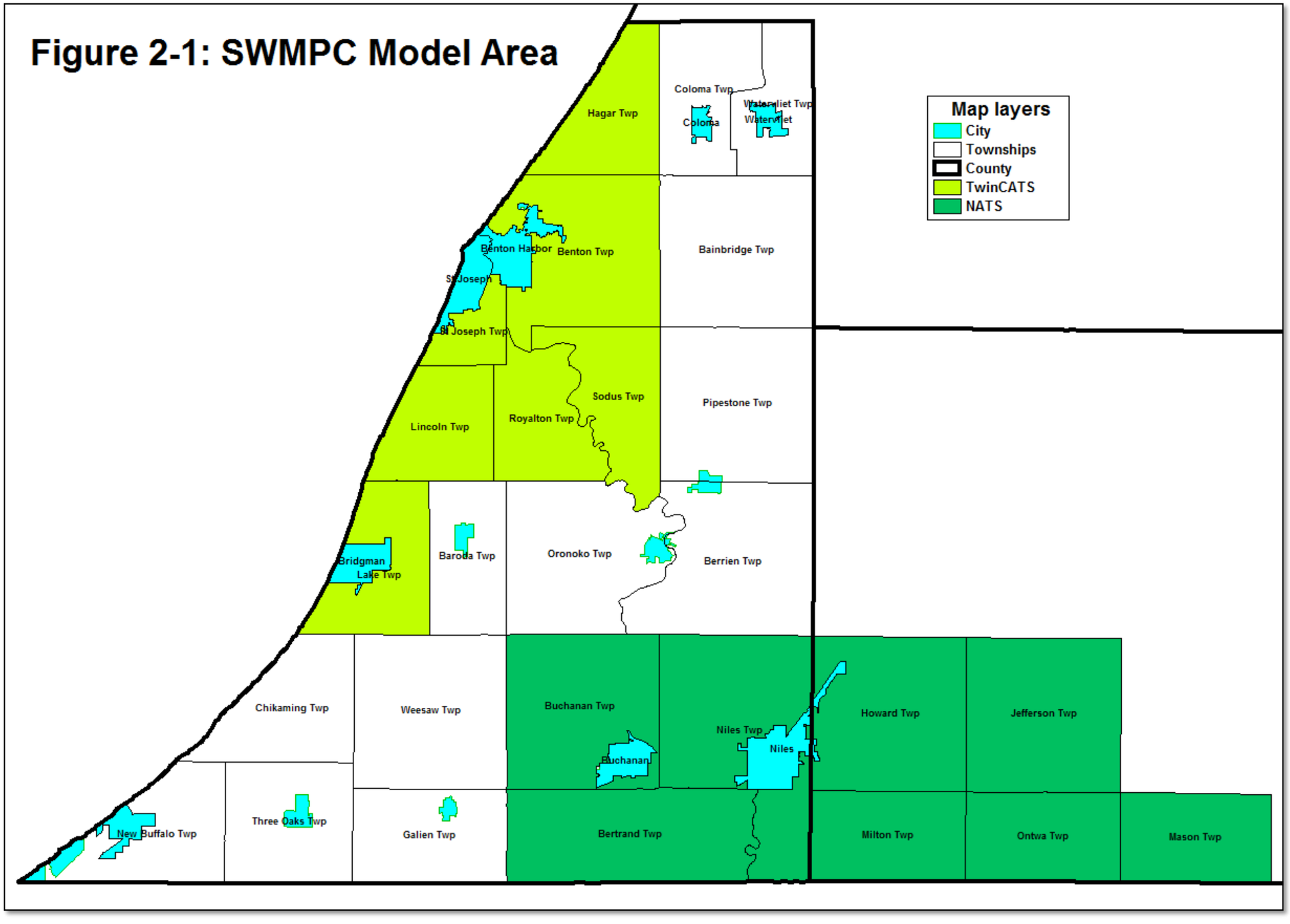
Map 5 - SWMPC Model Area



The entire SWMPC travel demand model area totals 714 square miles. Within that area, the smallest subsection or Traffic Analysis Zone (TAZ) of the model is 0.01 square miles and the largest TAZ is 11.35 square miles. The total transportation network including all roads consists of approximately 1,230 miles.

MODEL DEVELOPMENT

Travel demand modeling is developed using TransCAD and transportation Geographic Information Systems (GIS) software. The computer simulation generates current and future traffic conditions. Deficiencies in the transportation network are identified as "generalized 24-hour" (daily) deficiencies, based on generalized 24-hour road and transit capacities and traffic assignment volumes.

There are two basic systems of data organization in the travel demand forecasting process.

1. The first system of data is organized based on the street system. Roads with a National Functional Class (NFC) designation as "Minor Collector" and higher are included in the network. The unit of analysis is called a "link." Usually, a link is a segment of roadway that is terminated at each end by an intersection. In a traffic assignment network, intersections are called "nodes." Therefore, a link has a node at each end.
2. The second data organization mechanism is the Traffic Analysis Zone (TAZ). TAZs are determined based upon similarity of land use, compatibility with jurisdictional boundaries, the presence of physical boundaries, and compatibility with the street system. Streets are generally used as zone boundary edges. All socioeconomic and trip generation information for both the base year and future year are summarized by TAZ. Table 2.0 below depicts the SWMPC TAZ structure.

Table 7 - SWMPC Traffic Analysis Zone Structure

TAZ ID	JURISDICTION	County	MPO Area
1-7	Bridgman	Berrien	TwinCATS
8-26	Lake Charter Township	Berrien	TwinCATS
27-72	Benton Harbor - City	Berrien	TwinCATS
73-145	Benton Charter Township	Berrien	TwinCATS
146-169	Lincoln Charter Township	Berrien	TwinCATS
170-185	Royalton Township	Berrien	TwinCATS
186-235	Saint Joseph - City	Berrien	TwinCATS
236-237	Shoreham - Village	Berrien	TwinCATS
238-254	St. Joseph Charter Township	Berrien	TwinCATS
255-274	Sodus Township	Berrien	TwinCATS
275-280	Stevensville - City	Berrien	TwinCATS
281-285	Berrien Springs - City	Berrien	
286-289	Baroda - Village	Berrien	
290-303	Baroda Township	Berrien	
304-321	Oronoko Charter Township	Berrien	

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322-339	Chikaming Township	Berrien	
340-352	Weesaw Township	Berrien	
353-373	New Buffalo Township	Berrien	
374-384	New Buffalo - City	Berrien	
385	Michiana-Village	Berrien	TwinCATS
386-387	Grand Beach-Village	Berrien	TwinCATS
388-390	Three Oaks - City	Berrien	
391-397	Three Oaks Township	Berrien	
398	Galien - Village	Berrien	
399-404	Galien Township	Berrien	
405-425	Buchanan Township	Berrien	NATS
426-439	Buchanan - City	Berrien	NATS
440-461	Bertrand Township	Berrien	NATS
462-510	Niles Charter Township	Berrien	NATS
511-563	Niles - City	Berrien	NATS
564-576	Hagar Township	Berrien	TwinCATS
577-579	Hagar Shores - Village	Berrien	TwinCATS
580-599	Coloma Township	Berrien	
600-605	Coloma - City	Berrien	
606-616	Watervliet Township	Berrien	
617-621	Watervliet - City	Berrien	
622-632	Bainbridge Township	Berrien	
633-646	Pipestone Township	Berrien	
647-649	Eau Claire - Village	Berrien	
650-665	Berrien Township	Berrien	
666-680	Milton Township	Cass	NATS
681-693	Howard Township	Cass	NATS
694-705	Ontwa Township	Cass	NATS
706-713	Edwardsburg - Village	Cass	NATS
714-723	Jefferson Township	Cass	NATS
724-736	Mason Township	Cass	NATS
1001-1048	External Stations		

The two data systems - the street system (network) and the zone system (socioeconomic data) - are interrelated through the use of "centroids." Each zone is portrayed on the network by a point (centroid), which represents the weighted center of activity for that zone. A centroid is connected by a set of links to the adjacent street system. That is, the network is provided with a special set of links for each zone, which connect the zone to the street system. Since every zone is connected to the street system by these "centroid connectors," it is possible for trips from each zone to reach every other zone by way of a number of paths through the street system. Maps of the two data systems (street system and zone system) are shown on the following two pages.

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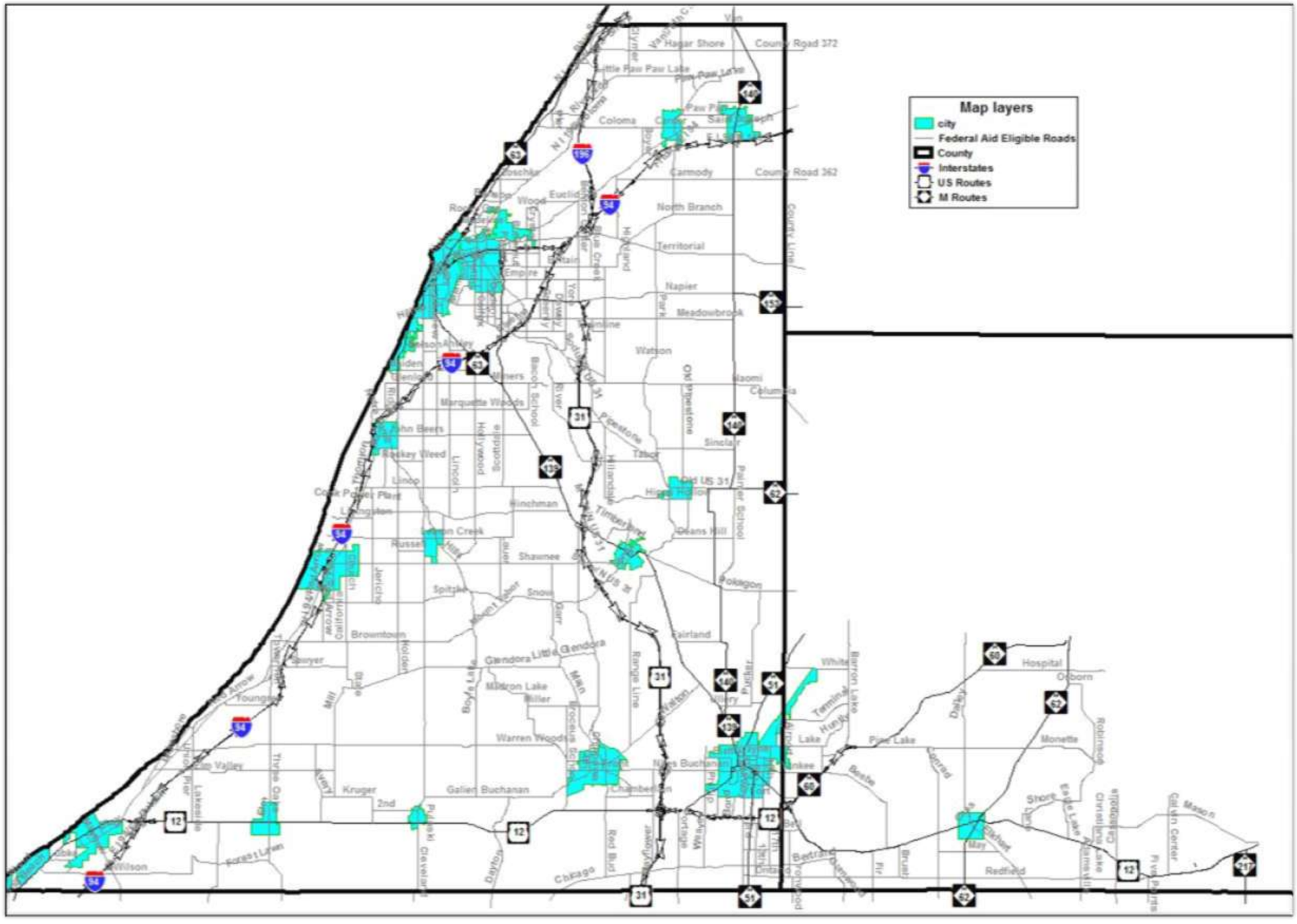
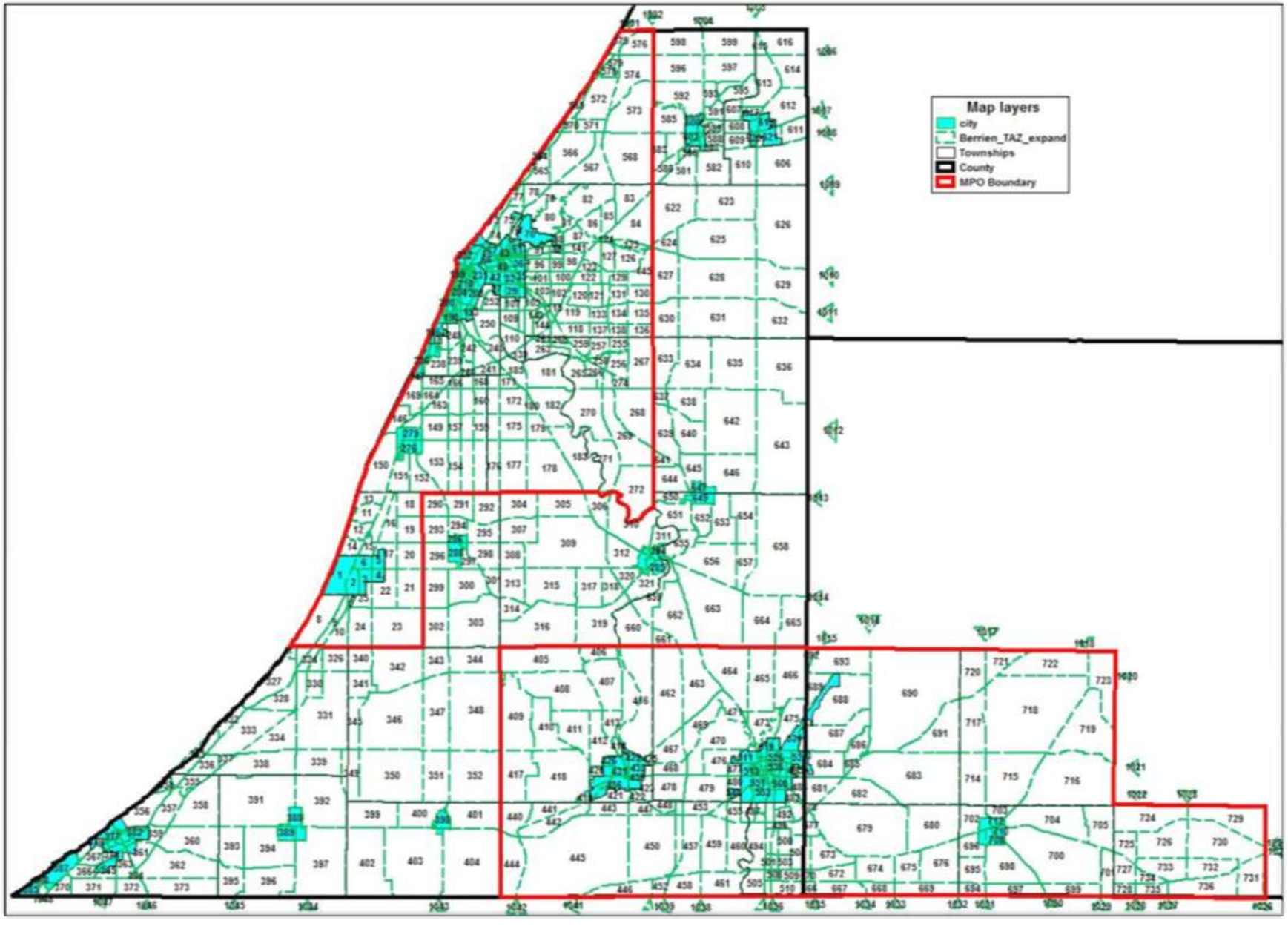
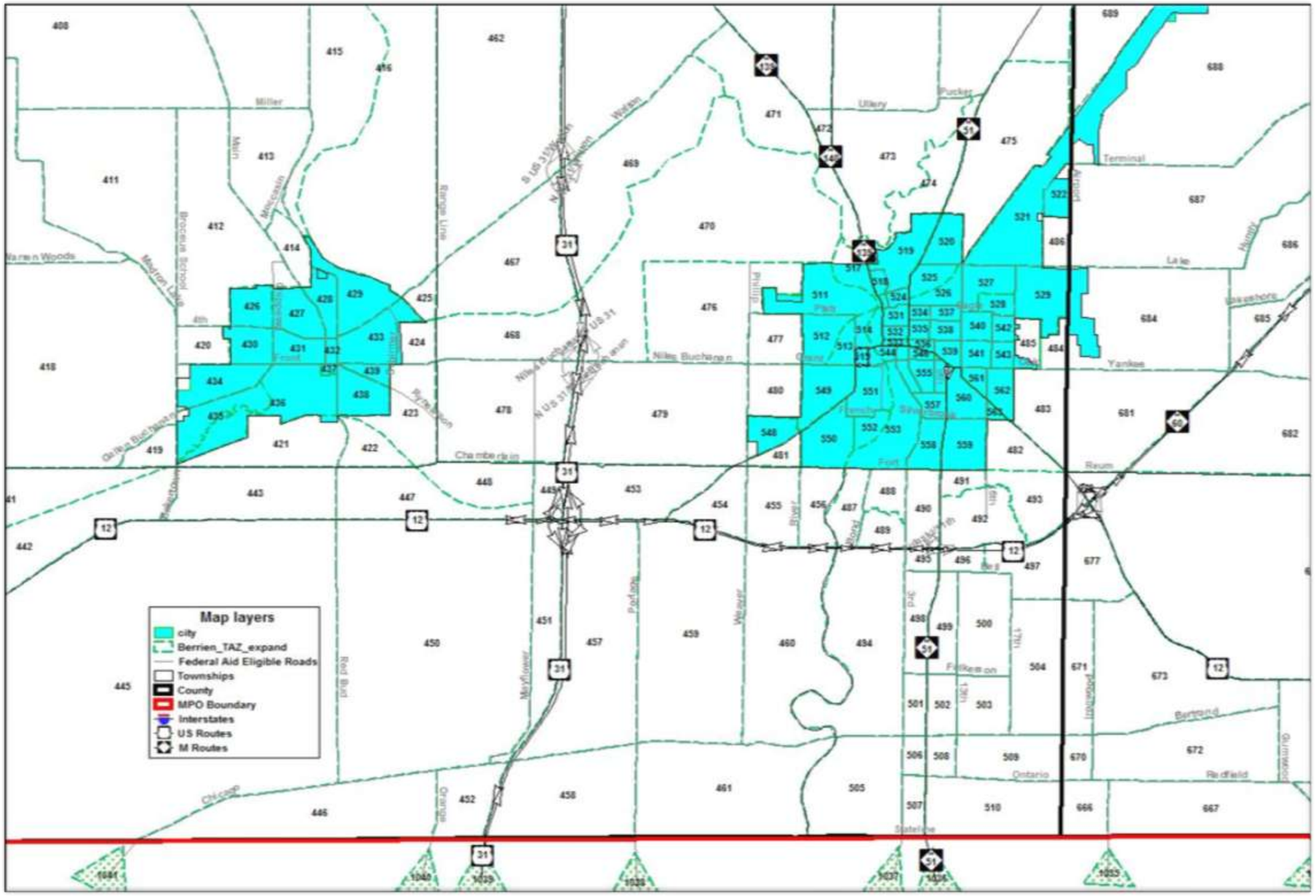
Map 6 - SWMPC Model Street System



Map 7 - SWMPC Traffic Analysis Zone Map



Map 8 - Niles and Buchanan Traffic Analysis Zone and Street Map



The urban travel demand forecasting process has eight phases, which are described in the sections that follow:

1. **Socioeconomic Data Collection** - Socioeconomic and facility inventory data are collected;
2. **Trip Generation** - Calculates the number of trips produced within or attracted into a the basic geographic unit of the model, the TAZ;
3. **Trip Distribution** - Studies the trips produced in a TAZ and distributes them to all other TAZs, based on the attraction of those zones;
4. **Auto Occupancy** - Separating trips into single-occupancy vehicle, 2 person and 3+ person vehicles, as well as distinguishing trucks;
5. **Time-of-Day** - Separating trips into 4 time periods (AM Peak, Mid-day, PM Peak, and Night-Time (Off-Peak);
6. **Traffic Assignment** - Determines what routes are utilized for trips;
7. **Model Calibration/Validation** - Verifying that the volumes (trips) simulated in traffic assignment and authenticates traffic counts; and
8. **System Analysis** - Tests alternatives and analyzes changes in order to improve the transportation system.

PHASE 1: SOCIOECONOMIC DATA COLLECTION

Travel demand models are driven, in part, by the relationship of land use activities and characteristics of the transportation network. Inputs to the modeling process include the number of households, population-in-households, vehicles, and employment located in a given TAZ. These characteristics are generally referred to as socioeconomic data. The modeling process translates this data into vehicle trips on the modeled transportation network. Therefore, it is a necessary step in the long range planning process to evaluate local socioeconomic data.

Base Year Data

Socioeconomic data collection and verification was a collaborative effort between SWMPC, MPO Committee members, and MDOT. Household, population, and employment data from the 2010 U.S. Census, the 2005-2009 American Community Survey, Claritas and Hoovers employment databases, were collected, broken down into individual TAZs and compiled into tables and maps. Beginning in the spring of 2012, the tables and maps were sent to representatives from each local government for review and comment in order to bring the data up-to-date through data year 2010, the model's base year. Local partners were asked to

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provide detailed information about new development that had occurred since 2000 and where employers or population had been lost.

When the local revisions were recorded, the revised data was presented to the NATS Technical Advisory and Policy Committees in September of 2011. The revised socioeconomic data was approved by the TAC and Policy Committees in October of 2011. The data were then provided to MDOT for inclusion in the travel demand model.

Future Year Data

Verification of future year data covering the years from 2010 to 2040, began in January of 2012. The method was similar to efforts used to verify the base year data. Demographic and economic forecasts were sourced from Regional Economic Models, Inc. (REMI). The data was broken down by jurisdiction and forecasted in five-year increments. A percent change for each five-year period was applied against the 2010 base data.

Data was then further subdivided geographically by local TAZ. To do this, aerial photographs from 2010 and 2011 were compared to determine growth patterns and seek out areas where land use approximated a maximum build-out scenario. Local future land use maps and master plans were examined to determine where each municipality expected their additional growth to occur. Additionally, areas were identified that demonstrated a growth trend that was likely to continue. The magnitude of the growth in each TAZ was assessed against the total growth in the area. Each TAZ was thus represented as a percent of the total overall growth. Any loss in population, households, or employment was expressed as a negative percentage.

Data were then compiled into maps and tables and distributed to local government representatives and committee members for review and comment. Local partners were asked to use local knowledge, local plans, and projection efforts to determine where population, household, and employment growth (or decline) was likely to occur in their communities, and whether the REMI forecasts seemed reasonable. As with the base year verification efforts, local efforts to review the data were mixed. Staff pursued the highest possible input through phone calls, e-mail exchanges, and in-person meetings with representatives of local governmental units willing to evaluate the data.

At the conclusion of the process, the locally reviewed data projections were presented to the NATS Technical Advisory and Policy Committees and were approved in September of 2012. The data were then provided to MDOT for inclusion in the travel demand model.

It is important to note that the forecasting and distribution of future population, households, and employment data cannot be made with pin-point accuracy. The general nature of the data sources, changes in development plans, unforeseen economic or population factors, and the limits imposed by time and financial resources all conspire to impart elements of unpredictability into the process. Although efforts were made to allocate the data as accurately as possible, in a few instances, some minor errors in address

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coding or unidentifiable employer names or addresses are predictable. As a result, some of the employment data allocated to one zone may actually belong in an adjacent zone. This does not change the overall effect of travel demand on the model because the net overall travel activity would be loaded onto the same adjacent network corridor. Therefore, household and employment data for individual zones should be considered as an estimate to be used as a guideline and not an exact total.

Population

In 2010, the SWMPC Model area had a population of 178,934. By 2040, due to the economic recession and the overall aging of the population, the area's total population is expected to reduce to of 173,895, a 2.81% decrease. Comparatively, the total population of the State of Michigan is projected to increase by 3.06% between 2010 and 2040 (REMI).

For the NATS area, the total population remains stable with a minimal reduction of 117 people or 0.2%. The cities and villages experience the greatest declines, while the townships in Cass County are projected to grow the most (consistent with the trends that occurred between 2000 and 2010. Milton Township is projected to see the greatest growth in population 19.99%, while Mason, Jefferson, and Ontwa also experience growth at 9.81%, 8.81%, and 4.36%. Overall, the projected growth in population is due to the increased growth of residents from the South Bend and Elkhart, Indiana urban areas. These two urban areas will continue to move towards one another, and are also moving north. These communities in Cass County are directly north of where these two urban areas are moving together.

Table 8 - NATS Total Population by Jurisdiction

Jurisdiction	2010	2015	2020	2025	2030	2035	2040	Percent Change
Buchanan - City	4,471	4,346	4,274	4,210	4,168	4,136	4,102	-8.25
Buchanan Twp	3,508	3,465	3,437	3,415	3,411	3,415	3,419	-2.54
Bertrand Twp	2,657	2,630	2,626	2,626	2,640	2,661	2,681	0.90
Niles - City	13,330	13,102	12,878	12,674	12,540	12,434	12,323	-7.55
Niles Charter Twp	12,306	12,222	12,138	12,073	12,074	12,104	12,131	-1.42
Howard Twp	6,335	6,390	6,433	6,449	6,447	6,444	6,438	1.62
Milton Twp	3,878	4,099	4,234	4,350	4,454	4,555	4,653	19.99
Edwardsburg - Vlg	1,259	1,265	1,243	1,216	1,185	1,155	1,125	-10.67
Ontwa twp	5,011	5,069	5,128	5,166	5,189	5,211	5,230	4.36
Jefferson Twp	2,820	2,689	2,781	2,861	2,932	3,001	3,068	8.81
Mason Twp	2,945	3,062	3,113	3,151	3,180	3,208	3,234	9.81
NATS Total	58,520	58,339	58,284	58,190	58,218	58,324	58,403	-0.20

The rural areas within the SWMPC Model area experience a 3.89% reduction in total population (from 46,217 people in 2010 to 44,418 people in 2040). These areas contain the remainder of the communities within Berrien County that are not in either the TwinCATS or NATS MPO areas.

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Households

Households in the SWMPC model area are projected to total 72,901 by 2040, or a 1.77% increase from the 2010 base year. By comparison the State of Michigan is projected to have a 10.81% increase in households from 2010 to 2040 (REMI). The rate of growth for households in the TwinCATS and NATS areas and in the State as a whole is considerably higher than that of the population, likely because the average household size is projected to to decline. Therefore, there are some communities that see a decline in overall population, but increases in total households. Overall, the areas that are projected to see increases in population, or very minimal decreases in population all are projected to see increases in total households through 2040.

For the NATS area, the area experiences a 5.72% increase in households between 2010 and 2040 (from 23,341 to 24,675 households). All the townships are projected to increase, while the cities (Buchanan and Niles) and the Village of Edwardsburg experience declines. Milton Township is projected to see the greatest increase in households 35.58%, while the other townships in Cass County all see significant increases as well. Within the NATS area, of all the communities in Berrien County, Bertrand Township experiences the highest growth of 4.8%.

Table 9 - NATS Total Household by Jurisdiction

Jurisdiction	2010	2015	2020	2025	2030	2035	2040	Percent Change
Buchanan - City	1,911	1,894	1,898	1,888	1,883	1,871	1,853	-3.05
Buchanan Twp	1,325	1,324	1,334	1,335	1,339	1,339	1,333	0.61
Bertrand Twp	1,031	1,044	1,058	1,065	1,074	1,079	1,081	4.80
Niles - City	5,540	5,583	5,597	5,572	5,559	5,529	5,477	-1.13
Niles Charter Twp	4,906	4,947	4,989	4,996	5,014	5,016	4,999	1.89
Howard Twp	2,575	2,687	2,760	2,796	2,797	2,787	2,759	7.16
Milton Twp	1,390	1,515	1,625	1,714	1,782	1,840	1,885	35.58
Edwardsburg - Vlg	517	527	531	527	517	505	490	-5.22
Ontwa twp	1,982	2,053	2,126	2,171	2,189	2,198	2,193	10.63
Jefferson Twp	1,057	1,031	1,110	1,175	1,226	1,270	1,304	23.36
Mason Twp	1,107	1,173	1,225	1,261	1,282	1,296	1,302	17.63
NATS Total	23,341	23,780	24,253	24,500	24,660	24,730	24,675	5.72

The rural areas with the SWMPC Model area experience a minimal increase of 110 households between 2010 and 2040 0.6% increase.

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Employment

In 2010, the total number of individuals employed in the SWMPC model area was 87,940. By 2040, SWMPC model area is projected to grow to 97,312 jobs a 10.66% increase. This is fairly consistent with the State of Michigan, which is expected to experience a 13.35% growth from 2010 to 2040 according (Source: REMI).

For the NATS area, the total employment is expected to increase by 16.86%, greater than the state average of 13.35%. The City of Niles is projected to have the greatest increase of 969 total jobs 15.29%. Most of the communities are projected to have over a 15% increase in total jobs, whereas no community is projected to experience a decline in total job.

Table 10 - NATS Total Employment by Jurisdiction

Jurisdiction	2010	2015	2020	2025	2030	2035	2040	Percent Change
Buchanan - City	2,197	2,293	2,320	2,318	2,330	2,357	2,381	8.38
Buchanan Twp	435	442	445	451	452	458	463	6.44
Bertrand Twp	1,104	1,231	1,316	1,354	1,371	1,398	1,420	28.62
Niles - City	6,342	6,619	6,792	6,905	7,052	7,220	7,311	15.29
Niles Charter Twp	4,433	5,017	5,049	5,100	5,134	5,151	5,173	16.69
Howard Twp	1,025	1,129	1,146	1,165	1,186	1,216	1,256	22.52
Milton Twp	639	663	669	671	673	685	700	9.55
Edwardsburg - Vlg	1,022	1,109	1,156	1,202	1,226	1,296	1,327	29.87
Ontwa twp	1,322	1,392	1,407	1,427	1,464	1,517	1,552	17.40
Jefferson Twp	499	561	579	587	606	645	699	40.08
Mason Twp	439	458	452	446	445	449	455	3.61
NATS Total	19,457	20,915	21,331	21,626	21,939	22,392	22,737	16.86

For the rural areas, the projections show a 14% increase in total jobs (from 18,398 jobs in 2010 to 20,975 in 2040). The greatest increases are down near New Buffalo, with the Four Winds Casino developed and expanded upon, along with other projected growth along the lakeshore.

PHASE 2: TRIP GENERATION

The trip generation process aims to determine the frequency of trips into and out of each TAZ. Those trips are defined as “person-trips” (trips per person). The calculation of trips per person is based on the socioeconomic characteristics of each zone, the median income of the household, the number of automobiles and dwellings. It should be explained that there are limitations to the detail of trip generation projections. The trips per person generated from or to each TAZ are not assigned characteristics such as direction, length, or time of occurrence. Analysis of relevant data is ultimately reduced to mathematical expressions for use in the modeling process. The relationship between trips per person making and land activity are expressed in equations for use in the modeling process. The formulas were derived from MI

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Travel Counts Michigan travel survey data (performed in 2004 and 2005) and other research throughout the United States. Roughly 2,040 surveys were taken within the small MPO areas throughout Michigan, and were used to determine the trip generation parameters for the SWMPC travel demand model. Productions were generated with a cross-classification look-up process based on household demographics. Attractions were generated with a regression approach based on employment, school enrollment and household demographics. In order to develop a trip table, productions (P's) and attractions (A's) must be balanced also referred to as normalization.

The SWMPC travel demand model also has a simple truck model that estimates commercial and heavy truck traffic based on production and attraction relationships developed from the Quick Response Freight Manual I (QRFM I). The QRFM I uses the employment data from the TAZs in its calculations.

Trips that begin or end beyond the SWMPC model study area boundary are called "cordon trips." These trips are made up of two components:

- Internal to external (IE) trips - start inside the study area and end outside the study area
- Through-trips (EE) - EE trips are those trips that pass through the study area without stopping.

A summary of the cordon volumes and distribution of those volumes is shown in the following table.

Table 11 - 2010 and 2040 External Station (Cordon) Trips

TAZ	Route Name	External Count	I-E Trips	% E-E Trips	E-E Trips	Count Source
1001	Blue Star Hwy (N)	1,642	1,559.90	5.0	82.10	Berrien County
1002	I-196/US-31 (N)	16,000	6,624.00	58.6	9,376.00	MDOT
1003	Clymer Rd (N)	366	358.68	2.0	7.32	Berrien County
1004	Coloma Rd (N)	456	446.88	2.0	9.12	Berrien County
1005	M-140 (N)	3,741	3,217.26	14.0	523.74	MDOT
1006	Hagar Shore Rd (E)	644	611.80	5.0	32.20	Berrien County
1007	Red Arrow Hwy (E)	4,400	4,276.80	2.8	123.20	Berrien County
1008	I-94 (E)	29,000	14,500.00	50.0	14,500.00	MDOT
1009	Carmody Rd (E)	451	441.98	2.0	9.02	Berrien County
1010	Territorial Rd (E)	950	910.10	4.2	39.90	Berrien County
1011	Napier (M-152) (E)	3,400	3,114.40	8.4	285.60	MDOT
1012	Columbia Ave (E)	620	620.00	0.0	0.00	Berrien County
1013	M-62 (E)	4,400	4,272.40	2.9	127.60	MDOT
1014	Pokagon Rd (E)	1,481	1,406.95	5.0	74.05	Berrien County
1015	M-51 (N)	5,800	4,350.00	25.0	1,450.00	MDOT
1016	Barron Lk Rd (N)	3,073	2,393.87	22.1	679.13	Cass County
1017	Dailey Rd (N)	2,700	1,350.00	50.0	1,350.00	Cass County
1018	M-60 (NE)	3,000	2,400.00	20.0	600.00	MDOT
1019	M-62 (N)	4,700	1,645.00	65.0	3,055.00	MDOT
1020	Brownsville St (E)	1,723	430.75	75.0	1,292.25	Cass County

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1021	Calvin Hill St (E)	2,151	645.30	70.0	1,505.70	Cass County
1022	Cassopolis Rd (N)	1,872	374.40	80.0	1,497.60	Cass County
1023	Calvin Center Rd (N)	2,400	480.00	80.0	1,920.00	Cass County
1024	Mason St (E)	516	154.80	70.0	361.20	Cass County
1025	US-12 (E)	8,500	1,700.00	80.0	6,800.00	MDOT
1026	M-217 (S)	3,900	390.00	90.0	3,510.00	MDOT
1027	Five Points Rd (S)	976	488.00	50.0	488.00	Cass County
1028	Old M-205 (S)	9,112	2,278.00	75.0	6,834.00	Cass County
1029	Adamsville Rd (S)	2,177	1,088.50	50.0	1,088.50	Cass County
1030	Elkhart Rd (S)	4,168	2,500.80	40.0	1,667.20	Cass County
1031	M-62 (S)	6,400	3,200.00	50.0	3,200.00	MDOT
1032	Conrad Rd (S)	2,100	1,575.00	25.0	525.00	Cass County
1033	Fir Rd (S)	2,600	2,080.00	20.0	520.00	Cass County
1034	Gumwood Rd (S)	5,329	4,263.20	20.0	1,065.80	Cass County
1035	Ironwood Rd (S)	4,557	3,645.60	20.0	911.40	Cass County
1036	M-51 (S)	15,400	12,320.00	20.0	3,080.00	MDOT
1037	3rd St (S)	3,288	2,630.40	20.0	657.60	Cass County
1038	Portage Rd (S)	3,417	2,733.60	20.0	683.40	Cass County
1039	US-31 (S)	16,000	12,800.00	20.0	3,200.00	MDOT
1040	Orange Rd (S)	963	857.07	11.0	105.93	Cass County
1041	Chicago Rd (S)	717	609.45	15.0	107.55	Cass County
1042	Dayton Rd (S)	259	253.82	2.0	5.18	Cass County
1043	Cleveland Ave (S)	1,337	1,310.26	2.0	26.74	Cass County
1044	Three Oaks Rd (S)	803	803.00	0.0	0.00	Cass County
1045	Basswood Rd (S)	323	323.00	0.0	0.00	Cass County
1046	M-239 (S)	6,400	5,888.00	8.0	512.00	MDOT
1047	I-94 (SW)	40,600	18,270.00	55.0	22,330.00	MDOT
1048	US-12 (SW)	11,500	11,500.00	0.0	0.00	MDOT
All	Total Externals	246,312	150,092.97	39.06	96,219.03	

Sources: MDOT, Berrien County Road Commission, Cass County Road Commission

The objective of this trip generation phase is to develop a trip table. An accurate trip table will show a balance between trips produced and trips attracted. To accomplish this, the study area's total attractions are factored to equal the study area's total productions. This balance is called normalization. The attractions are normalized based on trips produced because the trip production equations use household data, which generally provide a more accurate estimate of home-based trip making. The use of more accurate base data tends to produce greater reliability for the table as a whole. The SWMPC Model Area Trip Generation Summary identifies productions, attractions, and normalization factors for the study area, for 2010, 2020, 2030 and 2040.

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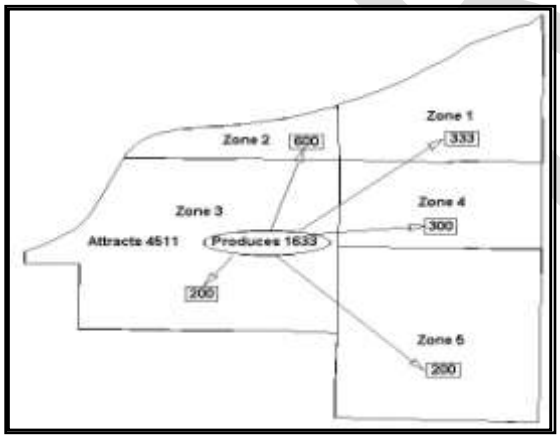
PHASE 3: TRIP DISTRIBUTION

Trip distribution incorporates standardized equations used to determine how many of the trips produced in a zone will be attracted to each of the other zones. Potential connections are analyzed at the ends of trips produced in one zone to the ends of trips attracted to (in) other zones. The equations are based on variables that include travel time between zones and the frequency of activity in each zone. Trip purpose is an important factor in the analysis of these relationships. The trip relationship formula developed in this process is based on principles and algorithms commonly referred to as the Gravity Model.

The Gravity Model is the most widely used and documented technique for developing trip generation. It is originally derived from Newton's Law of Gravity. Newton's Law states that the attractive force between any two bodies is directly related to the masses of the bodies and inversely related to the distance between them. Thus, in the trip distribution model, the number of trips between two areas is directly related to the level of activity in an area (represented by its trip generation) and inversely related to the distance between the areas (represented as a function of travel time) (see diagram below).

Research has determined that the Gravity Model equation alone does not adequately predict the distribution of trips between zones. In most models the value of time for each purpose is modified by an exponentially determined "travel time factor" or friction factor. Friction factors represent the average area-wide effect that various levels of travel time have on travel between zones. The friction factors used were developed from the process described in "Travel Estimation Techniques for Urban Planning", NCHRP 365, and they were created using the MI Travel Counts I Household Survey data.

Figure 14 - Trip Distribution Example



The primary input to the gravity model is the normalized productions and attractions by trip purpose developed in the trip generation phase. The second data input is a measure of the perceived separation between zones. This measure is an estimate of travel time over the transportation network. Zone-to-zone travel times are referred to as "skims."

In order to more closely approximate actual times between zones and also to account for the travel time for intra-zonal trips, the skims were updated to include terminal and intra-zonal times. Terminal times account for the non-driving portion of each end of the trip and were generated from a look-up table based on area type. They represent that portion of the total travel time used for parking and walking to the actual destination. Intra-zonal travel time is the time of trips that begin and end within the same zone. Intra-zonal travel times were calculated utilizing a nearest neighbor routine.

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The Gravity Model utilizes productions and attractions by purpose, the friction factors by purpose, and the travel times, including terminal and intra-zonal. The by-purpose productions and attractions (trip table) is combined with the through-trip table and then balanced so that the zonal productions and attractions are equal. The resulting total trip table is used for subsequent analysis.

PHASE 4: AUTO OCCUPANCY

Auto Occupancy splits the trips into 3 breakdowns: single-occupancy vehicle (SOV), vehicles with two persons (Shared Ride 2), and vehicles with 3 or more persons (SR 3+). This step converts the person trips that were calculated through trip generation and trip distribution, to vehicle trips, so that they can be assigned to the road network (in phase 6).

PHASE 5: TIME-OF-DAY

Time of Day splits the trips into 4 time periods. These time periods include:

AM Peak:	7:00am-9:00am
Mid-Day:	9:00am-3:00pm
PM Peak:	3:00pm-6:00pm
Off-Peak	6:00pm-6:00am

PHASE 6: TRAFFIC ASSIGNMENT

The traffic assignment process takes the trips produced in a zone (trip generation) and distributed to other zones (trip distribution) and loads them onto the network via the centroid connectors. All the possible paths from each zone to all other zones are examined and all reasonable time paths from each zone (centroid) to all other zones are calculated. The NATS model runs a “user equilibrium” traffic assignment. This means that trips are assigned to paths that are the shortest distance between each combination of zones. As the volumes assigned to links approach capacity, travel times on all paths are recalculated to reflect the congestion. The remaining trips are assigned to the next shortest path. This process continues through several iterations until no trip can reach its destination by taking the next shortest path. The traffic assignment is run 4 times, one for each period described in Phase 5, and capacities are calculated for each time period as well. This assignment method reflects the alternative routes that motorists use as the shortest paths become congested. The assignment ultimately produces an assigned volume for each link. The assignments for each time period are then summed together to make a daily assigned volume for each link.

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PHASE 7: MODEL CALIBRATION/VALIDATION

Model calibration/validation is the process of verification that the assigned volumes simulate actual traffic counts on the street system. When significant differences occur, additional analysis is conducted to determine the reason. Modifications may then be made to the network speeds and configurations, special trip generators, trip distribution, socioeconomic data, or traffic counts.

The purpose of the model calibration phase is to verify that the base year assigned volumes simulate actual base year traffic counts. When this step is completed, the model is considered statistically acceptable. This means that future socioeconomic data can be substituted for the base data. At that point the trip generation, trip distribution, and traffic assignment steps can be repeated and future trips can be simulated for systems analysis. It is assumed that the quantifiable relationships modeled in the base year will remain reasonably stable over time.

APPLICATIONS OF THE CALIBRATED MODEL

Once the base and future trips are simulated, a number of system analysis procedures can be conducted, including the following:

- Network alternatives to relieve congestion can be tested. Future traffic can be assigned to the existing network to show what would happen in the future if no improvements were made to the present transportation system. This process is often referred to as "deficiency analysis." From this, improvements can be planned that would alleviate demonstrated capacity problems. The NATS deficiency analysis can be found immediately after this section.
- The impact of planned roadway improvements or network changes can be assessed.
- A link can be analyzed to determine what zones are contributing to the travel on that link. This can be shown as a percentage breakdown of total link volume.
- The network can be tested to simulate conditions with or without a proposed bridge or new road. The assigned future volumes on adjacent links would then be compared to determine traffic flow. Thus, it is possible to appraise whether the bridge should be replaced and/or where it should be relocated.
- The impacts of land use changes on the network can be evaluated (e.g., what are the transportation impacts of a new major retail store or 200-unit housing development).
- Road closure/detour evaluation studies can be conducted to determine the effects of closing a roadway. This type of study is very useful for construction management and incident management.
- Model runs are a standard part of air quality conformity analysis.

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Two issues are critical in using the model:

1. The modeling process is most effective for system-wide analysis. Although detailed volumes for individual intersection and "links" of a highway are an output of the model, additional analysis and modification of the model output may be required for project level analysis.

2. The accuracy of the model is heavily dependent on the accuracy of the socioeconomic data and network attributes provided by the local participating agencies, and the skill of the users in interpreting the reasonableness of the results.

Generally, three different scenarios are developed for the Long Range Plan:

1. **Existing trips on the existing system -** This is the calibrated, existing network scenario founded on the base year data. This is a prerequisite for the other two scenarios.

2. **Future trips on the committed system -** This alternative displays future capacity and congestion problems if no improvements to the system are made. This is called the “do nothing” alternative and usually includes the existing system, plus any projects that are committed to be built in the future.

3. **Future trips on the future system -** This scenario is the future LRTP network. It includes suggested improvements to alleviate congested areas or corridors.

Applications of these basic procedures are important for identifying deficiencies as well as examining and evaluating the impacts of alternate solutions.

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DEFICIENCY ANALYSIS

With the completion of the travel demand model, deficiencies in the roadway network were identified for the following years: 2010, 2020, 2030, and 2040. Deficiencies were identified based upon the volume to capacity ratios. This means that if the V/C ratio approaches 1.0 then the efficiency of the roadway to handle vehicle traffic becomes compromised in the form of congestion.

Table 12 - 2010 Deficiency Segments

Jurisdiction	Route Name	From	To	Length	Volume	V/C Ratio
Buchanan	Front Street	Main St	Red Bud Trail	.1 miles	9769	0.87
Niles	Main Street (US-12 BR)	M-139 (Front Street)	M-51 (5th St)	.25 miles	12095	0.90
Niles	Main Street (US-12 BR)	M-51 (12th Street)	13th Street	.1 miles	15550	0.82
Niles	Grant/Broadway Street	Parkway Street	3rd Street	.15 miles	11893	0.85

While none of the segments are at capacity at the base year, 2010, it is still significant to note that these segments are reaching capacity. There will need to be monitoring of these specific segments for additional development that may occur and change the traffic patterns.

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Table 13 - 2020 Deficiency Segments

Jurisdiction	Route Name	From	To	Length	Volume	V/C Ratio
Berrien Springs	M-139 (Ferry Street)	Cass Street	Main Street	.07 miles	15805	0.87
Buchanan	Front Street	Main Street	Red Bud Trail	.1 miles	9515	0.84
Niles	**Main Street (US-12 BR)**	**M-139 (Front Street)**	**M-51 (5th Street)**	**.25 miles**	**13844**	**1.02**
Niles	Main Street (US-12 BR)	M-51 (12th Street)	13th Street	.07 miles	15871	0.83
Niles	Grant/Broadway Street	W of Parkway Street	3rd Street	.22 miles	11968	0.88
Niles	M-139 (Front Street)	Main (US-12 BR)	Sycamore Street	.07 miles	13402	0.94
Niles	M-51 (5th Street)	Lake Street	Burns Street	.25 miles	14234	0.83
Edwardsburg	US-12 (Main Street)	Edwardsburg WCL	Cass Street	.41 miles	14200	0.83
Edwardsburg	US-12 (Main Street)	M-62	Edwardsburg ECL	.2 miles	12351	0.80
Edwardsburg	M-62	Edwardsburg SCL	Elkhart Road	.38 miles	13523	0.80

It is clear from Table 13 that Main Street from M-139 in Niles from Main Street (US-12 BR) from M-139 (Front Street) to M-51 (5th Street) is over capacity. However, by 2030 this segment is no longer over capacity. The other segment that is closer to being over capacity is the segment in Niles on M-139 (Front Street) from Main (US-12 BR) to Sycamore Street. These segments will need to be monitored during the implementation of the plan and as the socioeconomic elements change. While Berrien Springs is not in the urbanized area or planning boundary, it is close enough to the NATS area that it still does impact the regional transportation system. In addition, during the adjusted census urban boundary review in 2013, it was suggested to review the potential incorporation of the Berrien Springs urban area. While the NATS Policy Committee did not think that it was advisable to include that jurisdiction into the MPO area, it is still significant to the MPO and the travel patterns of the region.

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Table 14 - 2030 Deficiency Segments

Jurisdiction	Route Name	From	To	Length	Volume	V/C Ratio
Berrien Springs	Main Street	Hamilton Street	Kephart Street	.21 miles	7144	0.82
Buchanan	Front Street	Main Street	Red Bud Trail	.1 miles	9532	0.84
Niles	Main Street (US-12 BR)	M-139 (Front St)	M-51 (5th St)	.25 miles	13136	0.97
Niles	Main Street (US-12 BR)	M-51 (12th St)	13th Street	.07 miles	15960	0.84
Niles	Grant/Broadway Street	Parkway Street	3rd Street	.15 miles	11957	0.85
Niles	M-139 (Front Street)	Main (US-12 BR)	Sycamore Street	.07 miles	11392	0.80

As noted from Table 14 that Main Street from M-139 in Niles from Main Street (US-12 BR) from M-139 (Front Street) to M-51 (5th Street) is no longer over capacity. As stated previously, there are several segments that will need to be monitored during the implementation of the plan and as the socioeconomic elements change.

Table 15 - 2040 Deficiency Segments

Jurisdiction	Route Name	From	To	Length	Volume	V/C Ratio
Berrien Springs	Main Street	Hamilton Street	Kephart Street	.21 miles	7343	0.85
Buchanan	Front Street	Main Street	Red Bud Trail	.1 miles	9554	0.85
Niles	**Main Street (US-12 BR)**	**M-139 (Front St)**	**M-51 (5th St)**	**.25 miles**	**13849**	**1.02**
Niles	Main Street (US-12 BR)	M-51 (12th St)	13th Street	.07 miles	16156	0.85
Niles	Grant/Broadway Street	Parkway Street	3rd Street	.15 miles	12195	0.87
Niles	M-139 (Front Street)	Main (US-12 BR)	Sycamore Street	.07 miles	12479	0.87

In the year 2040, Table 15 shows that Main Street from M-139 in Niles from Main Street (US-12 BR) from M-139 (Front Street) to M-51 (5th Street) is at capacity one again. Due to this roadway segment appearing twice as over capacity the MPO should work with the City of Niles and MDOT, since MDOT controls this segment of the roadway, to begin the discussion and design of a potential roadway expansion.

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Once the LRP is adopted there will be an Implementation Sub-Committee formed to assist the SWMPC transportation planners in implementing the plan, one of the tasks that can be dealt with is how to develop projects to meet the potential deficiencies in the transportation network in the future years.

US-31

While the completion of the US-31 corridor is not being currently planned for, there is justification to incorporating the information about the project being completed by 2040. The extension would happen in the TwinCATS MPO boundary but the impacts of that completion would still be felt in the NATS regions. A brief summary of what has occurred as a result of integrating the proposed US-31 freeway extension project from Napier to I-94 into the 2040 highway network is as follows:

- US-31 would have an increase of about 9% volumes at the Indiana state border.
- Approximately, 3700-3900 daily trips would travel in each direction on the proposed new route, this segment would be in the TwinCATS MPO.
- The Napier Road corridor would experience a reduction of about 7,000 trips daily (about a 36% reduction).
- The Napier Road bridge proposed V/C for 2040 would drop from 0.8 to 0.67.
- M-139 (northwest of US-31) would experience a reduction of about 1,500 trips daily (about a 10% reduction).

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ASSESSMENT OF TRANSPORTATION MODES

Rail service is a vital transportation mode within the study area. Providing interconnectivity between modes for rail passengers to access destinations in the study area is a concern for a truly interconnected transportation system.

PASSENGER RAIL SERVICE

Amtrak is the only passenger rail service that operates in the study area. The National Railroad Passenger Corporation, doing business as Amtrak (reporting mark AMTK), is operated and managed as a hybrid public/private entity. Amtrak began operations to provide intercity passenger train service in the United States on May 1, 1971. On the public side of its public/private identity, Amtrak receives investment from the federal and state government. The only Amtrak station that is within the study area is in Niles. The structure was built in 1892, is listed on the National Register of Historic Places, and is a well known landmark within the community. Amtrak operates an engineering department branch at the Niles Amtrak station that maintains the 97-mile track segment between Kalamazoo and Porter, Indiana. From their Niles location, Amtrak employees maintain the track for high-speed service.

Michigan's three Amtrak lines are the Blue Water, Pere Marquette, and Wolverine.

Map 9 - Southwest Michigan Amtrak Passenger Service

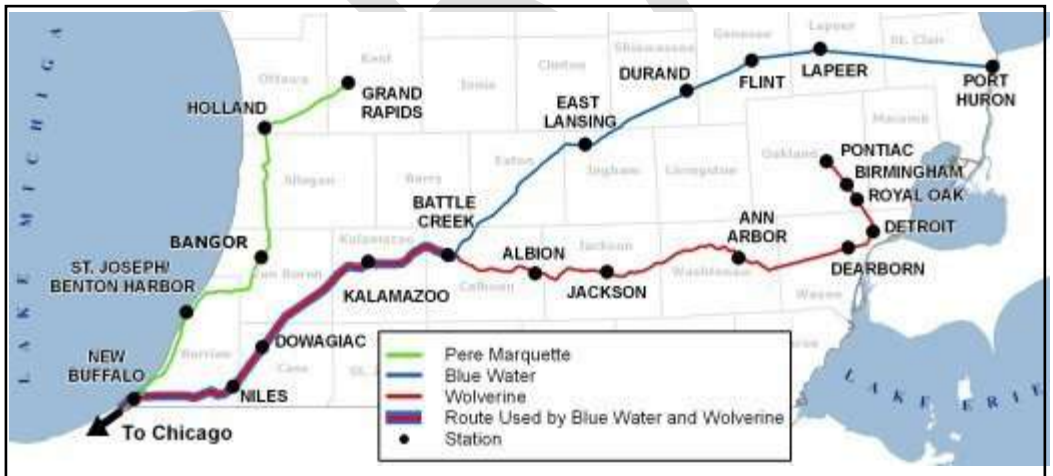

Image courtesy of MDOT http://mdotcf.state.mi.us/public/railstats/

Amtrak has three corridor passenger services in the NATS region including the Wolverine, the Blue Water that focus on providing rail service between Detroit and Chicago, Illinois, and the Pere Marquette providing service between Chicago and Grand Rapids.

- **The Wolverine** passenger service is a 304 mile line that offers three daily round trips from Chicago, Illinois to Pontiac, Michigan, with a stop in Niles, Michigan. The Wolverine operates over tracks owned by Norfolk Southern Railway, Amtrak, Conrail, and Canadian National Railway.

- **The Blue Water** is the second service that makes a daily stop in Niles, Michigan, from Chicago, Illinois to Port Huron, Michigan. The Blue Water operates on a 319-mile line that includes sections owned by Norfolk Southern Railway, Amtrak, and Grand Trunk Western Railroad. The 97-mile segment between Porter, Indiana and Kalamazoo, Michigan, is the longest segment of track owned by Amtrak outside of the northeast corridor.

  The Pere Marquette provides a third train option that travels from Chicago to Grand Rapids daily. The line operates on CSX lines from Grand Rapids to Porter, Indiana then on a line owned by Norfolk Southern to Chicago, Illinois. The one Berrien County stop is in St. Joseph. Advocacy for the promotion of the Pere Marquette is provided by an advocacy group represented by local governments, public transit agencies, chambers of commerce, metropolitan planning organizations, the Michigan Department of Transportation (MDOT), and Amtrak called Westrain. The collaborative promotes the Pere Marquette and seeks to enhance the service while addressing service deficiencies.

Table 16 - Ridership and Ticket Revenue

	Ridership				**Ticket Revenue (In Dollars)**		
Year	Blue Water	Pere Marquette	Wolverine		Blue Water	Pere Marquette	Wolverine
2012	189,193	109,321	484,138		$ 6,094,659	$ 3,276,210	$ 17,704,897
2011	187,065	106,662	503,290		$ 5,797,878	$ 3,197,106	$ 18,769,770
2010	157,709	101,907	479,782		$ 4,741,560	$ 2,912,070	$ 16,909,193
2009	132,851	103,246	444,127		$ 4,111,375	$ 2,818,294	$ 15,041,919
2008	136,538	111,716	472,393		$ 4,158,742	$ 2,975,391	$ 16,243,510

Ridership since 2008 on the Blue Water has increased 38 percent and has increased 2.5 percent on the Wolverine line. A similar trend has been seen in the amount of ticket revenues throughout the system. An increase of 46 percent on the Blue Water and 8.9 percent on the Wolverine represent important gains. The sluggish performance of the Wolverine line may be due in part to the expiration of maintenance contracts between Amtrak and Norfolk Southern. The track conditions subsequently deteoriated and resulted in lower travel speeds along this corridor. The upper limit on passenger rail speed was reduced from 79 to 55 mph. With slower speeds and overall performance reductions, some potential passengers may have found the route to be a less viable choice.

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Table 17 – Passenger Rail Boarding and Deboarding

	Boarding				Deboarding		
Year	Blue Water ***Niles*** New Buffalo	Pere Marquette St. Joseph	Wolverine ***Niles*** New Buffalo		Blue Water ***Niles*** New Buffalo	Pere Marquette St. Joseph	Wolverine ***Niles*** New Buffalo
2012	***3,702*** 3,260	5,118	***7,505*** 2,991		***2,529*** 3,495	5,700	***7,505*** 5,071
2011	***3,866*** 3,020	4,951	***7,663*** 2,291		***2,540*** 3,528	5,551	***7,663*** 4,279
2010	***3,606*** 2,578	4,622	***6,856*** 1,517		***2,278*** 2,647	5,221	***6,856*** 2,997
2009	***3,343*** 0	4,030	***5,513*** 0		***2,075*** 0	4,296	***7,264*** 0
2008	***3,509*** 0	3,963	***5,855*** 1		***2,037*** 0	4,387	***7,717*** 0

There have been consistent increases in those boarding (entering the train to begin a trip) and deboarding (leaving the train to end a trip) at the Niles station for both routes. This information is particularly useful when considering the improved inter-connectedness to which we aspire. Currently, there is no transit service for those arriving by train after 5:00 p.m. Monday through Friday. For arrivals by train on Saturday there is the option to take the Niles Dial-A-Ride (public transit with trips arranged through a call to the dispatch center) between the hours of 10:00 a.m. and 3:00 p.m. However, there are a couple of conditions. The demand response system requires a 24-hour reservation, which could make it difficult for rail passengers to schedule a transit ride if they do not know the exact time that they will arrive. The other issue is that there is no Sunday passenger rail service.

HIGH SPEED RAIL ALONG THE BLUE WATER AND WOLVERINE LINES

The 97-mile segment between Porter, Indiana and Kalamazoo, Michigan, is the longest segment of track owned by Amtrak outside of the northeast corridor. The Federal Rail Administration (FRA) has designated the Detroit to Chicago corridor as a high-speed corridor. The trains have increased their speeds from 95 mph to 110 mph on 80 miles of track between Kalamazoo and Porter, Indiana. The increased speeds in western Michigan set the stage for the expansion of 110 mph service from Kalamazoo east to near Dearborn on the track segment purchased by the Michigan Department of Transportation from Norfolk Southern Railway in December of 2012. This change will reduce the travel time an additional 30 minutes.

Chicago - Detroit/ Pontiac Passenger Rail Corridor Program

The Michigan Department of Transportation (MDOT) has initiated a program to evaluate passenger rail improvements for the Chicago-Detroit/Pontiac passenger rail corridor. The program is being prepared in

partnership with the Indiana Department of Transportation (INDOT) and the Illinois Department of Transportation (IDOT), and in association with the Federal Railroad Administration (FRA).

The purpose of the program is to improve intercity mobility by providing an improved passenger rail service that would be a competitive transportation alternative to automobile, bus and air service between Chicago and Detroit/Pontiac, Mich. The program will provide sufficient information for the FRA to potentially support future decisions to fund and implement a major investment in the passenger rail corridor.

Map 10 - High Speed Rail Corridor

Source: http://greatlakesrail.org/~grtlakes/

SOUTH SHORE LINE (SOUTH BEND, IN)

The South Shore Line, operated by the Northern Indiana Commuter Transportation District (NICTD), provides interurban electric commuter train service between South Bend, Indiana and Chicago, Illinois. The South Bend boarding site, located at the South Bend Regional Airport, links the South Shore with domestic airline service and inter- and intra- city bus service. Seven daily trains leave from South Bend bound for Chicago, with five trains offering return service. The weekend and holiday schedule offers eight trains that originate from South Bend and seven trains that provide return service. The South Bend Regional Airport is the only multimodal passenger facility operating in the Michiana area. South Bend Regional Airport offers connecting air service through Chicago, Cincinnati, Detroit, Atlanta and Minneapolis, intercity bus service to Chicago, Indianapolis, commuter rail service to Chicago and local bus service to the South Bend-Mishawaka area. Currently residents within the study area could connect to this system via the Niles Dial-A-Ride transfer point with Transpo at Auten Road, then take Transpo to the South Bend Regional Airport where they can board the South Shore Line and travel to Chicago.

CAPITOL AND LAKESHORE LIMITED

This service has two trains that leave from the South Bend, Indiana train station in the evening and retun in the morning. This service provides an additional connection to area residents for travel east to Cleveland, Pittsburgh, Washington D.C., Philadelphia, upstate New York, New York City, and Boston.

THE FUTURE OF HIGHER-SPEED RAIL

Federal

Momentum continues to grow across the country for greater investment in passenger rail service amid concerns over rising gas prices, climate change, and traffic congestion. On April 16, 2009, President Obama, together with Vice President Biden, and U.S. Transportation Secretary Ray LaHood, announced a new vision for developing high-speed intercity passenger rail in America. The vision calls for a collaborative effort by the federal government, states, railroads, and other key stakeholders to help transform America's transportation system through the creation of a national network of high-speed rail corridors. To achieve this vision, FRA published the High-Speed Rail Strategic Plan in April 2009 and launched the High Speed Intercity Passenger Rail (HSIPR) Program in June 2009. To realize President Obama's vision of giving 80 percent of Americans access to high-speed rail within the next 25 years, Congress made $8 billion available through the American Recovery and Reinvestment Act of 2009 (ARRA). Congress continued to build upon the Recovery Act by making available an additional $2.1 billion through annual appropriations for FY 2009 and 2010, using the framework initially established by the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), bringing the total program funding to $10.1 billion. Michigan has benefited from this investment in high speed rail through federal funding to purchase the Norfolk Southern line from Kalamazoo to Dearborn. Additional funding has been provided to begin work to increase speeds to 110 mph over the next few years.

Regional

The Midwest Regional Rail Initiative (MWRRI) is a cooperative, multi-agency effort that began in 1996 and involves nine Midwest states (Indiana, Illinois, Iowa, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin) as well as the Federal Railroad Administration. The Midwest Regional Rail System (MWRRS) Plan elements include:

- Use of 3,000 miles of existing rail right of way to connect rural and urban areas
- Operation of a hub and spoke passenger rail system
- Introduction of modern, high-speed trains operating at speeds up to 110 mph
- Provision of multi-modal connections to improve system access

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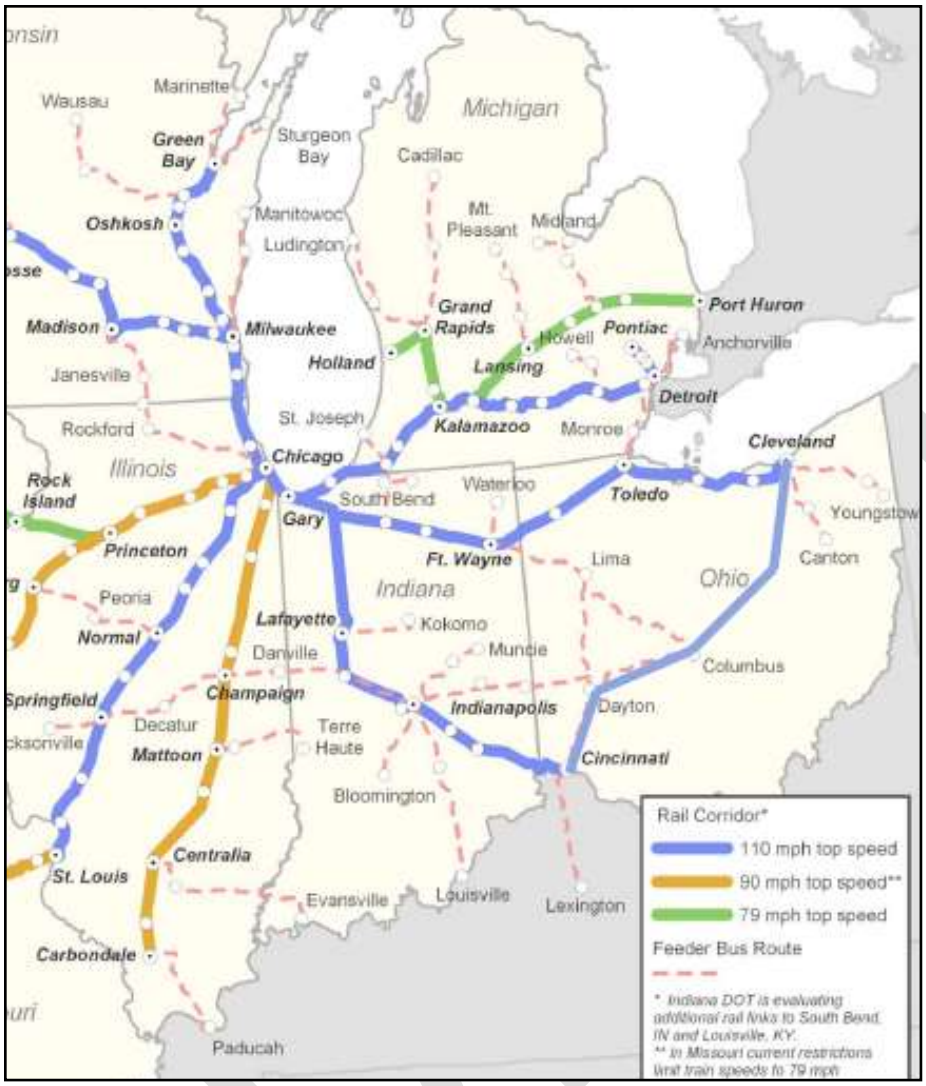
Map 11 - Midwest Regional Rail Initiative



The goal of the initiative is to develop a passenger rail system that offers business and leisure travelers shorter travel times, additional train frequencies, and connections between urban centers and smaller communities.

This study includes the 435-mile corridor from the Twin Cities to Chicago. The Minnesota portion of the study includes approximately 150 miles in southeastern Minnesota from La Crescent to Minneapolis/St. Paul that could accommodate high-speed trains. Today, only one train brings passengers from Minnesota to Chicago in about eight hours travel time. With the MWRRI, Minnesotans could travel to Chicago on an additional six trains in five-and-half hours of travel time.

The MWRRI will provide a large increase in service and will cut travel time between destinations by 30 to 50 percent. In addition, new equipment with reduced maintenance requirements, an advanced train signaling and control system, and line capacity improvements will help to establish and sustain a high-level of on-time performance.

As a result of faster trip times, more frequent and higher quality on-time service, rail ridership in the routes that encompass the MWRRI will increase greatly. This increase in ridership will help to reduce expected growth in automobile congestion on highways and reduce overcrowding and runway delays at regional airports. As stated in the description of the Pere Marquette line, the MWRRI would replace the Pere Marquette line with a feeder bus route from St. Joseph to Niles to connect to the Wolverine or Blue Water lines. Other alternatives being evaluated are to create a connection at New Buffalo for the Pere Marquette line to benefit from the higher speed line. The other option is to add a route from Grand Rapids to Kalamazoo to connect to the higher speed train in that location. This would offer two routes from Grand Rapids. The station communities along the Pere Marquette continue to monitor the activity with this rail plan. To explore more about the MWRRI please visit http://www.dot.state.mn.us/passengerrail/mwrri/index.html.

STATE OF MICHIGAN

The State of Michigan Rail Plan of 2011 highlights the state's commitment to rail. "The Plan is based on the understanding that the maintenance and expansion of rail service is critical to the economic well-being of the citizens and businesses of Michigan. Railroads play a major role in the movement of freight within and throughout the state and provide vital connections to the global marketplace. Because rail access is essential to many companies, improved rail service provides an important tool in Michigan's business development efforts. Passenger rail service provides an alternative for traveling between major economic centers and helps to promote commerce and economic development, particularly in the areas adjacent to stations"[2].

To review or read the plan please visit http://www.michigan.gov/documents/mdot/MDOT_MI_SRP_public_review_draft_2011-05-23_600dpi_353776_7.pdf

The Michigan Department of Transportation (MDOT) has initiated a program to evaluate passenger rail improvements for the Chicago-Detroit/Pontiac passenger rail corridor. The program is being prepared in partnership with the Indiana Department of Transportation (INDOT) and the Illinois Department of Transportation (IDOT), and in association with the Federal Railroad Administration (FRA).

The purpose of the program is to improve intercity mobility by providing an improved passenger rail service that would be a competitive transportation alternative to automobile, bus and air service between Chicago

[2] Michigan State Rail Plan, 2011

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and Detroit/Pontiac, Mich. The program will provide sufficient information for the FRA to potentially support future decisions to fund and implement a major investment in the passenger rail corridor. To learn more about this effort please visit www.greatlakesrail.org.

RAIL ADVOCACY

The Michigan Association of Railroad Passengers, Inc. (MARP) was established in 1973 as a consumer advocacy group to passenger rail services, improved travel conditions for passengers, and the preservation of historic rail stations. MARP is working with the Midwest High Speed Rail Association and National Association of Railroad Passengers (NARP) to achieve high speed rail throughout the Midwest.

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AIRPORTS

MICHIGAN

Southwest Michigan Regional Airport (Benton Harbor, Michigan)

The Southwest Michigan Regional Airport (SWMRA)is the largest airport in Berrien County, and the only all-weather airport in Berrien, Cass, and Van-Buren Counties. Additionally, it is one of only twenty Michigan airports to have a full Instrument Landing System (ILS). *The ILS is an internationally normalized system for navigation of aircrafts upon the final approach for landing. It was accepted as a standard system by the International Civil Aviation Organization in 1947*[3].

Founded in 1934, the airport is overseen by the Southwest Michigan Regional Airport Authority formed in 1997. The Authority is responsible for the overall operations of the airport, and its board of directors is composed of representatives from the cities of Benton Harbor and Saint Joseph, townships of Benton Charter, Lincoln Charter, Royalton, and Saint Joseph.

The airport is located in northeast Benton Harbor at an elevation of 649 feet above sea level. There are 66 aircraft based on-site and more than 400 US and Canadian companies use the facility annually. Total aircraft operations for 2010 were 36,372. There are 67 registered aircraft at the airport.

There are three runways. The first is the primary runway 10/28 with 6005 feet long by 100 wide to handle corporate jet traffic; the second is 14/32 with 3,661 feet by 100 feet; and the third 18/36 with 2,498 feet by 100 feet.

Scheduled airline service is not currently available. The Authority is currently involved in land acquisition for Runway Safety Area (RSA) improvements for our crosswind runway 14/42 to provide safety areas at each end of the runway. The SWMRA has on-site parking available for airport users in a completely fenced-in area. Avis and Enterprise offer car rental services at the airport with advance notice. Other operations:

[3] http://instrument.landing-system.com/

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Military ,Coast Guard and Ste Police activity; Just-In-Time (JIT) delivery; air courier delivery (UPS); and executive travel by local and visiting companies.

In 2012, approximately 429,248 gallons of jet, and aviation fuel were sold at the airfield. Additionally, the airport is used as a logistical base for medical emergencies and search and rescue operations. The majority of airport revenue is derived from fuel sales, hangar leases (both T-hangar and corporate hangars), and millages from participating jurisdictions. The success of the SWMRA provides primary and secondary economic benefits to the community at large. The economic impact (according to the Bureau of Transportation Planning, Twin Cities Area Transportation Study 2009-2035 Long Range Transportation Plan 91 Intermodal Section of MDOT) of the SWMRA to the community is estimated at slightly below $10 million as of January 2004. Additionally, the airport is directly linked to 101 full and part-time jobs.

A full list of the Southwest Michigan Regional Airport 2013-2018 five year plans can be found in Appendix _____.

Jerry Tyler Memorial Airport (Niles, Michigan)

Jerry Tyler Memorial Airport is a general utility airport, owned and operated by the City of Niles. The airport serves general aviation needs in the Michigan and Indiana areas. Situated on the northeast side of the city at 2018 Lake St., the airport features a NW/SE 4,100 foot paved runway and a NE/SW 3,300 paved runway. Approximately 35 aircraft are based at the airport.

The airport provides both corporate and recreational flyers with a conveniently located facility, offering an alternative to the more congested South Bend Regional Airport nearby. Hangar rentals and ground and tie-down leases are available for both private and corporate aircraft. The airport provides both corporate and recreational flyers with a conveniently located facility, thus relieving added congestion at nearby South Bend Regional Airport in South Bend. Joe Ray, the City's Public Works Director, also serves as the Michigan state-licensed Airport Manager.

A seven member airport advisory board assists with airport operations issues. The board meets on the 2nd Thursday of each month at 4:30 pm at the airport administration building[4].

[4] http://www.ci.niles.mi.us/DeptsAndServices/DPW/JerryTylerMemorialAirport.htm

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INDIANA

South Bend Regional Airport (South Bend, Indiana)

The airport offers commercial and freight service, and also offers aircraft fueling, servicing, storage and charter services from Atlantic Aviation. The airport is governed by the St. Joseph County Port Authority, which is a municipality in the State of Indiana. Its four bipartisan board members are appointed by the St. Joseph County Commissioners. The Airport Authority employs approximately 60 staff members. The mission of the St. Joseph County Airport Authority as defined is "to maximize the safety, service, efficiency and effectiveness of South Bend Airport for the traveling public, and to promote the value of the airport to the community." In addition to serving our commercial passengers, South Bend Airport also offers services and amenities to small, private aircraft. Passenger air travel is offered by Allegiant, Frontier, Delta, and United. Map 12 highlights the vast passenger connectivity that the airport provides throughout the country.

Map 12 - South Bend Regional Airport Flight Locations

Sources: http://www.flysbn.com/

NON-MOTORIZED TRANSPORTATION

Increased interest and attention has been building over the years on the incorporation of bicycling and walking into the transportation network. This section will focus on the non-motorized network that includes:

- Sidewalks-where information is available
- 4 foot paved shoulders
- 5 foot bicycle lanes
- Trails

FEDERAL EFFORTS

US Department of Transportation (US DOT)

"The DOT encourages States, local governments, and other government agencies, to adopt similar policy statements on bicycle and pedestrian accommodation as an indication of their commitment to accommodating bicyclists and pedestrians as an integral element of the transportation system. Transportation agencies and local communities should go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible, and convenient bicycling and walking networks. Such actions should include:

> "Increased commitment to and investment in bicycle facilities and walking networks can help meet goals for cleaner, healthier air; less congested roadways; and more livable, safe, cost-efficient communities. Walking and bicycling provide low-cost mobility options that place fewer demands on local roads and highways."
>
> Ray LaHood, US Secretary of Transportation

- Considering walking and bicycling as equals with other transportation modes.
- Ensuring that there are transportation choices for people of all ages and abilities, especially children.
- Going beyond minimum design standards.
- Integrating bicycle and pedestrian accommodation on new, rehabilitated, and limited-access bridges.
- Collecting data on walking and biking trips.
- Setting mode share targets for walking and bicycling and tracking them over time.
- Removing snow from sidewalks and shared-use paths.
- Improving non-motorized facilities during maintenance projects.

US DOT recognizes that safe and convenient walking and bicycling facilities may look different depending on the context — appropriate facilities in a rural community may be different from a dense, urban area. However, regardless of regional, climate, and population density differences, it is important that pedestrian

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and bicycle facilities be integrated into transportation systems. While DOT leads the effort to provide safe and convenient accommodations for pedestrians and bicyclists, success will ultimately depend on transportation agencies across the country embracing and implementing this policy[5]."

STATEWIDE EFFORTS

MICHIGAN

- Michigan Transportation Law-"Michigan's state transportation law requires that a minimum of one percent of state transportation funds be spent for non-motorized transportation. Section 10k of Public Act 51 of 1951, as amended, allows for non-motorized plans, services, and improvements to a road, street, or highway, which facilitates non-motorized transportation by the widening of lanes, striping to designate bike lanes, or any other appropriate measure considered a qualified non-motorized facility for the purpose of this section. State law allows bicyclists to ride on all public roads except where restricted or on limited access highways. Therefore, bicyclists are found in travel lanes on streets, roads shoulders, bike lanes, and shared use paths across the state". *Source Michigan Department of Transportation State Long-Range Transportation Plan 2005-2030 Non-Motorized Technical Report, 2007.*

- Michigan Department of Transportation (MDOT)-"The Michigan Department of Transportation is demonstrating its commitment to an integrated system through the inclusion of non-motorized projects in MDOT's standard operating procedures. The Fiscal Year (FY) 2018 Integrated Call for Projects (CFP) encourages project managers to integrate non-motorized solutions with roadwork when appropriate". In addition, the CFP emphasizes context sensitive solutions that support the state's Complete Streets Policy discussed below. *Sources: Michigan Department of Transportation State Long-Range Transportation Plan 2005-2030 Non-Motorized Technical Report, 2007; Michigan Department of Transportation 2018 Integrated Call for Projects, 2012.*

- Michigan Trails at the Crossroads: A Vision for Connecting Michigan, 2007. This document was produced by the Michigan Department of Natural Resources and the Michigan Department of Transportation. This document seeks to foster a connected shared use path system in Michigan by building new facilities and upgrading existing facilities throughout the state. The document also promotes the creation of an interconnected statewide system of shared use paths called

[5]Ray LaHood, United States Secretary of Transportation
http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm).

"Discover Michigan Trails." This system would connect natural, tourist, and urban destinations. Modeled after the Michigan Trailways Act, a designation of the initial set of shared use paths would be established and then an appointed Council of diverse interests would be charged to create a strategy and action plan to achieve the vision for the "Discover Michigan Trails" network, including developing guiding principles for public trail investments and a dedicated funding source for multi-use shared use paths. In accordance with this document and other initiatives, in 2012, Governor Snyder laid out his vision for a continuous 924-mile trail stretching from Detroit, to the border with Wisconsin in the UP, across the heart of the state. The trail would be accessible to hikers, bicyclists, and snowmobilers.

- Michigan Complete Streets Legislation: August 2010

  Complete Streets legislation signed on Aug. 1, 2010 gives new project planning and coordination responsibilities to city, county and state transportation agencies across Michigan. The legislation defines Complete Streets as "roadways planned, designed, and constructed to provide appropriate access to all legal users...whether by car, truck, transit, assistive device, foot or bicycle." The law further requires Complete Streets policies be sensitive to the local context, and consider the functional class, cost, and mobility needs of all legal users. Michigan leads the nation in the number of communities that have enacted Complete Streets policies. The State Transportation Commission officially adopted a Complete Streets policy on July 26, 2012, as required by PA 134 and PA 135 of 2010. The primary purpose of the new laws is to encourage development of Complete Streets as appropriate to the context and cost of a project. The focus on streets that serve all legal users is intended to increase transportation accessibility for all modes and all users without significantly impacting traffic movements. MDOT created a Complete Streets internal team to help implement the policy and work through the department's Context Sensitive Solutions (CSS) process. MDOT also participates in the statewide Michigan Complete Streets Advisory Council. This activity complements the goals of the MITP[6].

INDIANA

Michiana Area Council of Governments (MACOG)

MACOG shares a border with Berrien, Cass, and St. Joseph counties in northern Indiana. MACOG provides planning oversights in St. Joseph, Marshall, and Elkhart counties. In 2001, they released their Regional Bicycle Facilities Map which outlines all off and on-road bike routes in the MACOG region. Routes which

[6] http://www.michigan.gov/documents/mdot/MDOT_NewPolicyIntegrationWhitePaperFinal_397570_7.pdf

were planned to remain unsigned were also identified. This plan serves as an excellent resource for those looking to connect to points surrounding the region and to southwest Michigan[7].

The maps below show the projects that are being either on the ground to date (the solid lines) and those projects that are being proposed (dashed lines) in the areas that would impact the NATS planning area. The three projects that the MPO should monitor would include:

1. Laurel Road (signed route),
2. Barryknoll Way (unsigned route),
3. Gumwood (proposed multi-use path).

As more projects come closer to connecting the two states, communication with our partner to the south will be important to ensuring that a seamless non-motorized transition from Michigan to Indiana occurs.

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[7] www.macog.com/

Map 13 - South Bend and Mishawaka Non-Motorized and Pedestrian Facilities

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Regional Efforts

Southwest Michigan Non-Motorized Transportation Plan

In 2011, the Southwest Michigan Planning Commission completed a 9 county non-motorized transportation plan on behalf of the Michigan Department of Transportation, which covered the 9 counties in the MDOT Southwest Region (Allegan, Barry, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren counties). The plan was intended to guide MDOT's investment in non-motorized facilities in the southwest region for five years.

Mud Lake Bog is owned and operated by Buchanan Township.

The plan provided a region-wide vision for a connected system of off-road shared use paths and on-road facilities (paved shoulders/bike lanes); encouraged dialogue and more coordinated planning among state, county, and local entities; and enhanced partnerships and increased communication among state, county, and local agencies regarding the implementation and operation (construction, maintenance, marketing, etc.) of non-motorized facilities.

This plan highlights the major gaps in southwest Michigan to achieving a connected region-wide system. With extensive public participation, desired and planned non-motorized facilities were solicited and mapped. Regional priority corridors were identified along with local priority routes for each of the counties. There are five north-south and four west-east priority regional corridors and many of the local/county priority routes correspond to the regional corridors. The regional corridors and local priority routes will help guide the Michigan Department of Transportation's (MDOT) investment in the region's non-motorized transportation system. The plan and maps can be viewed at http://www.swmpc.org/smart_plan.asp.

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Local Efforts

Indiana-Michigan River Valley Trail, Niles

The partners are working to create a 34-mile trail connecting Niles, MI to Mishawaka, IN. The completed trail would be used by commuters, students, families and tourists. The trail would connect people to universities, schools, downtowns, parks, hospitals, historical and cultural areas, and businesses. In 2010, the City of Niles completed 2.25 miles of trail from Plym Park to 3rd/Fort Street. The trail needs to be completed south of the City of Niles. The Niles Township Parks Committee is actively working with partners to make this connection from Niles City to the Indiana state line. Niles Township has secured a 20 year lease agreement with Indiana-Michigan Power along the utility corridor to make this trail a reality! In Indiana, the St. Joseph County Parks Department and partners are working to continue the trail to Roseland and onto South Bend and Mishawaka. St. Joseph County Parks and Michiana Council of Governments have conducted a traffic study at Cleveland Avenue and have found an affordable solution for getting trail users across this busy road. In South Bend, IN, extension of the section known as the Northside Trail will be constructed in 2012. The extension will more-or-less parallel Northside Blvd. from 21st Street to Logan St. where it will link up with Mishawaka's Riverwalk.

Friends of McCoy Creek Trail, Buchanan

Friends of McCoy's Creek Trail was established by Resolution of the City of Buchanan in April 2004 as a subcommittee of the Buchanan Area Recreation Board. They have developed pathways through E. B. Clark Woods on the south side of McCoy's Creek and have continued the shared use path to downtown Buchanan along McCoy Creek and are now working to connect to Niles and New Buffalo.

INVENTORY OF FACILITIES

Table 18 outlines the total inventory of facilities in the NATS planning area. As more detailed mapping inventory is completed for the NATS Walk and Roll Plan, it will be easier to determine where the gaps in facilities are throughout the region. This will better help the MPO and member communities target areas that need to be completed to make the system more easily accessible for pedestrians and non-motorized users. The MPO does not have a map showing where all the local facilities are currently located.

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Table 18 - Inventory of Non-Motorized Facilities

Community	Sidewalks	Paved Shoulders and Bicycle Lanes	Trails
City of Niles	87	0.25	2.25
City of Buchanan	38	X	4.3
Village of Edwardsburg (called)		X	X
Bertrand Township	NI	NI	NI
Buchanan Township	X	2.2	X
Howard Township	NI	NI	NI
Mason Township	X	X	X
Milton Township	X	X	X
Ontwa Township	X	X	X
Niles Township	15.14	11.85	X

NI=No information provided to MPO

BENEFITS OF NON-MOTORIZED TRANSPORTATION

Non-motorized transportation has become increasingly important because many people understand the numerous benefits that these facilities bring to a community. The benefits are very diverse and include advantages in economic, social, environmental, health, and overall quality of life.

The economic vitality of a community can be greatly affected by an environment that is supportive of non-motorized travel. Non-motorized facilities such as shared use paths provide a means of interacting with nature, neighbors, and businesses within a community. Many studies have shown the economic benefits of shared use paths to local businesses. In Michigan studies show that out of town shared use path users spend anywhere from $949 to $1,269 on lodging, restaurant, groceries, gas, and equipment per trip. Further, shared use paths can positively impact property values. For example, realtors indicated that homes along the Paint Creek Trail in Michigan were selling for about 10% more than comparable homes not located along the path.

Health and Quality of Life Benefits of Non-Motorized Facilities

- Reduces air pollution
- Encourages physical fitness
- Helps prevent obesity related chronic diseases
- Creates safer neighborhoods
- Provides safe alternative transportation options
- Helps connect people, neighborhoods and communities with each other and the outdoors

Non-motorized facilities provide an alternative form of transportation to the automobile. This can help reduce the amount of congestion on our roadways and reduces the amount of air pollution from vehicles. Poor air quality can contribute to respiratory problems and overall health issues in the population. Non-

motorized facilities can also provide transportation options for the elderly, mobility challenged and those who cannot afford or chose not to have an automobile. Non-motorized transportation options can also help people connect to public transit options such as train and bus stops.

Further, a connected non-motorized network will offer numerous health and safety benefits for the residents of southwest Michigan. As the obesity epidemic is quickly becoming one of the largest health problems facing Americans today, these facilities can provide a place for community members to easily and inexpensively engage in physical activity. Non-motorized facilities can also provide a safer route for students to walk or bike to school.

Despite the known benefits to non-motorized transportation, the general public does not choose non-motorized transportation very frequently outside of recreational uses. According to the American Community Survey the primary means of transportation to work in Michigan and the study area continues to be those driving alone. The table below shows that driving alone to work is a slightly more dominant commute mode in Southwest Michigan than in the state as a whole.

Table 19 - Percentage of People Who Drive Alone

	Michigan	**Berrien County**	**Cass County**
Total Number of Workers (Age 16 and older)	4,225,557	68,875	22,914
Drove alone	82%	84%	85%
Carpooled (2-3 person)	9%	8%	9%
Public Transportation	1%	.004	.002
Walked	2%	.026	.014
Bike	.004	.003	.000
Taxi, Motorcycle, and Other means	.007	.007	.005

Source: 2006-2010 American Community Survey Federal Information Processing Standards Codes (FIPS): 26027, 26, 26021

Still, the dominance of driving alone is not uniform throughout the study area. The map below shows that certain areas of Southwest Michigan contain higher concentrations of residents who tend to use a mode other than the personal automobile for their daily commute.

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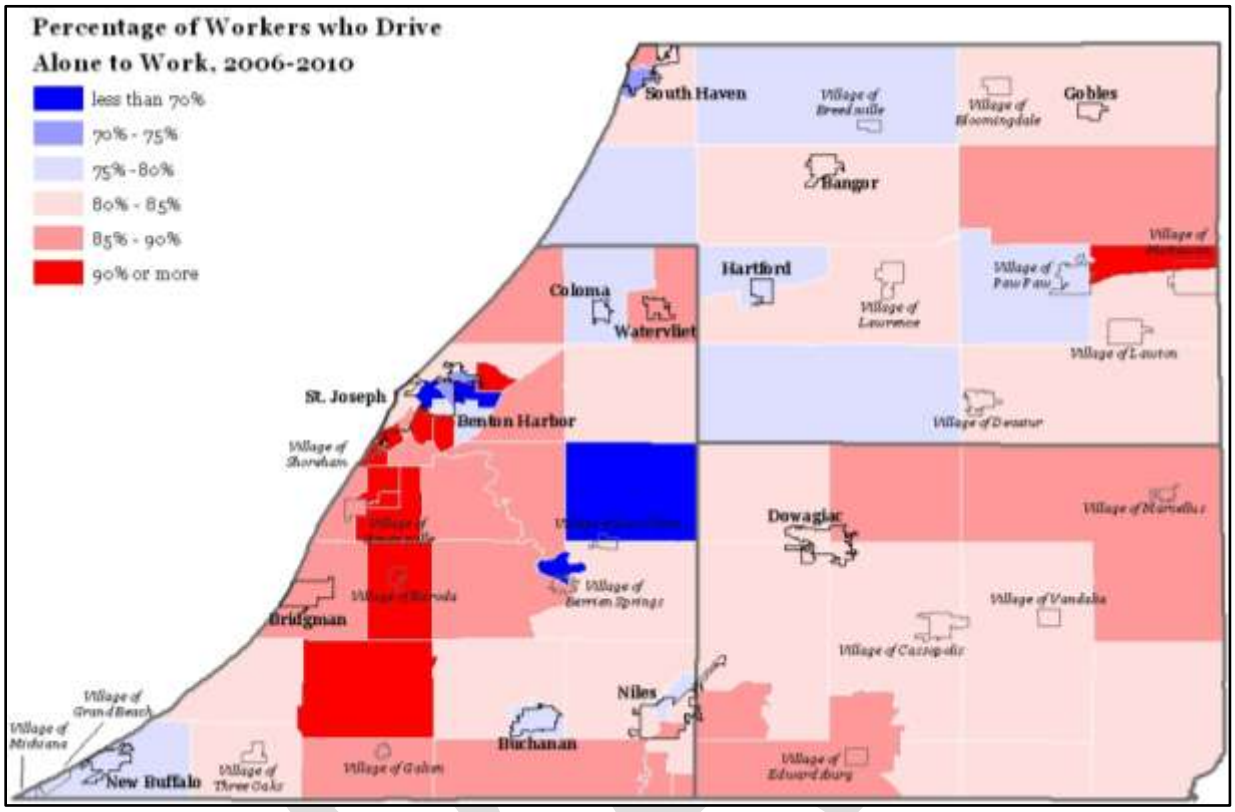
Map 14 - Percentage of Workers Who Drive Alone to Work



Commuting patterns alone do not fully explain the need for transportation alternatives to the personal automobile. Changes in demographics and market demand also contribute to a desire for infrastructure that supports a variety of forms of transportation.

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CHANGING DEMOGRAPHICS

Elderly and Disabled Populations

The graphics show a clear increase in the population aged 50-74 between 2000 and 2010, and a clear decrease in the population aged 25-44 over that time. The trends suggest that while Southwest Michigan has a large number of people of working age, the population of the state and the study area will continue to age. As more people are unwilling or unable to drive alone, that they will rely less on single occupancy vehicles as their primary means of travel. As an MPO, NATS needs to ensure that the transportation system is complete to provide all people the opportunity to travel by modes other than automobile. A particular challenge in this region is that the population is continuing generally to disperse from incorporated cities and villages into townships. In many cases, this shift in population increases the distance that residents have to travel to access vital resources such as food, healthcare, and employment. For senior citizens and persons with disabilities who are unable or uncomfortable with driving on their own, these distances can become prohibitive where alternatives do not exist.

Figure 15 - Berrien County Population Tree

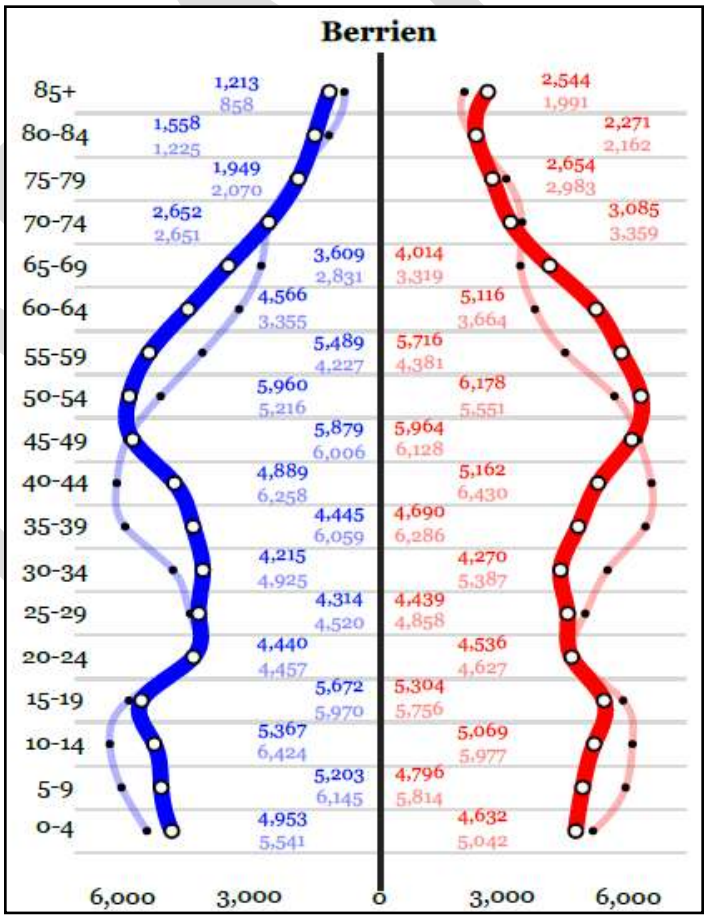
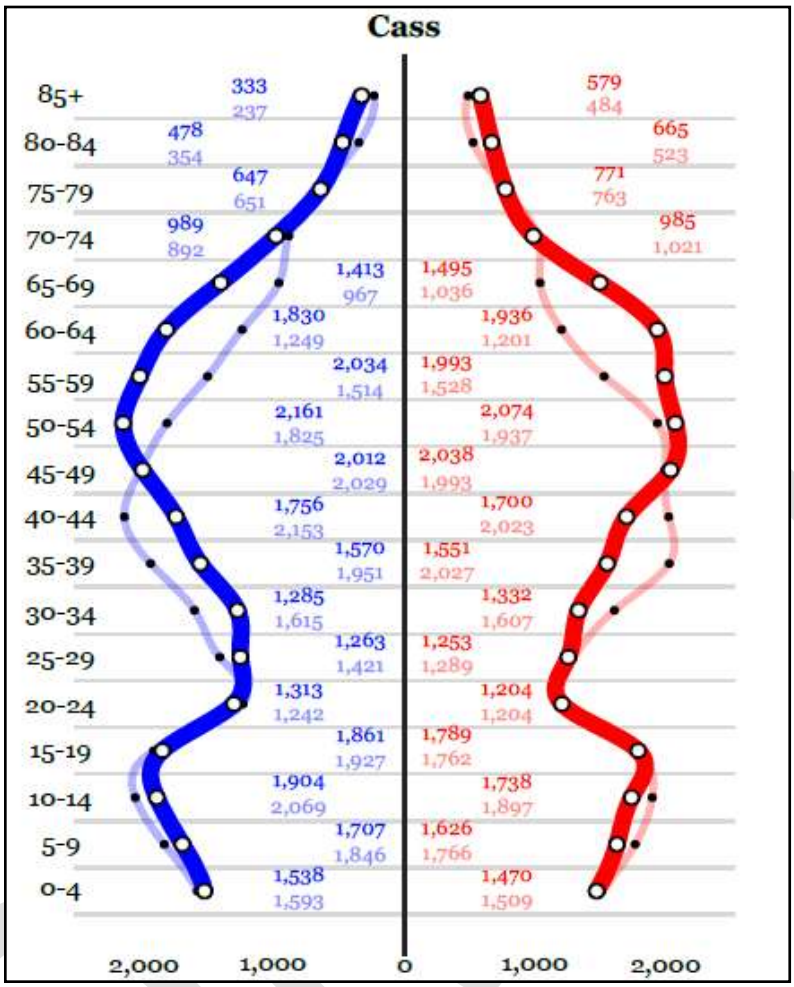


Figure 16 - Cass County Population Tree



Youth

A shortage of alternative facilities to the automobile creates challenges for more than just the elderly and disabled. One interesting change that has become more apparent is that many younger people now desire living in communities where they do not have to own an automobile, or do not need to travel by car to meet their daily needs. These young people might wish to live in an area with good public transit, pedestrian and bicycle facilities that connect them with employment and cultural attractions.

A survey by the National Association of Realtors conducted in March 2011 revealed that 62 percent of people ages 18-29 said they would prefer to live in a communities with a mix of single family homes, condos and apartments, nearby retail shops, restaurants, cafes and bars, as well as workplaces, libraries, and schools served by public transportation.

http://www.theatlanticcities.com/

The ability for Southwest Michigan to once again attract working age people to the region may hinge not just on availability of jobs, but on provision of these amenities. Certain nationwide findings support the provision of these amenities to retain and attract young workers:

- **Driving Restrictions**-Recent restrictions on driving -- later ages for licenses, limits on how many people can be in the car, restrictions on cell phone use and this has resulted in the share of 14 to 34-year-olds without a driver's license increased by 5 percentage points, rising from 21 percent in 2000 to 26 percent in 2010, according to the Federal Highway Administration[8].

- **Multi-Modal Youth-**Young people are also making more use of transit, bikes, and foot power to get around. In 2009, 16 to 34-year-olds took 24 percent more bike trips than they took in 2001. They walked to their destinations 16 percent more often, while their passenger miles on transit jumped by 40 percent. But money doesn't explain everything. Sixteen to 34-year-olds in households with incomes of more than $70,000 per year are increasingly choosing not to drive as well, according to the report. They have increased their use of public transit by 100%, biking by 122%, and walking by 37%[9].

- **Walkable Communities-**A separate 2011 Urban Land Institute survey found that nearly two-thirds of 18 to 32-year-olds polled preferred to live in walkable communities. The re-urbanization of America is

[8] http://www.theatlantic.com/business/archive/2012/08/why-are-young-people-ditching-cars-for-smartphones/260801/

[9] http://www.theatlanticcities.com/commute/2012/04/why-young-americans-are-driving-so-much-less-their-parents/1712/

giving more people access to public transportation. The advent of Zipcar and other car-on-demand businesses is eliminating the need to own and insure an expensive vehicle that often isn't driven much.

Low Income Populations

Another demographic group may require, and indeed, want personal automobiles to navigate their daily needs, but may be unable to afford the cost of owning a car, which continues to rise. The total average cost of owning and operating a car is approximately $8,700 per year, and this figure assumes that gasoline prices remain under $4.00 per gallon.

A lack of a car may particularly impact these populations because entry-level employment centers in the region tend to be located close to high-speed, high-traffic roadways, including M-139 and areas near I-94 exits 29 and 23. The provision of sidewalks is intermittent and may be absent in many situations. Some of the jobs in these areas may also demand that employees reach and depart work during the evening hours, when transit is unavailable, and when walking and bicycling in the traffic lanes themselves may be even more unsafe than during daylight hours.

Aging and disability, a desire for less automobile-oriented living, and insufficient incomes all lead to a need to consider alternative modes to the automobile. The map below shows the percentage of zero-car households in each Census Tract of the Southwest Michigan region. While the small urban centers appear to have generally higher percentages of zero-car households than more rural areas, this might not always be the case as the population continues to age. One of the stated goals of this plan is to improve the accessibility that these households have to critical services, employment and cultural attractions, regardless of the circumstances that lead to them not owning or operating a vehicle.

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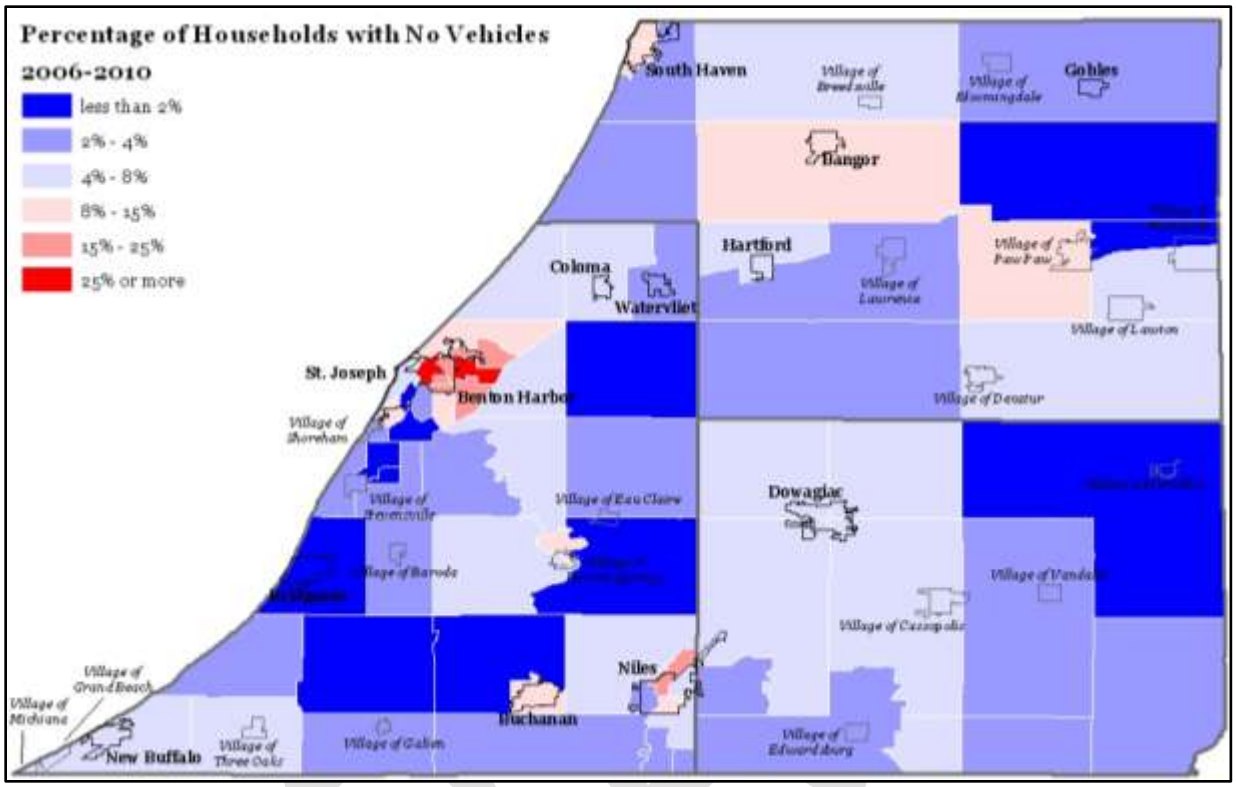
Map 15 - Percentage of Households with No Vehicles



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FREIGHT

Freight transportation, whether by rail, truck, or ship, contributes significantly to both to traffic and economic activity in the Southwest Michigan region. With the global extent of supply chains, changes in freight movement well outside the region may have tremendous impacts on the quantity and type of freight moving through the region, as well as the types of economic activity in Southwest Michigan.

Freight movement and large-scale infrastructure in nearby major metropolitan centers may have a substantial spillover effect in increasing traffic in southwest Michigan. Interstate I-290 in Illinois in 2011 was found to have the worst truck bottleneck of any freight significant highway in the United States. Given that I-94, a major transportation link in Berrien County, connects directly to I-290, it is likely that a large portion of that traffic travels through the southwest Michigan region. In addition, transnational border crossings in Detroit and Port Huron, the busiest in the nation, send a large amount of truck traffic through this region, both into and out of Canada.

This section covers the effects that all modes of freight transport have on the region, including recent projects far beyond the planning boundary of NATS and new federal legislation.

MAP-21'S FOCUS ON FREIGHT

Moving Ahead for Progress in the 21st Century (MAP-21), which took effect on October 1, 2012, includes a renewed focus on the efficient movement of freight, and a goal of using effective freight planning to spur and support economic growth across the country. Freight provisions open up new possibilities for funding as well as promote the creation of a national framework for freight. In particular, MAP-21 provides for the following:

- The development of a report by USDOT by October 1, 2014 which assesses the current condition and performance of the nation's freight system.
- The development of national performance goals related to freight by April 1, 2014.
- The development of state performance measures related to freight movement on the Interstate system by one year after federal goals and measures are released.
- The development of state freight plans and progress reports on performance measures every 4 years.
- New freight activity eligibility under core highway programs.
- The completion of a nationwide truck parking facility survey by April 1, 2014
- Funding opportunities for states, MPOs, and local agencies that wish to upgrade truck parking facilities.
- An expansion of the Marine Highways program, and increased funding for harbor upgrades.

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- The establishment of a National Freight Policy Council, made up of state DOT officials and other freight stakeholders, to help develop a national freight policy[10].

FREIGHT RAIL

The CSX Corporation is based in Jacksonville Florida and is one of the nation's largest rail transportation providers. There are operations and networks in 23 states, the District of Columbia, and the Canadian provinces of Ontario and Quebec. (Rail Map in Appendix H)

A rendering of the proposed Detroit River International Crossing between Southwest Detroit and Windsor, Ontario.

In Michigan, the CSX line is a class one carrier that connects the east to the west making many stops including Detroit, Lansing, and Grand Rapids. The CSX line from Grand Rapids travels along the lakeshore through southwest Michigan and onto Chicago. There are seven to eight trains traveling along the tracks on a daily bases. There is a mix of both passenger and freight. Use of CSX tracks continues to decline in southwest Michigan. CSX still transports a wide variety of products including coal, iron, steel, passenger vehicles, and auto parts to points both east and west. Coal is the most heavily shipped product by rail. Major companies in the area that use CSX include TechniSand Inc. in Bridgman and Arlington Metals Corporation in Sawyer. In addition, Amtrak operates its Blue Water, Wolverine, and Pere Marquette passenger routes on CSX tracks consistently.

On a national scale, two major railroad expansions may already be increasing the amount of freight that enters the southwest Michigan region. CSX's National Gateway Project, completed in 2011, allows freight trains from Maryland, Virginia, North Carolina Pennsylvania, West Virginia, and Ohio to be double-stacked with containers, dramatically increasing the amount of freight that can be moved. As part of the project, CSX also opened a new multi-modal freight terminal in North Baltimore, Ohio[11]. In addition, the Heartland Corridor allow the routing of double-stacked trains from the port of Norfolk, Virginia to Columbus Ohio, and then onward to Chicago.

[10] http://www.fhwa.dot.gov/planning/freight_planning/talking_freight/12talking.cfm

[11] http://www.nirpc.org/media/5588/nirpc_freight__report_final_updated_8_30_2010.pdf

While neither of these projects will directly impact railroad tracks or services in southwest Michigan, they will each substantially increase the quantity of freight that moves across the country. Some of the increased number of trucks needed to move that freight away from their rail destinations will no doubt cross through or deliver freight into the Southwest Michigan region, perhaps along with an increased number of freight ships on the St. Joseph River or Lake Michigan.

TRUCKING

The efficient movement of freight within and through the NATS area is important to industry, retail, and agriculture for international and regional trade. On a national scale, over-the-road trucking still makes up the largest modal share of domestic freight transport, both in terms of volume of freight and dollar value. While there has been a reduction in total freight moved by truck in the wake of the 2008 recession, USDOT still projects that trucking movement will increase and continue to be the predominant mode of freight travel in 2040.[12]

The recession did not appear to slow down truck freight movements to and from Canada, as both exports and imports increased between 2005-2011. The Ambassador Bridge in Detroit is currently the most active commercial transnational border crossing in North America. It is likely that much of the freight that crosses the Ambassador Bridge passes through this region before reaching its end user. With the proposed Detroit River International Crossing, the capacity to haul freight across the border will increase, likely leading to an increased number of trucks passing through the southwest Michigan region en-route.

Regions adjacent to NATS also see a substantial share of truck traffic. The Northern Indiana Planning Commission (NIRPC) found trucking to be the predominant mode of freight movement within its planning boundaries, accounting for nearly double the volume of freight moved through all other modes combined. Similarly, the Michiana Area Council of Governments (MACOG) found in its 2004 study that regional producers of non-metallic minerals, a major economic base in the region, were heavily dependent on trucks to export their goods[13].

THE CHICAGO EFFECT

The proximity of this region to Chicago will continue to have profound impacts on freight movement through the TwinCATS region. Chicago is in a unique position nationally as it continues to be both a rail and trucking hub. Chicago is the busiest port in the Western Hemisphere in terms of twenty-foot equivalent unit (TEU) container traffic. According to Chicago Metropolitan Area's Freight Drill-Down Report, Chicago's status

[13] http://www.macog.com/PDFs/MPO/D05stfnl.pdf

as a freight center allows it to experience a multiplier effect. For example, when there is growth in the air transport sector, demand in the rail transport sector. With this multiplier effect, it is inevitable that many products seen in Chicago's freight distribution facilities will pass through the NATS region, or reach end users here, at some point in the supply chain[14].

THE PANAMA EFFECT

Unlike Chicago, Panama may seem a world away from southwest Michigan. Yet an ongoing expansion of the Panama Canal, known as Panamax, will increase the speed and efficiency of freight movement across the globe, and will create significant new freight traffic in southwest Michigan. With the expansion of the Panama Canal, larger ships will be able to pass through, doubling the number of containers that can be sent in a single shipment. By 2015, the ports of Norfolk, Baltimore, New York, and Miami will all have the capacity to accommodate these larger container ships in their ports, earning the designation of post-Panamax ready. The arrival of these larger ships will also increase demand among suppliers to quickly and cost-effectively distribute those goods to their end destination, over road, rail, air and inland waterways. Global supply chains mean that the end markets or destinations for these goods are increasingly dispersed. In Southwest Michigan, the Panamax expansion would likely mean a greater number of trucks on the road, and possibly increased weight carried by these trucks[15].

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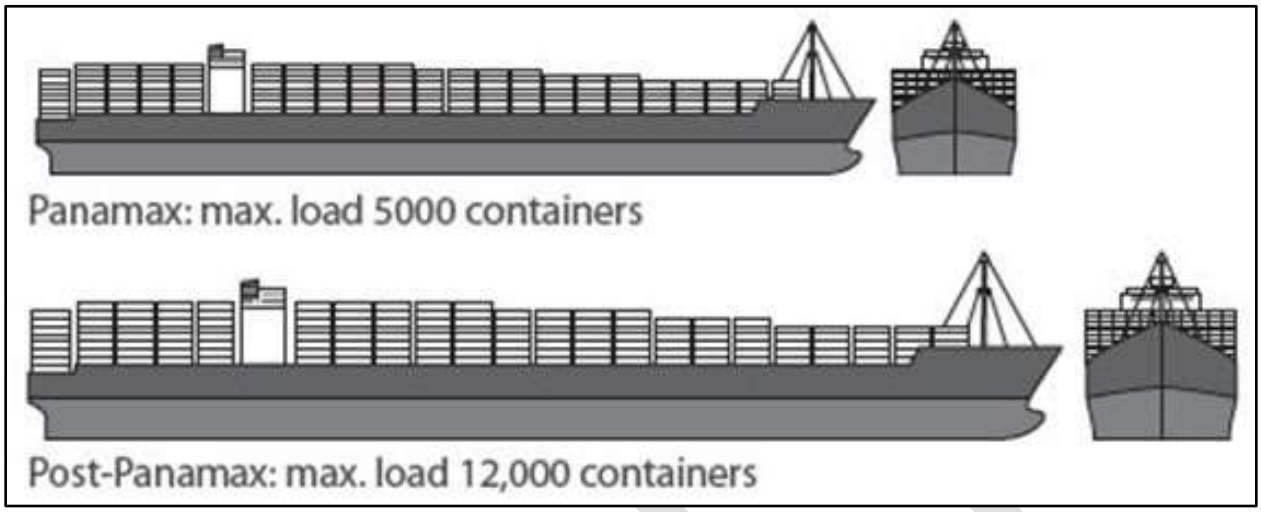
[14] http://www.cmap.illinois.gov/c/document_library/get_file?uuid=80610300-0acd-4e57-8d74-293ddc637c14&groupId=20583

[15] http://www.colliers.com/en-us/us/~/media/files/marketresearch/unitedstates/colliers_portreport_2012q2_final.ashx?campaign=Colliers_Port_Analysis_NA_Aug-2012

Figure 17 - Post Panamax Ship Capacity



Within the region, portions of US-31 and I-94 are already showing wear from constant traffic of heavy trucks. In order to maintain these important routes for suppliers and other roadway users alike, careful monitoring and enforcement of established truck weight limits will be necessary.

FREIGHT IN NATS

Within the NATS region trucking has a significant mode of freight movement. The Table 20 shows average daily traffic volumes of commercial vehicles for selected major roadway segments within the NATS region in 2000, 2007, and 2011. Not surprisingly, I-94 is the dominant roadway on which the commercial traffic travels. The overwhelming dominance of I-94 indicates that freight trucks may stop at points off the highway for mandatory rests or to drop off goods at retail establishments. Trucks are also helping move agricultural products to markets both within and beyond our region, and no doubt help connect suppliers in our region with end users. Yet the predominant use of the interstate by freight traffic does suggest that the NATS region is not itself a major hub or distribution center for freight operations.

Table 20 also shows a possible significant effect of the economic recession of the late 2000s on truck freight movement both on I-94 and on regular roadways. While most roadway segments saw a decline in commercial traffic between 2000 and 2007, many roadway segments saw a steeper decline between 2000 and 2011, and all experienced a net decline between 2000 and 2011. The closure of additional manufacturing facilities in Chicago, northern Indiana, and the NATS region in response to the economic downturn may have contributed to the decline in freight trucking movement in recent years.

Table 20 - NATS Region Commercial Average Daily Traffic: Sample of Major Roadway Segments

Route	From	To	2000 CADT	2007 CADT	2011 CADT	Percent Change from 2000-2011
US-31	BUCHANAN RD	US-31 BR (WALTON ROAD)	2139	2353	1870	-12.58
US-31	JCT US-12	BUCHANAN RD	2139	2353	1870	-12.58
US-31	US-31 BR (WALTON RD)	SNOW RD	2307	1840	1814	-21.37
US-31	SNOW RD	JCT M-139	2307	1840	1814	-21.37
US-12	JCT M-51 (OLD US-33)	JCT M-60	1412	1144	789	-44.12
US-12	JCT M-60	WCL EDWARDSBURG	653	525	275	-57.89
US-12	JCT M-40	JCT M-103	653	525	275	-57.89
US-12	JCT M-62	OLD M-205	653	525	275	-57.89
US-12	MASON ST	JCT M-40	653	525	275	-57.89
US-12	WCL EDWARDSBURG	JCT M-62	653	525	275	-57.89
M-60	END DIVIDED S OF LEET RD	SCL CASSOPOLIS	590	392	348	-41.02
M-60	JCT M-60 BR NILES	BEGIN CONCRETE SURFACE	590	392	348	-41.02
M-60	JCT US-12	JCT M-60 BR NILES	977	965	653	-33.16
M-60	N JCT M-62	ECL CASSOPOLIS	635	541	473	-25.51
M-60	S JCT M-62	N JCT M-62	573	541	473	-17.45
M-60	SCL CASSOPOLIS	S JCT M-62	590	392	348	-41.02
M-60	BEGIN CONCRETE SURFACE	END DIVIDED S OF LEET RD	590	392	348	-41.02
M-62	JCT US-12	NCL EDWARDSBURG	364	276	345	-5.22
M-62	N JCT M-60	NCL CASSOPOLIS	193	217	101	-47.67
M-62	NCL EDWARDSBURG	SCL CASSOPOLIS	364	276	345	-5.22
M-62	SCL CASSOPOLIS	S JCT M-60	364	276	345	-5.22
M-62	SCL EDWARDSBURG	JCT US-12	464	353	174	-62.50

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* Source: Michigan Department of Transportation Traffic Monitoring Information System (TMIS). The estimated mean daily traffic volume for commercial vehicles. Values are calculated using the same procedures as AADT. Major Roadway Segments were defined as roads with AADT of over 10,000.

FREIGHT MOVEMENT BY RAIL

Currently, southwest Michigan has two Class I railroads operated by Canadian National Railway and CSX Transportation. Class I railroads are national companies that primarily offer services for national and intermodal shippers and markets. Table 21 highlights the Class I railroads in southwest Michigan and the main commodities that are transported.

Table 21 - Class I Railroads and Commodities

	Canadian National	CSX Transportation
Main Commodities	Petroleum, chemicals, grain, fertilizers, coal, metals, forest products, minerals, automotive parts	Agricultural products, automotive products, chemicals, coal, food, machinery, metals, minerals, paper, pulp, transportation equipment
Number of Miles in MI	1,017	569

The MPO does not have sufficient data to suggest how the Class I railroads directly impact southwest Michigan. The Michigan State Rail Plan has more detailed information regarding how rail impacts the state.

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Map 16 - Michigan's Railroad System

BENEFITS OF RAIL IN MICHIGAN

The Michigan State Rail Plan offers more information regarding the benefits of rail transportation than what the MPO currently has access to. Rail transportation has the potential to provide significant benefits for the State of Michigan. Both passenger and freight rail services provide an alternative to less efficient transportation modes. By diverting passengers from automobiles and freight from trucks, rail provides significant benefits from reducing congestion and wear and tear on roadways, to reducing fuel consumption and reducing emissions of pollutants. Passenger and freight rail service in Michigan provides significant economic and environmental benefits to the state.

Economic Benefits

Efficient freight and passenger rail service provides important economic development benefits to Michigan communities. Industrial development can be thwarted by the lack of freight rail service. Freight rail service is a key location factor for many new companies seeking to locate or expand in Michigan. Enhanced passenger rail service can provide important economic development benefits to Michigan communities by providing improved accessibility, connectivity and travel efficiency. An economic impact analysis has been prepared for the MWRRI Plan which recommends 110 mph high-speed rail service in the Chicago-Detroit/Pontiac corridor and enhanced service in other Michigan corridors. This analysis estimates that improved passenger rail service in Michigan will result in 6,970 new permanent jobs, $680 million in increased property values around Michigan stations and a $138 million increase in annual household income statewide.

> Rail transportation is also a catalyst for economic development and job creation. Access to freight rail transportation helps to encourage the development of new businesses and the expansion of existing businesses. Passenger rail services can be an important catalyst for shaping communities and spurring growth around rail stations

Environmental Benefits

Rail service provides important environmental benefits to Michigan residents. Rail can move freight three times more efficiently than trucks on a per ton-mile basis. The U.S Environmental Protection Agency (EPA) estimates that a typical freight train emits only one-third the pollution of a truck on a ton-mile basis. Transportation by rail saves approximately $266 million annually in pavement damage and reduces truck congestion on Michigan roadways. Passenger rail travel has similar environmental benefits. Data from the Oak Ridge National Laboratory indicates that intercity passenger rail consumes 17 percent less energy per passenger mile than airlines and 21 percent less energy per passenger mile than autos. Intercity passenger rail produces 60 percent fewer carbon dioxide (CO_2) greenhouse gas emissions per passenger mile than the average auto and about half (50 percent) of the greenhouse gas emissions per passenger mile of an airplane. Intercity passenger rail also generates fewer emissions per passenger mile of other pollutants such as oxides of nitrogen (NOx), volatile organic compounds (VOCs) and carbon monoxide (CO). Intercity passenger rail service provides “downtown to downtown” connectivity that encourages urban infill and downtown

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redevelopment. This type of "transit-friendly" development is more energy efficient, resulting in fewer harmful emissions and the ability to more efficiently provide urban services than in areas of low-density suburban sprawl"[16].

Preservation in Roadway Pavement

"There is a logical connection to be made between more people and products being moved by rail and the extension of pavement life on our roads, highways, bridges, and interstates. According to an article about the benefits of rail, "Amtrak removes 8 million cars from the road…A single intermodal freight train can take up to 280 trucks or 1,100 cars off of the highway. Without rail as an option, freight shippers would have to add 50 million additional trucks on the roadways[17]". Additionally the American Association of State Highway and Transportation Officials, Transportation Invest in America Freight-Rail Bottom Line report of 2002 states that if all freight-rail were shifted to trucks tomorrow, it would add 92 billion truck vehicle-miles-of-travel to the highway system and cost federal, state, and local transportation agencies an addition-al $64 billion for highway improvements over the next 20 years. This $64 billion is a conservative figure that does not include the costs of improvements to bridges, interchanges, local roads, new roads or system enhancements. If these were included, the estimate could double"[18].

SAFETY ALONG RAIL CORRIDORS

Amtrak has partnered with the FRA and the State of Michigan to develop a radio-based train communication system, called the Incremental Train Control System (ITCS), which is designed to allow trains to operate safely at higher speeds. The ITCS is currently in place for high-speed revenue service on Amtrak-owned track in Michigan and works to prevent train-to-train collisions, train overspeed conditions, and protect on-track roadway workers.

Incremental Train Control System (ITCS), developed by General Electric Transportation Systems (GETS) is a communication-based signaling system overlaid on an existing signal system. This is one class of PTC that was designed to prevent train collisions and overspeed derailments. The program of upgrading 66 miles of Amtrak owned Michigan Line between Kalamazoo and New Buffalo, Michigan to allow 110-mph operation with this PTC system was initiated with a co-operative effort among FRA, Michigan Department of Transportation, and Amtrak. The program started in 1996 with a contract for Harmon Electronics, which has since been acquired by General Electric, to develop the first ITCS demonstration on this corridor.

The main function of the system is to enforce signal authorities, civil speed limits and temporary speed

[16] Michigan State Rail Plan, 2011

[17] http://www.amtrak.com/ccurl/216/645/CriticalLink2007_5.pdf

[18] http://rail.transportation.org/Documents/FreightRailReport.pdf

limits. It was designed as a vital overlay to an existing CTC system with a wireless computer network of servers along these 66 miles with radio communication. The servers communicated with the equipped locomotives through the communication system consisting of a UHF radio network based on ATCS Spec 200 frequencies. Unique to this system is the employment of TDMA (Time Division Multiple Access) scheme to reduce the message collisions while in transmission. With this scheme, the communication to a number of locomotives can be conducted with more ease. Unlike an office-centric system like IDOT PTC, all the communication tasks are performed locally device-to-device. Most of the decision-making processes are made with the host processors on-board the locomotives. A computer in the office however is necessary to transmit the temporary speed restrictions to the server and to download the health of the system when it is necessary. The train tracking system is based on GPS (Global Position System).

ITCS, being vital, means that it will ensure that all the messages are delivered properly and accurately, and will continuously perform surveillance of all devices and interfaces of the system to ensure they are in proper working conditions, and if not, a fail-safe fall back will be enforced. Another feature that is critical to high-speed operation is the advanced grade crossing activation. When the train approaches a crossing, continuous location tracking and calculation are performed and will activate the crossing gates using wireless communication, instead of the conventional track circuit, at the appropriate time to insure the optimum advanced activation time[19].

The system has been in revenue service since September 2000. At the beginning, the speed limit of 79 mph was kept to gain experience and confidence with the system. The maximum speed limit was subsequently raised to 90 mph in January 2002 and then to 95 mph in September 2005. The goal is to increase the speed to 110 mph in the 4th quarter of 2007.

AIRPORT FREIGHT SERVICE

The South Bend Regional Airport is North Central Indiana's major airport handling airfreight. Three main carriers, FedEx, Airborne Express, and UPS, handle airfreight at the Airport. There are two other minor carriers of airfreight at the airport as well, Ameriflight and Mountain Air. Some of the passenger airlines also carry freight. These carriers include American Connection, ACA-Delta Connection, ASA-Delta, Air Wisconsin, Air Wisconsin ACA, US Trans State, Comair, Northwest, Pinnacle, Mesaba and PSA. As a true multi-modal facility the South Bend Regional Airport provides passenger service via inter- (ex: Greyhound) and intra-city (Transpo-South Bend city bus service) buses, and the Chicago South Shore and South Bend interurban commuter railroads[20].

[19] http://www.fra.dot.gov/Page/P0287

[20] http://www.flysbn.com/

PUBLIC TRANSIT

Over the last four years a comprehensive effort has been made to understand the current role of public transit and mobility in Berrien and Cass Counties. This effort included several transit focused studies that called for the establishment of a structure to build and sustain coordination efforts and for improved integration between countywide rural and small urban service. This was documented in the following completed studies from 2010-2012; Berrien County Coordinated Human Service Transportation Plan, Berrien County Transit Study, Niles Dial a Ride Transit Study, and the Pokagon Band of Potawatomi Transit Feasibility Study. In 2011 the KFH group was selected to conduct a three year countywide transit feasibility study with the purpose of identifying opportunities to create a countywide transit system in Berrien County. The study will provide detailed analysis of the following opportunities:

- Allow for additional rider benefits, such as better and increased services within the County and services that cross county and state boarders;
- Provide a more effective mechanism to address regional transportation issues;
- Provide greater opportunities for the creation of local dedicated funding sources for transit; and
- Achieve economies of scale with regard to capital, operating, administrative, and human resources.

Since 2010 a Mobility Manager has been in place that is funded through a grant from the Federal Transit Administration and is administered by Twin Cities Area Transportation Authority (TCATA). Working with the SWMPC and other agencies the Mobility Manager is responsible for short-range planning, management activities and projects for improving coordination among public transportation and other transportation service providers with the intent of expanding the availability of services to people with disabilities, older adults and low-income individuals.

CONSIDERATIONS OF TRANSIT IN THE STUDY AREA

- There are three independently operated public transit systems that have service areas located in the study area. Niles Dial a Ride (Niles DART) service area encompasses the City of Niles, Niles Township and the City of Buchanan. Buchanan Dial a Ride (Buchanan DART) provides service to the City of Buchanan and Buchanan Township. The communities that are located in Cass County are served by Cass County Public Transit. Berrien Bus provides limited service to all of the designated rural areas of Berrien County and should be considered the “spine” for connecting people with transit systems in the adjacent designated urban areas in the county.

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- Transit is a critical transportation link for older adults, people with disabilities, and low income households. Many of the needs of these groups are being met, but there are large gaps in services that need to be addressed.

- Some level of public transit service is provided in the seven communities that encompass the study area, however, many of these areas are limited in the amount and frequency of service they receive, especially in more rural areas of the county.

- The three independently operated transit agencies have combined annual budgets totaling over $ 1.5 million. Two out of the three transit agencies receive local support in the form of a millage.

- Public transit services increases residents access to education, training, jobs, shopping and other life sustaining activities in the NATS study area. In 2011 Niles Dial a Ride and Buchanan Dial a ride provided almost 39,000 trips to life enhancing activities.

TRANSIT OVERVIEW

The NATS study area receives services from four public transit providers. Two of which (Niles DART and Buchanan DART receive funding through the MPO and provide service within the study area. Because of this, these two providers will be examined in greater detail. The two other providers; Cass County Public Transit, is the designated rural provider for Cass County and Berrien Bus provide services within the designated rural areas of the Berrien and Cass County. Both of these rural providers serve as the "spine" by bringing people in from rural area to the urbanized activity centers of Niles, Buchanan, Benton Harbor St. Joseph and Dowagiac. An additional system that connects people to the South Bend, Indiana region is through Transpo. This is the urban transit provider in the South Bend, Indiana urbanized area. Map 18 provides an overview of the four different providers in the study area.

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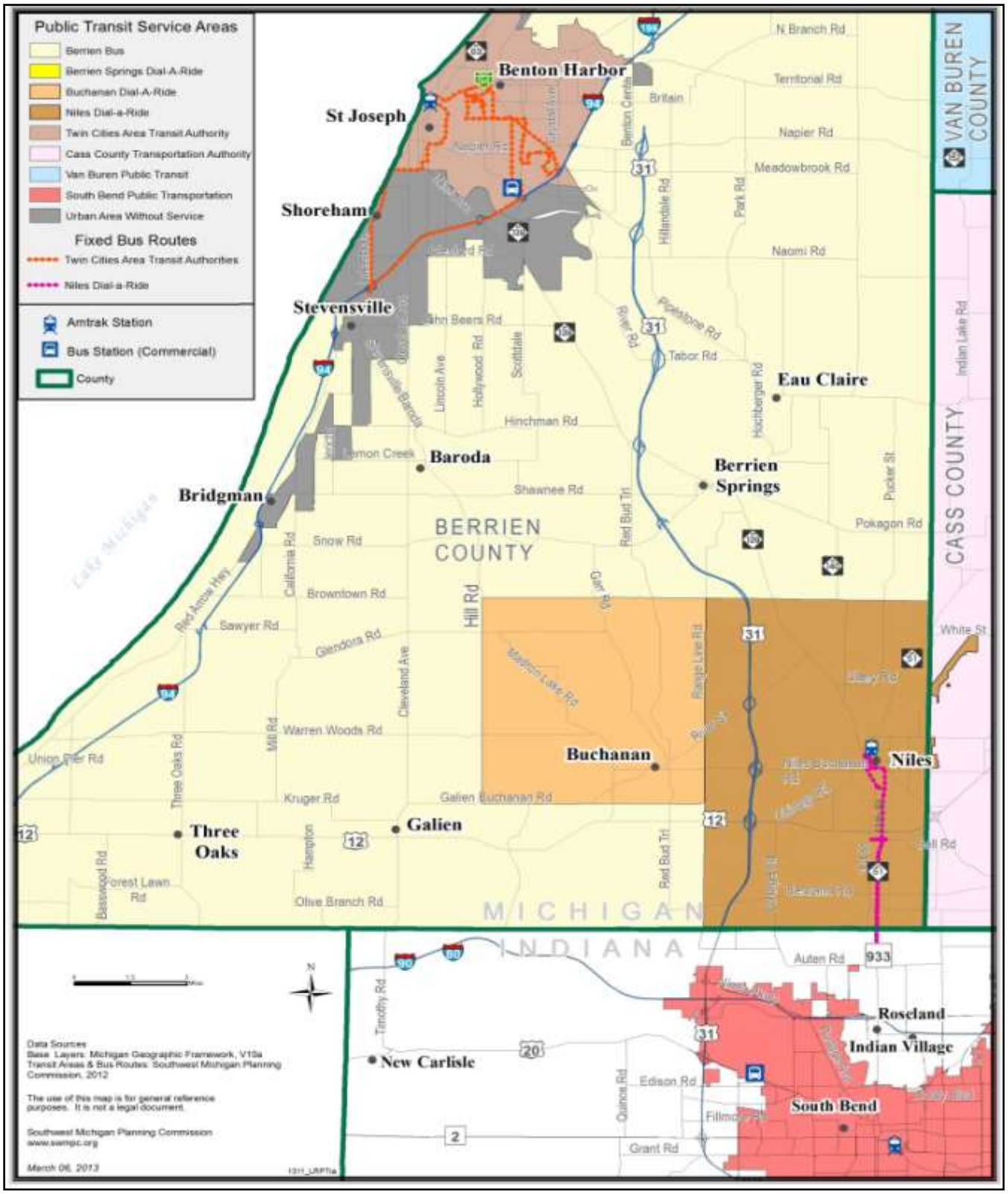
Map 17 - Public Transit Provider Service Areas



Trip Generators

There are five main activity centers in the study area that bear special attention. These activity centers include:

- Niles
- St. Joseph
- Benton Harbor
- Dowagiac in Cass County
- South Bend-Mishawaka area in St. Joseph County, Indiana

The five identified activity centers offer health care facilities, education facitlities, retail stores, recreational attractions, government buildings, and human service/social agencies. Many of the destinations within the activity centers also serve as employment centers.

Table 27 provides an overview of the major transportation generators for people living in the study area and the public transit provider that would serve that destination. *Example: City of Niles to Andrews – Niles DART provides service from City of Niles origin to Niles DART office where passenger transfers to Berrien Bus to reach final destination at Andrews University.*

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Table 22 - Transit Trip Generators

Trip Generator	City	County	Type	Transit Serving Destination
Andrews University	Berrien Springs	Berrien	Education	Berrien Bus
Department of Human Services	Benton Harbor	Berrien	Medical/Education	Berrien Bus
Berrien County Court	City of St. Joseph	Berrien	Legal	Berrien Bus
Berrien County Court	City of Niles	Berrien	Legal	Niles DART
Lakeland Hospital	City of St. Joseph	Berrien	Medical	Berrien Bus
Lakeland Health Services	Royalton Township	Berrien	Medical	Berrien Bus
Mall Drive	Benton Township	Berrien	Shopping	Berrien Bus
Lakeland Dialysis Niles	Niles Township	Berrien	Medical	Niles DART
Four Winds Casino	New Buffalo	Berrien	Employment	Berrien Bus
Lake Michigan College	Benton Township	Berrien	Education	Berrien Bus
Eleventh Street Corridor	Niles	Berrien	Shopping	Niles DART
Lakeland Rehabilitation Services	Niles Township	Berrien	Medical	Niles DART
Lake Michigan College	Niles	Berrien	Education	Niles DART
Four Winds Casino	Dowagiac	Cass	Employment	Cass County Public Transit
Pokagon Health Services	Dowagiac	Cass	Medical	Cass County Public Transit
Southwest Michigan College	Dowagiac Township	Cass	Education	Cass County Public Transit
Grape Road Corridor	Mishawaka	St. Joseph	Shopping	TRANSPO
St. Joseph Regional Health Center	Mishawaka	St. Joseph	Medical	TRANSPO
The South Bend Clinic	South Bend	St. Joseph	Medical	TRANSPO
Memorial Hospital	South Bend	St. Joseph	Medical	TRANSPO

A closer examination of the transit agencies will be provided in this section. Niles Dial a Ride and Buchanan Dial a Ride will be examined much more closely as they are the primary service providers in the study area. A brief discussion of the two remaining agencies, Cass County Public Transit and Berrien Bus will be reviewed.

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NILES DIAL A RIDE

Niles Dial-A-Ride provides curb-to-curb service to the general public in the City of Niles and Niles Township. Curb-to-curb customers are encouraged to call dispatch at least twenty-four hours in advance of their requested trip. Same day trips may be scheduled depending on availability.

Niles Dial-A-Ride also operates an hourly deviated fixed-route service that is available Monday – Friday from 10:00am to 5:00pm. The Route table can be found in Appendix _____. The route stops at twenty-two origins and destinations that include; major retail, apartment and senior living facilities and also connects with Transpo at the state line to provide a connection to South Bend. Bus shelters are available at many of the stops and the stops are signed. The transportation facility located in downtown Niles offers a waiting area where passengers can connect to other public transit providers including Cass County Public Transit and Berrien Bus**.** Map 17 provides an overview of the fixed route service that Niles DART currently provides.

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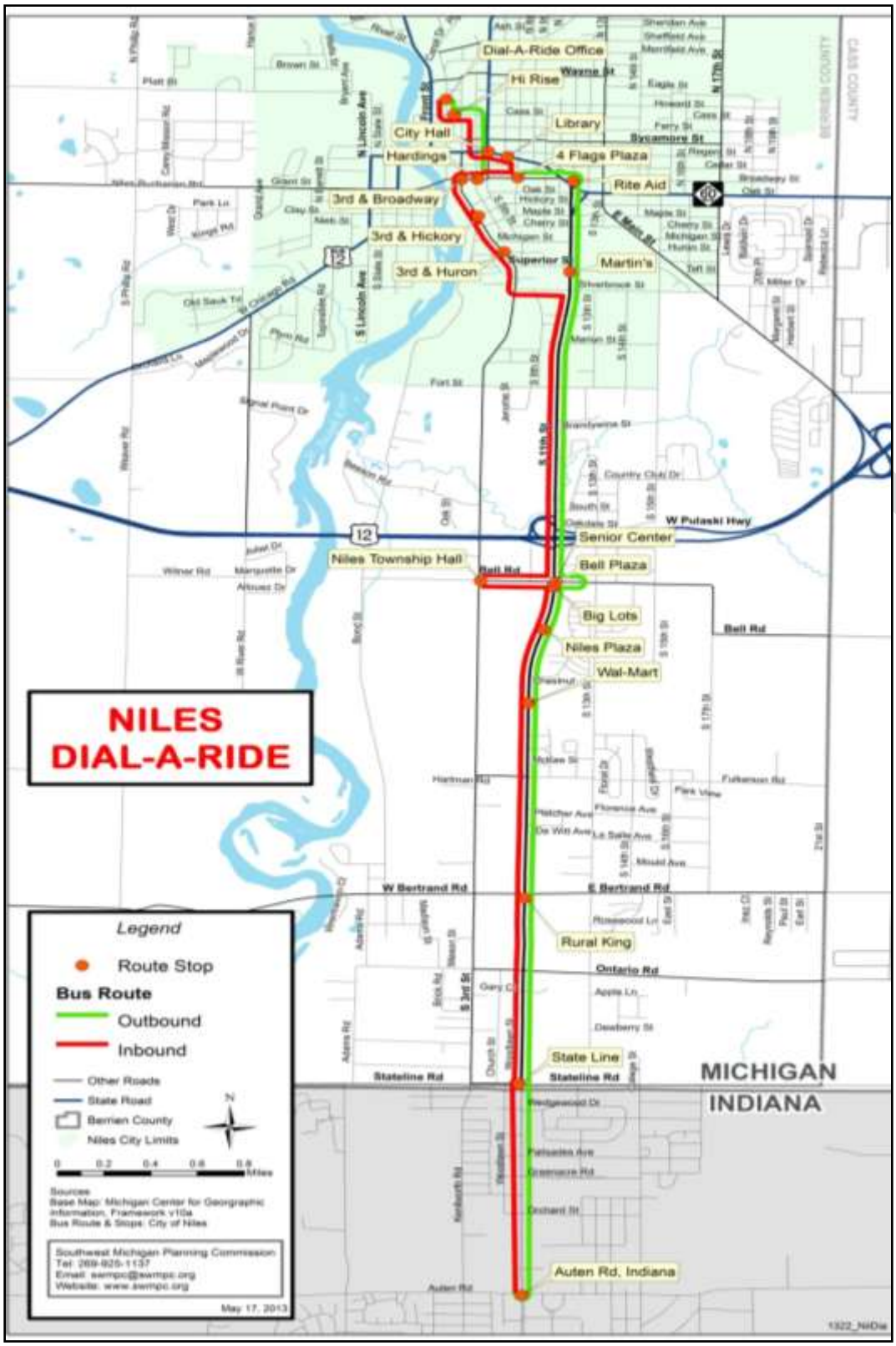
Map 18 - Niles DART Deviated Fixed Route Service



Governance and Administration

Niles DART is organized under the State of Michigan Home Rule Act which authorizes cities to form transit systems. The City Council of Niles serves as the Niles DART Board. The Board is supported by a Local Advisory Council that meets on a quarterly basis to provide feedback and recommendations about Niles DART services. In 2011 DART allowed the operational contract for transit services to expire with an independent private contractor and brought the operation of services back in house at the City of Niles. A Community Development Director oversees the entire management staff and reports to the City Council. The Transportation Coordinator acts as the Executive Director of the transit system and reports directly to the Community Development Director and is responsible for all administrative duties performed by the system.

Fare Structure

Passenger fares depend on the service type, the origin, and destination and the age or disability of the passenger. Reduced fares are available for older adults age 60 and older and individuals with a disability. Passengers who qualify for a reduced fare are issued a reduced fare card to indicate they are eligible for the reduced rate. Table 23 indicated the fare structure that is currently operated at Niles DART.

Table 23 - Niles DART Fare Structure

Service Type	Geographic Location	Fare
Demand Response	Within the City of Niles	$3.00/$1.50 Reduced Fare
Demand Response	Niles and Bertrand Township	$4.00/$2.00 Reduced Fare
Deviated Fixed Route	Within the City of Niles	$2.00/$1.00 Reduced Fare

Additional fare items can be issued to those use frequently use the Niles DART. These fare media include:

- $10.00 Punch Card
- $1.00 Tokens (For use by human service agency clients)
- $15.00 Summer Fun Pass (Unlimited rides for youth during the summer months)

Funding

Niles DART operating costs are covered by a combination of federal, state and local funding as well as passenger fares. Over the last four years the City of Niles Transit millage, (Niles DART only source of local government funds) contributed to nearly 28 percent of Niles DART's operating revenue. Niles Township and Bertrand Township do not contribute any local operating revenue to the Niles DART system, but there is a $1.00 increase added to the fare structure for passenger trips into or out of those townships.

Because Niles DART is located within the South Bend/Elkhart, Indiana urbanized area, there is a Memorandum of Understanding in place between the Michiana Area Council of Government, the South Bend Public Transportation Corporation, Niles DART, and the Southwest Michigan Planning to define the process by which federal funds made available from the U.S. Department of Transportation, Federal Transit Administration (FTA),

are allocated between Niles DART and the South Bend Public Transportation Corporation. A copy of this agreement can be found in Appendix _____.

More than 50 percent of Niles DART's operating revenue is derived from the FTA and MDOT state operating funds. As shown in Table 24, a large portion of the Niles DART operation and capital funds are derivied from multiple funding sources. Additional analysis of funding sources to be utilized by Niles DART and the other transportation agencies for the fiscal years of 2014-2017 can be found in the MPO Financial section of this plan.

Table 24 - Niles DART Operating and Capital Revenues FY 2008-2011

FY	Federal	State	Local	Farebox	Total
2008	$120,598	$224,492	$194,295	$89,600	$628,985
2009	$111,649	$190,144	$113,141	$63,367	$478,301
2010	$162,610	$190,144	$109,235	$57,268	$519,257
2011	$103,104	$190,144	$189,446	$61,095	$543,789

Source: MDOT PTMS Data

Figure 18 shows the average operating and capital revenue from 2008-2011. Funding from the Federal Transit Administration (FTA) Sections 5307 and 5311 Programs accounted for approximately 51 percent of the system's operating revenue on average for FY 2009 and FY 2010. In March 2011, the system opted to discontinue receiving Section 5311 program funds so that it could maximize preventive maintenance funding provided by the Section 5307 program. This decision was made because the City was directed that it could no longer receive funding from both of these Federal programs.

Niles Dial a Ride bus
Source: Google images

Facilities

The Niles DART transportation facility, located at 623 N. Second Street in downtown Niles and is owned by the City of Niles. The facility includes vehicle storage, administrative offices, a large passenger waiting area and maintenance. This location also serves as a stop on the fixed route as well as a transfer point to Buchanan Dial-A-Ride, Cass County Public Transit and the Berrien Bus transit systems.

Vehicles

The Niles DART fleet includes five cutaway vehicles. All of the vehicles are wheelchair accessible. Vehicles are equipped with two-way radios. In 2008 a Ford 250 was purchased and is used to plow snow.

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Vehicle Utilization

Niles DART meets passenger demand varies at different times of the day. To meet the demand, Niles DART assigns vehicles as indicated in Table 25.

Table 25 - Niles DART Vehicle Service

Time of Day	Number of Vehicles / Mode of Service
Weekdays	
7:00 am to 11:30 am	2 vehicles/demand response
11:30 am to 5:00 pm	3 vehicles/demand response
10:00 am to 5:00 pm	1 vehicle /deviated fixed route
Saturdays	
10:00 am – 3:00 pm	2 vehicles/demand response

SYSTEM PRODUCTIVITY

The FTA and MDOT-Passenger Transportation evaluate public transit services for effectiveness, which can by analyzed by passenger trips per mile or hour. Niles DART measures vehicle hours based on the hours that a vehicle is scheduled or actually travels from the time it pulls out from its garage to go into revenue service to the time it pulls in from revenue service.

According to the ridership and operating statistics in Table 26, the demand response mode of service in FY 2011 provided approximately 3.82 trips per vehicle hour, whereas the deviated fixed route produced 4.25 one-way passenger trips per hour. On a national level, the average demand response passenger per hour productivity goal is at least two passengers per hour. Table 26 highlights Niles DART productivity rate by service type. The industry standard for deviated fixed route productivity is five to six passengers per hour.

Table 26 - Niles DART Route Productivity

	Demand Response		Fixed Route	
Fiscal Year	Passengers Per Mile	Passengers Per Hour	Passengers Per Mile	Passengers Per Hour
2008	0.32	3.99	0.21	2.37
2009	0.32	3.79	0.28	3.41
2010	0.31	3.8	0.35	4.73
2011	0.28	3.31	0.33	4.25

Source: Niles DART Transportation Development Plan

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BUCHANAN DIAL-A-RIDE

Buchanan Dial-A-Ride (Buchanan DART) is a same day curb-to-curb shared ride transportation service that provides service to residents of the City of Buchanan and Buchanan Township. The service operates from 7:00am to 5:30 pm Monday through Friday and 9:00 a.m. to 3:00 p.m. on Saturdays. Customers must schedule trips at least one hour before the desired departure time. Regular shuttle service to Niles is available six days a week with twenty four hour notice. The shuttle will deviate off the route to pick up passengers with advanced reservations between communities on the shuttle route. Buchanan DART provides connections to Berrien Bus at designated locations that allow customers to transfer and access locations outside of Buchanan. This is possible because the systems share the same facility, dispatchers, and brokered management firm, Transportation Management Inc.

Governance

Buchanan DART is organized under Public Act 279 and is overseen by five elected officials who serve on the Buchanan City Commission. The Buchanan City Commission is supported by a Local Advisory Council that meets on a quarterly basis to provide feedback and recommendations regarding the provision of transit services. In 2011 the Buchanan City Commission entered into an operational contract with Berrien County who sub-contracts with Transportation Management for transit services.

Fare Structure

Passenger fares depend on the service type, the origin and destination and the age or disability of a passenger. Reduced fares are available for older adults age 60 and older and individuals with a disability. Passengers who qualify for a reduced fare are issued a reduced fare card to indicate they are eligible for the reduced fare, see Table 27.

Table 27 - Buchanan DART Fare Structure

Service Type	Geographic Location	Fare
Demand Response	Within the City of Buchanan	$1.50/$.75 Reduced Fare
Demand Response	Buchanan Township	$4.00/$2.00 Reduced Fare
Buchanan/Niles Shuttle	City of Buchanan, Buchanan Township Niles,	$4.00/$2.00 Reduced Fare

Buchanan DART Funding

Leave this space for narrative on funding

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FY	Federal	State	Local	Farebox	Total
2008	$120,598	$224,492	$194,295	$89,600	$628,985
2009	$111,649	$190,144	$113,141	$63,367	$478,301

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2010	$162,610	$190,144	$109,235	$57,268	$519,257
2011	$103,104	$190,144	$189,446	$61,095	$543,789

System Productivity This is just a place holder for the narrative to describe table 28

The FTA and MDOT-Passenger Transportation evaluate public transit services for effectiveness, which can by analyzed by passenger trips per mile or hour. Niles DART measures vehicle hours based on the hours that a vehicle is scheduled or actually travels from the time it pulls out from its garage to go into revenue service to the time it pulls in from revenue service.

According to the ridership and operating statistics in Table 26, the demand response mode of service in FY 2011 provided approximately 3.82 trips per vehicle hour, whereas the deviated fixed route produced 4.25 one-way passenger trips per hour. On a national level, the average demand response passenger per hour productivity goal is at least two passengers per hour. Table 26 highlights Niles DART productivity rate by service type. The industry standard for deviated fixed route productivity is five to six passengers per hour.

Table 28 - Buchanan DART System Productivity

Fiscal Year	Passengers	Expenses	Vehicle Miles	Vehicle Hours	Cost/Pass	Cost/Hour	Passengers Per Vehicle Hour
2008	11643	$147,892	39109	3417	$12.70	$42.56	3.5
2009	11882	$175,786	47330	3626	$14.55	$47.69	3.3
2010	8166	$172,340	41580	3564	$21.11	$48.36	4.0
2011	9551	$192,052	46570	3771	$20.11	$50.93	2.5
2012	8632	$194,187	43384	3718	$22.50	$52.25	2.3

Source:

Facilities

Dispatching, maintenance, vehicle storage, administration and a passenger waiting area are shared with Berrien Bus in Berrien Springs. This is possible because Berrien Bus is also under contract Transportation Management for the provision of transit services in the designated rural areas of Berrien County.

Vehicles

Buchanan DART has three cut-away busses, two vehicles operate during peak hours and the third bus is used for backup. Vehicles are scheduled for replacement in 2015.

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CASS COUNTY PUBLIC TRANSIT

Cass County Public Transit
Source: Google Images

Cass County Public Transit is a curb-to-curb, 24-hour advance reservation county-wide public transportation system serving the census-designated rural areas of Cass County. Cass County Public Transit also has a fixed, scheduled, shared ride service daily to and from Cassopolis to Niles, Edwardsburg and Marcellus two times a day, and three times daily to Union and Dowagiac. Services are available to the general public, and rides are reserved on a first come first-served basis. Hours of operation are Monday through Friday 5:00 am -5:00 pm. Because Cass County Public Transit offices and garage are located in Cassopolis, this community receives the highest frequency of service. Immediate request dial-a-ride service is available within Cassopolis from 8:00 am to 5:00 pm Monday through Friday.

Cass County Public Transit also operates regularly scheduled curb-to-curb services for several human service agencies in Cass and Berrien Counties, including Cass County Mental Health (Woodlands), Cass County Council on Aging, Cass County Medical Care (nursing home), Michigan Works, and Cass Family Clinic in Niles. Cass County Council on Aging also contracts with Cass County Public Transit to provide shopping trips two times per month (first and second Thursday of the month) to Niles for $5.00 roundtrip for people over 60 years and older to several retail shopping locations such as Wal-Mart, Shelton's, Martins, Lunch).

INSERT BERRIEN BUS INFORMATION HERE

TRANSIT DEPENDENT COMMUNITY DEMOGRAPHIC CHARACTERISTICS

Transit dependent populations are individuals considered by the transportation profession to be dependent upon public transit based on income, age, or disability. These population characteristics prevent most individuals from driving and/or owning a reliable automobile, leaving ridesharing, public transit, and other community transportation options, as the only forms of transportation available. Community specific demographic data is very useful in the for the understanding it give of citizen's current and potential travel trends, as well as the gaps it highlights in current transportation services.

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Niles DART and Buchanan DART service areas are comprised of five communities: the City of Niles, Niles Charter Township, the City of Buchanan, Buchanan Township, and Bertrand Township. The four communities have a population of 36,400 people that reside in one of 14,800 households. The communities of Niles and Buchanan have population densities that can support more frequent fixed or flexed route services, while some of the townships with much lower population densities support less frequent demand response services that feed into the activity centers of Niles and Buchanan.

The service areas also are home to an older population with the median age of forty six in Bertrand Township and forty two in Buchanan Township, which is shown in Table 28. Both of these communities have a population older than the state of Michigan's median age of thirty nine and Berrien County's median age of forty one. **See Map APPENDIX** These factors need to be considered in planning future transportation services for older adults who one day be required to turn over their car keys. This issue will be explored in further detail in following pages.

Table 29 - Population Characteristics

Transit Service Areas Population Characteristics	Niles Twp.	Niles	City of Buchanan	Buchanan Twp.	Bertrand Twp.	Michigan
Population	14,164	11,600	4,456	3,523	2,657	9,883,640
Pop. Density	380	2,003	1,782	110	77	175
Median Age	41	36.	38	42	46	39
Households	5,687	4,806	1,901	1,375	1,031	3,872,508

Source: US Census

Table 29 highlights the need to provide for more transportation options in the study area due to the unemployment rate, income per capita, and household income. The income per capita in the City of Niles is only $17,353, which includes all adults and children and is 44 percent lower than the per capita in Michigan. This further emphasizes the need to provide for multiple modes of transportation for those who simply cannot afford to own their own personal automobile.

Table 30 - Transit Service Areas Economy

Transit Service Areas Economy	Niles Twp.	Niles	City of Buchanan	Buchanan Twp.	Bertrand Twp.	Michigan
Unemployment Rate WHAT YEAR	8.20%	8.20%	8.20%	8.20%	8.20%	9.80%
Income Per Capita	$20,423	$17,353	$19,573	$18,681	$24,840	$23,797
Household Income	$40,403	$33,867	$37,583	$40,317	$56,940	$46,932

Source:

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Table 30 indicates the commute time for those using different modes of transportation options. While thre is some deviation among the individual categories to the overall statewide percentage, these are not unexpected. The study area is largely rural and many people in this part of the study area live in Michigan and commute to northern Indiana for work and shopping destinations.

Table 31 - Population Travel Behavior

Transportation	Niles Twp.	City of Niles	Buchanan Twp.	City of Buchanan	Bertrand Twp.	Michigan
Commute Time	23.6	22.4	28.4	23.9	22.5	26.3
COMMUTE MODE						
Auto (alone)	87.81%	84.88%	81.85%	85.72%	85.00%	82.51%
Carpool	7.55%	10.39%	9.33%	6.75%	3.92%	9.28%
Mass Transit	0.20%	0.18%	0.32%	1.04%	0.15%	1.35%
Work at Home	2.70%	2.26%	7.32%	3.81%	7.61%	3.45%

Source:

Table 31 focuses on the occupations that are most prevalent in the study area. About 27 percent of the public transit service area population is employed in the service sector, warehousing, and transportation occupations. The majority of these occupations require shifts that begin or end after Buchanan DART and Niles DART hours of operation and many times public transit is not a commute option. With over 25 percent of the population employed in occupations that operate during non-traditional work hours it will be important for the transit systems to use thoughtful analysis in considering if there current routes or services go where needed and if the services operate early or late enough.

Table 32 - Population Occupations

Population by Occupation	Niles Twp.	City of Niles	Buchanan Twp.	City of Buchanan	Bertrand Twp.	Michigan
Management, Business, and Financial Operations	9.03%	9.07%	9.55%	9.55%	13.20%	14.04%
Professional and Related Occupations	13.78%	14.50%	12.31%	12.31%	15.32%	20.61%
Service	15.47%	16.70%	13.59%	13.59%	12.14%	14.45%
Sales and Office	25.21%	24.73%	23.78%	23.78%	21.43%	26.75%
Farming, Fishing, and Forestry	0.75%	0.19%	0.00%	0.00%	0.00%	0.70%
Construction, Extraction, and Maintenance	10.47%	8.81%	14.37%	14.37%	12.47%	9.42%

Source:

COMMUNITY MOBILITY OPTIONS FOR OLDER ADULTS

Reductions in mortality have resulted in increases in life expectancy that have contributed to the growth of the elderly population, especially in the oldest age brackets. This is in contrast to the early days of our nation when high fertility and high mortality kept the nation "young." A century ago in 1910 life expectancy at birth was a mere 46 years for boys and 48 years for girls.3 Many citizens in the region can expect to live well beyond retirement. In fact, in Berrien County female life expectancy is 80.3 years of age and male life expectancy is 75 years of age. 4

In 2010, the U.S. Census Bureau reported that the dependency ratio, or the number of people 65 and older to every 100 people of traditional working ages, is projected to climb rapidly from 22 in 2010 to 35 in 2030. This time period coincides with the time when baby boomers are moving into the 65 and older age category.**5** This group of older adults may not be able to drive personal vehicles into their later years.

Age differences among older adults must be taken into account in transportation planning. In particular, people between the ages of sixty and seventy can have a different set of needs compared with people age eighty and above. SOURCE INFORMATION A MDOT demographic analysis and survey found that older adults age eighty and older reported lower levels of health and functioning, drove less and closer to home and were more likely to think there was a chance their driving ability could become a problem within the next five years. In addition, their participation in outside activities was limited and they also reported a higher level of perceived isolation. Table 32 illustrates how this population continues to grow.

The need for more specialized demand-response transit service is likely. This is a much more expensive service and may require the reduction or elimination of other transit services currently being provided. It will be important for communities to consider all of the mobility options for people who need specialized transportation services.

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Table 33 - Senior Population

YEAR *Age of Population*	2000 *60-69*	2010 *60-69*	Percent Change	2000 *70-79*	2010 *70-79*	Percent Change	2000 *80+*	2010 *80+*	Percent Change
BERRIEN COUNTY									
Bertrand Township	197	346	76%	167	185	11%	79	113	43%
City of Buchanan	303	431	42%	298	248	-17%	238	213	-11%
Buchanan Township	319	416	30%	233	244	5%	96	127	32%
City of Niles	822	1060	29%	861	629	-27%	627	567	-10%
Niles Charter Township	1221	1671	37%	994	1000	1%	462	745	61%
CASS COUNTY									
Howard Township	520	931	79%	462	404	-13%	183	243	33%
Mason Township	226	305	35%	130	173	33%	55	88	60%
Milton Township	209	514	146%	144	220	53%	56	114	104%
Ontwa Township	577	758	31%	389	456	17%	165	248	50%

Source: US Census

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Coordination with Senior Centers

Table 33 highlights the various Senior Centers in the study area and details regarding bus service, trips, and popular destinations. There is limited supplemental transportation available to adults sixty years and older from seven independently operated senior service centers and meal sites located throughout Berrien County and one senior center in Cass County. While all of these are not within the study area, it is important to understand that there are many providers of transit service and still there are gaps in service for community members.

Each of the eight centers is supported financially by a countywide senior millage that provides approximately two million dollars annually in funding. This funding helps support activities, transportation and facilities. Each of the senior centers provides transportation services to older adults (sixty and older) in their respective service areas. However, the frequency and service area varies from one senior center to the next. For example, an older adult who resides in the Niles Senior Service area can access destinations located across county or state boarders, while someone who lives in the Benton Harbor or St. Joseph senior services area only has access to destinations in Benton Harbor and St. Joseph, see Table 33. There is little or no coordination that takes place between the senior centers in each of the counties.

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Table 34 - Senior Service Providers

Senior Center	Communities Served	Destinations	Transportation Hours	Number of Vehicles	Popular Destinations
Benton Harbor Senior Center	Benton Harbor, Benton Twp.	St. Joseph, Royalton Twp. Lincoln Twp. St. Joseph Twp. City of Benton Harbor Benton Twp.	Monday-Friday 9:00-4:00pm	Three-12 passenger vans (One lift equipped)	Lakeland Hospital Napier Ave. Royalton Twp.
City of Buchanan Senior Center	City of Buchanan, Buchanan Township	City of Buchanan City of Benton Harbor Bertrand Twp. Battle Creek, Niles Twp	Monday-Friday 9:00-4:00pm	One-5-6 passenger van	Lakeland Hospital Niles
Central County Senior Center	Berrien Twp. Sodus Twp., Oronoko Twp. Pipestone Twp. Berrien Twp. Baroda Twp, Village of Baroda Village Berrien Springs	Berrien County, Kalamazoo, Battle Creek	Monday-Friday 8:30-4:30pm	Five-vehicles ranging in size from 7 passenger to 24 passenger (One lift equipped)	Lakeland Hospital Napier Ave. Royalton Twp. Meijer-Benton Harbor
Niles Senior Center	City of Niles, City of Buchanan, Niles Twp	City of Niles, City of Buchanan Battle Creek (hospital) Medical destinations in South Bend	Monday-Friday 8:00-4:00pm	One-4-5 passenger mini vans	Lakeland Hospital Niles South Bend Medical trips
North Central Senior Services	City of Coloma, Coloma Twp, Hagar Twp, Watervliet Twp, City of Watervliet	Berrien County	Monday-Friday 9:00-3:00pm	Two-6 passenger vans and One-4 passenger sedan	Royalton Watervliet Meijer-Benton Harbor
St. Joseph Lincoln Senior Services	City of St. Joseph, St. Joseph Charter Twp.	City of St. Joseph, St. Joseph Twp. Lincoln	Monday-Friday 9:00- 12:00pm	One-12 passenger bus, One-7	Lakeland Hospital Napier Ave.

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	Lincoln Twp. Royalton Twp. Village of Stevensville	Twp. Royalton Twp. Village of Stevensville Benton Twp. City of Benton Harbor		passenger van, One-5 passenger SUV	Royalton Twp.
River Valley Senior Services	City of New Buffalo Three Oaks Twp. Galien Twp. Lake Twp. City of Bridgeman	New Buffalo Three Oaks Galien Twp. Lake Twp. Bridgeman ,St. Joseph Watervliet, Battle Creek, Benton Harbor Royalton Twp.	Monday-Friday 9:00-4:00pm	One-12 passenger van	Lakeland Hospital Meijer-Stevensville
Cass County Council on Aging					

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TRANSIT UNMET NEEDS AND ISSUES

In order to determine community needs regarding public transportation within and outside the study area several sources were used to uncover current issues and unmet needs.

Service and Connectivity:

- Trips from Cass County to destinations in the Niles, Buchanan and South Bend service areas can require up to three transit agencies; Cass County Transit, Niles DART and Buchanan DART.
- There is no dialysis center or obstetrics unit located in Cass County. Residents must cross county lines into Niles to access service.
- Lack of specialized transportation services that allow trip-chaining – Mother needs to stop at a daycare before stopping at work location. Senior needs to stop at pharmacy after doctors leaving doctors appointment but before arriving at home.
- There is no intercity bus service (Greyhound) within the NATS study area. Residents must travel to South Bend or Benton Harbor, which can require the use of three different public transit systems.
- There is no public taxi service in the county of Cass.
- Use current demand-response services more efficiently to expand capacity of current services offered by integrating countywide rural service, small urban dial-a-ride services, and fixed-route services.
- Berrien Bus provides limited service to all of the designated rural areas of Berrien County and should be considered the "spine" for connecting people with transit systems in the adjacent designated urban areas in the county. It is possible that in the future, the three urban systems and the county rural system could be blended into one Berrien countywide system.

Visibility and Understanding of Transit:

- In the 2010 *Berrien County Human Services Coordination Plan and the 2012 Pokagon Band of Potawatomi Indians Tribal Transit Plan* focus groups indicated that one of the barriers that prevented older adults and others from using public transportation and specialized services was the lack of good information sources on how to use transportation other than a personal automobile. In 2011 Niles DART conducted a public survey as part of their Transit Development plan.
- Table 34 highlights the issues facing public transit systems in regards to visibility and understanding of transit, by community of respondent.

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- 72 percent of respondents from Niles Charter Township do not ride any of the transit systems that provide service in the NATS region.

- 45 percent of respondents from the same township were not familiar with the transportation provided by any of the local systems.

- According to these results, residents that reside within the City of Niles are both more aware of the services available and more likely to use them.

Table 35 - Awareness and Ridership Survey

Category	Niles		Niles Charter Twp.		Bertand Twp.		Response Totals	
	Familiar With	Ride	Familiar With	Ride	Familiar With	Ride	Familiar With	Ride
Niles DART	60.7% (51)	54.3% (44)	45.5% (5)	27.3% (3)	0	0	58.3% (56)	50.5%(47)
Berrien Bus	36.9% (31)	18.5% (15)	27.3% (3)	9.1% (1)	100 (1)	100 (1)	36.5% (35)	18.3%(17)
Buchanan DART	25.0% (21)	7.4% (6)	18.2% (2)	9.1% (1)	0	0	24.0% (23)	7.5%(7)
Cass County Transportation	11.9% (10)	1.2% (1)	9.1% (1)	0	0	0	11.5% (11)	1.1%(1)
None of the Above	27.4% (23)	40.7% (33)	45.5% (5)	72.7% (8)	0	0	29.9% (28)	44.1% (41)
Total Number of Respondents	84	81	11	11	1	1	96	93

Source Niles DART Public Survey, 2011

Hours:

- Cass County Public Transit, DART and Buchanan Dial A Ride system hours preclude use by commuters and riders who work later shifts. There is no service after 5:00pm on weekdays. There is no public service on Sundays in Berrien or Cass counties.

- Amtrak Rail service is available out of Niles but hours do not correspond with public transit hours of operation.

Berrien County Public Transit Feasibility Study:

- The *Berrien Countywide Public Transit Feasibility Study* is currently examining the possibility of either creating a countywide system or developing a consolidation plan.

- The Plan hopes to make travel between communities in Berrien County more seamless; the same fares, transfer procedure, schedule formatting, etc.

- Without this effort to move towards a more seamless countywide system, the four individual public transit systems may find themselves in a position where the State mandates a consolidation at which point it would be too late to transition at an orderly, locally-managed pace.

- It has been documented in the draft *Berrien Countywide Public Transit Feasibility Study* that there are two main barriers to the near-term effort for a countywide system; 1). Political - the sense of surrendering local authority of the transit system; 2). Systems structure and funding - the three urban systems receive local funding from local city millages (Niles DART, Buchanan DART, TCATA) while the rural system receives no local funding. Two of the systems are strictly demand-response and two of the systems are fixed route and demand response.

With this in mind, proposed conceptual routes have been created in Map 19, including a combination of fixed routes in higher density areas and flex-route service in lower density areas with scheduled transfer points throughout the service area.

Since there are only two transit systems in Cass County, Cass County Public Transit and Dowagiac Dial a Ride, the main focus has been on the reformation of the four systems in Berrien County. More analysis needs to be performed to fully understand the issues facing Cass County transit providers.

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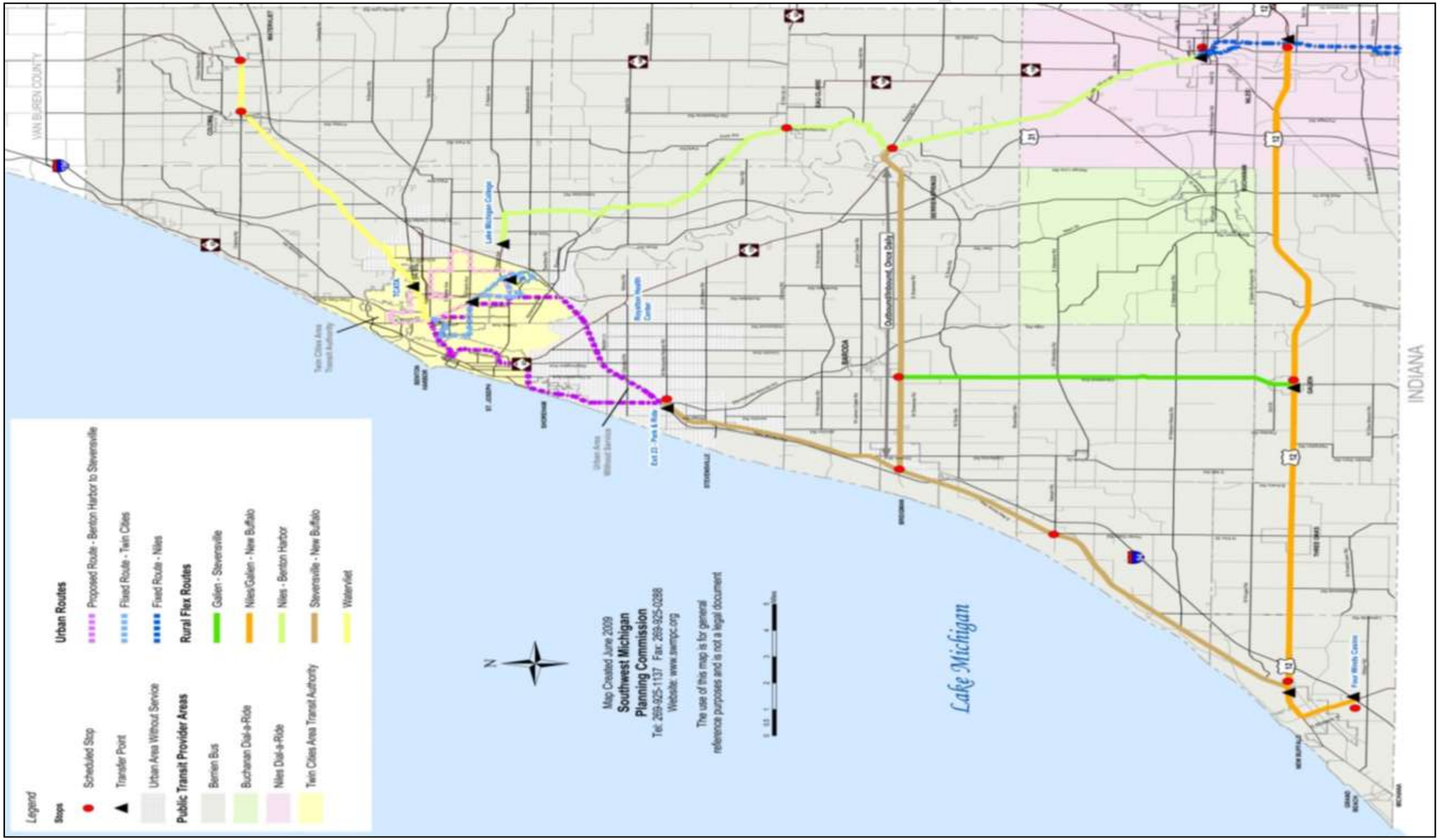
Map 19 - Proposed Routes for Berrien County Transit



RURAL AND URBAN PLANNING CONSIDERATIONS

Although there are many facets of the transportation networks, some may produce more significant impacts than others. Listed below are present and expected situations, the potential effects of which deserve special attention. Recognizing that transportation needs do not occur independently of land use, the NATS committees have identified a list of community concerns that have a direct impact on the area's transportation network.

BERRIEN COUNTY

- **Harbor Shores -** During the 2009 TwinCATS LRTP update, construction was underway on the Harbor Shores golf course in Benton Harbor. The cities of St. Joseph and Benton Harbor, as well as Benton Charter Township, came together to partner with Harbor Shores Community Redevelopment, Inc. to develop and redevelop over 530 acres of land along the Paw Paw and St. Joseph Rivers near Lake Michigan. The $500 million, multi-year project is slated in the end to bring over 826 residential units, over 43,000 square feet of commercial and office space, two hotels, a conference center, a water park, and a Jack Nicklaus Signature golf course into the TwinCATS area. The golf course is currently open and hosted the Senior PGA championship in 2012 for the first time.

  The next major phase of development within the Harbor Shores project is known as Harbor Village at Harbor Shores. Harbor Village includes a hotel, condominiums, cottages, and a marina on the north bank of the St. Joseph River. Construction is expected to begin in the spring of 2013. The Environmental Assessment for the Harbor Village project, released in January 2013, found that no further roadway capacity expansion would be needed for the project, and that existing roadways are adequate for traffic coming to and leaving from Harbor Village. The assessment found that any significant new adverse air quality impacts from transportation would come during the construction process only, which was acceptable under EPA standards. In terms of transit connections, the project was well within Twin Cities Area Transportation Authority (TCATA)'s door-to-door service area and was also within an acceptable walking distance to TCATA's fixed route service. The project will also improve upon local trails by continuing to build the 12.2 mile non-motorized path system outlined in the Harbor Shores Master Plan. In particular, a non-motorized path on public property adjacent to the Harbor Village development will be developed in conjunction with the private development, improving pedestrian and bicycle access along the St. Joseph River, all through ADA-accessible facilities.

  The significance of this project to the region is unmistakable. Significant land use changes are taking place on previously vacant land, new residents will purchase second homes in the area, and many visitors will use the hotels, golf course, and marina, along with other businesses and services in Benton

Harbor and St. Joseph. As the development continues to progress, regular updates will be provided at TwinCATS TAC committee meetings to review transportation impacts.

- **US-31 -** The completion of the US 31 freeway from Napier Avenue to the I-94 and I-196 interchange is a project that has been important to the people of southwest Michigan for over 30 years. In a recent correspondence dated February 4, 2013 from MDOT Director Kirk Steudle to State Representative Al Pscholka indicated that "the US-31 freeway project in Berrien County remains a long-term priority for the Michigan Department of Transportation (MDOT). The current estimated cost to complete this project is approximately $92 million dollars". A copy of the letter has been included in this section. It is clear that the completion of this highway is important to the local agencies of southwest Michigan but also to MDOT.

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RICK SNYDER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

KIRK T. STEUDLE
DIRECTOR

February 4, 2013

The Honorable Al Pscholka
Michigan House of Representatives
P.O. Box 30014
Lansing, Michigan 48909

Dear Representative Pscholka:

Thank you for your recent letter regarding proposed improvements to US-31. The completion of the US-31 freeway project in Berrien County remains a long-term priority for the Michigan Department of Transportation (MDOT). The current estimated cost to complete this project is approximately $92 million.

Since the issuance of the Federal Highway Administration's Record of Decision in 2004, MDOT has been acquiring the necessary right-of-way to complete this project subject to the availability of funds for those purchases. There are approximately nine outstanding properties that need to be acquired, at an estimated cost of $1.3 million. In addition, there is a major pipeline in the proposed corridor that needs to be relocated before construction can begin. It is estimated that this relocation could take as much as two years to complete.

Over the past decade, MDOT has been focusing on system preservation needs. This strategy has left little funding for new freeway segments. At current state and federal transportation funding levels, this strategy is not likely to change soon. When adequate funding becomes available to meet and sustain MDOT system condition goals, priorities beyond system preservation will be examined. At that point, MDOT's Southwest Region staff believes this project should be divided into three phases. The first phase would be reconfiguring the interchange at the I-94/I-94 business loop, the second phase would be additional improvements to the I-94 corridor in the vicinity of the reconfigured interchange, and the last would be the new US-31 freeway corridor between Napier Road and I-94.

As you are aware, the freeway currently terminates at Napier Avenue, which provides a connection to I-94. This connection is currently performing adequately and meets the mobility needs of the area for the present time. MDOT will continue to monitor traffic operations at US-31/Napier Road and I-94/Napier Road.

If you have any questions, please contact either me or David E. Wresinski, Director, Bureau of Transportation Planning, at 517-373-0343.

Sincerely,

Kirk T. Steudle
Director

BTP:AMD:HM:gms
bcc: David E. Wresinski, William Tansil, Hugh McNichol, Governmental Affairs
Bob Parsons, Andy Irwin, Maria Bowerman

- **Berrien County Equestrian Centers -** A specialization in being seen throughout Berrien County in the form of expo centers. One such example that must be mentioned is the Expo Arena at the Berrien County Youth Fair http://www.expoarena.org/. The arena will include a 500-stall stable and will feature an indoor warm-up ring, a 4,000-seat show area that can be converted to 7,000 seats for concerts and a hospitality center with a 14,000-square-foot exhibition hall. Also included will be 18 classroom/sky boxes, locker and tack rooms and a 400- by 75-foot concourse for offices, shops and vendors. The marketing study estimated the arena could draw as many as 10,000 visitors for 39 weekends each year. Not only would those venues include horse shows and rodeos but also concerts, livestock, trade, boating and RV shows. Conventions, wedding receptions, proms, circuses and farm-implement, pet and house and garden shows also could be accommodated. There are other examples of these types of facilities located in Niles, the Lucky Horse Equestrian Center (71487 Kline Road, Niles and the Concord Ridge Equestrian Center located on M-139 in between St. Joseph and Berrien Springs.

- **Southeast Berrien County Landfill (on Chamberlain Road) -** One of the issues at this facility is that three different jurisdictions have ownership of different parts of Chamberlain Road. Those communities are: Buchanan Township, Bertrand Township, and Niles Township. Niles Township has ownership of the east side of the road; Bertrand Township has ownership of the west side of the road, and Buchanan Township has ownership at the entrance to the facility.

- **Niles Industrial Park**- The Niles Industrial Park is located in the City of Niles near the Jerry Tyler Airport off of Lake Street. Improving the routes connecting to the Industrial Park and making access to the major highways is key to the success of the businesses located there.

- **11th Street Corridor Improvement**-The plan establishes for the future development of the 4.5 miles of the 11th Street (Michigan Highway 51) corridor through a series of development options and action plans. The project would focus on the corridor from Main Street to Stateline Road. The roadway has several unique challenges such as ownership of the roadway is by the Michigan Department of Transportation. However, local land use planning and zoning is done by the City of Niles and Niles Charter Township. The partners that were involved in this plan wanted to review the roadway for its potential and what could be achieved through coordination. The plan analyzes several elements of the corridor:

    - Streets and Traffic Patterns
    - Driveway Access
    - Pedestrian Circulation
    - Aesthetics and Maintenance
    - Parking
    - Building and Public Spaces
    - Land Use

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- Sense of Place

The plan discusses how the implementation of the project could be handled. The recommendation discussed was to form the creation of a new inter-governmental body capable of both raising the necessary funds and providing of the construction and maintenance of corridor improvements. The plan emphasizes the importance of intergovernmental coordination with master planning and local zoning issues.

- **Indiana Michigan River Valley Trail-** The Indiana-Michigan River Valley Trail partners are working to create a 34-mile trail connecting Niles, MI to Mishawaka, IN. The completed trail would be used by commuters, students, families and tourists. The trail would connect people to 4 universities and schools, 4 downtowns (Niles, Roseland, South Bend and Mishawaka), 16 parks and 2 YMCAs, 5 hospitals or major medical facilities, historical and cultural attractions, and businesses offering eating, lodging and shopping. In 2013 the trail project was awarded funding from MDOT Transportation Enhancement, Transportation Alternatives funds, Michigan Natural Resources Trust Fund, to begin the engineering and then construction of the trail. This project will be a tremendous asset to the community and region.

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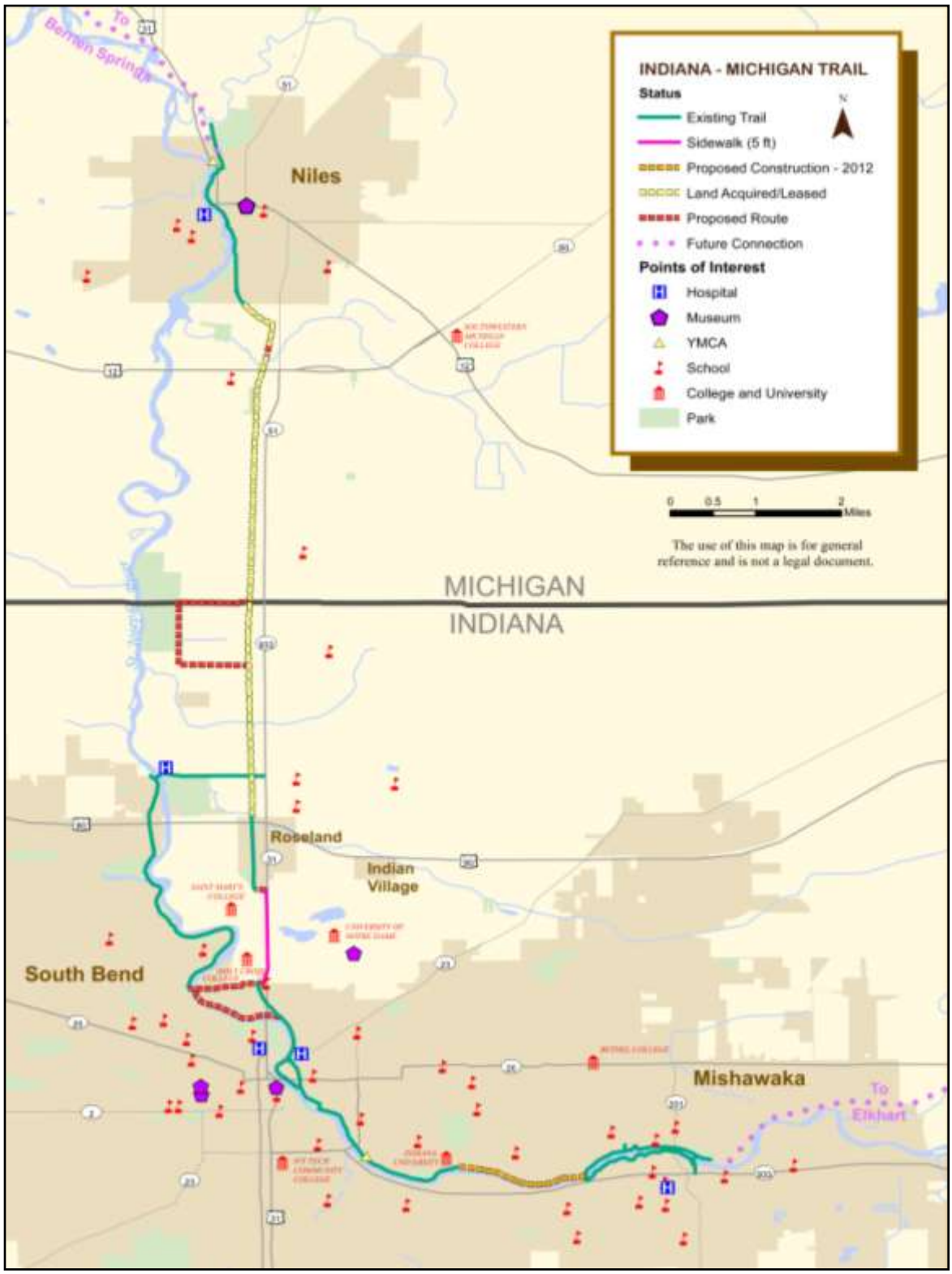
Map 20 - Indiana Michigan River Valley Trail



CASS COUNTY

- **Traffic on the existing north-south routes** including, but not limited to, Gumwood, Fir, M-62/SR 23, and Ironwood, moving to and from the University Park Mall, individual strip malls and mega stores in the Mishawaka area (Indiana). These roadways provide the key connectors into Indiana and do not completely traverse the county. Roadways such as Dailey Road, Calvin Center and Indian Lake Road do provide some of the longest north south extensions in the County; however they end at major highways and do not return to a county road. Some of the roadways turn to highways.

- **Four Winds Casino**-Is located on a 59-acre plot of land off the west side of M-51 near Edwards Street near Dowagiac, Michigan. The casino is projected to employ 100 people. While this project is located outside of the MPO this could impact the traffic patterns going south on M-51 into the MPO area.

- **Southwestern Michigan College-**SMC continues to construct year round dorms for students. According to Jason Wilt, Director of Housing for SMC, in the Fall 2013 SMC will open their third student residential hall which will add 130 more private bedrooms to our current 260 student housing community. While this facility may be outside the MPO, as people from Cass County orient themselves towards the South Bend/Mishawaka area, the travel patterns of these students may also be to do their shopping and traveling through the MPO.

INDIANA

The Michiana Area Council of Governments (MACOG) handles the transportation planning and coordination of the transportation system in northern Indiana. Please refer to MACOG's LRP for more information http://www.macog.com/.

GENERAL CONSIDERATIONS

- **Commercial Traffic** - Any change in the density of population and intensity of land use activities will change the predicted traffic flows and possible congestion in those segments of the network. As employment opportunities spread far from the historic centers of the cities, they put a strain on the existing network. Many of these problems involve land use and development policies, and they often have the greatest affect on the townships. Concerns about population density, access management, and support of arterial routes have become important planning considerations because of increasing residential development pressures. Housing developments on the northern edge of Indiana are encroaching into Michigan through subdivision roads as developers buy and build on land that straddles the boundary between the states.

- **Land Use** - The preservation of open space and of the agriculture industry hinge on property owners' decisions and local implementation of state land use policy. As farmers sell their prime agricultural lands and these lands are developed into more sprawling communities, the strain to local jurisdictions

becomes very real. As more and more people live in rural communities, additional infrastructure is often not put into place to meet the growing diversity of needs by the public. We can see this in the form of people not being able to walk to vital services such as transit, shopping, and medical care facilities.

- **Telecommuting** - As more people and businesses are willing and able to allow their employees to work from home remotely the importance of having the right telecommunications becomes more significant. We have seen a shift already of people living in Michigan while working in Indiana and Chicago from their primary or secondary residence. If we see a greater shift in people needing to physically be in an office, there could be less traffic on our most heavily traveled roadways, thus cutting down on the wear and use of passenger vehicles. This could impact the air quality issues that face southwest Michigan but also the wear on our roadways.

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FUTURE METROPOLITAN PLANNING AREA

During the development of this LRTP, NATS reviewed population, housing, employment, and travel patterns to see where potential connections to the urban area may exist in the future, specifically at the 2020 U.S. Census count. While the MPO will be monitoring other factors as indicated, the dominant factor that will be monitored will be population. The U.S. Census urban areas are defined only by the population numbers. Federal statute governs the planning boundaries for Metropolitan Planning Organizations. Specifically, Title 23 Part 450.38 states that:

> (a) The metropolitan planning area boundary shall, as a minimum, cover the UZA(s) and the contiguous geographic area(s) likely to become urbanized within the twenty year forecast period covered by the transportation plan described in §450.322 of this part. The boundary may encompass the entire metropolitan statistical area or consolidated metropolitan statistical area, as defined by the Bureau of the Census.

Therefore, it is prudent for the MPO to monitor areas closely as the economy continues to recover in southwest Michigan and northern Indiana.

MONITORING FACTORS

As this LRTP was being developed, population, housing, employment, and travel patterns were reviewed for the base year of 2010 and were projected out to the plan end year of 2040. This information allows the MPO to monitor where development is being shifted to or where it is to be newly created. The specific factors that the MPO will use to monitor this information before the next Census count will be:

- Population
- Housing
- Employment

The MPO staff will use the American Community Survey (ACS) information which releases 1-year, 3-year and 5-year data products **every year** to monitor the above listed information. As the new Census information will not be released before the next long range plan update, the MPO will rely on the information changes that are supplied.

GEOGRAPHIES TO MONITOR

Map 21 Areas to Monitor for NATS Planning Area highlights the areas that will be monitored over the duration of this long range transportation plan. There are eight specific areas that the SWMPC will be monitoring until the next U.S. Census.

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1. **Berrien Springs-Eau Claire Urban Cluster (Buchanan Township and Oronoko Township).**
   Prior to the 2010 Census information being released, SWMPC staff anticipated the connection of the NATS planning boundary with the Berrien Springs-Eau Claire urban cluster, given that the two areas were close to connecting in the 2000 Census. However, the Berrien Springs-Eau Claire cluster shrank. Berrien Springs population lost about 3% of their population and Eau Claire also lost about 4% of their population causing a potential contraction of the urban area. *(As of the writing of this section, the adjusted census urban area boundaries were being reviewed for this urban cluster and final size of the urban cluster is not known).* While this did show a contraction this is still an area that continues to be brought up in conversations at the MPO level and by Committee members and will thus continue to be monitored.
2. **North of City of Buchanan Limits-Red Bud Trail east to US-31 (Buchanan Township and Niles Charter Township)**
   This area experienced significant growth since the 2000 Census mainly due to development north of the St. Joseph River and continued development occurring along the US-31 corridor.
3. **Bertrand Road and US-31 East to Niles Charter Township (Bertrand Township and Niles Charter Township)**
   The pattern of development continues to come from South Bend, Indiana. There continues to be consistent interaction between the two regions in the form of households and travel patterns. Many people from southern Berrien County that live close to the Indiana state line work in the South Bend urban area.
4. **Redfield Street from Gumwood Road East to Ironwood Road (Milton Township and Ontwa Township)**
   The pattern of development continues to come from South Bend, Indiana. There continues to be consistent interaction between the two regions in the form of households and travel patterns. Many people from southern Cass County that live close to the Indiana state line work in the South Bend urban area. And as the map indicates, the South Bend and Elkhart, Indiana urbanized areas continue to push north into Michigan.
5. **Village of Edwardsburg North into Jefferson Township (Village of Edwardsburg, Ontwa Township, and Jefferson Township)**
   The change from the 2000 and 2010 adjusted census urban areas has shown the trend of population, households, and businesses moving in a northerly pattern into the Village of Edwardsburg, continuing into Ontwa Township. This may continue to move northerly into Jefferson Township.
6. **Davis Lake Street South to North Shore Drive (Ontwa Township and Jefferson Township)**
   There is significant and consistent demand to live near or along one of many inland lakes throughout the study area. This pattern in Cass County has not slowed, as many people from Indiana and Illinois own second homes along many of the inland lakes in this region. According to township officials, many of these second homes are becoming primary residences for people as they retire to our region.

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7. **Redfield Street from Elkhart Road East to Cassopolis Road (Ontwa Township and Mason Township)**

   Mason Township is the most recent addition to the planning area and this again is due to the northerly expansion of the South Bend and Elkhart, Indiana urbanized area. There continues to be consistent interaction between the two regions in the form of households and travel patterns. Many people from southern Cass County that live close to the Indiana state line work in the South Bend urban area.

8. **Christiana Road to Cassopolis Road from Mason Street to Calvin Hill Street (Calvin Township, Jefferson Township, Mason Township and Ontwa Township).**

   There is significant and consistent demand to live near or along one of many inland lakes throughout the study area. This pattern in Cass County has not slowed, as many people from Indiana and Illinois own second homes along many of the inland lakes in this region. According to township officials, many of these second homes are becoming primary residences for people as they retire to our region. With the presence of four lakes in this area: Eagle Lake, Christiana Lake, Juno Lake and Painter Lake we anticipate that development around these lakes will continue.

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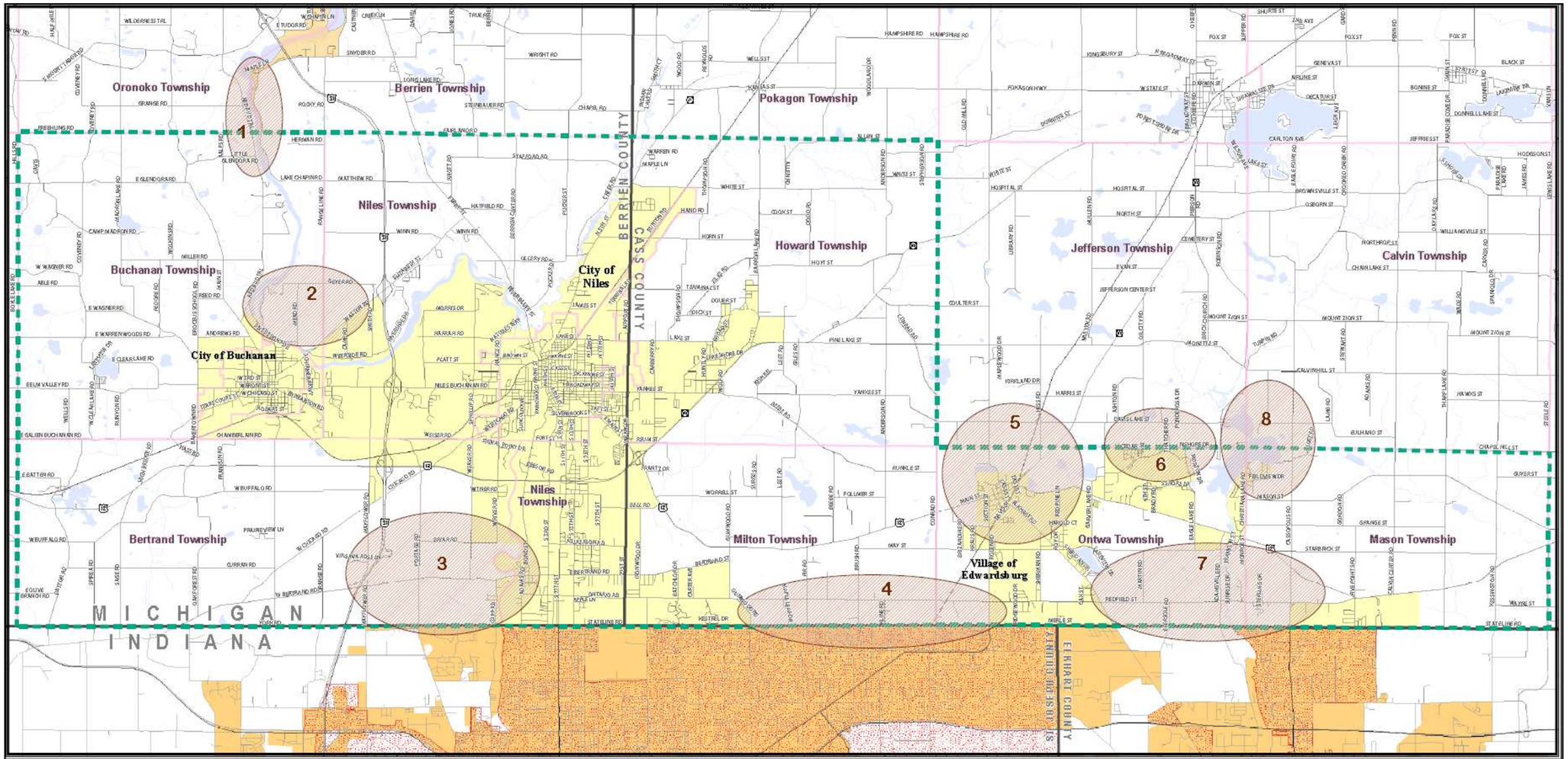
Map 21 - Areas to Monitor in NATS Planning Area



TRENDS IN THE OUTYEARS

This section will review some of the trends that are being projected for the study area. The following tables are noting where the biggest growths and reductions are occurring. The SWMPC will use this information to help Committee members make transportation decisions that reflect where the population, households, and employment area locating in the region.

Table 36 - Population Projections

Jurisdiction	2010	2020	2030	2040	Change from 2010-2040
Buchanan City	4,471	4,274	4,168	4,102	-8.20%
Buchanan Twp	3,508	3,437	3,411	3,419	-2.50%
Niles City	13,300	12,879	12,540	12,324	2.40%
Niles Twp	12,306	12,137	12,074	12,131	-1.40%
Bertrand Twp	2,657	2,626	2,640	2,681	0.90%
Howard Twp	3,348	6,433	6,447	6,438	92%
Milton Twp	3,878	4,234	4,454	4,653	19.90%
Edwardsburg Village	1,259	1,243	1,185	1,125	-10.60%
Ontwa Twp	2,011	5,128	5,189	5,230	160%
Mason Twp	2,945	3,113	3,180	3,234	9.80%
Total	49,683	55,504	55,288	55,337	11.38

The greatest population increases that are being projected are occurring in the following communities: Howard Township, Milton Township, Ontwa Township and Mason Township. These are all showing increases near 10% or above 10%, as with the case in Ontwa Township. This projection demonstrates why the SWMPC will be monitoring these areas as pointed out in the Geographies to monitor section above. These areas are projected to see significant population increases that would impact the need to rethink where the transportation investments are being made in the region. As with the case for Ontwa Township for example, the projection over the next 30 years is for the community to grow by over 3,000 people. While this is still a comparatively small population increase for the township this could stretch the infrastructure demands on the community. As we know from previous sections, the aging of our region will continue to grow and as more people are moving further away from core service areas such as in cities and villages, we need to think about how we are going to connect people with the vital services that they need.

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Table 37 - Indiana Counties Population Projections

County Jurisdiction	2010	2020	2030	2040	Change from 2010-2040
St. Joseph	266,931	270,586	274,250	274,683	2.9 %
Elkhart	197,559	212,036	225,496	237,323	20.1%
Total	464,490	482,622	499,746	512,006	10.2%

Source: STATS Indiana www.stats.indiana.edu

As stated in the introduction of this document, NATS is part of the South Bend and Elkhart, Indiana urbanized area. Map 21 indicates where the St. Joseph and Elkhart counties are located in proximity to Berrien and Cass Counties. While there will still be some modest growth in St. Joseph County, IN as we have seen in Milton Township, the main growth will be happening in Elkhart County which coincides with the expansion of the urban areas into Mason and Milton Townships.

Table 38 - Household Projections

Jurisdiction	2010	2020	2030	2040	Change from 2010-2040
Buchanan City	1,977	1,898	1,883	1,853	-6.20%
Buchanan Twp	1,325	1,334	1,339	1,333	0.60%
Niles City	5,540	5,598	5,548	5,454	-1.50%
Niles Twp	4,906	4,989	5,013	4,999	1.80%
Bertrand Twp	1,026	1,058	1,074	1,080	5.20%
Howard Twp	2,575	2,760	2,797	2,760	7.10%
Milton Twp	1,390	1,625	1,782	1,885	35.60%
Edwardsburg Village	517	531	517	490	-5.20%
Ontwa Twp	1,982	2,126	2,189	2,193	10.60%
Mason Twp	1,104	1,225	1,282	1,302	17.90%
Total	22,342	23,144	23,424	23,349	4.51

Not surprisingly we are seeing the same trends from the population projections with respect to the communities that are anticipating more households in the future. Howard, Milton, Ontwa, and Mason Townships are projecting to have at least 10% growth in the number of households comparing 2010 to 2040. One of the surprising communities is Bertrand which is anticipating households growing by 5% while their total population growth is only .9%. This may be signifying a national trend of less people in individual households. This could also mean that more people are choosing to age in their home. As noted in the

description of population projections, this shifting of where households are located should reflect the investments that will need to be made to accommodate the shifting demographics.

Table 39 - Employment Projections

Jurisdiction	2010	2020	2030	2040	Change from 2010-2040
Buchanan City	2,944	3,083	3,096	3,161	7.30%
Buchanan Twp	677	693	692	703	3.80%
Niles City	8,062	8,543	8,621	8,786	8.90%
Niles Twp	5,696	6,172	6,188	6,200	8.80%
Bertrand Twp	1,282	1,446	1,461	1,476	15.10%
Howard Twp	1,392	1,484	1,488	1,534	10.20%
Milton Twp	834	877	873	900	7.90%
Edwardsburg Village	1,214	1,338	1,370	1,437	18.30%
Ontwa Twp	1,785	1,887	1,884	1,952	9.30%
Mason Twp	439	452	445	455	3.60%
Total	24,325	25,975	26,118	26,604	9.37%

The employment projections for the region show modest but gains throughout all jurisdictions. This demonstrates that while Michigan and southwest Michigan are still recovering from the 2008 economic collapse, that the region will see gains.

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MPO FINANCIAL PLAN

The Transportation Improvement Program (TIP) is the list of road and transit projects that communities and agencies plan to implement over a four-year period. That list is required to be fiscally constrained; that is, the cost of projects programmed in the TIP cannot exceed the amount of funding "reasonably expected to be available" during that time. The financial plan is the section of the TIP that documents the method used to calculate funds reasonably expected to be available and compares this amount to proposed projects to demonstrate that the TIP is fiscally constrained. The financial plan also identifies the costs of operating and maintaining the transportation system in the Niles-Buchanan-Cass Area Transportation Study.

SOURCES OF TRANSPORTATION FUNDING

The basic sources of transportation funding are motor fuel taxes and vehicle registration fees. Both the federal government and the State of Michigan tax motor fuel, the federal government at $0.184 per gallon on gasoline and $0.244 per gallon on diesel and Michigan at $0.19 per gallon on gasoline and $0.15 per gallon on diesel. Michigan also charges sales tax on motor fuel, but this funding is not applied to transportation. The motor fuel taxes are excise taxes, which mean that they are a fixed amount per gallon. The amount collected per gallon does not increase when the price of gasoline or diesel fuel increases. Over time, inflation erodes the purchasing power of the motor fuel tax.

The State of Michigan also collects annual vehicle registration fees when motorists purchase license plates or tabs. This is a very important source of transportation funding for the state. Currently, roughly half of the transportation funding collected by the state is in the form of vehicle registration fees.

Cooperative Revenue Estimation Process

Estimating the amount of funding available for the four-year TIP period is a complex process. It relies on a number of factors, including economic conditions, miles travelled by vehicles nationwide and in the State of Michigan, and federal and state transportation funding received in previous years. Revenue forecasting relies on a combination of data and experience and represents a "best guess" of future trends.

The revenue forecasting process is a cooperative effort. The Michigan Transportation Planning Association (MTPA), a voluntary association of public organizations and agencies responsible for the administration of transportation planning activities throughout the state, formed the Financial Working Group (FWG) to develop a statewide standard forecasting process. FWG is comprised of members from the Federal Highway Administration (FHWA), the Michigan Department of Transportation (MDOT), transit agencies, and metropolitan planning organizations. It represents a cross-section of the public agencies responsible for transportation planning in our state. The revenue assumptions in this financial plan are based on the factors formulated by the FWG and approved by the MTPA. They are used for all TIP financial plans in the state.

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HIGHWAY FUNDING FORECAST-FEDERAL

Sources of Federal Highway Funding

Federal transportation funding comes from motor fuel taxes (mostly gasoline and diesel). Receipts from these taxes are deposited in the Highway Trust Fund (HTF). Funding is then apportioned to the states. Apportionment is the distribution of funds through formulas in law. The current law governing these apportionments is Moving Ahead for Progress in the 21st Century (MAP-21). Under this law, Michigan receives approximately $1 billion in federal transportation funding annually. This funding is apportioned through a number of programs designed to accomplish different objectives, such as road repair, bridge repair, safety, and congestion mitigation. A brief description of the major funding sources follows.

National Highway Performance Program (NHP): This funding is used to support condition and performance on the National Highway System (NHS) and to construct new facilities on the NHS. The National Highway System is the network of the nation's most important highways, including the Interstate and US highway systems. In Michigan, most roads on the National Highway System are state trunk lines (i.e., "I-," "US-," and "M-"roads). , However, MAP-21 expanded the NHS to include all principal arterials (the most important roads after freeways), whether state- or locally-owned. As a result of this change the NATS area will receive a small allocation of NHPP funds of roughly $13,000 a year. However, it should be noted that as of March 2013 all NHPP eligible roadways in the study area are MDOT controlled roadways. This may change if the classification of some roadways in the NATS urban area changes. This review will take place in the summer of 2013, after the TIP has been submitted.

Surface Transportation Program (STP): Funds for construction, reconstruction, rehabilitation, resurfacing, restoration, preservation, or operational improvements to federal-aid highways and replacement, preservation, and other improvements to bridges on public roads. Michigan's STP apportionment from the federal government is evenly split, half to areas of the state based on population and half that can be used in any area of the state. In FY 2014, Michigan's STP apportionment is estimated to be $269.8 million. The NATS region will receive approximately $488,696 which will be used by cities, villages, and the county road commissions. STP funds can also be flexed (transferred) to transit projects.

Highway Safety Improvement Program (HSIP): Funds to correct or improve a hazardous road location or feature or address other highway safety problems. Projects can include intersection improvements, shoulder widening, rumble strips, improving safety for pedestrians, bicyclists, or disabled persons, highway signs and markings, guardrails, and other activities. The State of Michigan retains all Safety funding and uses a portion on the state trunk line system, distributing the remainder to local agencies through a competitive process. Michigan's statewide FY 2014 estimated Safety apportionment is $64.5 million. While there is no specific allocation goes directly to the NATS MPO, local agencies are eligible to apply for these funds as stated above.

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Congestion Mitigation and Air Quality Improvement (CMAQ): Intended to reduce emissions from transportation-related sources. MAP-21 has placed an emphasis on diesel retrofits, but funds can also be used for traffic signal retiming, actuations, and interconnects; installing dedicated turn lanes; roundabouts; travel demand management such a ride share and vanpools; transit; and nonmotorized projects that divert non-recreational travel from single-occupant vehicles. CMAQ funds come to the MPO by means of a countywide allocation, since the MPO does not encompass the entire county. Therefore, there are CMAQ funds for projects in Berrien and Cass Counties that can be utilized for projects within the MPO. For FY 2014 Berrien County received an allocation of $578,210 and Cass County received $176,329. The distribution of the county funds are decided at publicly held county meetings, where all transit and road projects are discussed and voted upon.

Transportation Alternatives Program: Funds can be used for a number of activities to improve the transportation system environment, including (but not limited to) nonmotorized projects, preservation of historic transportation facilities, outdoor advertising control, vegetation management in rights-of-way, and the planning and construction of projects that improve the ability of students to walk or bike to school. The statewide apportionment for Transportation Alternatives is estimated to be $26.4 million in FY 2014. The funding will then be split, 50 percent being retained by the state and 50 percent to various areas of the state by population, much like the STP distribution. NATS share of this funding is approximately $43,000 in FY 2014, and will be distributed to eligible applicants on a competitive basis.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF FEDERAL HIGHWAY FUNDS

Each year, the targets (amount NATS is expected to receive) are calculated for each of these programs, based on federal apportionment documentation and state law. Targets for FY 2013 as provided by MDOT are used at the baseline for the forecasts. Targets for fiscal year 2013, as provided by MDOT, are used as the baseline for the forecast. The Financial Work Group of the MTPA developed a two percent per year federal revenue growth rate for the FY 2014 through FY 2017 TIP period. If targets for each of fiscal years 2014-2017 are known (such as CMAQ), those amounts were used without adjustment. While this is less than the five percent growth rate over the past 20 years, the decrease in motor fuel consumption (due to less driving and higher-MPG vehicles) and the economic downturn and restructuring experienced by the nation in general and Michigan in particular made assumptions based on long-term historical trends unusable. Table 1 contains the federal transportation revenue projections for the 2014-2017 TIP.

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Table 40 - Federal Highway Transportation Revenue Projections

FY	STP	NHPP	CMAQ Funds Berrien (Cass)	TAP	TOTAL
2014	$488,696	$13,029	$578,210 $(176,329)	$43,398	$1,123,335 $(721,453)
2015	$498,470	$13,290	$578,210 $(192,817)	$44,266	$1,134,237 $(748,845)
2016	$508,439	$13,555	$578,210 $(192,817)	$45,152	$1,145,358 $(759,965)
2017	$518,608	$13,826	$578,210 $(192,817)	$46,055	$1,156,700 $(771,308)
TOTAL:	$2,014,214	$53,702	$2,312,841 ($769,782)	$178,873	$4,549,631 $(3,016,572)

Note (Cass County allocation of funds added to total)

HIGHWAY FUNDING FORECAST—STATE FUNDING

Sources of State Highway Funding

There are two main sources of state highway funding, the state motor fuel tax and vehicle registration fees. The motor fuel tax, currently set at 19 cents per gallon on gasoline and 15 cents per gallon on diesel, raised approximately $937.5 million in fiscal year 2011.[21] Like the federal motor fuel tax, this is also an excise tax that doesn't increase as the price of fuel increases, so over time, inflation erodes the purchasing power of these funds. Approximately $855.9 million in additional revenue is raised through vehicle registration fees when motorists purchase their license plates or tabs each year. The state sales tax on motor fuel, which taxes both the fuel itself and the federal tax, is not deposited in the Michigan Transportation Fund. Altogether, approximately $1.9 billion was raised through motor fuel taxes, vehicle registrations, heavy truck fees, interest income, and miscellaneous revenue in FY 2011.

The state law governing the collection and distribution of state highway revenue is Public Act 51 of 1951, commonly known as "Act 51." All revenue from these sources is deposited into the Michigan Transportation Fund (MTF). Act 51 contains a number of complex formulas for the distribution of the funding, but essentially, once funding for certain grants and administrative costs are removed, 10 percent of the remainder is deposited in the Comprehensive Transportation Fund (CTF) for transit. The remaining funds are then split between the State Trunkline Fund, administered by MDOT, county road commissions, and municipalities in a proportion of 39.1 percent, 39.1 percent, and 21.8 percent, respectively.[22]

[21] Michigan Dept of Transportation, Annual Report, Michigan Transportation Fund, Fiscal Year Ending September 30, 2011 (MDOT Report 139), Schedule A.

[22] Act 51 of 1951, Section 10(1)(j).

MTF funds are critical to the operation of the road system in Michigan. Since federal funds cannot be used to operate or maintain the road system (items such as snow removal, mowing grass in the right-of-way, paying the electric bill for streetlights and traffic signals, etc.), MTF funds are local communities' and road commissions' main source for funding these items. Most federal transportation funding must be matched with 20 percent non-federal revenue. In Michigan, most matching funds come from the MTF. Finally, federal funding cannot be used on local public roads, such as subdivision streets. Here again, MTF is the main source of revenue for maintenance and repair of these roads.

Funding from the MTF is distributed statewide to incorporated cities, incorporated villages, and county road commissions, collectively known as "Act 51 agencies." The formula is based on population and public road mileage under each Act 51 agency's jurisdiction.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF STATE HIGHWAY FUNDS

The base for the financial forecast of state funding is the FY 2011 distribution of MTF funding as found in MDOT Report 139. This report details distribution of funding to each eligible Act 51 agency in the state. Adding all of the distributions to cities, villages, and county road commissions, in the NATS area, that provides an overall distribution total for the region. That amount that Berrien County Act 51 agencies can plan to receive in the NATS area was $10,914,931.04 million in FY 2011 and for Cass County it was $4,217,738.86.

The Financial Work predicted an increase of 0.4 percent in state revenues for fiscal years 2014 through 2017. Table 2 shows the amount of MTF funding cities, villages, and road commissions in the NATS area that are projected to receive during the four-year TIP period, based on the agreed-upon rates of increase.

Table 41 - Projected MTF Distribution to Act-51 Agencies for Highway Use

2014	2015	2016	2017	Total
$15,314,989	$15,376,249	$15,437,754	$15,499,505	$61,628,497

State funding is projected to grow much more slowly than federal funding during the four-year TIP period. This will have two effects on the region's highway funding: First, available funding for operations and maintenance of the highway system will most likely not keep pace with the rate of inflation, leaving less money for a growing list of maintenance work. Secondly, the federal highway funding will grow at a greater rate than non-federal money to match it. For those federal transportation sources requiring match, this means that some funding will go unused, despite the demand.

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HIGHWAY FUNDING FORECAST—LOCAL FUNDING

Sources of Local Highway Funding

Local highway funding can come from a variety of sources, including transportation millages, general fund revenues, and special assessment districts. Locally-funded transportation projects that are not of regional significance are not required to be included in the TIP. Local funding support for projects in the TIP is significant and there are very few communities within the MPO that have dedicated revenue collected from an assessment on property taxes. There are no communities within the MPO that have dedicated transportation revenue.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF LOCAL HIGHWAY FUNDS

The current TIP covers fiscal years 2011 through 2014. The current TIP, plus FY 2010 from the previous TIP, were queried for all projects with funding codes indicating that local funding was or will be used. Local funds programmed by transit agencies were removed, as were advance construct funds. Advance construct (AC) means the agency uses its own money to build the project, and then pays itself back in a future year with federal funding. Because of the way AC projects are shown in the TIP, counting them exaggerates the amount of local funding actually used. When this was done, the five-year annual average of local funding totaled about $180,975.60 a year with total local funding for the 2010-2014 period totaling approximately $904,878.00. It's highly unlikely that there will be increases in local funding over the four-year TIP period. For the projects currently listed in the 2014-2017 TIP there will be approximately 486,412 in the form of local funding. Table 33 highlights the total local match amount for the currently programmed projects.

Table 42 - Local Match for Road Projects

NATS Funding Years	Road Projects with Local Match
2014	$107,993
2015	$111,754
2016	$142,265
2017	$124,400
Total	$486,412

DISCUSSION OF INNOVATIVE FINANCING STRATEGIES-HIGHWAY

A number of innovative financing strategies have been developed over the past two decades to help stretch limited transportation dollars. Some are purely public sector; others involve partnerships between the public and private sectors. Some of the more common strategies are discussed below.

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Toll Credits: This strategy allows states to count funding they earn through tolled facilities (after deducting facility expenses) to be used as "soft match," rather than using the usual cash match for federal transportation projects. States have to demonstrate "maintenance of effort" when using toll credits—in other words, they must show that the toll money is being used for transportation purposes and that they're not reducing their efforts to maintain the existing system by using the toll credit program. Toll credits have been an important source of funding for the State of Michigan in the past because of the three major bridge crossings and one tunnel crossing between Michigan and Ontario. Toll credits have also helped to partially mitigate the funding crisis in Michigan, since insufficient non-federal funding is available to match all of the federal funding apportioned to the state.

State Infrastructure Bank (SIB): Established in a majority of states, including Michigan.[23] Under the SIB program, states can place a portion of their federal highway funding into a revolving loan fund for transportation improvements such as highway, transit, rail, and intermodal projects. Loans are available at 3 percent interest and a 25-year loan period to public entities such as political subdivisions, regional planning commissions, state agencies, transit agencies, railroads, and economic development corporations. Private and nonprofit corporations developing publicly owned facilities may also apply. In Michigan, the maximum per-project loan amount is $2 million. The Michigan SIB had a balance of approximately $12 million in FY 2011.

Transportation Infrastructure Finance and Innovation Act (TIFIA): This nationwide program, significantly expanded under MAP-21, provides lines of credit and loan guarantees to state or local governments for development, construction, reconstruction, property acquisition, and carrying costs during construction. TIFIA enables states and local governments to use the borrowing power and creditworthiness of the United States to fund finance projects at far more favorable terms than they would otherwise be able to do on their own. Repayment of TIFIA funding to the federal government can be delayed for up to five years after project completion with a repayment period of up to 35 years. Interest rates are also low. The amount authorized for the TIFIA program in FY 2014 nationwide is $1.0 billion.

Bonding: Bonding is borrowing, where the borrower agrees to repay lenders the principal and interest. Interest may be fixed over the term of the bond or variable. The amount of interest a borrower will have to pay depends in large part upon its perceived credit risk; the greater the perceived chance of default, the higher the interest rate. In order to bond, a borrower must pledge a reliable revenue stream for repayment. For example, this can be the toll receipts from a new transportation project. In the case of general obligation bonds, future tax receipts are pledged.

States are allowed to borrow against their federal transportation funds, within certain limitations. While bonding provides money up front for important transportation projects, it also means diminished resources in future years, as funding is diverted from projects to paying the bonds' principal and interest. Michigan transportation law requires money for the payment of bond and other debts is taken off the top before the

[23] FHWA Office of Innovative Program Delivery. "Project Finance: An Introduction" (FHWA, 2012).

distribution of funds for other purposes. Therefore, the advantages of completing a project more quickly need to be carefully weighed with the disadvantages of reduced resources in future years.

Advance Construct/Advance Construct Conversion: This strategy allows a community or agency to build a transportation project with its own funds (advance construct) and then be reimbursed with federal funds in a future year (advance construct conversion). Tapered match can also be programmed, where the agency is reimbursed over a period of two or more years. Advance construct allows for the construction of highway projects before federal funding is available; however, the agency must be able to build the project with its own resources and then be able to wait for federal reimbursement in a later year.

Public-Private Partnerships (P3): Funding available through traditional sources, such as motor fuel taxes, is not keeping pace with the growth in transportation system needs. Governments are increasingly turning to public-private partnerships (P3) to fund large transportation infrastructure projects. An example of a public-private partnership is Design/Build/Finance/Operate (DBFO). In this arrangement, the government keeps ownership of the transportation asset, but hires one or more private companies to design the facility, secure funding, construct the facility and operate it, usually for a set period of time. The private-sector firm is repaid most commonly through toll revenue generated by the new facility.[24] Sometimes, as in the case of the Chicago Skyway and the Indiana Toll Road, governments grant exclusive concessions to private firms to operate and maintain already-existing facilities in exchange for an up-front payment from the firm to the government. The firm then operates, maintains, and collects tolls on the facility during the period of the concession, betting that it will collect more money in tolls then it paid out in operations costs, maintenance costs, and the initial payment to the government.

HIGHWAY OPERATIONS AND MAINTENANCE

Construction, reconstruction, repair, and rehabilitation of roads and bridges are only part of the total cost of the highway system. It must also be operated and maintained. *Operations and maintenance* is defined as those items necessary to keep the highway infrastructure functional for vehicle travel, other than the construction, reconstruction, repair, and rehabilitation of the infrastructure. Operations and maintenance includes items such as snow and ice removal, pothole patching, rubbish removal, maintaining the right-of way, maintaining traffic signs and signals, clearing highway storm drains, paying the electrical bills for street lights and traffic signals, and other similar activities, and the personnel and direct administrative costs necessary to implement these projects. These activities are as vital to the smooth functioning of the highway system as good pavement.

Federal transportation funds cannot be used for operations and maintenance of the highway system. Since the TIP only includes federally-funded transportation projects (and non-federally-funded projects of regional significance), it does not include operations and maintenance projects. While in aggregate, operations and maintenance activities *are* regionally significant, the individual projects do not rise to that level. However,

[24] http://www.fhwa.dot.gov/ipd/p3/defined/design_build_finance_operate.htm.

federal regulations require an estimate of the amount of funding that will be spent operating and maintaining the federal-aid eligible highway system over the FY 2014 through FY 2017 TIP period. This section of the Financial Plan provides an estimate for NATS planning area and details the method used to estimate these costs. Table 5 highlights the total lane miles (the miles of federal aid eligible roads multiplied by the total number of lanes) for the system.

Table 43 - Federal Aid Eligible Lane Miles

	Federal Aid Lane Miles
State Trunkline	228.331
Local Federal Aid Roads	277.702
All Federal Aid Eligible	506.033

Source: Roadsoft

Table 44 - Federal Aid Miles by Jurisdiction

Jurisdiction	Total State Trunkline Miles	Total Local Federal Aid Eligible Miles	Total Federal Aid Eligible Miles
Bertrand Twp	25.42	16.247	41.667
Buchanan	0	6.056	6.056
Buchanan Twp	0	18.848	18.848
Edwardsburg	0	0.888	0.888
Howard Twp	12.929	17.06	29.989
Mason Twp	6.455	8.665	15.12
Milton Twp	10.779	16.911	27.69
Niles	6.05	10.669	16.719
Niles Twp	36.789	23.537	60.326
Ontwa Twp	10.23	13.934	24.164
Total	108.652	132.815	241.467

Source: Roadsoft

According to *Michigan's FY 2011-2014 State Transportation Improvement Program*, approximately $599.3 million will be available statewide for operations and maintenance costs in FY 2014 for the state trunk line

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highway system (roads with "I-,", "US-," and "M-" designations).[25] About 228.331 lane miles of the state trunkline system are located the NATS region. Assuming an allocation of $6,500 per lane mile for the operations and maintenance cost, MDOT should spend approximately $1,482,000 in the NATS region in FY 2014. Since MDOT's operations and maintenance funding comes from state motor fuel taxes (the Michigan Transportation Fund), the agreed-upon rate of increase for state funds (0.4 percent annually) was applied to derive the operations and maintenance costs for FYs 2015, 2016, and 2017.

Local communities' and agencies' costs to operate and maintain their portions of the federal-aid highway system were estimated through discussions with the local agencies on an agreed upon average. This was then applied to the total lane mileage of federal-aid eligible roads in the NATS region. The assumption in this case is that local communities and agencies are spending every available operations and maintenance dollar, so funds expended equal funds available. Much of local agencies' operations and maintenance funding comes from the Michigan Transportation Fund, so the agreed-upon rate of increase for state funds (0.4 percent annually) was applied to derive the operations and maintenance costs for FYs 2014 through 2017. MDOT and local operations and maintenance funding available was then brought together for a regional total. This is summarized in Table 6.

Table 45 - Projected Available Highway Operations and Maintenance Funding

FY	MDOT Estimate	Local Estimate
2014	$1,482,000	$1,110,808
2015	$1,487,928	$1,155,240
2016	$1,493,879	$1,201,449
2017	$1,499,854	$1,249,506
TOTAL	$5,963,661	$4,717,003

MPO staff received information from the Cass County Road Commission for the lane mile cost of the federal aid system in the amount of $2,175. Staff also received information from the Berrien County Road Commission for their portion of the federal aid system and their amount was $8,000 a mile. As this is only an estimate of the costs, a rate of $4,000 per lane mile was applied to the local estimate calculation.

HIGHWAY COMMITMENTS AND PROJECTED AVAILABLE REVENUE

The TIP must be fiscally constrained; that is, the cost of projects programmed in the TIP cannot exceed revenues "reasonably expected to be available" during the four-year TIP period. Funding for core programs such as NHP, STP, HSIP, and CMAQ are expected to be available to the region based on historical trends of

[25] Michigan Department of Transportation. *FY 2011-2014 State Transportation Improvement Program* (January 2012), p. 9.

funding from earlier, similar programs in past federal surface transportation laws. Likewise, state funding from the Michigan Transportation Fund (MTF) and the hybrid state/federal programs, are also expected to be available during the FY 2014 through FY 2017 TIP period. Funds from other programs are generally awarded on a competitive basis and are therefore impossible to predict. In these cases, projects are not amended into the TIP until proof of funding availability (such as an award letter) is provided. Funds from federal competitive programs are not included in the revenue forecast.

All federally-funded projects must be in the TIP. Additionally, any non-federally-funded but regionally significant project must also be included. In these cases, project submitters demonstrate that funding is available and what sources of non-federal funding are to be utilized.

Projects programmed in the TIP are known as *commitments*. As mentioned previously, commitments cannot exceed funds reasonably expected to be available. Projects must also be programmed in year of expenditure dollars, meaning that they must be adjusted for inflation to reflect the estimated purchasing power of a dollar in the year the project is expected to be built. The MTPA/Financial Work Group has decided on an annual inflation rate of 3.3 percent for projects over the TIP period. This means that a project costing $100,000 in FY 2014 is expected to cost $103,300 in FY 2015, $106,709 in FY 2016, and $110,230 in FY 2017. Since the amount of federal funds available is only expected to increase by 0.86 percent in 2014 and then 2 percent per year thereafter, and state funds by only 0.4 percent per year over the four-year TIP period, this means that less work can be done each year with available funding. Within the NATS region, all projects accommodated for inflation from the submitting agency.

Table 8 is known as a fiscal constraint demonstration. The demonstration is provided to the Michigan Department of Transportation, Federal Highway Administration, and Federal Transit Administration in order to show that the cost of planned projects does not exceed the amount of funding reasonably expected to be available over the FY 2014 through FY 2017 TIP period.

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Table 46 - Highway Fiscal Constraint Demonstration

TIP-NEED TO MAKE SURE THAT BERRIEN COUNTY CMAQ IS HANDLED AND NO CHANGES OCCURRING

NATS	2014		2015		2016		2017	
Funding	Avail	Prog	Avail	Prog	Avail	Prog	Avail	Prog
STP	$488,696	488,219	$498,470	498,923	$508,439	525,834	$518,608	561,004
NHPP	$13,029	0.00	$13,290	0.00	$13,555	0.00	$13,826	0.00
CMAQ Berrien County (Cass County)**	$578,210 $(176,329)		$578,210 $(192,817)		$578,210 $(192,817)		$578,210 $(192,817)	
TAP~	$43,398	0.00	$44,266	0.00	$45,152	0.00	$46,055	0.00
TOTAL								
Net Balance*	$0.00		$0.00		$0.00		$0.00	

-this table will need to be amended once the total projects have been reviewed for all cost allocations.

**Net Balance = Available funding less cost of programmed projects. A positive net balance means that available funding exceeds programmed project cost; a negative balance means that programmed project costs exceed available funding; and a zero net balance indicates that programmed project costs equal available funding.*

** Because the MPO does not encompass either the Berrien or Cass County as a whole the CMAQ funds are county wide allocation and some of the funds do come to the MPO but not all in the form of road projects and transit projects.

~Due to the newness of this specific funding source in the TMA, NATS will be holding a separate call for projects in late July to handle the programming of the TAP funds.

TRANSIT FINANCIAL FORECAST—FEDERAL

Sources of Federal Transit Funding

Federal Revenue for transit comes from federal motor fuel taxes, just as it does for highway projects. Some of the motor fuel tax collected from around the country is deposited in the Mass Transit Account of the Highway Trust Fund (HTF). As of the start of fiscal year 2012 (October 1, 2011), the balance of the federal Mass Transit Account was $7.32 billion.[26] Federal transit funding is similar to federal highway funding in that

[26] http://www.fhwa.dot.gov/highwaytrustfund/index.htm.

there are several core programs where money is distributed on a formula basis and other programs that are competitive in nature. Here are brief descriptions of some of the most common federal transit programs.

Section 5307: This is one of the larger sources of transit funding that is apportioned to Michigan. Section 5307 funds can be used for:

- Capital projects
- Transit planning
- Projects eligible under the former Job Access Reverse Commute (JARC) program (intended to link people without transportation to available jobs).
- Some of the funds can also be used for operating expenses, depending on the size of the transit agency.
- One percent of funds received are to be used by the agency to improve security at agency facilities.

Distribution is based on formulas including population, population density, and operating characteristics related to transit service. Urbanized areas of 200,000 population or larger receive their own apportionment. As with the NATS area, the Michiana Area Council of Governments is the recognized recipient of the transit funds for the urbanized area and the apportionment goes to MACOG first then is apportioned to Niles Dial A Ride. Areas between 50,000 and 199,999 population are awarded funds by the governor from the governor's apportionment. In the NATS area, MACOG and South Bend TRANSPO are the designated recipients for the IN portion of the UZA, Niles is the designated recipient for the MI portion. Per an MOU, each year when congress apportions the funds, MACOG prepares a distribution table. Representatives from TRANSPO and from Niles convene to discuss and split the bus portion of the apportionment. A letter is signed and forwarded to MACOG. Because the Niles system is so much smaller than TRANSPO, the agreement has typically been based on Niles DART's funding needs, with TRANSPO accepting the remaining portion.

Section 5310, Elderly and Persons with Disabilities: Funding for projects to benefit seniors and disabled persons when service is unavailable or insufficient and transit access projects for disabled persons exceeding Americans with Disabilities Act (ADA) requirements. Section 5310 incorporates the former New Freedom program. The State of Michigan allocates its funding on a per-project basis.

Section 5311, Non-Urbanized Area Formula Grant: Funds for capital, operating, and rural transit planning activities in areas under 50,000 population. Activities under the former JARC program (see Section 5307 above) in rural areas are also eligible. The state must use 15 percent of its Section 5311 funding on intercity bus transportation. The State of Michigan operates this program on a competitive basis. Areas in the NATS MPO that would be eligible for these funds are Berrien Bus, Cass County Public Transit, and Buchanan Dial A Ride. While Cass County Public Transportation is part of the MPO area, such a small portion of the urbanized area is in the MPO that the 5311 funds for this agency are listed in the State Transportation Improvement Program.

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Section 5337, State of Good Repair Grants: Funding to state and local governmental authorities for capital, maintenance, and operational support projects to keep fixed guideway systems in a state of good repair. Recipients will also be required to develop and implement an asset management plan. Fifty percent of Section 5337 funding will be distributed via a formula accounting for vehicle revenue miles and directional route miles; fifty percent is based on ratios of past funding received. Currently, the NATS region is not eligible for these funds.

Section 5339, Bus and Bus Facilities: Funds will be made available under this program to replace, rehabilitate, and purchase buses and related equipment, as well as construct bus-related facilities. Each state will receive $1.25 million, with the remaining funding apportioned to transit agencies based on various population and service factors.

Congestion Mitigation and Air Quality Improvement (CMAQ): Intended to reduce emissions from transportation-related sources. MAP-21 has placed an emphasis on diesel retrofits, but funds can also be used for traffic signal retiming, actuations, and interconnects; installing dedicated turn lanes; roundabouts; travel demand management such a ride share and vanpools; transit; and nonmotorized projects that divert non-recreational travel from single-occupant vehicles. CMAQ funds come to the MPO by means of a countywide allocation, since the MPO does not encompass the entire county. Therefore, there are CMAQ funds for projects in Berrien and Cass Counties that can be utilized for projects within the MPO. For FY 2014 Berrien County received an allocation of $578,210 and Cass County received $176,329. The distribution of the county funds are decided at publicly held county meetings, where all transit and road projects are discussed and voted upon.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF FEDERAL TRANSIT FUNDS

The base for the federal portion of the transit financial forecast is the amount of federal funding each transit agency received in the region in FY 2013, the first year of MAP-21. Given the extra obligation authority available at the state level, the MTPA rates of increase were used for FY 2014, rather than the lower MAP-21 factor (1.38 percent). Table 6 shows the federal transit forecast for the FY 2014-17 TIP period.

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Table 47 - Federal Transit Revenue Projections

NATS FY	Sec 5307	Sec 5310 (Sen/Dsbld)	Sec 5311 (Rural) Op	Sec 5339 Bus & Bus Facilities*	CMAQ Funds Berrien (Cass)	Total
2014	182,484	0	44,607	0	$578,210 $(176,329)	807,301 (405,420)
2015	185,002	0	45,222	0	$578,210 $(192,817)	808,434 (423,041)
2016	187,555	0	45,846	0	$578,210 $(192,817)	811,611 (462,218)
2017	190,143	0	46,479	0	$578,210 $(192,817)	814,832 (429,439)
Total	745,184	0	182,154	0	$2,312,841 ($769,782)	3,240,179 (1,697,120)

TRANSIT FINANCIAL FORECAST—STATE

Sources of State Transit Funding

The majority of state-level transit funding is derived from the same source as state highway funding, the state tax on motor fuels. Act 51 stipulates that 10 percent of receipts into the MTF, after certain deductions, are to be deposited in a subaccount of the MTF called the Comprehensive Transportation Fund (CTF). This is analogous to the Mass Transit Account of the Highway Trust Fund at the federal level. Additionally, a portion of the state-level auto-related sales tax is deposited in the CTF.[27] Distributions from the CTF are used by public transit agencies for matching federal grants and also for operating expenses. Approximately $157 million was distributed to the CTF in FY 2011.[28]

Base and Assumptions Used in Forecast Calculations of State Transit Funds

The base for calculations of state transit funds is the amount transit agencies in the NATS region received in FY 2013. The CTF amounts in the NATS region were not constant from 2011 to 2013 due to the following reasons:

1. In the past, MDOT used toll credits for transit to match capital projects, except for facility and bus projects, which were matched with cash. MDOT no longer uses toll credits to match transit projects.
2. In previous years, Niles DART did not list operating expenses in the TIP. Under SAFETEA-LU, transit agencies in large urban areas (those with over 200,000 people) could not use federal 5307 funds to cover operating expenses. The current legislation, MAP-21, allows for agencies in large UZAs to use some of their 5307 funds for operating expenses, provided that the system runs 100 or fewer buses

[27] Hamilton, William E. *Act 51 Primer* (House Fiscal Agency, February 2007), p. 4.
[28] MDOT Report 139 for 2011, Schedule A.

in fixed route service during peak hours. TRANSPO runs fewer than 100 buses, and we do, too, so we are hoping to utilize some of the annual 5307 apportionment to the UZA for operating expenses.

Funding was adjusted upward by 3.75 percent for state match and 0.37% for state operating in FY 2014, the first year of the TIP, and then by the same percentage in FYs 2015 through 2017, in accordance with factors determined by the Financial Workgroup and approved by the Michigan Transportation Planning Association. The state-level CTF distributions to the NATS transit agencies are shown in Table 7, broken down by state match and state operating.

Table 48 - State Transit (CTF) Revenue Projections

FY	Sec 5307 State Operating	Sec 5307 Capital	Sec 5311 (Rural) Op State	Sec 5339 Bus & Bus Facilities (State)	Total
2014	175,647	30,087	73,270	0	279,004
2015	176,296	31,215	73,541	0	281,052
2016	176,948	32,385	73,813	0	283,146
2017	177,610	33,599	74,086	0	285,295
Total	706,501	127,286	294,710	0	1,128,497

The third column of Table 9, State Match for JARC-Type Projects, shows the maximum amount of match that the state will provide to transit agencies using some of their Section 5307 funding for projects eligible under the Job Access and Reverse Commute program. This program was a stand-alone under the old SAFETEA-LU law, but has been folded into the Sec 5307 program under MAP-21. JARC projects are intended to connect persons without an automobile to job opportunities in many parts of the region.

TRANSIT FINANCIAL FORECAST—LOCAL

Sources of Local Transit Funding

Major sources of local funding for transit agencies include farebox revenues, general fund transfers from city governments, and transportation millages.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF LOCAL TRANSIT FUNDS

The base amounts for farebox, general fund transfers, and millages are derived the MDOT Public Transportation Management System from the reconciled 2011. Presuming that transit agencies spend all money that they receive each year, these data can be used for revenue projections as well.

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Table 49 - Local Transit Revenue Projections

FY	Berrien Bus	Niles DAR	Buchanan DAR
2014	364,649	170,541	105,663
2015	364,649	170,541	105,663
2016	364,649	170,541	105,663
2017	364,649	170,541	105,663

Source: Information was gathered from the PTMS data source and the year was the 2011 reconciled report-local revenue and farebox

DISCUSSION OF INNOVATIVE FINANCING STRATEGIES-TRANSIT

Sources of funding for transit are not limited to the federal, state, and local sources previously mentioned. As with highway funding, there are alternative sources of funding that can be utilized to operate transit service. Bonds can be issued (see discussion of bonds in the "Innovative Financing Strategies—Highway" section). The federal government also allows the use of toll credits to match federal funds. Toll credits are earned on tolled facilities, such as the Blue Water Bridge in Port Huron. Regulations allow for the use of toll revenues (after facility operating expenses) to be used as "soft match" for transit projects. Soft match means that actual money does not have to be provided—the toll revenues are used as a "credit" against the match. This allows the actual toll funds to be used on other parts of the transportation system, thus stretching the resources available to maintain the system.[29] However, MDOT is currently not allowing toll credits to be used as match.

TRANSIT CAPITAL AND OPERATIONS

Transit expenditures are divided into two basic categories, capital and operations.

1. *Capital* - refers to the physical assets of the agency, such as buses and other vehicles, stations and shelters at bus stops, office equipment and furnishings, and certain spare parts for vehicles.
2. *Operations* - refers to the activities necessary to keep the system operating, such as driver wages and maintenance costs. Most expenses of transit agencies are operations expenses.

Data on capital and operating costs were derived from the 2014-2017 TIP project requests from all eligible agencies. This did not include Cass County transit as their revenue is listed in the STIP. It is also assumed that the transit agencies are spending all available capital and operations funding, so that the amount expended on these items is roughly equal to the amount available. Table 9 shows the amounts estimated to be available for transit capital and operations during the FY 2014-FY 2017 TIP period.

[29] FHWA Office of Innovative Program Delivery at http://www.fhwa.dot.gov/ipd/finance/tools_programs/federal_aid/matching_strategies/toll_credits.htm.

Table 50 - Anticipated Amounts to be Expended on Transit Capital and Transit Operations

FY NATS	Operations	Capital	Total
2014	661,640	226,858	888,498
2015	665,800	332,650	998,450
2016	669,640	137,750	807,390
2017	669,640	196,250	865,890
Total:	2,666,720	893,508	3,560,223

These tables shows the total project costs for 14-17 capital and operations with federal, state, and local funds for all of the NATS transit agencies with the exception of Cass County Public Transit.

TRANSIT COMMITMENTS AND PROJECTED AVAILABLE REVENUE

The TIP must be fiscally constrained; that is, the cost of projects programmed in the TIP cannot exceed revenues "reasonably expected to be available" during the four-year TIP period. Funding for core programs such as Section 5307, Section 5339, Section 5310, and Section 5311 are expected to be available to the region based on historical trends of funding from earlier, similar programs in past federal surface transportation laws. Likewise, state funding from the state's Comprehensive Transportation Fund (CTF), and local sources of revenue such as farebox, general fund transfers, and millages, are also expected to be available during the FY 2014 through FY 2017 TIP period. Funds from other programs are generally awarded on a competitive basis and are therefore impossible to predict. In these cases, projects are not amended into the TIP until proof of funding availability (such as an award letter) is provided. Funds from federal competitive programs are not included in the revenue forecast.

All federally-funded projects must be in the TIP. Additionally, any non-federally-funded but regionally significant project must also be included. In these cases, project submitters demonstrate that funding is available and what sources of non-federal funding are to be utilized.

Projects programmed in the TIP are known as *commitments*. As discussed previously, commitments cannot exceed funds reasonably expected to be available. Projects must also be programmed in year of expenditure dollars, meaning that they must be adjusted for inflation to reflect the expected purchasing power of a dollar in the year the project is expected to be built. The MTPA/Financial Work Group has decided on an annual inflation rate of 3.3 percent for projects over the TIP period. This means that a project costing $100,000 in FY 2014 is expected to cost $103,300 in FY 2015, $106,709 in FY 2016, and $110,230 in FY 2017. Since the amount of federal funds available is only expected to increase by 3.75 percent per year, state match funds by only 3.75 percent per year, and state operating funds by 0.37 percent per year over the four-year TIP period, this means that funding will barely keep pace with inflation. All transit projects submitted were adjusted by the submitting agency.

Table 42 shows the summary financial constraint demonstration for transit. The demonstration is provided to the Michigan Department of Transportation, Federal Highway Administration, and Federal Transit Administration in order to show that the cost of planned projects does not exceed the amount of funding reasonably expected to be available over the FY 2014 through FY 2017 TIP period. To see the detailed fiscal constraint demonstration, refer to Appendix B.

Table 51 - Transit Fiscal Constraint Demonstration

FY	Available Federal	Programmed Federal	Available State	Programmed State	Available Local	Programmed Local
2014						
2015						
2016						
2017						
Total						

ANALYSIS OF FUNDING AND NEEDS

While the previous tables have shown fiscal constraint; i.e., that programmed funds do not exceed available revenues, the fact remains that the needs of the transportation system substantially outweigh the funding available to address them. A brief discussion of highway funding illustrates the problem.

On a statewide basis, a study headed by Michigan Rep. Rick Olson found that approximately $1.4 billion was needed annually through 2015 just to maintain the existing highway system. This could be expected to increase in future years to approximately $2.6 billion annually by 2023. Michigan currently receives about $1 billion from the federal government for transportation and raises an additional $2 billion through the MTF. After MTF deductions for administrative services and the Comprehensive Transportation Fund (transit), the state is left with approximately $1.8 billion in state funds, so there is a total of $2.8 billion for highways and bridges. If an additional $1.4 billion is required to keep the system at a minimally acceptable level of service, this indicates that the state only has about two-thirds of the funding necessary *just to maintain the existing infrastructure*. Any new facilities would, of course, increase the costs of the system to higher levels.

ENVIRONMENTAL MITIGATION

This chapter will serve as an introduction on the effort by the SWMPC, to place greater emphasis on the environmental impacts of federally funded transportation projects in the region; and to develop and maintain partnerships with private and public state and local governments/agencies and Native American Tribes who can assist in the development of the LRTP and TIP.

MAP-21

Moving Ahead for Progress in the 21st Century (MAP-21) is the current transportation legislation as of October 1, 2013, which replaces the extensions to SAFETEA-LU legislation that were in place during the previous long range plan update. MAP-21 reinforces SAFETEA-LU's provisions for environmental mitigation, and in some ways increases funding avenues for environmental mitigation activities on all types of projects. While streamlining the environmental review process, MAP-21 reiterates the need, for a discussion in the planning process that addresses:

> "Types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the plan. This discussion shall be developed in consultation with federal, state, and tribal wildlife, land management, and regulatory agencies."

A three stop process was used to help identify this requirement:

1. Define and inventory the environmentally sensitive species and resources (Floodplains, Wetlands, Potential conservation areas, Parks, trails, and other recreational lands(not including golf courses or camps), Cemeteries, Other conservation easements, Aquifer recharge areas, Other water features (lakes, ponds, rivers, coldwater streams, and county drains), Woodlands, Well heads, Cultural, historical, archeologically significant sites, FEMA-identified flood plain areas).
2. The 2014-2017 Transportation projects are overlayed on each of they resource maps.
3. Identify and assess likely impacts on these species and areas from transportation projects.
4. Address possible mitigation strategies.

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DEFINE AND INVENTORY THE ENVIRONMENTALLY SENSITIVE SPECIES AND RESOURCES

Endangered Species Act Overview

When Congress passed the Endangered Species Act (ESA) in 1973, it recognized that our rich natural heritage is of "esthetic, ecological, educational, recreational, and scientific value to our Nation and its people."[30] It further expressed concern that many of our nation's native plants and animals were in danger of becoming extinct.

The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend. It is administered by the U.S. Fish and Wildlife Service and the Commerce Department's National Marine Fisheries Service (NMFS). The FWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of NMFS are mainly marine wildlife such as whales and anadromons fish such as salmon.

Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened. For the purposes of the ESA, Congress defined species to include subspecies, varieties, and, for vertebrates, distinct population segments.

Piping Plover
Source: plover.fws.gov

Berrien and Cass County is home to many species that are included in the candidate, endangered or threatened species categories.

- **Endangered Species -** species that are likely to become extinct throughout all or a large portion of their range.
- **Threatened Species** - species that are likely to become endangered in the near future.
- **Candidate species** - Plants and animals that have been studied and the Service has concluded that they should be proposed for addition to the Federal endangered and threatened species list. These species have formerly been referred to as category 1 candidate species. From the February 28, 1996 Federal Register, page 7597: "those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded."

[30] http://www.fws.gov/endangered/laws-policies/

Table 52 - Threatened, Endangered, and Candidate Species

County	Species	Status	Habitat
Berrien	Indiana Bat (Myotis sodalis)	Endangered	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.
Berrien	Piping plover (Charadrius melodus)	Endangered	Beaches a long shorelines of the Great Lakes
Berrien	Eastern massasauga (Sistrurus catenatus)	Candidate	
Berrien	Mitchell's satyr butterfly (Neonympha mitchellii mitchellii)	Endangered	Fens; wetlands characterized by calcareous soils which are fed by carbonate - rich water from seeps and springs
Berrien	Pitcher's thistle (Cirsium pitcheri)	Threatened	Stabilized dunes and blowout areas
Berrien	Small whorled pogonia (Isotria medeoloides)	Threatened	Dry woodland; upland sites in mixed forests (second or third growth stage
Cass	Indiana Bat (Myotis sodalis)	Endangered	Summer habitat includes small to medium river and stream corridors with well developed riparian woods; woodlots within 1 to 3 miles of small to medium rivers and streams; and upland forests. Caves and mines as hibernacula.

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Cass	Copperbelly Water Snake (Nerodia erythrogaster neglecta)	Threatened	Wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods
Cass	Eastern Massasauga (Sistrurus catenatus)	Candidate	
Cass	Mitchell's satyr butterfly (Neonympha mitchellii mitchellii)	Endangered	Fens; wetlands characterized by calcareous soils which are fed by carbonate - rich water from seeps and springs

Source: http://www.fws.gov/midwest/Endangered/lists/pdf/MichiganCtyListMarch2013.pdf

There were ten main areas of significant natural resources that were analyzed, this is a description of each of those resources.

1. Biological Rarity Probability Value

Map 21 reviews the probability of finding the species in Table 48 as indicated above. The probability value is designed to highlight those areas with known occurrences of rare species or high quality natural communities. Probability model - The model is designed to help protect biodiversity and minimize potential regulatory problems by directing development away from those areas with a high likelihood of encountering a sensitive species. Because no specific species information is presented, the model reduces the sensitivity of the underlying MNFI data. A high probability indicates that the area of interest contains the spatial extent of an occurrence, there is potential habitat within the area, and the occurrence has been observed in the recent past. A low probability indicates that the area contains the spatial extent of an historic species occurrence and there is potential habitat within the area. While the low probability indicates that the underlying occurrences are historic, there is still a possibility that the species persists in appropriate habitat The probability model can be used in the context of both land use planning efforts and conservation planning efforts. By delineating areas with high likelihood of encountering sensitive species or natural communities, the model can be used to direct development away from those areas.

2. Agricultural Lands

Map 22 reviews the occurrence of agricultural lands in the planning area. Those lands are defined as being used for farming and agricultural purposes.

3. Cold Water Streams

Map 23 shows the occurrence of cold water streams in the study area. These are defined as streams are the primary systems within a watershed making their health extremely important to all of the connected

streams, rivers and ultimately, lakes throughout the watershed. These vitally important coldwater streams act to control excess sediment and nutrients from entering the lower portions of a watershed, which means better overall water quality, biodiversity and improved recreational opportunities. They are also vital in controlling water levels, whether it is in times of drought or in the event of a flood. A healthy coldwater system will sustain the larger, lower portions through a steady base flow from the headwaters. Their importance also extends to terrestrial wildlife as the native vegetation that binds the riparian zones are effective wildlife corridors.

4. Significant Places

Map 24 indicates where those areas with non-motorized facilities, schools, cemetaries, and boat launches.

5. Floodplains

Map 25 highlights the areas in which you would encounter floodplains in the study area. They are defined as a nearly flat plain along the course of a stream or river that is naturally subject to flooding. ZONE A =Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies.

6. Forested

Map 26 indicates where the forested lands are which are lands covered with woods or trees.

7. Parks, Trails, and Other Recreational Lands

Map 27 shows wehre all of the community parks are located within the study area, these do not including golf courses or camps.

8. Potential Conservation Areas

Map 28 indicates where the Potential conservation areas (PCA's) are and are defined as places on the landscape dominated by native vegetation that have various levels of potential for harboring high quality natural areas and unique natural features.

9. Water features

Map 29 shows the location of lakes, ponds, rivers, and county drains that can be vulnerable during transportation project developments.

10. Wetlands

Map 30 indicates wehre areas of land that has a wet and spongy soil, as a marsh, swamp, or bog are located in the study area.

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Table 49 shows that each project has their own unique identifier that is matched on each of the following maps, Maps 21-30. Analysis was done following the completion of these maps to assess any impacts to the resources discussed above.

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Table 53 - 2014-2017 Road and Highway Projects

Label	Fiscal Year	Project Name	Miles	Work Type	Description
1	2014	M-139, ROW & CON phase	0.1	Bridge replacement	Bridge replacement
2	2014	M-139	0.14	Bridge replacement	Bridge replacement
3	2014	Red Bud Trl-1, Third St-2, Portage Rd-3	6.2	Resurface	Hot mix patching and single seal coat
4	2014	Redfield St	1.27	Restore & rehabilitate	Structural HMA overlay with shoulders and striping
5	2014	Seventeenth St	0.51	Resurface	Resurface
6	2014	Bertrand Rd	1.04	Resurface	Resurface
7	2014	Elkhart Rd	1.33	Resurface	Partial milling and total resurface
8	2015, 2016	US-31 NB	0	Roadside facility	Expand existing lot to add capacity and mill and resurface existing portion of lot
9	2015	Madron Lake-1, N Main-2, Red Bud Trl-3	5.7	Resurface	Hot mix patching and seal coat
10	2015	Range Line Rd-1, Lake St-2, Main St-3	5.1	Resurface	Hot mix patching and seal coat
11	2015	Broadway	0.3	Resurface	Cold Mill and resurface
12	2015	Adamsville	1.5	Restore & Rehabilitate	
13	2016	Galien-Buchanan-1, Bakertown-2, Fourth-3, Terre Coupe-4	5.5	Resurface	Hot mix patching and seal coat
14	2016	Bertrand-1, Third-2, State Line-3	5.1	Resurface	Hot mix patching and seal coat
15	2016	Adamsville St	0.4	Restore & rehabilitate	Crush and shape
16	2016	Red Bud Trail	0.5	Resurface	Cold milling and resurfacing of Red Bud Trail a distance of 2,700', including miscellaneous curb and gutter replacement, ADA sidewalk ramps, misc. subgrade underdrains, sections of full depth pavement replacement and pavement markings. The roadway through this area is experiencing moderate transverse and edge cracking.
17	2016	Fir Rd	1	Resurface	HMA overlay with Shoulders and Striping
18	2016	Fir Rd	0.5	Resurface	HMA Overlay with shoulders and striping
20	2017	Niles-Buchanan-1, Red Bud 2	4.9	Resurface	Hot mix asphalt and seal coat

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21	2017	Dayton-1, Orange-2, Third-3, Fulkerson-4, Ontario-5	5.9	Resurface	Hot mix patching and seal coat
22	2016	Sycamore St	0.5	Resurface	Thirteenth Street to Seventeenth Street. Cold mill and resurface
23	2017	Redfield St	1.1	Restore & rehabilitate	Mill and structural overlay with shoulders and stripng

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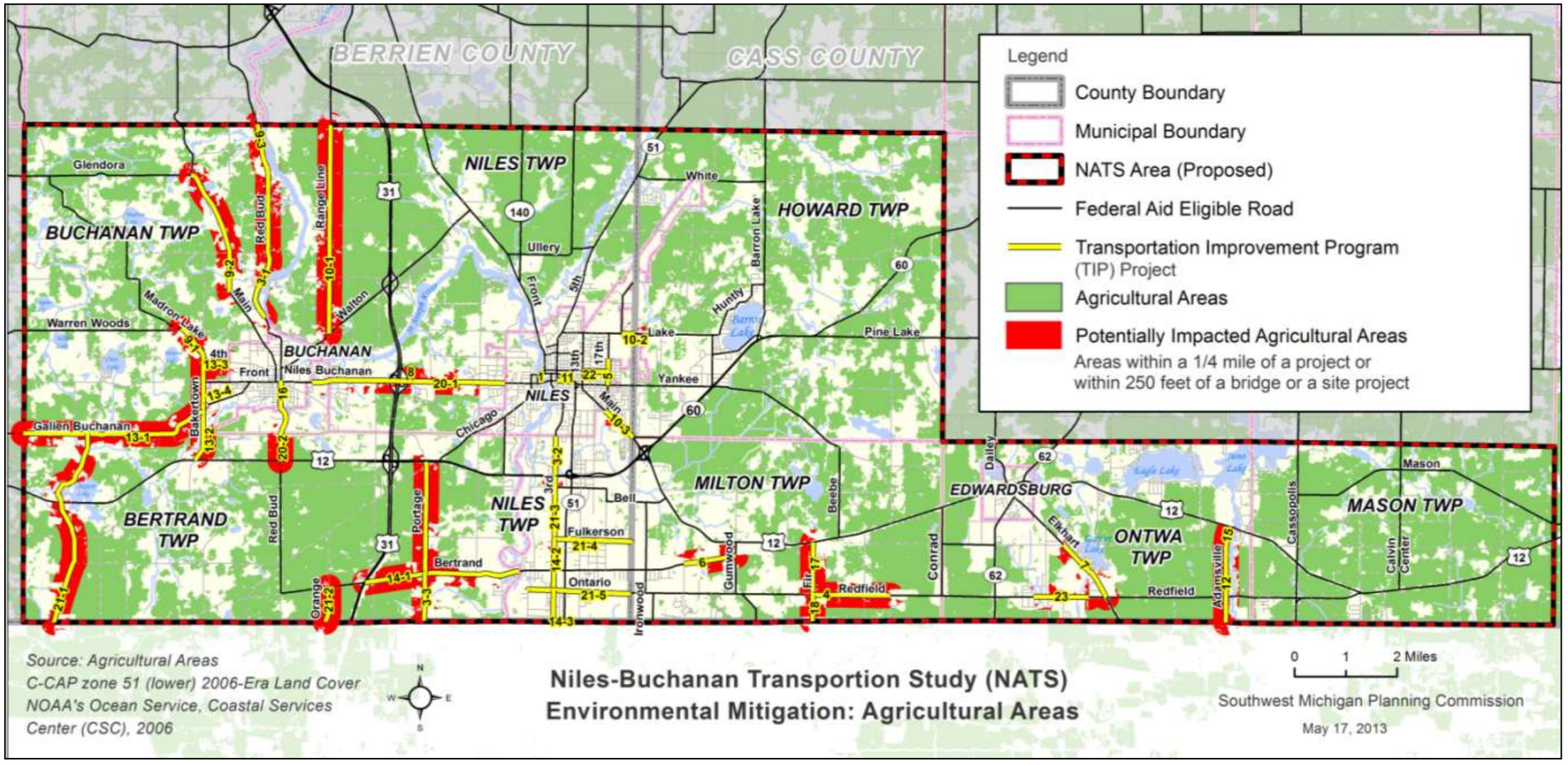
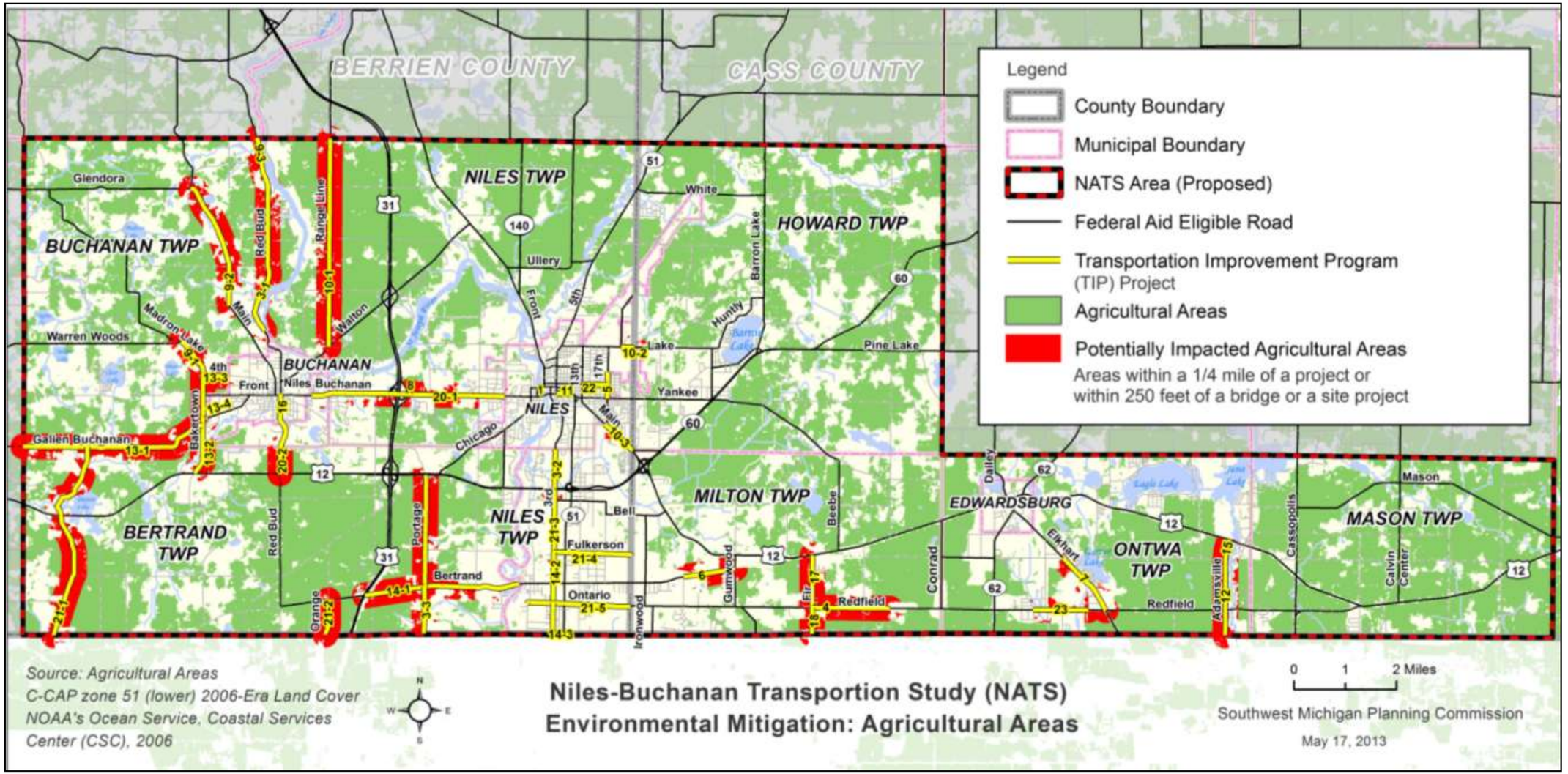
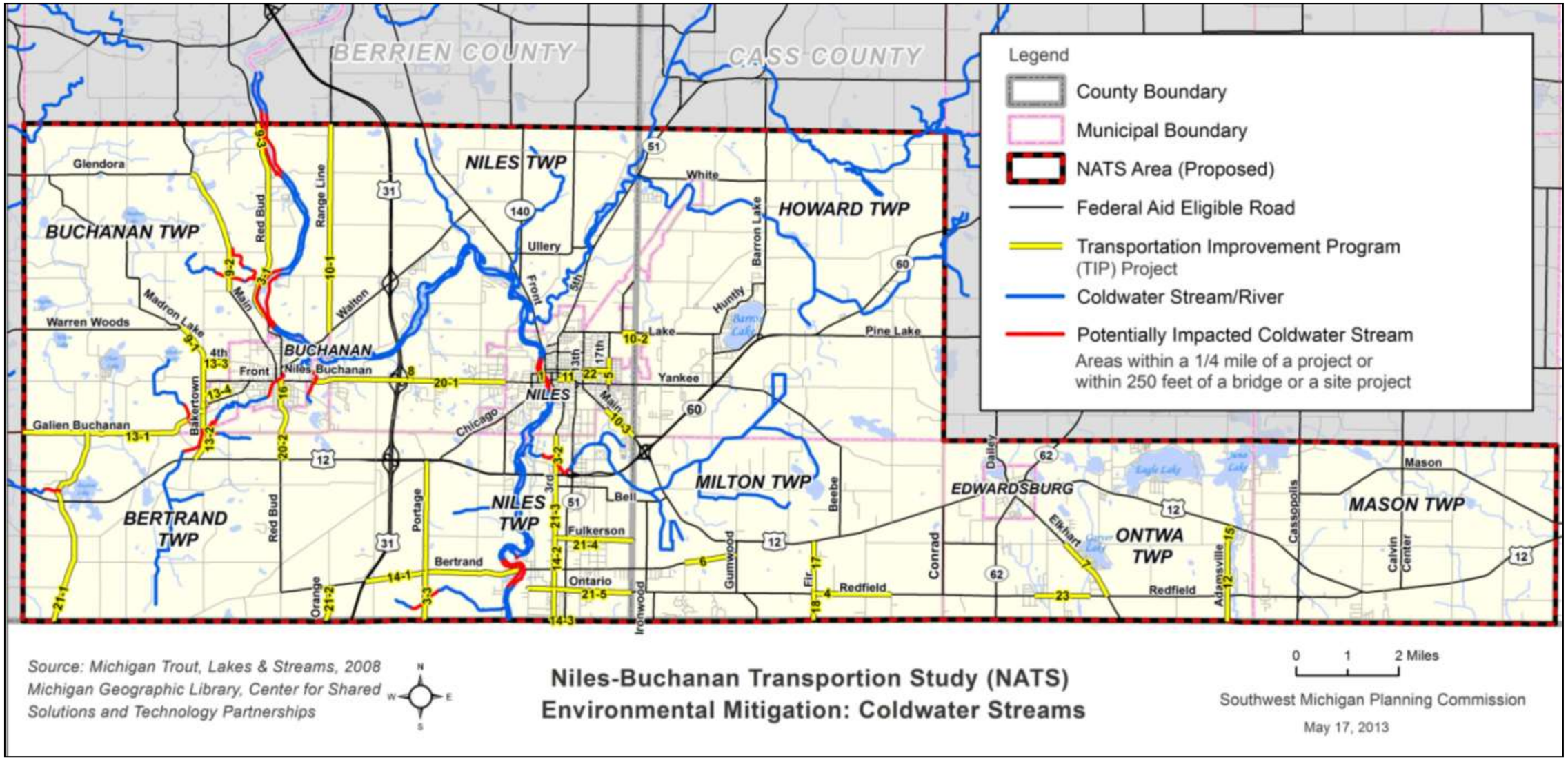
Map 22 - Environmental Mitigation: Biological Rarity Probability Value



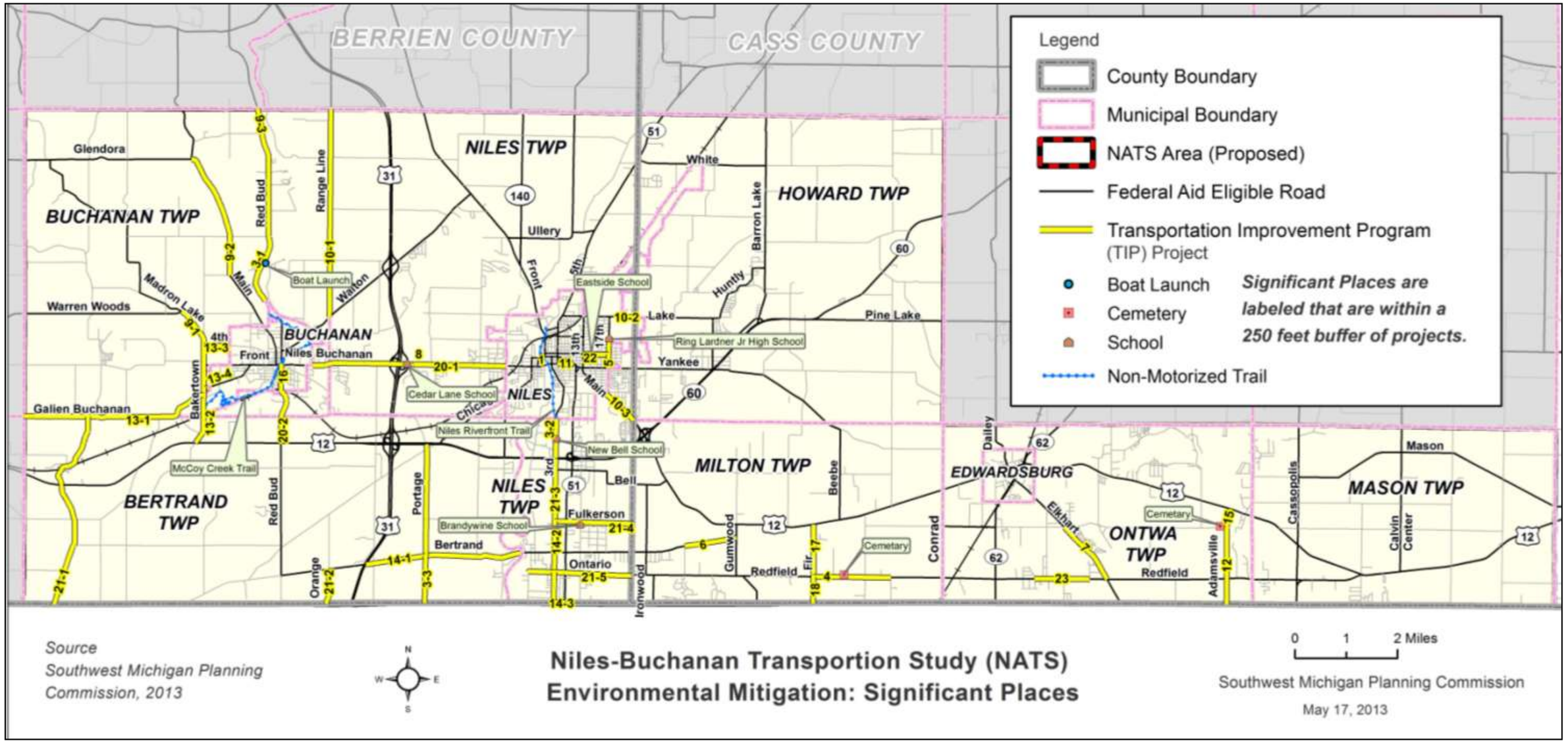
Map 23 - Environmental Mitigation: Agricultural Areas



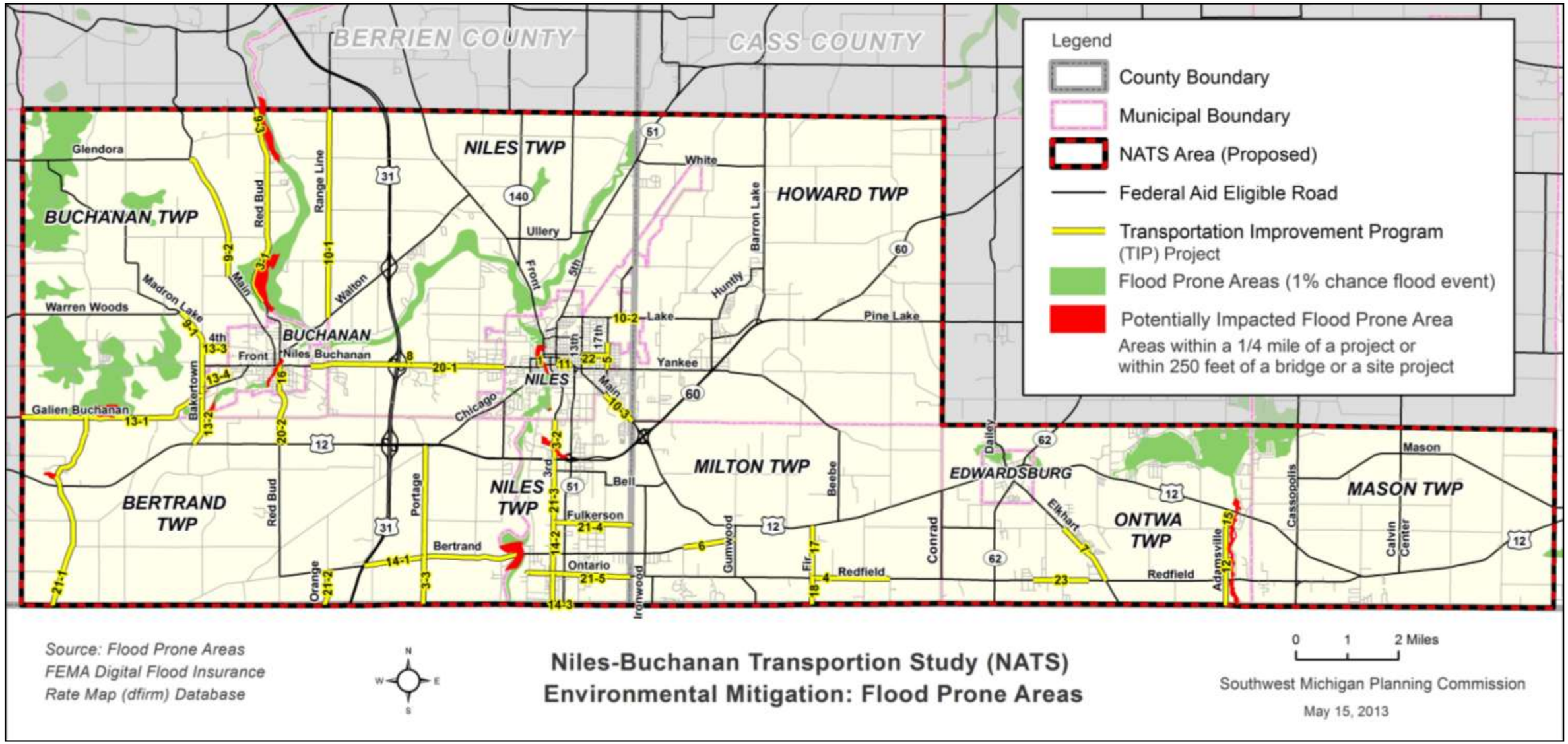
Map 24 - Environmental Mitigation: Coldwater Streams



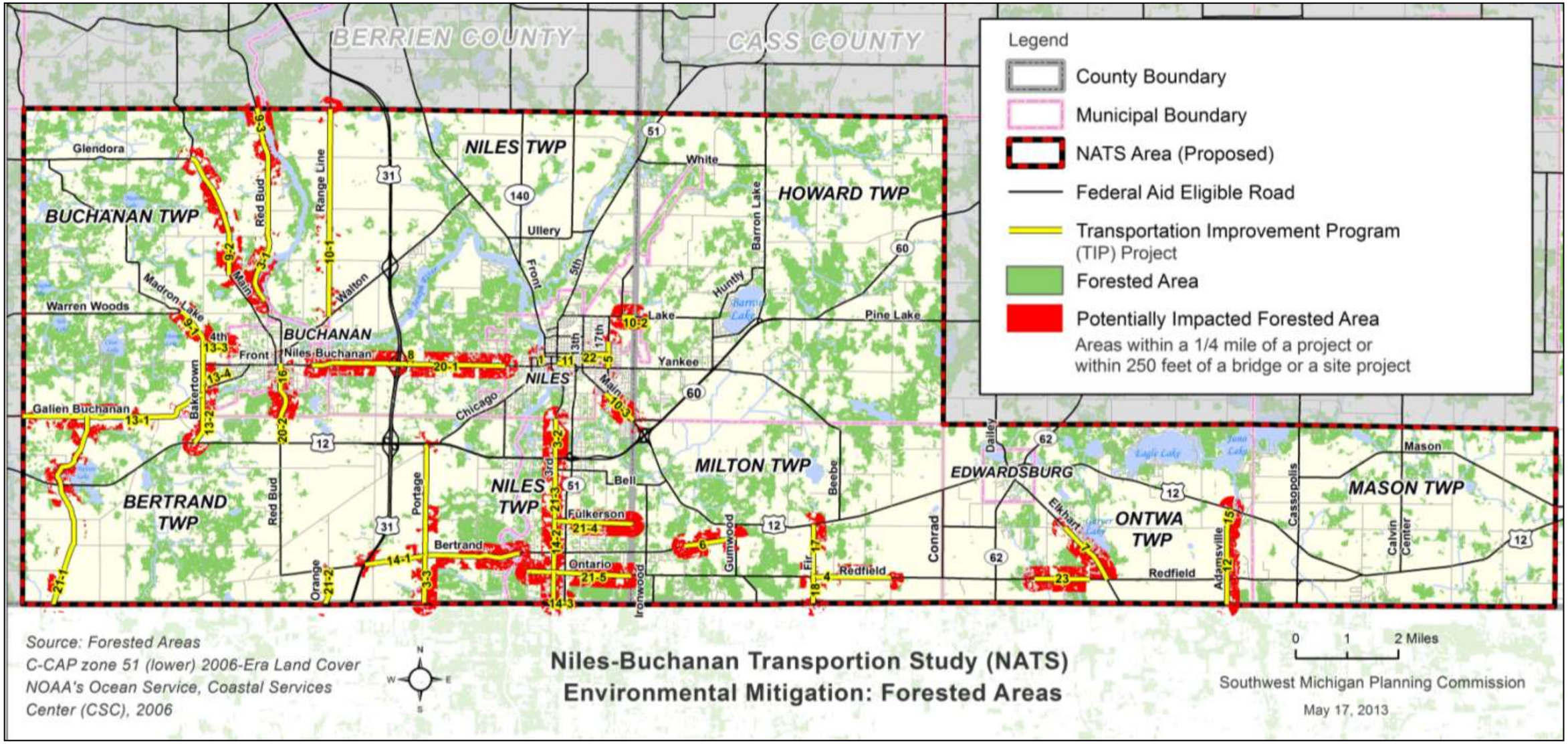
Map 25 - Environmental Mitigation: Significant Places



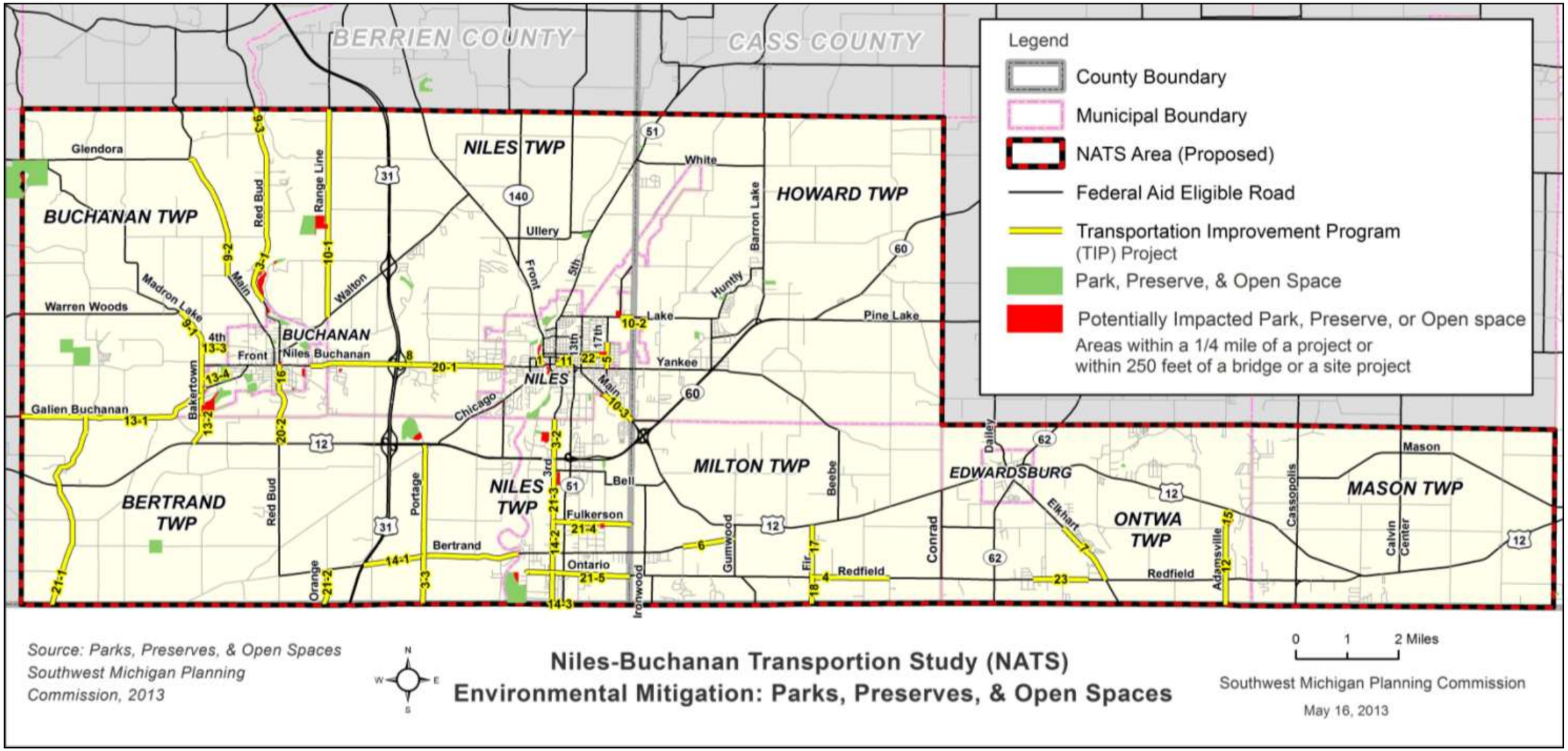
Map 26 - Environmental Mitigation: Flood Prone Areas



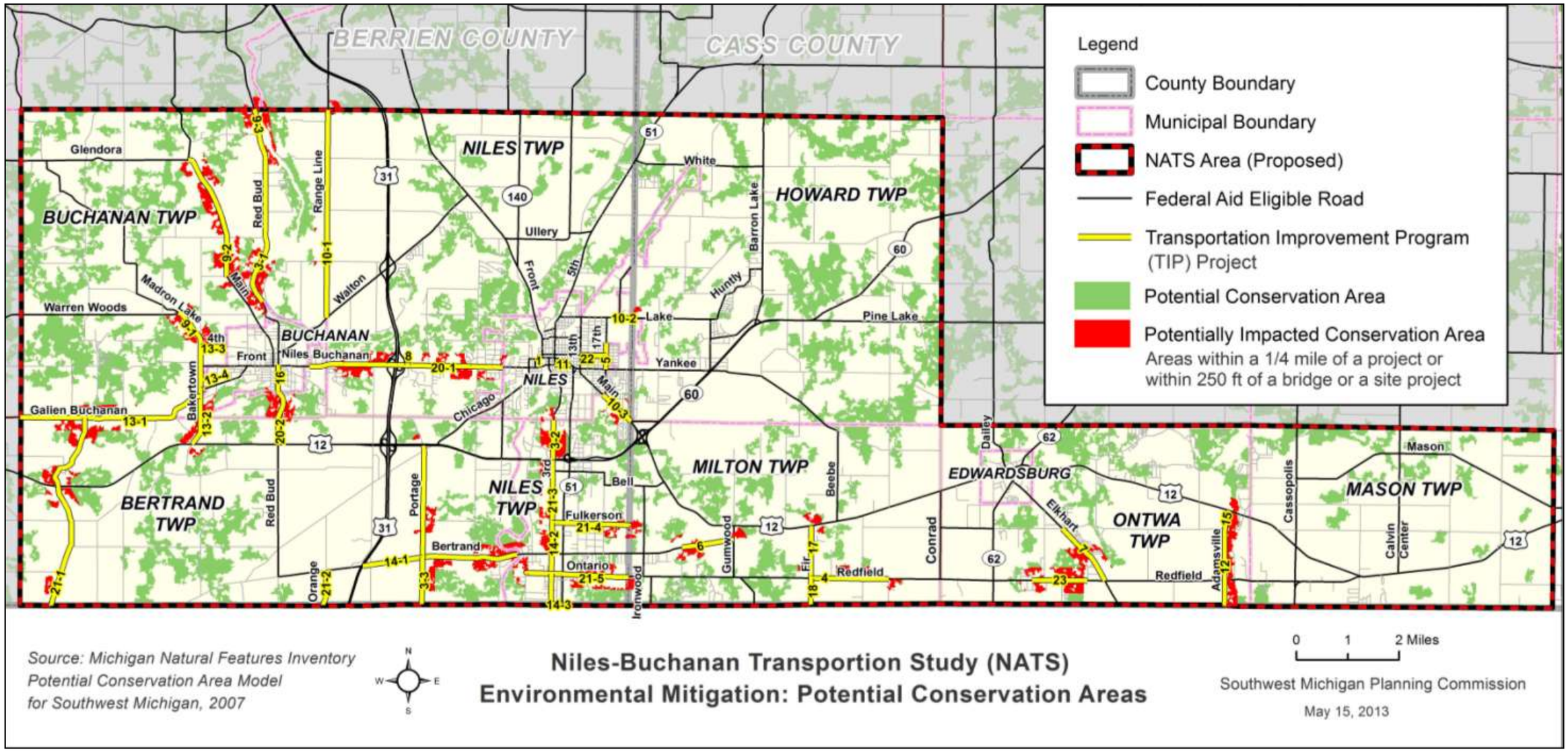
Map 27 - Environmental Mitigation: Forested Areas



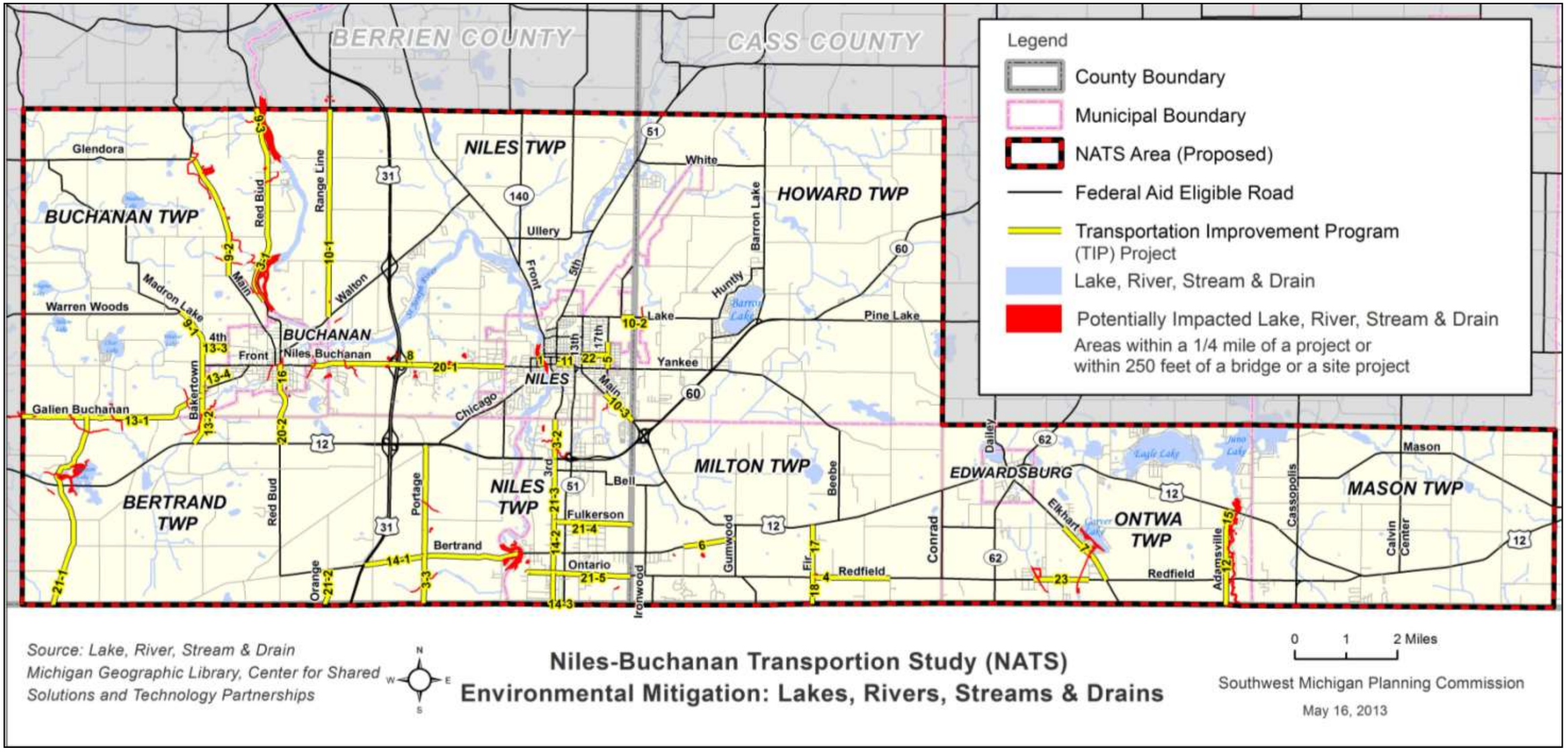
Map 28 - Environmental Mitigation: Parks, Preserves, & Open Spaces



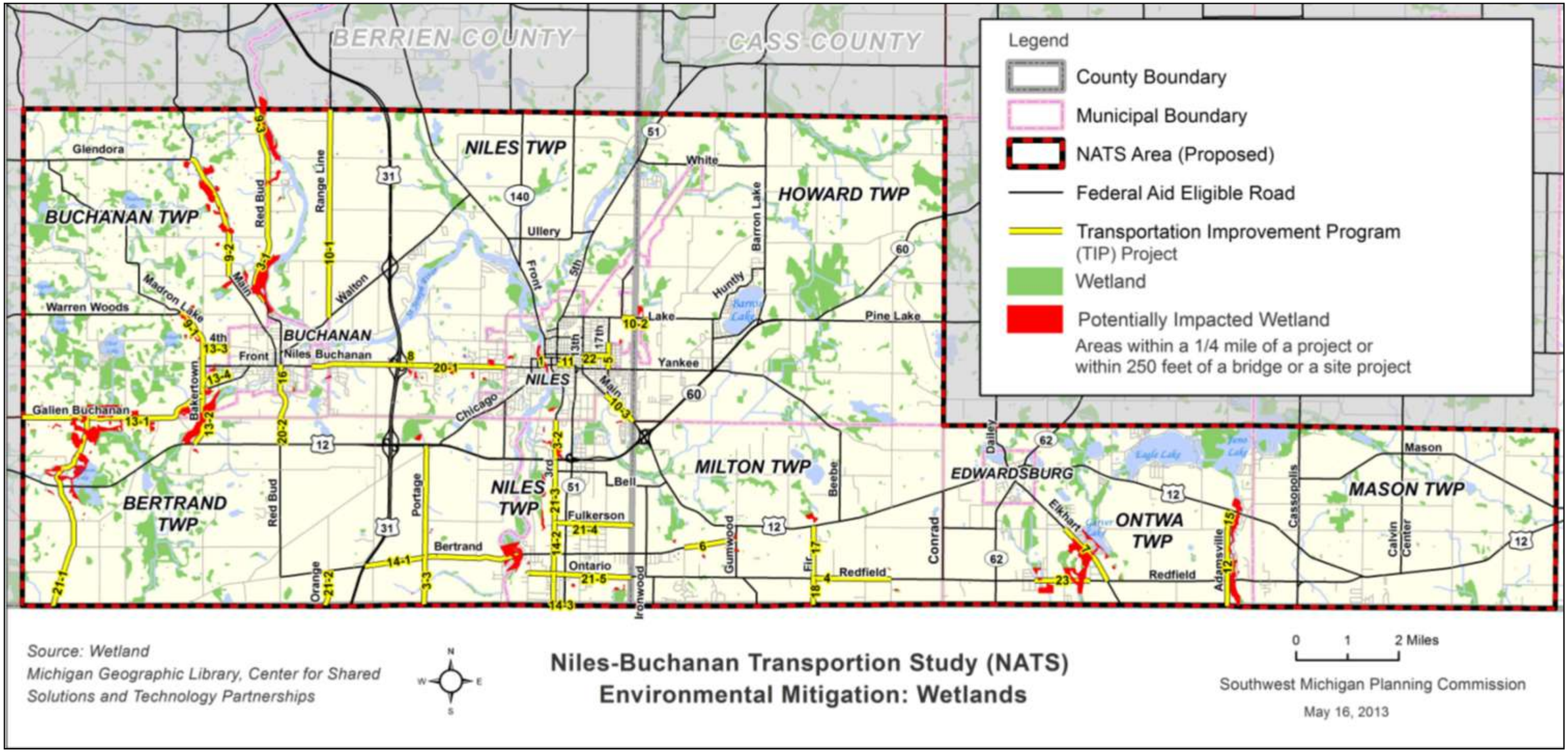
Map 29 - Environmental Mitigation: Potential Conservation Areas



Map 30 - Environmental Mitigation: Lakes, Rivers, Streams & Drains



Map 31 - Environmental Mitigation: Wetlands



ENVIRONMENTAL MITIGATION CONSIDERATIONS

It is important to note that in order to develop this chapter, and assess potential environmental impacts of NATS LRTP projects, the SWMPC used a consultation process to enlist the assistance of many partners and complete the following steps:

1. SWMPC consulted with submitting agencies and reviewed projects based on their location to sensitive areas and if they were adding capacity, building outside of the existing right of way, or dramatically changing the traffic pattern on the roadway.

2. SWMPC also worked to develop the environmental mitigation maps, agencies such as the Southwest Michigan Land Conservancy, the Nature Conservancy, and the Berrien County Planning Department, shared data files with SWMPC. SWMPC environmental planners assisted in identifying important environmental features, in developing buffer sizes, and in reviewing the plan.

3. SWMPC staff utilized GIS software to map the species and sensitive areas along with the identified LRTP projects. Each project was mapped with a buffer, depending on the type of environmental resource[31], to show the potential area that could be affected. SWMPC staff also utilized the information presented in Table 50 to review the specific areas that needed to be most focused on during the project's construction.

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31 Project type was not considered to be a substantial factor in determining buffer size because projects listed in the LRTP, with the exception of US-31, are rehabilitation, resurface, or reconstruction projects.

Table 54 - Environmental Mitigation Inventory

Label	Project Name	PCA	Potential Wetland	Wetland	Coldwater Streams/Rivers	Water Features	Flood Zone	Forested*	Agriculture*	Parks and Preserves	Non-Motorized Trail
1	M-139, ROW & CON phase Bridge			X	X	X	X		X	X	X
2	M-139 Bridge				X	X			X	X	X
3-1	Red Bud Trl	X	X	X	X	X	X	X	X	X	X
3-2	Third St	X	X	X	X	X	X	X		X	
3-3	Portage Rd	X	X	X	X	X		X	X	X	
4	Redfield St	X		X		X		X	X		
5	Seventeenth St									X	
6	Bertrand Rd	X		X		X		X	X		
7	Elkhart Rd	X	X	X		X		X	X		
8	US-31 NB							X	X		
9-1	Madron Lake Rd	X	X	X				X	X		
9-2	N Main	X	X	X	X	X		X	X	X	
9-3	Red Bud Trl	X	X	X	X	X	X	X	X		
10-1	Range Line Rd	X	X			X			X	X	
10-2	Lake St	X		X		X		X		X	
10-3	Main St	X	X	X		X		X		X	
11	Broadway		X	X						X	
12	Adamsville	X	X	X		X	X	X	X	X	
13-1	Galien-Buchanan	X	X	X	X	X	X	X	X		

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13-2	Bakertown	X	X	X	X	X		X	X	X	X
13-3	Fourth		X	X				X	X		
13-4	Terre Coupe		X	X				X			
14-1	Bertrand	X	X	X	X	X	X	X	X		
14-2	Third St	X	X	X				X			
14-3	State Line		X					X		X	
15	Adamsville St	X	X	X		X	X	X	X	X	
16	Red Bud Trl		X	X	X	X	X	X		X	X
17	Fir Rd	X		X				X	X		
18	Fir Rd							X	X		
20-1	Niles-Buchanan	X	X	X	X	X		X	X		
20-2	Red Bud Trl	X	X			X		X	X	X	
21-1	Dayton	X	X	X	X		X	X	X		
21-2	Orange					X			X		
21-3	Third St	X	X	X				X		X	
21-4	Fulkerson	X	X					X		X	
21-5	Ontario	X	X	X		X		X		X	
22	Sycamore St			X						X	
23	Redfield St	X	X	X		X		X	X		

*Over 1/4 Forested within buffer

Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project

*Over 1/4 specified land cover within buffer

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Table 55 - Location of Parks Near Transportation Project

LABEL	PROJECT NAME	PLACES WITHIN 250 FEET BUFFER	PARKS WITHIN 250 FEET BUFFER	PARKS WITHIN 1/4 MILE BUFFER	WATER FEATURES WITHIN 1/4 MILE BUFFER
1	M-139, ROW & CON phase Bridge		St. Joseph Riverfront Park		St. Joseph River
2	M-139 Bridge		St. Joseph Riverfront Park		St. Joseph River
3-1	Red Bud Trl	Boat Launch		Redbud Park	St. Joseph River
3-2	Third St	School	McCoy Creek Trail	Niles Township Community Park	Brandywine Creek
3-3	Portage Rd			Topinee Lake Preserve	unnamed
4	Redfield St	Cemetery			Unnamed ponds,
5	Seventeenth St			Eastside Park	
6	Bertrand Rd				Unnamed ponds,
7	Elkhart Rd				Cobus Creek, Garver Lake
8	US-31 NB	School			
9-1	Madron Lake Rd				
9-2	N Main		Vella Park		Unnameed ponds & streams
9-3	Red Bud Trl				St. Joseph River
10-1	Range Line Rd		Fernwood Botanical Garden and Nature Preserve		Unnameed
10-2	Lake St			Vella Park	Unnameed
10-3	Main St		Williams Field		Unnameed
11	Broadway			Saathoff Park, St Joseph Riverfront Park	
12	Adamsville				Christina Creek
13-1	Galien-Buchanan				Branch Creek
13-2	Bakertown		Bakertown Fen		Bakertown Drain, unnamed streams, McCoy Creek, Weaver Lake Creek

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13-3	Fourth				
13-4	Terre Coupe				
14-1	Bertrand				St. Joseph River
14-2	Third St				
14-3	State Line		Madeline Bertrand Park		
15	Adamsville St	Cemetery	Old Mill Natural Area		Christina Creek
16	Red Bud Trl			McCoy Pond	Alexander Street, McCoy Creek,
17	Fir Rd				unnamed pond
18	Fir Rd				unnamed pond
20-1	Niles-Buchanan				unnamed
20-2	Red Bud Trl			Sampson Park, Sampson Terrace Park	unnamed ponds & streams
21-1	Dayton				Dayton Lake
21-2	Orange				unnamed
21-3	Third St			South Fireman Park	
21-4	Fulkerson	School	Fulkersons Park		
21-5	Ontario			Madeline Bertrand Park	unnamed
22	Sycamore St	School		Eastside Park	
23	Redfield St				Cobus Creek, Gast Ditch

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MITIGATION GUIDELINES

Each project, of any type, proposed in the LRTP should be examined for potential environmental impacts prior to being programmed into the TIP. This is particularly important in an area like the Twin Cities area where natural features are abundant and important to residents. Because each NATS project was adjacent to at least one environmental feature, it is important to implement planning and construction practices that will protect the natural environment and cultural resources. The following are general guidelines that, if implemented, will help to ensure solid planning practices and enhance the general quality of life within the NATS boundaries.

PLANNING AND DESIGN GUIDELINES

- Use Context Sensitive Solutions (CSS) throughout the planning and project development process, beginning as early as possible. CSS is a collaborative process that is designed to solicit public and stakeholder input when developing transportation projects.
- Identify the area of potential impact connected to each transportation project, including the immediate area as well as related project development areas.
- Regularly update the environmental features inventory to determine if any environmentally sensitive resources could be impacted by the project.
- Coordinate the LRTP with the County Hazard Mitigation Plan.
- Coordinate transportation projects with local plans, such as comprehensive plans, watershed management plans, recreation plans, etc.
- Regularly collaborate and meet with local community officials and other relevant stakeholders to discuss environmental issues and goals.
- Where impacts are unavoidable, mitigate them to the fullest extent possible.
- Incorporate stormwater management into design using a "green streets concept" that takes into account landscaping needs and existing runoff issues.
- Promote public education on protecting sensitive features in land use planning.

CONSTRUCTION AND MAINTENANCE GUIDELINES

- Include all special requirements that address environmentally sensitive resources into plans and estimates used by contractors and subcontractors.
- Distribute information regarding activities prohibited in environmentally sensitive areas.
- Minimize construction and staging areas with clearly marked boundaries.
- Utilize the least intrusive construction techniques and materials.
- Avoid wetlands.
- Avoid disturbing the site as much as possible.

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    - Protect established vegetation (especially tree and drip zones, where tree roots are located) and habitat. If disruption is unavoidable, replace with native species as soon as possible.
    - Implement sediment and erosion control techniques.
    - Do not stockpile materials in sensitive areas.
    - Protect water quality by controlling runoff, regularly sweeping streets, protecting storm drains from construction debris, and implementing salt management techniques.
    - Protect cultural and historic resources, including surrounding soils and materials.
    - Minimize noise and vibrations.
    - Provide for solid waste disposal
        - Use the least hazardous substances possible, and ensure that such substances are properly handled, stored, and disposed.
- Keep construction activities away from wildlife crossings and corridors.
- Reduce land disturbances through efficient organization of construction activities
- Avoid equipment maintenance, fueling, leaks, spraying, etc. near sensitive areas.
- Incorporate Integrated Pest Management techniques if pesticides are used during maintenance.
- Properly size and place culverts to ensure fish passage and reduce erosion.
- Conduct on-site monitoring during and immediately following construction to ensure that environmental resources are protected as planned.
- Utilize buffer strips to protect sensitive features, especially wetlands.
- Where possible, realign/design routes or interchanges to protect sensitive features, especially wetlands.
- Consider alternatives to capacity expansion.
- Promote proactively restoring sites/building corridors and wildlife during road projects.

It is important to note that these guidelines are suggested as steps to mitigate potentially harmful effects of transportation projects on the natural environment. The SWMPC has no authority to require implementation of these guidelines. However, this information is intended to inform the construction process, from planning to implementation, and to ensure better coordination with general land use planning practices. [32]

[32] AASHTO Center for Environmental Excellence. Environmental Stewardship PracticesProcedures, and Policies for Highway Construction and Maintenance. http://environment.transportation.org/environmental_issues/construct_maint_prac/compendium/manual/

GVMC. 2035 Long Range Transportation Plan for the Grand Rapids Metropolitan Area.

Draft Document February 1, 2007.

SEMCOG. Integrating Environmental Issues in the Transportation Planning Process.

Guidelines for Road and Transit Agencies. January 2007.

FINDINGS

The environmental assessment included in this document is intended to serve as an initial screening of each transportation project's proximity to sensitive environmental features and is to be used to prevent potential negative impacts to the environment. The spreadsheet and maps found in this section demonstrate the results of the feature identification and draw attention to areas to be examined further at the project level. The spreadsheet and maps indicate which projects are adjacent to various environmental features, but do not identify the level of potential impacts. Project-level environmental impact assessments go into far greater depth when these impacts may be more pronounced.

All of the proposed transportation projects listed in the spreadsheet are adjacent to at least one environmental feature. Woodlands, wetlands, aquifer recharge areas, floodplains, and well locations were the most common features to fall within project buffers. The least common features within project buffers were cemeteries and areas of cultural significance. Depending on the project, environmental features may need to be studied further, in order to develop project-level mitigation strategies to minimize any possible negative effects on the environment. Environmental features also may influence transportation project timing and costs.

It is important to note that the features identified are not an all-inclusive list, nor is this environmental assessment considered completed. Mapped features included are those for which data were readily available. Environmental assessment will be an ongoing process, and future long range planning will reflect a continued effort to expand the scope of this effort.

ADDITIONAL ENVIRONMENTAL CONSIDERATIONS

Assessment of Culverts and Stream Species Protection

With any road or bridge project, it is critical to pay special attention to the impact of culverts and other potential barriers to species movement in streams and creeks, particularly native fish. The movement of these species happens as part of their lifecycle and in response to varying environmental conditions of certain sections of the watershed. Impediments to movement can potentially reduce fish populations and impact the entire river ecosystem. A 2011 study by the Potawatomi Resource Conservation and Development Council conducted an inventory of culverts and dams in the St. Joseph River watershed to determine the extent of adverse impacts of infrastructure on native fish species in high priority water streams.

Christiana Creek was the only stream or stream section included in the study that is directly within the NATS area. However, fish species movement may be impacted by obstructions on creeks in Northern Indiana. In addition, culverts and dams downstream in Berrien Springs and St. Joseph may alter the composition of the fish and plant life in creeks within the NATS area by keeping species from migrating.

The main potential barriers to species movement within the NATS area appear to be culverts, which are drains that allow water to flow under a road or railroad. According to the 2011 study, the culverts observed in the NATS area on Christiana Creek do not completely stop fish movement. Still, numerous barriers further south in Elkhart, which stop most species of fish from moving, do affect species composition within the NATS region.

The study was designed to be an inventory that would serve as a starting point for federal, state, regional, local, and tribal governments to work in cooperation with one another and with environmental organizations in the area to identify problematic culverts and allow better fish movement throughout the creek. While many of the suggested actions focus on removal of dams, the study suggests that installing culverts in the proper position on a streambed, and making sure that they are the right size, will both promote better movement of species throughout the watershed.

Low Impact Development

Proper planning of new developments and major reconstructions can help to minimize the negative impacts, and in some cases effect create positive impacts, of these developments on water quality. The Low Impact Development (LID) Manual for Michigan promotes development that:

- Preserves open space and minimizes land disturbance
- Protects natural systems and processes (drainage ways, vegetation, soils, and wetlands)
- Reexamines the use and sizing of traditional infrastructure (lots, streets, curbs, gutters, and sidewalks) and customize site design.
- Incorporates natural site elements (wetlands, stream corridors, mature forests) as design elements

WATERSHEDS IN THE NATS REGION

Watersheds are an important environmental consideration and planning component within the MPO study area. A brief review of the three watersheds will be conducted here as to ensure that as projects in the LRP move forward these watersheds will be consulted. All of the three watersheds in the NATS planning area (St. Joseph, Galien, and Dowagiac) have some type of guidance documents or resources to ensure that pollutants stay out of the water and the watershed.

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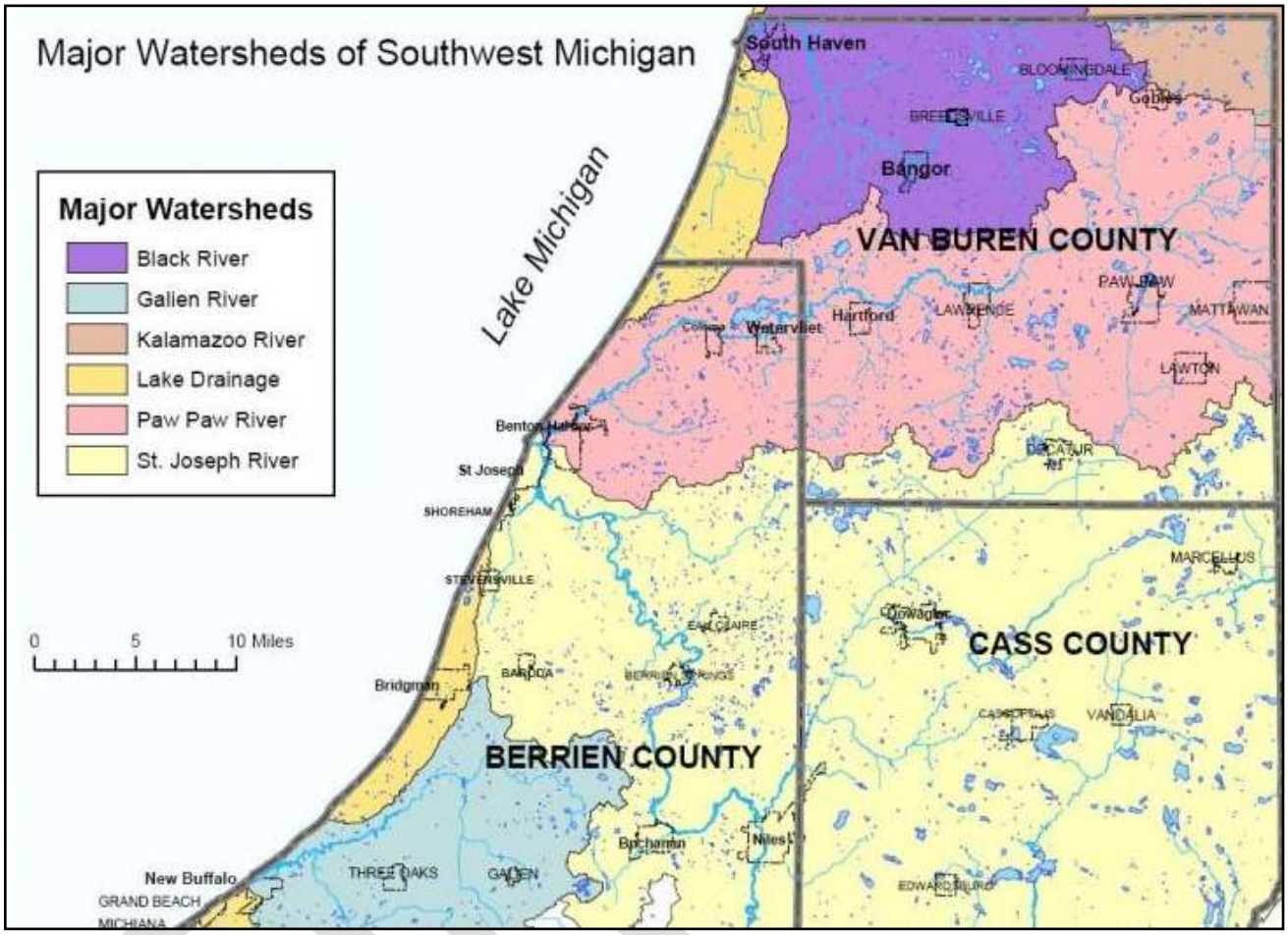
Map 32 - Major Watersheds of Southwest Michigan



The St. Joseph and Dowagiac River Watersheds have a Watershed Management Plan. A Watershed Management Plan is a comprehensive plan to protect water quality and natural resources in the watershed. Each management plan can be accessed for the specific watershed. The SWMPC has a website that houses all watershed information and links to the management plans at www.swmpc.org/watersheds.asp.

What is a Watershed?

A watershed is the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. You are sitting in a watershed now. Homes, farms, ranches, forests, small towns, big cities and more can make up watersheds. Some watersheds cross county, state, and even international borders such as the Great Lakes Basin. Watersheds come in all shapes and sizes. Some are millions of square miles, others are just a few acres. Just as creeks drain into rivers, watersheds are nearly always part of a larger watershed or basin. For example the St. Joseph River Watershed is part of the Lake Michigan Watershed which is part of the Great Lakes Basin. Every stream, tributary or river has an associated watershed.

Most watersheds are composed of a mixture of uplands, wetlands, riparian areas, streams and lakes. The most common component of almost all watersheds is the upland area, covering in many cases over 99% of the total watershed area. The rain and snow that falls onto a watershed, and that does not evaporate, is stored in the soil, and over a period of time is released down slope through groundwater, wetlands and streams. This water then moves through a network of drainage pathways, both underground and on the surface.

ST. JOSEPH RIVER WATERSHED

The St. Joseph River Watershed is located in the southwest portion of the Lower Peninsula of Michigan and northwestern portion of Indiana. It spans the Michigan-Indiana border and empties into Lake Michigan at St. Joseph, Michigan. The watershed drains 4,685 square miles from 15 counties (Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph and Van Buren in Michigan and De Kalb, Elkhart, Kosciusko, Lagrange, Noble, St. Joseph and Steuben in Indiana). The watershed includes 3,742 river miles and flows through and near the Kalamazoo-Portage, the Elkhart-Goshen, the South Bend and the St. Joseph/Benton Harbor metropolitan areas. According to the 2000 U.S. Census, 1,524,941 people live in the 15 counties of the watershed, with 53.6% living in Michigan. The most populated county is St. Joseph, IN. The watershed is largely agricultural. More than 50% of the riparian habitat is agricultural/urban, while 25-50% remains forested. Learn more about this watershed and the management plan at http://www.stjoeriver.net/.

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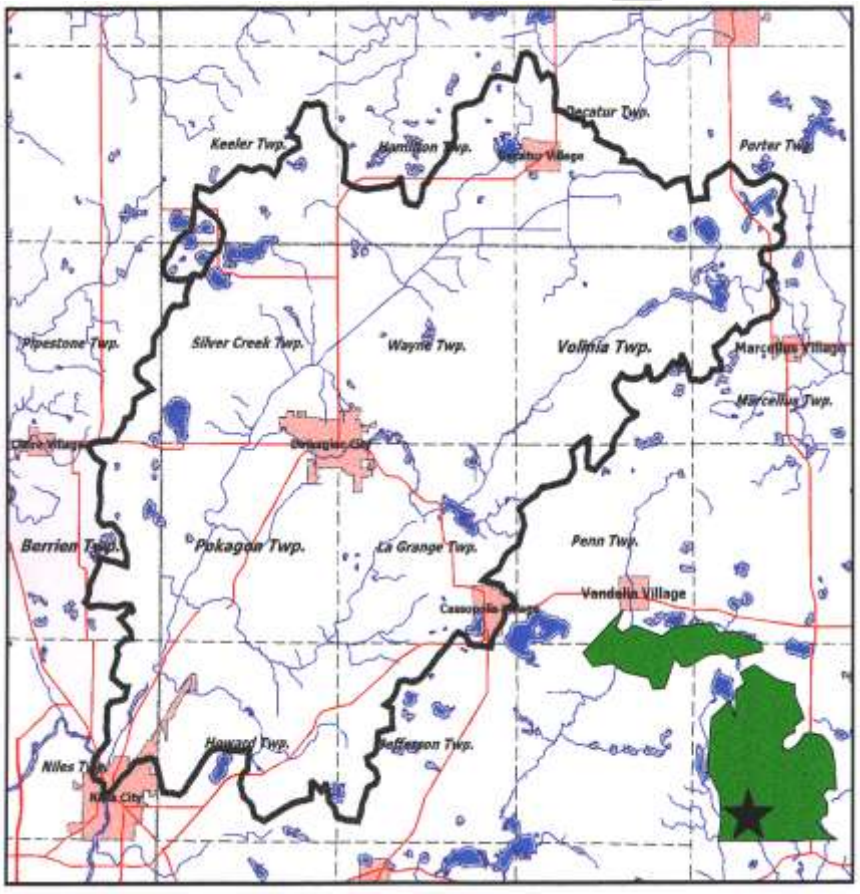
GALIEN RIVER WATERSHED

The Galien River Watershed is located in Southwest Michigan and is approximately 82,200 acres located in Berrien County and emptying into Lake Michigan in New Buffalo. In Michigan, this watershed contains 62% rural land, 23% forest land, and 5% urban land, with the remainder being streams and lakes. Within the MPO the eastern townships of Buchanan and Bertrand fall within this watershed. The Galien River Watershed encompasses areas of prime farmland, Warren Woods Preserve, and a portion of the City of New Buffalo where the Galien River flows into Lake Michigan. If you would like to learn more about this watershed please visit http://www.swmpc.org/grw.asp.

DOWAGIAC RIVER WATERSHED

Map 33 - Dowagiac River Watershed



The Dowagiac River Watershed is about 287 square miles in size with an estimated population of 38,600. The Dowagiac River Watershed includes all or part of 20 municipalities (16 townships, 2 cities and 2 villages). The headwaters of the Dowagiac River are located in southern Van Buren County. The Dowagiac River flows through Cass County and joins the St. Joseph River in Berrien County near Niles. The largest tributary is the Dowagiac Creek. Other significant tributaries include McKinzie Creek, Pokagon Creek, Peavine Creek, Silver Creek and Lake of the Woods Drain. Within the MPO the communities of Niles, Niles Charter Township, and Howard Township fall within the watershed. To learn more about this watershed please visit http://www.swmpc.org/drw.asp.

CONSULTATION

Previous transportation legislation, SAFETEA-LU, required that MPOs use a consultation process, which is a separate and discrete process from the general public participation process, this process was continued with MAP-21 legislation. This process is meant as a way to better consider the needs of consulted agencies and to eliminate or minimize conflicts with other agencies' plans. By consulting with agencies in this manner during the development of this plan, these groups can compare potential project lists and maps with other natural and resource inventories. The MPO will be able to compare the Draft LRP to any documents received and make adjustments as necessary to achieve great compatibility.

Legislation suggests that contacts with State, local, Indian Tribes, and private agencies responsible for the following areas be contacted:

- Economic growth and development
- Environmental protection
- Airport operators
- Freight movement
- Land use management
- Natural resources
- Conservation
- Historical preservation
- Human service transportation providers

Because the SWMPC is both a regional planning agency and a MPO, relationships with agencies responsible for cultural, land use, and environmental planning are already established. The SWMPC has a wide range of planning expertise which regularly cross-cuts with transportation planning. Expanding the scope of transportation planning to ensure the inclusion of the range of stakeholders and partners will only enhance the quality of the region's transportation plans and projects.

Agencies with which the SWMPC requested consultation were sent the following in the mail:

1. A letter explaining the transportation planning consultation process according to MAP-21 legislation.
2. The NATS role in this process.
3. A draft list of 2040 LRP proposed transportation projects.
4. A map displaying proposed projects.
5. Directions on how they might provide their input.

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Table 56 - Consultation Contact List

Abonmarche Consultants, Inc.		Benton Harbor	Michigan
Area Agency on Aging Region VI		St Joseph	Michigan
Berrien Bus		Berrien Springs	Michigan
Berrien Co. Community Development		St. Joseph	Michigan
Berrien Co. Community Development		St. Joseph	Michigan
Berrien County	Road Commission	Benton Harbor	Michigan
Berrien County	Parks & Recreation	St. Joseph	Michigan
Berrien County	Administration	St. Joseph	Michigan
Berrien County	Health Department	Benton Harbor	Michigan
Berrien County Board of Commissioners		St. Joseph	Michigan
Berrien County Conservation District		Berrien Springs	Michigan
Berrien County Drain Commissioner		St. Joseph	Michigan
Berrien County Historical Association		Berrien Springs	Michigan
Berrien County Planning Commission		St. Joseph	Michigan
Berrien County Public Transit		Berrien Springs	Michigan
Berrien Regional Education Service Agency		Berrien Springs	Michigan
Bertrand Township		Buchanan	Michigan
Brandywine Public Schools		Niles	Michigan
Buchanan Community Schools		Buchanan	Michigan

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Buchanan Dial a Ride		St. Joseph	Michigan
Buchanan Township		Buchanan	Michigan
CARE-A-VAN		Coloma	Michigan
Cass County	Public Works	Cassopolis	Michigan
Cass County	Road Commission	Cassopolis	Michigan
Cass County	Planning Commission	Cassopolis	Michigan
Cass County	Parks and Recreation	Cassopolis	Michigan
Cass County	Conservation District	Cassopolis	Michigan
Cass County	Board of Commissioners	Cassopolis	Michigan
Cass County	Water Resource Commission	Cassopolis	Michigan
Cass County	Planning Commission	Cassopolis	Michigan
Cass County	Administration	Cassopolis	Michigan
Cass County Council on Aging		Cassopolis	Michigan
Cass County Historical Commission	c/o Cass District Library	Cassopolis	Michigan
Cass County Transportation Authority		Cassopolis	Michigan
Cassopolis/Vandalia Chamber of Commerce		Cassopolis	Michigan
City of Buchanan		Buchanan	Michigan
City of Niles		Niles	Michigan
City of Niles	Dept of Public Works	Niles	Michigan
Consumer's Energy Inc		Covert	Michigan

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Consumers Power Company		Kalamazoo	Michigan
Cornerstone Alliance		Benton Harbor	Michigan
Department of Human Services	Berrien County	Benton Harbor	Michigan
Department of Human Services	Cass County	Cassopolis	Michigan
Disability Network of SW MI - Berrien/Cass		St Joseph	Michigan
Edwardsburg Chamber of Commerce		Edwardsburg	Michigan
Edwardsburg Public Schools		Edwardsburg	Michigan
Federal Highway Administration	Michigan Division	Lansing	Michigan
Fernwood Botanical Gardens		Niles	Michigan
Four Flags Area Chamber of Commerce		Niles	Michigan
Friends of Harbor Country Trails			Michigan
Friends of the McCoy's Creek Trail		Buchanan	Michigan
Friends of the St Joseph River		Athens	Michigan
Greater Niles-Buchanan	Committee on Aging	Buchanan	Michigan
Howard Township		Niles	Michigan
Lake Michigan College	Bertrand Crossing	Niles	Michigan
Lewis Cass ISD		Cassopolis	Michigan
Mason Township		Edwardsburg	Michigan
MDEQ	Air Quality Division	Lansing	Michigan
MDEQ	Head Quarters	Lansing	Michigan
MDEQ	Surface Water Quality Division	Plainwell	Michigan
MDEQ Kalamazoo	Water Division	Kalamazoo	Michigan
MDOT	Coloma TSC	Benton Harbor	Michigan

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MDOT	Southwest Region	Kalamazoo	Michigan
MDOT	Intermodal Section	Lansing	Michigan
MDOT	Urban/Public Transportation	Lansing	Michigan
MDOT	Statewide Planning	Lansing	Michigan
MDOT	Multi-Modal Transportation Services Bureau	Lansing	Michigan
MDOT	Bureau of Transportation Planning	Lansing	Michigan
MDOT	Non-Motorized Transportation	Lansing	Michigan
MDOT	Passenger Trans Division	Lansing	Michigan
Merritt Engineering Inc		Stevensville	Michigan
MI Dept of Agriculture	Environmental Stewardship Division	Lansing	Michigan
MI Dept of Agriculture & Rural Development		Lansing	Michigan
MI Dept of Natural Resources	Lansing	Lansing	Michigan
MI Dept of Natural Resources	Plainwell	Plainwell	Michigan
Michiana Area Council of Governments		South Bend	Michigan
Michigan Association of Railroad Passengers		Livonia	Michigan
Michigan Economic Develop Corp		Lansing	Michigan
Michigan House 59th District		Lansing	Michigan
Michigan House 78th District		Lansing	Michigan
Michigan House 79th District		Lansing	Michigan
Michigan Senate 21st District	Lansing Office	Lansing	Michigan

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Michigan Works	Benton Harbor	Benton Harbor	Michigan
Milton Township		Niles	Michigan
MSU Extension	Berrien County	Benton Harbor	Michigan
MSU Extension	Cass County	Cassopolis	Michigan
National Railroad Passenger Corp		Niles	Michigan
Natural Resources Conservation Service	Berrien County	Berrien Springs	Michigan
Natural Resources Conservation Service	Cass County	Cassopolis	Michigan
Niles Charter Township		Niles	Michigan
Niles Dial A Ride Transportation		Niles	Michigan
Niles Public Schools		Niles	Michigan
Ontwa Township		Edwardsburg	Michigan
Pokagon Band of Potawatomi Indians		Dowagiac	Michigan
Preserve the Dunes		Riverside	Michigan
South Bend Regional Airport		South Bend	Michigan
Southwest MI Econ Growth Alliance		Niles	Michigan
Southwest Michigan Community Action Agency		Benton Harbor	Michigan
Southwest Michigan Land Conservancy		Portage	Michigan
Southwestern Michigan College		Dowagiac	Michigan
Southwestern Michigan College	Niles Area Campus	Niles	Michigan
State Historic Preservation Office	Preserve America	Lansing	Michigan
SW MI Home Builders Association		Berrien Springs	Michigan
The Nature Conservancy		Comstock Park	Michigan
Transpo		South Bend	Indiana

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Van Buren/Cass District Health Dept.		Hartford	Michigan
Village of Edwardsburg		Edwardsburg	Michigan
Wightman & Associates, Inc		Benton Harbor	Michigan

COMMENTS RECEIVED AND RESPONSES

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ENVIRONMENTAL JUSTICE

Environmental Justice (EJ) is a federal directive (Executive Order 12898, enacted in 1994) requiring all federal programs to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects as the result of its programs, policies, and activities on minority populations and low-income populations. Populations that require special consideration include historically marginalized groups such as African Americans, Asian Americans, Hispanic or Latino Americans, Native Americans and low-income households.

In addition to the general EJ mandate, the US DOT published its own Order (5610.2) in the Federal Register on April 15, 1997. This Order requires the incorporation of EJ principles in all US DOT programs, policies and activities. The US DOT integrates the goals of the Executive Order through a process developed within the framework of existing requirements, primarily the National Environmental Policy Act of 1969 (NEPA), Title VI of the Civil Rights Act of 1964 (to ensure that no person is excluded from participation in, denied the benefits of, or is subjected to, discrimination).

Within the NATS area, efforts are undertaken to ensure that transportation system improvements that are implemented do not have disproportionately negative effects on minority and low-income populations. In addition, system investments must provide for an equitable distribution of benefits to areas that are traditionally underrepresented in the planning process. Transportation projects may bring new benefits in terms of greater connectivity to destinations and faster, safer travel. At the same time, these projects can also bring new concerns with increased noise, air pollution, or impediments during construction processes. In order to ensure that transportation investments in the NATS equitably benefit on all of the region's diverse populations, and that they do not have a disproportionately adverse impact on any of these populations, SWMPC undertook procedures listed in the methodology section below.

METHODOLOGY TO IDENTIFY ENVIRONMENTAL JUSTICE POPULATIONS

In June of 2007, SWMPC revisited its procedures for identifying NATS EJ Populations. Staff turned to representatives from MDOT to determine the procedures used at the state level for EJ analysis. The methodology described below outlines the procedures used for NATS EJ analysis and parallels what is being used by the State of Michigan.

Minority group population numbers were assembled from the following 2010 US Census sources:

1. Total Population (Summary File 1, Table 1);
2. Black or African American alone (Summary File 1, P3);
3. American Indian and Alaskan Native alone (Summary File 1, P3);
4. Asian alone (Summary File 1, P3); and
5. Hispanic or Latino (Summary File 1, P5).

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All but Hispanic or Latino population numbers were drawn from populations of one race. Since the US Census does not consider Hispanic or Latino to be a race designation, there will be, by definition, individuals who identified themselves as two or more races within the Hispanic or Latino designation.

Low-income population numbers were drawn from the following 2011 American Community Survey (ACS) sources:

1. Population for whom poverty status is determined (ACS 2007-2011 5-Year Estimates, Table S1701) and,

2. Population for whom annual income was below poverty level (ACS 2007-2011 5-Year Estimates, Table S1701).

The 2010 US Census did not include a "long form", where questions about income had been had been asked in Census 2000 and prior decennial census datasets. Instead, the American Community Survey, which helps the Census Bureau collect data continuously, now measures income in its questionnaire. 5-Year Estimates were used because they provide a large enough sample for the Census Bureau to report data at the Census Block Group level in our region. Census Block Groups are also the smallest geographic summary area for which race and poverty data are available. At the block group level, individual concentrations of population can be more carefully identified.

To determine whether a census block group constituted an "EJ area", SWMPC calculated the percentage of the total population in each census block group that belonged to each of the designated EJ groups. The percentage of the population that belonged to each EJ group was then compared to the proportion of the overall population of Michigan that the group constitutes. SWMPC then created maps for each of the EJ groups, shading areas where the concentration of that particular EJ group was higher than the proportion that the group represents of the state of Michigan's overall population.

For example, people who identify as African American made up 14.6% of the total population of Michigan. The Environmental Justice analysis map of the African-American population would show shading for those block groups that had greater than 14.6% of their population who identified as African American.

The EJ maps were then overlayed with the 2014-2017 TIP and LRTP project location information to determine potential impacts to EJ populations. These maps can be found in Appendix A.

Conclusion

After reviewing the EJ maps with the project locations, it has been determined that there will be no adverse effects on EJ targeted populations and that EJ populations have not been excluded from the benefits to be derived from projects in their area.

PROJECT-LEVEL ENVIRONMENTAL JUSTICE ANALYSIS

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When a project is submitted, the applicant must fill out the TIP Project Application form (available from http://swmpc.org/nats_tipapp.asp). In the fall of 2009, the project application was revised and approved by the NATS committees. A new section was added for Environmental Justice. When the application is submitted, the SWMPC staff review the application for completeness and raise any concerns regarding the application to the submitting agency.

The questions asked on the application in the Environmental Justice section are:

1. Will this project reduce travel time to jobs/training, medical and social services and food for the population in census-designated EJ areas?
2. Is this project located in a census-designated EJ area?
3. Were outreach materials and public meetings made accessible to encourage participation from EJ populations?
4. Did EJ populations submit comments?

SWMPC staff relay their concerns and/or any public concerns raised about the environmental justice of a project to the NATS committees before the project is approved. TIP projects were plotted on the Environmental Justice maps (Appendix A) and staff evaluated if there were any concerns regarding Environmental Justice populations and projects being proposed.

Conclusion

After reviewing the project applications and the EJ maps with the project locations, it has been determined that there will be no adverse effects on EJ targeted populations and that EJ populations have not been excluded the benefits of receiving projects in their area.

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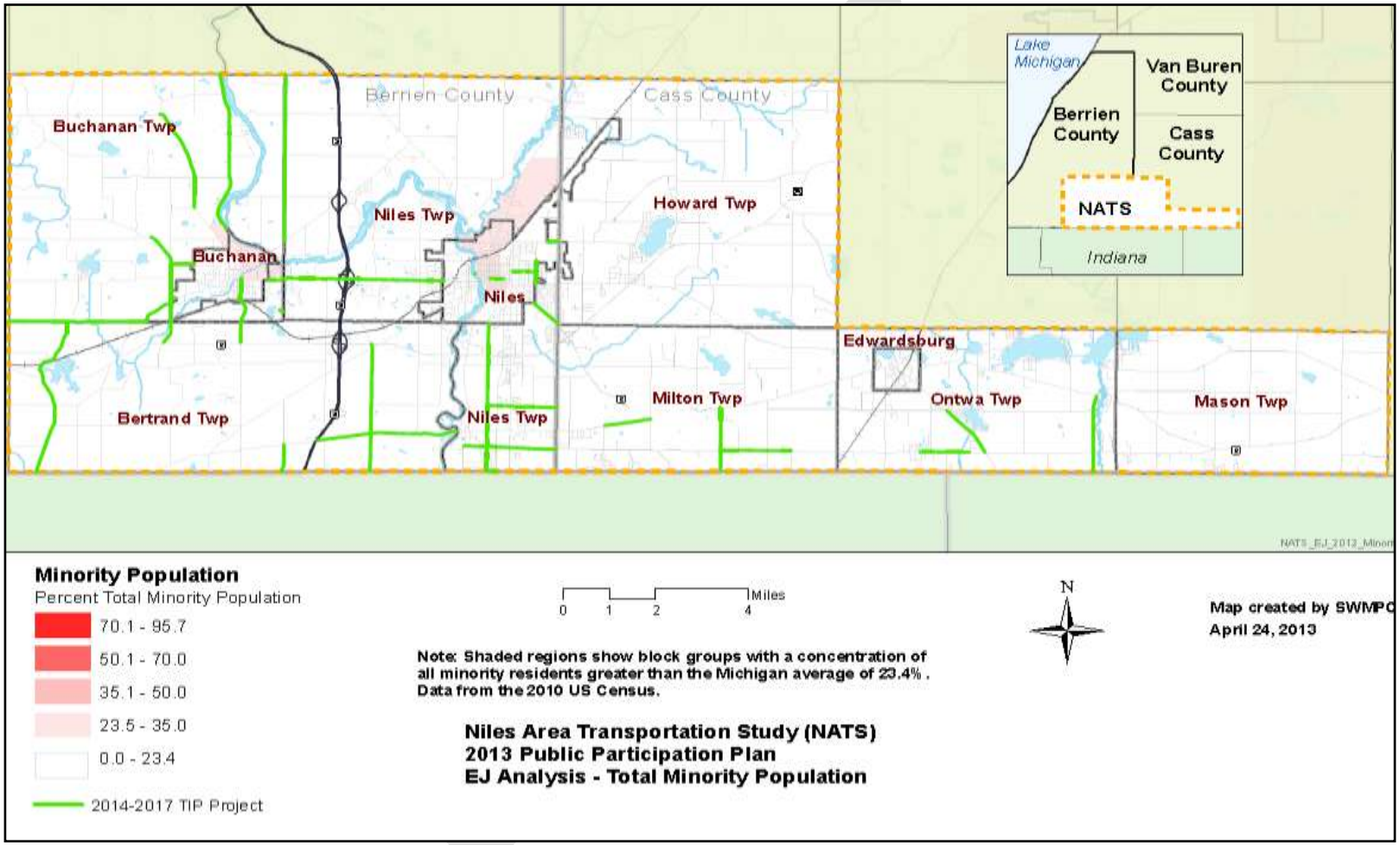
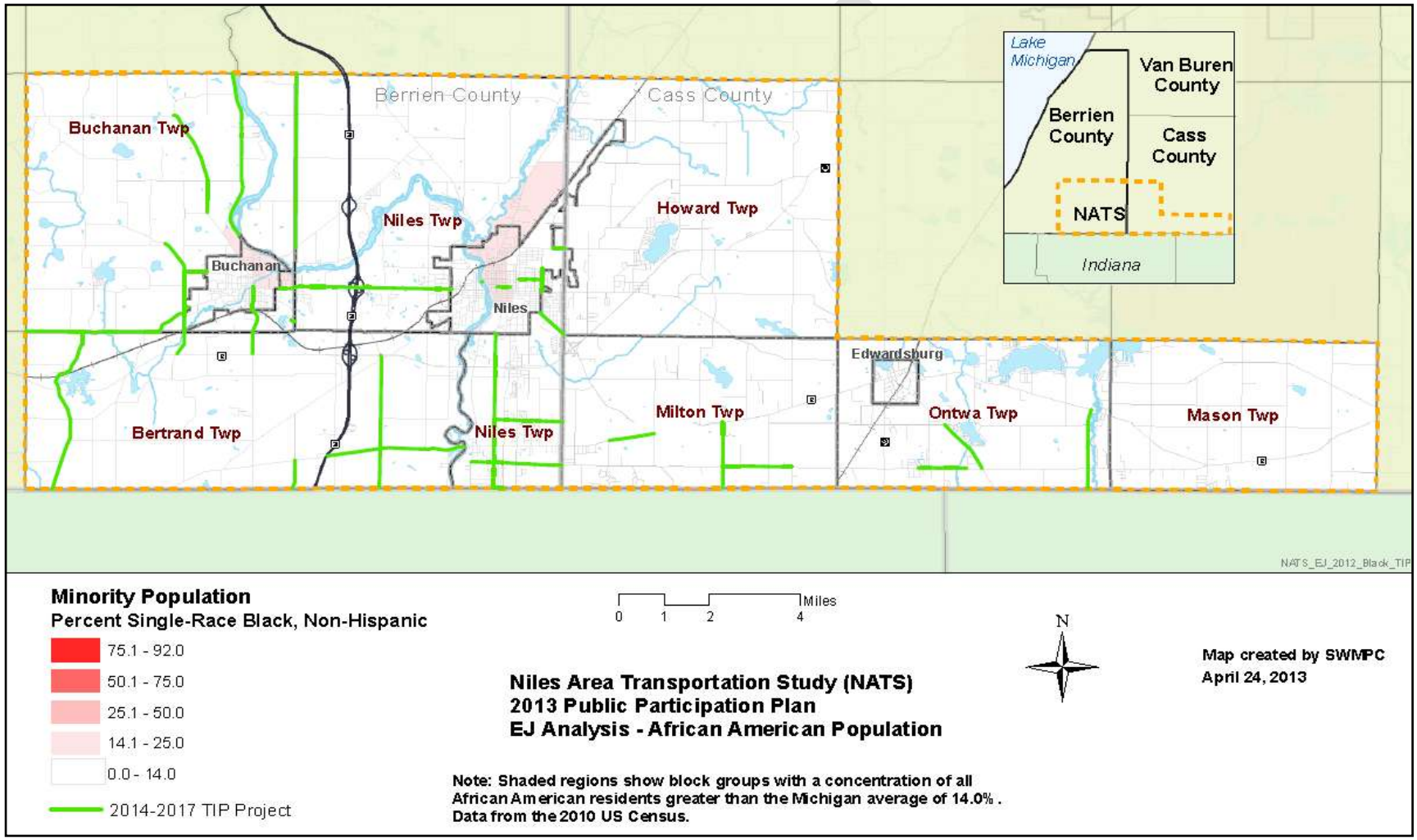
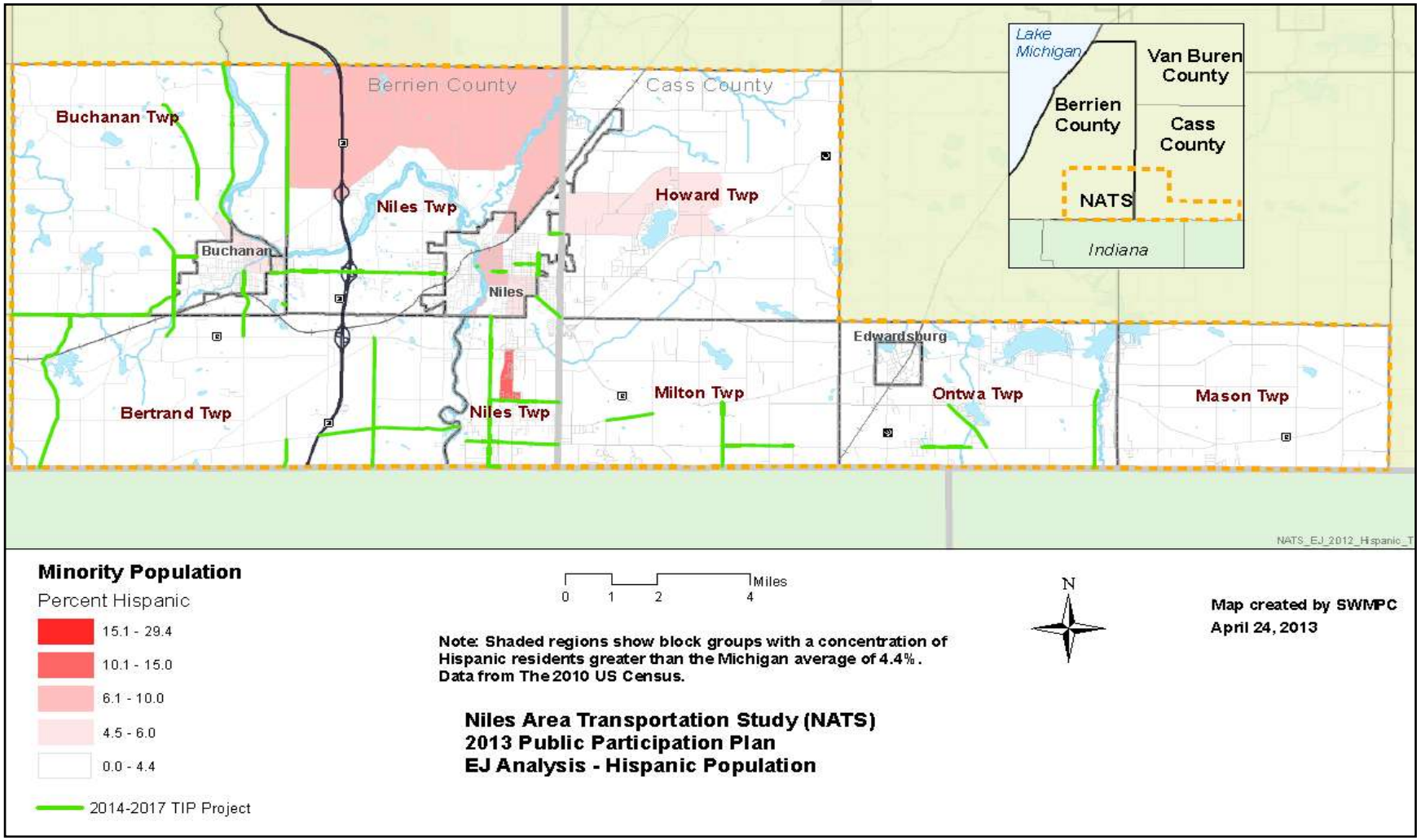
Map 34 - Total Minority Population



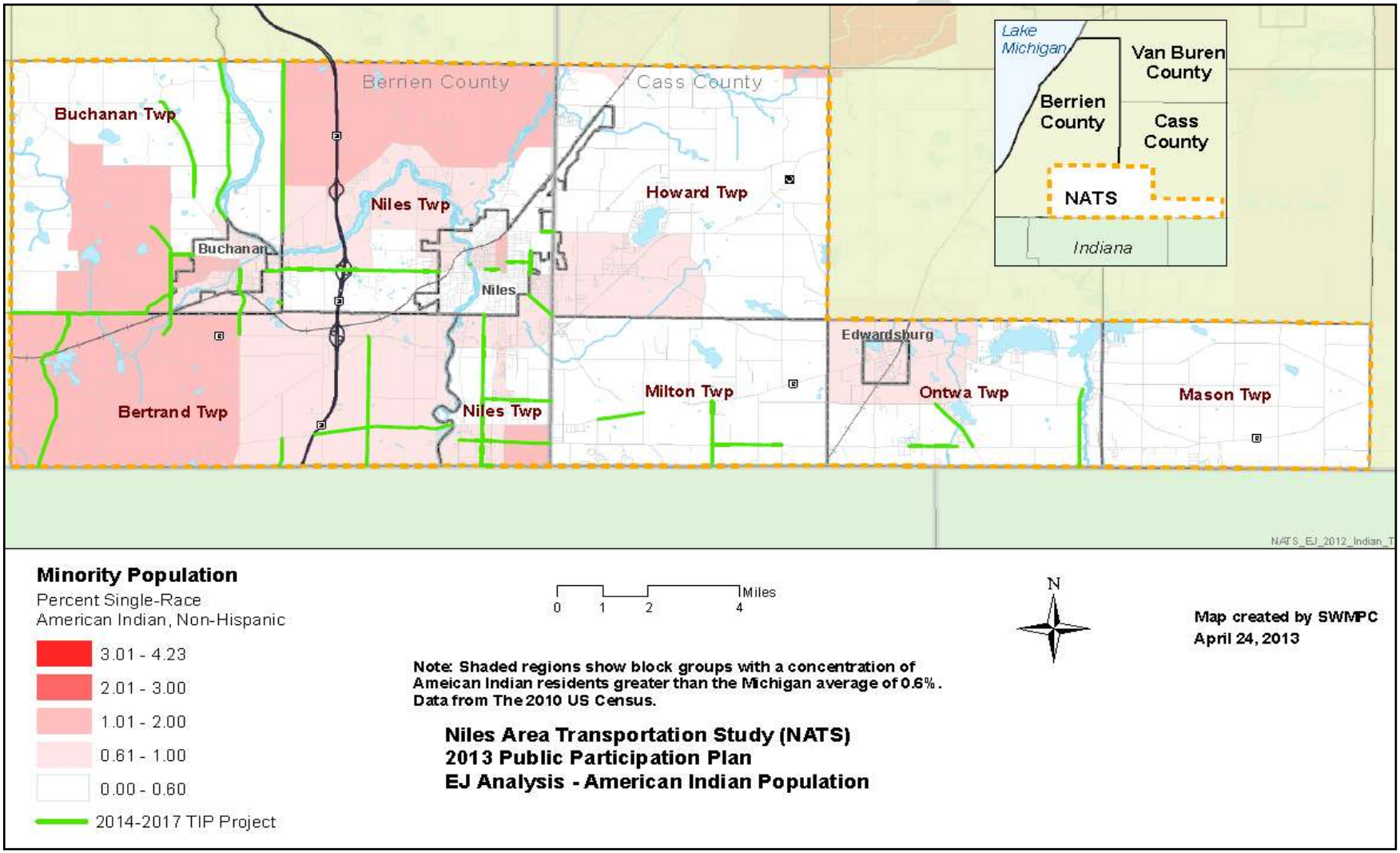
Map 35 - Minority Population-Black



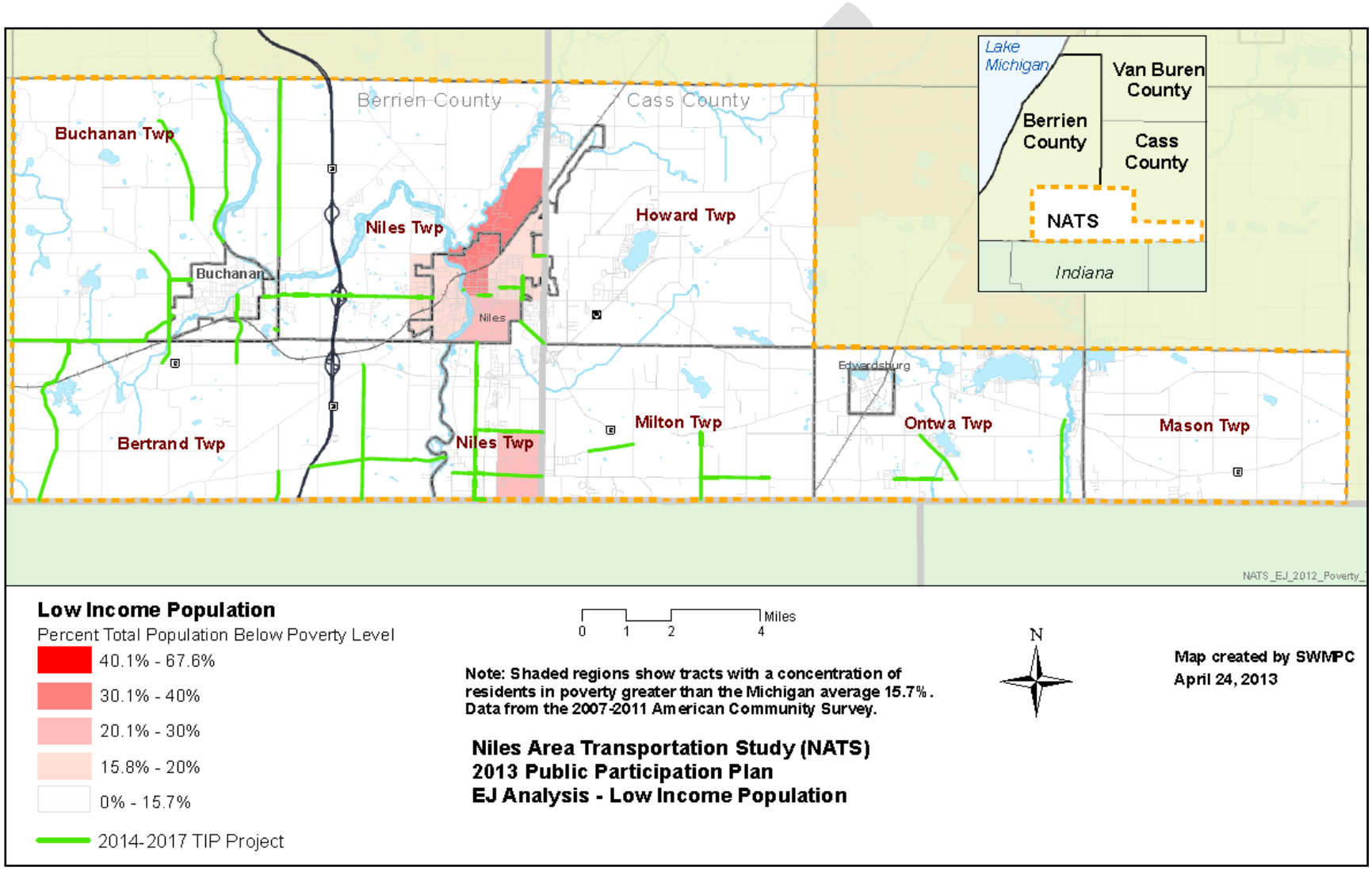
Map 36 - Minority Population-Hispanic



Map 37 - Minority Population-American Indian



Map 38 - Total Population Below the Poverty Line



AIR QUALITY CONFORMITY

1990 Federal Clean Air Act Amendments

The 1990 Federal Clean Air Act Amendments (CAAA) identified six pollutants for which air quality standards were established: Ozone (O3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), "respirable" or breathable particulate matter (PM), and lead (Pb). Each one of these pollutants has benchmark levels that are considered allowable for public exposure. Beyond those benchmark levels, the air quality for that constituent pollutant is considered dangerous. The EPA has termed these national standards as "national ambient air quality standards," or NAAQS. Transportation contributes to four of the six criteria pollutants: O3, CO, PM, and NO_2. Ozone is formed when volatile organic compounds (VOC) and oxides of nitrogen (NOx) combine with sunlight and high temperatures. One way to reduce the amount of Ozone is to reduce the amount of VOC and NOx which are produced in the region. VOC and NOx emissions originate, in part, from highway motor vehicles and can be reduced by decreasing congestion such as ridesharing and/or providing for alternatives to the automobile, such as public transit.

St. Joseph River, Niles Township

In addition to establishing benchmark levels of exposure to pollutants, the CAAA of 1990 required that transportation plans and TIPs in non-attainment areas demonstrate "conformity" to the State Implementation Plan (SIP), which is intended to ensure that the state meets the National Ambient Air Quality Standards (NAAQS). In other words, transportation projects, such as the construction of highways and transit rail lines cannot be federally funded or approved unless they are consistent with state air quality goals. In addition, transportation projects must not cause or contribute to new violations of the air quality standards, worsen existing violations, or delay attainment of air quality standards[33].

[33] http://www.gpo.gov/fdsys/pkg/FR-2012-05-21/html/2012-11605.htm

CHANGES TO THE FEDERAL CLEAN AIR ACT

- In 1997, the standard for fine breathable particulate matter (PM) was increased to 2.5 microns (PM2.5), and a more rigorous 8-hour ozone testing standard replaced the previous 1-hour ozone testing standard. In 2001, the U.S. Supreme Court upheld the constitutionality of the new EPA standards. Upon implementation of the new standards, Cass County (including parts of the NATS area) was found to be in "non-attainment" for 8-hour ozone, meaning that the benchmark level for ozone was exceeded by the average measurement within the 8-hour testing period.
- On May 16, 2007, the EPA approved a request from the State of Michigan to redesignate Cass County, among others, to attainment of the 8-hour ozone NAAQS. While the redesignation changes Cass County's area non-attainment status to attainment-maintenance, air quality conformity procedures were followed in the 2035 LRP.
- March 12, 2008, the EPA announced a new primary 8-hour ozone standard of 0.075 parts per million (ppm), down from the previous .085 ppm.
- On May 12, 2012 the United States Environmental Protection Agency (EPA) revoked the 1997 8-hour 0.080 ppm Ozone standard for the purposes of regional transportation conformity. On May 21, 2012, the USEPA issued designations for the new 2008 8-hour 0.075 ppm Ozone standard. NATS MPO is designated attainment under the 2008 standard.
- May 21, 2012, Federal Register notice, (77FR 30160), revoked the 1997 ozone standard for transportation conformity purposes only.
- Effective July 21, 2013, (as a result of both the partial revocation of the 0.080 Ozone standard, and the designation of NATS mpo as attainment for the 0.075 standard), the NATS MPO attainment/maintenance area is no longer required to demonstrate regional transportation conformity of Long Range Plans or Transportation Improvement Plans (TIPs) until EPA publishes a notice designating the area in nonattainment.

IMPACT TO STATE OF MICHIGAN AND NATS STUDY AREA

In a letter dated April 30, 2012 from Lisa P. Jackson from the U.S. Environmental Protection Agency to Governor Rick Snyder stated that "I am pleased to inform you that no areas in Michigan violate the 2008 standards or contribute to a violation of the ozone standards in a nearby area. As a result, the EPA is designation all of Michigan "unclassifiable/attainment." APPENDIX ITEM___

According to an MDOT Office Memorandum from Pete Porciello dated June 14, 2012 (APPENDIX ITEM_____), "After July 2013, conformity analysis will no longer need to be demonstrated unless new designations of nonattainment occur. The next time standards will be revised will be in 2013 or early 2014. Conformity requirements for nonattainment areas would begin within 1 year after the standard is published for any areas that are in nonattainment (sometime before 2015). Michigan is in attainment for the following national ambient air quality standards,"

- Nitrogen Dioxide,
- Carbon Monoxide,
- Particulate Matter less than 10 microns (PM 10),
- Lead (Pb)
- Sulfur Dioxide (SO2)

Correspondence from Andy Pickard, FHWA Transportation Planning Team Leader, to Dave Wresinski, MDOT Director stated that the May 21, 2012 Federal Register notice only partially revoked the 1997 ozone standard, and that those areas in nonattainment or maintenance status for the 1997 standard have not changed. However, MPOs, such as NATS, that have long range transportation plans and transportation improvement programs due in 2013 that were previously classified nonattainment are exempt from demonstrating conformity if updated plans are due or approved after July 20, 2013. Therefore, NATS does not need to demonstrate air quality conformity or perform an air quality analysis for this 2013-2040 long range transportation plan update. (APPENDIX ITEM___)

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COORDINATION WITH STATE LONG RANGE TRANSPORTATION PLAN

MAP-21 requires each state develop a statewide long range transportation plan in coordination with local MPO's. Upon completion of the plan, any future transportation improvements must be consistent with the plan. As a result of the coordination, Michigan's state LRTP is a broad document and it is not financially constrained like the MPO must be. Any future transportation improvements have to coincide with the adopted plan, thus reiterating the importance of coordination with the state, MPO, Regional Planning Organization (RPO) and local units of government.

STATE LONG RANGE PLAN

Michigan's 2035 LRTP *MI Transportation Plan* is projected over a 25-year period that focuses on the important link between transportation and Michigan's economic vitality and quality of life.

It presents options to achieve Michigan's goals for the future by providing an efficient, integrated transportation system. To view the plan and its white papers please visit http://www.michigan.gov/mdot/1,1607,7-151-9621_14807_14809---,00.html.

The *2035 MI Transportation Plan (2035 MITP)* is an update and extension of the *2005-2030 MI Transportation Plan: Moving Michigan Forward (2030 MITP).* The *2035 MITP* consists of both of these documents which provide both an overview of the findings and a high-level summary of the current assessment of key trends, demographic changes, and key initiatives that will guide the selection of transportation projects between now and 2035.

In addition to these two documents, the MITP also includes a number of Technical and Strategic Reports published in conjunction with the *2030 MITP* and 18 newly published White Papers as part of this revision. The initial Technical and Strategic reports should be referred to for details on specific goals, objectives, strategies, and decision principles of the MI Transportation Plan, while the White Papers should be referred to for current assessments of key trends and demographic changes; status updates of key initiatives that were discussed in detail in the initial Technical and Strategic Reports; and descriptions of new initiatives that have been launched to fulfill the goals and objectives of the state long-range transportation plan.

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SUMMARY OF THE 2035 MI TRANSPORTATION PLAN

The *2035 MITP* revision reaffirms the policy framework of the *2030 MITP,* as well as readopts the vision, goals, objectives, strategies, focus on Corridors of Highest Significance, and decision principles guiding program development. The most recent forecasts for population and employment were used to update the assumptions made in the *2030 MITP.*

> "In preparing the MI Transportation Plan 2035, the MDOT once again sought input from the traveling public. The public listed three top priorities and said transportation planners need to:
>
> - Maintain/preserve the existing transportation system.
> - Improve public transit.
> - Recognize the need for intercity rail passenger service."
>
> Governor Rick Snyder, September 2012

This revision was initiated as an interim step to keep the state's long-range transportation plan current and followed a more streamlined approach than a complete update. This revision extends the planning horizon year to 2035 to maintain consistency with regional and metropolitan planning processes. MDOT embarked on this revision in March 2012 to maintain the 20-year planning horizon required by federal transportation planning regulations found in 23 CFR 450 Subpart B. During the *2035 MITP* revision process, new federal legislation was passed that replaced the "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)" under which the *2030 MITP* was created.

The new legislation, "Moving Ahead for Progress in the 21st Century Act" (MAP-21)," a 24-month transportation authorization bill, was signed into law on July 6, 2012. The impacts and implications of pending policy changes will not be fully known for some time and therefore cannot be considered and prepared for immediately.

MICHIGAN'S TRANSPORTATION GOALS

The goals in MDOT's current long-range plan were developed with the help of a Customers and Providers Committee, working with MDOT staff to review and reassess the goals of the current state long-range plan. Changes were developed in a cooperative manner and represented the consensus of the group around eight core goal areas:

1. **Preservation** – Within the constraints of state and federal law, direct investment in existing transportation systems to effectively provide safety, mobility, access, and intermodal connectivity or support economic activity and the viability of older communities and ensure that the facilities and services continue to fulfill their intended functions.
2. **Safety** – Promote the safety and security of the transportation system for users and passengers, pedestrians, and motorized and non-motorized vehicles.

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3. **Basic Mobility** – Work with the general public, public agencies and private sector organizations to ensure basic mobility for all Michigan citizens by (at a minimum) providing safe, effective, efficient and economical access to employment, educational opportunities, and essential services.
4. **Strengthening the State's Economy** – Provide transportation infrastructure and services that strengthen the economy and competitive position of Michigan and its regions for the 21st Century.
5. **Transportation Services Coordination** – Create incentives for coordination between public officials, private interests, and transportation agencies to improve safety, enhance or consolidate services, strengthen intermodal connectivity, and maximize the effectiveness of investment for all modes by encouraging regional solutions to regional transportation problems.
6. **Intermodalism** – Improve intermodal connections to provide seamless transportation for both people and products to and throughout Michigan.
7. **Environment and Aesthetics** – Provide transportation systems that are environmentally responsible and aesthetically pleasing.
8. **Land Use Coordination** – Coordinate local land use planning, transportation planning, and development to maximize the use of the existing infrastructure, increase the effectiveness of investment, and retain or enhance the vitality of the local community.

Metropolitan Long Range Plan

Each MPO is required by federal legislation to prepare a long range transportation plan based on expected revenues over a twenty year time frame. MAP-21 also requires the articulation of the planning factors to provide a consensus based on priorities and needs of the transportation system. This plan has been reviewed to assure consistency with the statewide plan, projects and programs. Local goals and objectives are broadly and are consistent with statewide goals and objectives.

COORDINATION WITH STATE LONG RANGE PLAN

The MDOT is continually involved with NATS planning activities and processes ranging from attending committee meetings, to providing workshops and being a resource for transportation needs. NATS planning process is to promote consistency between transportation improvements and state and local planned growth and economic development patterns. Both are equally important and depend on each other for quality and consistency. There are many coordinated issues that both the state and NATS address in their plans.

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Table 57 - Coordination With State LRP Goals

MDOT LRP Goals **MDOT's goals are in no particular order*	**NATS Goals**
Safety – Promote the safety and security of the transportation system for users and passengers, pedestrians, and motorized and non-motorized vehicles.	**2, 5**
Land Use Coordination – Coordinate local land use planning, transportation planning, and development to maximize the use of the existing infrastructure, increase the effectiveness of investment, and retain or enhance the vitality of the local community.	**1, 3**
Environment and Aesthetics – Provide transportation systems that are environmentally responsible and aesthetically pleasing.	**3**
Intermodalism – Improve intermodal connections to provide seamless transportation for both people and products to and throughout Michigan.	**3, 6**
Transportation Services Coordination – Create incentives for coordination between public officials, private interests, and transportation agencies to improve safety, enhance or consolidate services, strengthen intermodal connectivity, and maximize the effectiveness of investment for all modes by encouraging regional solutions to regional transportation problems.	**1-6**
Preservation – Within the constraints of state and federal law, direct investment in existing transportation systems to effectively provide safety,	**4**

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mobility, access, and intermodal connectivity or support economic activity and the viability of older communities and ensure that the facilities and services continue to fulfill their intended functions	
Strengthening the State's Economy – Provide transportation infrastructure and services that strengthen the economy and competitive position of Michigan and its regions for the 21st Century.	**1, 4**
Basic Mobility – Work with the general public, public agencies and private sector organizations to ensure basic mobility for all Michigan citizens by (at a minimum) providing safe, effective, efficient and economical access to employment, educational opportunities, and essential services.	**2, 5, 6**

MDOT's LRTP goals coincide with the NATS 2040 LRTP goals. NATS LRTP goals address stewardship through preservation of the regional transportation systems, while promoting livable communities. System improvements include enhancing mobility accessibility and equitability within the transportation system. They also include improved efficiency and effectiveness in moving people, goods, and services through the transportation system. Safety and security is promoted through safety conscious planning and system security.

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ANNOTATED BIBLIOGRAPHY

In an effort to provide for greater collaboration and consultation among statewide plan in Michigan and Indiana, regional plans, and community plans the SWMPC set forth to produce a section of the LRP that would house information on these different resources to allow for greater ease and access to the multiple plans that transportation planners and officials would come into contact with. This central location will allow for transportation planners and officials to have more continuous collaboration with the many partners involved in the complex development of a transportation network.

MICHIGAN

2035 Michigan Long Range Transportation Plan

MI Transportation Plan, also known as the State Long - Range Transportation Plan, is a 25-year plan for transforming Michigan's transportation system. MDOT is revising the current plan by evaluating its inputs, forecasts and strategies against current trends and is extending the horizon year to 2035.

http://www.michigan.gov/mdot/1,1607,7-151-9621_14807_14809---,00.html

Michigan's FY 2011-2014 State Transportation Improvement Program

The State Transportation Improvement Program (STIP) is a federally mandated planning document that lists surface transportation projects that the state intends to fund with federal-aid provided under the federal-aid transportation program. The primary purpose of this document is to provide information regarding the programs and projects to which state and local transportation agencies have committed over the next four years. It verifies that new transportation resources are available and sufficient to finance these improvements.

http://www.michigan.gov/mdot/0,4616,7-151-9621_14807_14808-241927--,00.html

Michigan State Rail Plan

The Michigan Department of Transportation (MDOT) has developed a state rail Plan to guide the future development of Michigan's rail system for both passenger and freight rail over the next 20 years. The plan identifies current and future system needs and makes recommendations to encourage ongoing rail investments. The plan meets the requirements established by the federal Passenger Rail Investment and Improvement Act of 2008, which positions the state to receive additional federal funding for rail projects.

http://www.michigan.gov/mdot/0,4616,7-151-9621_14807-242455--,00.html

Michigan Complete Streets

Complete Streets legislation (Public Acts 134 and 135), signed on Aug. 1, 2010, gives new project planning and coordination responsibilities to city, county and state transportation agencies across Michigan. The legislation defines Complete Streets as "roadways planned, designed, and constructed to provide appropriate access to all legal users...whether by car, truck, transit, assistive device, foot or bicycle." The law further requires Complete Streets policies be sensitive to the local context, and consider the functional class, cost, and mobility needs of all legal users. The primary purpose of these new laws is to encourage development of Complete Streets as appropriate to the context and cost of a project.

To further assist this purpose, Public Act 135 provides for the appointment of a Complete Streets Advisory Council, comprised of representatives from 18 statewide government and non-government stakeholder agencies. The Complete Streets Advisory Council will provide education and advice to the State Transportation Commission, county road commissions, municipalities, interest groups, and the public on the development, implementation, and coordination of Complete Streets policies.

http://www.michigan.gov/mdot/0,4616,7-151-9623_31969_57564---,00.html

http://mihealthtools.org/mihc/CompleteStreetsResources.asp

Michigan Low Impact Development Manual, 2008

Low Impact Development (LID) is the cornerstone of stormwater management with the goal of mimicking a site's presettlement hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Because LID uses a variety of useful techniques for controlling runoff, designs can be customized according to local regulatory and resource protection requirements, as well as site constraints. The manual provides communities, agencies, builders, developers, and the public with guidance on how to apply LID to new, existing, and redevelopment sites. The manual provides information on integrating LID from the community level down to the site level. It outlines technical details of best management practices, and also provides a larger scope of managing stormwater through policy decision, including ordinances, master plans, and watershed plans.

http://www.swmpc.org/MI_LID_manual.asp

Connecting Michigan: A Statewide Trails Vision and Action Plan, 2006

This publication was developed with leadership from Michigan Trails and Greenways Alliance (MTGA), a non-profit organization that fosters and facilitates the creation of an interconnected statewide system of shared use paths and greenways for environmental/cultural preservation purposes. MTGA works at both the state and local levels by assisting public and private interests in

shared use path and greenway planning, funding, development, and maintenance. MTGA builds public support for trails and greenway development through events, membership, education, information, and advocacy activities.

http://www.michigantrails.org/connectingmichigan/connecting_michigan_plan.pdf

INDIANA

Michiana Area Council of Governments (MACOG) – The Michiana Area Council of Governments (MACOG) is a regional intergovernmental agency established to foster cooperative, coordinated and comprehensive planning activities. The MACOG region represents Elkhart, Kosciusko, Marshall and St. Joseph Counties in Indiana and serves several functions: an MPO, an RPO, staff of the SJRBC, transit operator, and does economic development planning among other tasks. http://www.macog.com/

MACOG Public Transit-Human Services Coordinated Transportation Plan 2013-14 Updates and Revisions (2012 update)

The Michiana Area Council of Governments (MACOG), a four-county regional planning organization, which includes Elkhart, St. Joseph, Marshall, and Kosciusko counties. The plan illustrated the initial gaps, needs strategies and activities to meet the transit planning process identified in SAFETEA-LU and MAP-21. Annual updates have occurred making minor revisions to the original Coordinated Plan, based on information obtained from the service providers in the region, along with staff knowledge.

MACOG staff held a round of Stakeholder meetings in the MACOG Region (one in each county) to develop a new Coordinated Plan with a scope for the next two years--2013-2014--based on MAP-21 funding. Several planning components were developed during this process for the following needs:

- Documentation of regional transit statistical data
- Identification of transit service providers: human services agencies, public transit, and private transit providers
- Identification of stakeholders in each county to participate in stakeholder meetings
- Administer and document an agency survey and a client survey
- Update of the regional fleet inventory

The Coordinated plan represents documentation of completed or ongoing strategies and activities since the original Coordinated Plan, along with new gaps and opportunities to meet current and future regional transit needs.

http://www.macog.com/PDFs/Transit/TransitCoordinatedPlan12.pdf

MACOG 2035 Transportation Plan, 2010

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The Safe, Accountable, Flexible, Efficient, and Transportation Equity Act - A Legacy for Users (SAFETEA-LU) was passed by the United States Congress in 2005. The legislation provides funding for public transit and highway construction activities nationwide. In order for urban areas to receive the benefits of federal aid for both roads and transit, they are required to have plans in place, which are comprehensive and coordinated through cooperation among jurisdictions.

The most extensive of these plans is the 20-year transportation plan. The MACOG 2035 Transportation Plan Update outlines the region's focus on planning for surface-transportation improvement projects in St. Joseph and Elkhart Counties through the year 2035. Projects include highway, transit, bicycle and pedestrian facilities, freight facilities, and illustrative project listings for Kosciusko and Marshall Counties.

http://www.macog.com/MACOGHOM/TransportationPlanning/LRTP.HTM

MACOG SFY2013-2016 Transportation Improvement Program (TIP), 2012

The State Fiscal Year (SFY) 2013-2016 TIP is a prioritized, multi-year program for the implementation of transportation improvement projects for the entire MACOG region. As such, it serves as a management tool to ensure the most effective use of funding for transportation improvements. It is also necessary for two other reasons. First, the TIP is a requirement of the transportation planning process as legislated by the Safe, Accountable, Flexible, Efficient, Transportation Equity Act - A Legacy for Users (SAFETEA-LU). Secondly, a transportation improvement is not eligible for federal funding unless it is listed in the TIP.

http://www.macog.com/MACOGHOM/TransportationPlanning/TIP.HTM

Northwestern Indiana Regional Planning Commission (NIRCP)

Northwest Indiana's 2040 Comprehensive Regional Plan (CRP), 2011

The 2040 CRP is different from previous Long Range Transportation Plans and other NIRPC planning programs. The 2040 CRP is a Vision Plan. The CRP was developed as a comprehensive; citizen based regional vision that will guide the development of land use and transportation programming. As such, it is a policy program with strong coordination and implementation elements.

http://www.nirpc.org/2040-plan/plan-documents.aspx

http://www.nirpc.org/media/2934/ch.2_transportation.pdf

Northwestern Indiana Regional Planning Commission (NIRCP) Transportation Improvement Program (TIP)

The **(TIP)** is developed to document road, bridge, transit, and non-motorized projects that will be occurring in the near future within the MPO boundary.

http://www.nirpc.org/transportation/transportation-improvement-program.aspx

NIRPC Freight Study Final Report, 2010

The Northwestern Indiana Regional Planning Commission (NIRPC) is developing its first ever Comprehensive Regional Plan, the 2040 CRP, addressing opportunities and challenges in transportation, land use, economic development, the environment and social equity in Lake, Porter and LaPorte counties, Indiana. Recognizing that freight plays a major role in the economy of Northwest Indiana, NIRPC has commissioned this freight study to provide input into the 2040 CRP as well as to function as a stand-alone document. This Freight Study is the first study by NIRPC to focus exclusively on freight mobility within the region.

http://www.nirpc.org/media/5588/nirpc_freight__report_final_updated_8_30_2010.pdf

REGIONAL

Regional Non-Motorized Transportation Plan for MDOT's Southwest Region, 2011

SWMPC developed a comprehensive, regional Non-Motorized Transportation Plan for MDOT's Southwest Region (Allegan, Barry, Berrien, Branch, Calhoun, Cass, Kalamazoo, St. Joseph and Van Buren Counties). Provide a region-wide vision for a connected system of off-road shared use paths and on-road facilities (paved shoulders/bike lanes). Encourage dialogue and more coordinated planning among state, county, and local entities. Enhance partnerships and increase communication among state, county, and local agencies regarding the implementation and operation (construction, maintenance, marketing, etc.) of non-motorized facilities.

http://www.swmpc.org/smart_plan.asp

http://www.swmpc.org/downloads/final_plan_1.pdf

Harbor Country Hike & Bike Plan, 2010

The Harbor Country Hike & Bike Plan focuses on creating a network of sidewalks, shared use paths, bikeways and bike lanes that will link neighborhood communities, business districts, schools and parks. The main purpose of the plan is to provide a common vision and encourage coordination between agencies for future planning efforts.

http://harborcountrytrails.org/project-plan.html

http://harborcountrytrails.org/images/Harbor_Country-Hike-Bike-Plan.pdf

Pokagon Band of Potawatomi Indians Transit Feasibility Study, 2012

The purpose of the Study was to prepare Tribal transit a feasibility study and needs assessment for the Michigan counties of Cass, Berrien, Van Buren and St. Joseph County in Indiana. Currently these counties offer a mix of public transit services including demand response, fixed route and dial-a-ride service. There is a perceived need to improve mobility for Tribal citizens who do not have access to personal vehicles, particularly elders, veterans, tribal and casino employees, and those who need to access tribal services. The unmet transportation needs of the Tribe extend to residents in the study area not associated with the Tribe. Thus, any improvements in transit services will not only benefit the Tribe, but also the general public. It will be important to work with the existing transit providers serving the counties to promote and develop a coordinated system of public transit.

The study identifies: the transportation needs of tribal citizens; the "gaps" in service where tribal citizens' needs are not currently being met; the ways in which current transit services can be utilized to meet those needs; and the potential need for dedicated tribal transit service. The Study also begins to outline what the tribal transit service could look like and identify potential funding sources for that transit service, as well as ways in which it could be coordinated with existing transit service.

WATERSHEDS

Galien River Watershed Management Plan Addendum, 2005

The watershed falls in the NATS MPO region. The Galien River Watershed (Watershed) encompasses areas of prime farmland, Warren Woods Preserve, and a portion of the City of New Buffalo, where the Galien River (River) flows into Lake Michigan. The Watershed is situated in the southwest corner of Berrien County, Michigan, and is included in the Little Calumet/Galien Tri-State Watershed Management Area, which spans coastal areas of Michigan, Indiana, and Illinois. Improvements for road and stream crossings - bioengineering, riprap, soil erosion and sedimentation control, pulling back banks, removing sediment, riprap culverts, riprap outlet protection, remove logs, replace culvert and clean out culverts. (pg77)

http://www.swmpc.org/Downloads/galien_river_addendum_master_1.pdf

St. Joseph River Watershed Management Plan, 2005

The watershed falls in both NATS and TwinCATS MPO region. Located in the southwest portion of the Lower Peninsula of Michigan and the northern portion of Indiana, the St. Joseph River Watershed spans the Michigan-Indiana border and empties into Lake Michigan at St. Joseph/Benton Harbor, Michigan. Being a bi-state watershed, little coordinated effort concerning its management has been undertaken. The St. Joseph/Benton Harbor areas are critical urban areas in need of mitigation efforts centered on reduction and improved management of stormwater runoff. The displacement of cropland, open space, and forested areas by the impervious surfaces of driveways, streets, and buildings greatly intensifies the volume and velocity of stormwater runoff, exacerbates

stream channel erosion, and diminishes groundwater recharge. Furthermore, the sediments, nutrients, toxins, and pathogens transported from impervious surfaces into surface water substantially degrade streams, rivers, wetlands, and lakes.

http://www.fotsjr.org/Resources/Documents/StJoeRiverWMP.pdf

Paw Paw River Watershed Management Plan, 2008

The Paw Paw River Watershed is a part of the TwinCATS MPO region. The Paw Paw River Watershed (PPRW) is all of the land that drains into the Paw Paw River. Wetlands, lakes, streams, other surface water bodies on this land and groundwater are also part of the watershed. Water is a critical resource for recreation, irrigation, and increasing the value of adjacent real estate. These uses depend on good water quality, but they can also be a threat to it. Roads are a land use that can have substantial impacts on water quality. Controlling roadway-related pollution during project planning, construction and ongoing maintenance is important.

http://www.tworiverscoalition.org/downloads/paw_paw_river_management_plan_august_2008.pdf

COUNTY PLANS

BERRIEN

Berrien Healthy Communities

Berrien County Health Department, with collaboration from the We Can! Healthy Berrien and the Healthy Berrien Consortium, has been chosen as one of ten recipients statewide of a Building Healthy Communities Planning Grant. The purpose of the Building Healthy Communities project is to implement evidence-based policy and sustainable environmental changes that support health, such as opening farmers markets and building walking and biking trails, through a strategic process. BCHD has been awarded money to begin planning these activities. The Health Department has chosen Benton Harbor/Benton Township as its target community for the Building Healthy Communities project.

http://www.wecanhealthyberrien.net/healthycommunities.html

Berrien County Hazard Mitigation Plan, 2005

The Berrien County Hazard Mitigation Plan is a comprehensive study of the hazards that have impacted Berrien County in the past, as well as those that have the potential to occur in the future. Some of these hazards are a greater threat to some communities than others, and some of the hazards could harm one sector of society more than others. This Plan covers Berrien County and all of the cities, villages and townships within Berrien County. The top 12 potential hazards for our

county include severe winter weather, nuclear power plant accident, extreme temperature, tornado, infrastructure failures, severe winds, structural fires, terrorism/sabotage, dam failures, hazmat transportation accident, hazmat fixed site accident, and transportation accidents.

http://www.swmpc.org/downloads/berrien_haz_mit.pdf

Berrien County Master Plan, 2009

Master Plan is intended to guide land use decisions and provide direction to current and future Planning Commissions and Boards which will implement it. While population and employment figures are projected to remain somewhat stagnant, we predict that interest in Berrien County from the Chicago land area will continue. People will continue to seek second/vacation homes in the County, thus an increase in choice traveling and tourism. Models for the NATS and TwinCATS long range transportation plans indicate that the existing road networks should handle vehicle capacity through a 20-year horizon.

Other noteworthy trends: the Southwest Michigan Regional Airport projects an increase in private service with safety improvements and facility upgrades. Continuously plan for traffic produced by special generators such as tourist destinations, hospitals, regionally significant projects and new industrial, residential, and commercial centers. There is dramatic interest in pedestrian and bicycle route development. The proposed connection of US 31, east of business loop I-94 is proceeding through an Environmental Impact Statement, and will likely be the only significant capacity expansion in the County over the next couple of decades. Industrial and commercial use of the waterways and harbors has dwindled; the majority of future use is recreation in nature. The lack of needed capacity expansions suggests funding is primarily for capital preventative maintenance, safety improvements, and non-motorized investment. A 2005 windshield condition survey rated 25% of federal aid eligible roads good, 65% fair, and 10% in poor condition. Non- Federal aid roads rated 12% of federal aid eligible roads good, 53% fair, and 35% in poor condition. Poor roads likely need major reconstruction while capital preventative maintenance prolongs the lifecycle of fair roads at a lower cost. (pg 40)

http://www.berriencounty.org/econdev/pdfs/Master%20Plan%20Draft.pdf?PHPSESSID=64e73e67c9a1441736e05f8e39b586d1

Berrien County Coordinated Transit-Human Services Transportation Plan, 2009

This document was compiled from various stakeholder meetings and interviews. The document outlines strategies to address transportation gaps and offers guidance for Berrien County's allocation of FTA 5310 (seniors and people with disabilities), 5316 (JARC) and 5317 (New Freedom) grant funds. The Coordinated Transportation Plan will also: assess the transportation needs of older adults, people with disabilities and low income workers. Develop strategies for

addressing identified gaps and improving efficiencies of services. Prioritize specific strategies for implementation.

http://www.swmpc.org/downloads/berrien_co_coordinated_transit_plan_final.pdf

Niles Dial A Ride Transportation Development Plan, 2012

The plan describes the comprehensive analysis of Niles Dial A Ride Transportation (DART) service and operations. The project focused on potential changes in service that will encourage increased use and long-term sustainability of Niles DART services. The Plan includes an overview of the current Niles DART transportation services, a review of the internal and external factors affecting Niles DART service provision, and development of service strategies that can be implemented over the next five or more years.

http://www.rlsandassoc.com/userdata/project_pdf/project_5065bfbaf41e3.pdf

Cass

Cass County Master Plan for Land Use, 2002

This Plan will be the fundamental tool used by the Planning Commission as a guide to fulfilling the Commission's responsibilities over the next five years. This Master Plan is the first comprehensive update of the County's first plan, the Cass County General Development Plan, which was adopted in 1975. There is a transportation analysis that summarizes the existing traffic conditions and data, identifies current roadway improvement plans and outlines traffic related guidelines the County should consider that will help maintain an efficient and safe roadway system in the future.

The County Road Commission has instituted and continues a program of reconstructing or resurfacing County roadways each year. Current 2002 plans include the reconstruction of Dailey Road between Pokagon Highway and Beeson Road and Brownsville Road from M-60 to Crooked Creek Road, in addition to basic repaving and maintenance work on County roads within the fifteen townships. The road commission is completing a major project to connect Calvin Center Road to CR 17 in Indiana, linking Cass County to new business and residential developments. A new four lane highway will be constructed between Kessington Road and Union Road, and will extend to the I-80 toll road in Northern Indiana.

http://www.casscountymi.org/MasterPlan.aspx

COMMUNITY PLANNING DOCUMENTS

Master Plans **-** In the simplest of terms, a community master plan provides a framework for decision-making resulting in a community's dreams becoming reality. Master plans include history, trends, projections, and goals - the community's story of where it came from and where it is going. Seeking

public input from every segment of the population is one of the most important aspects of the community plan development process.

Parks and Recreation Plans **-** A community parks, recreation, open space, and greenway plan provides a five-year framework for decisions regarding the establishment, development, and maintenance of recreational programs and facilities. A well-designed comprehensive recreation plan will also include plans to preserve and protect natural resources (land, water, animal, and vegetation) as well as cultural, historic, and artistic resources. Factors to be considered include population growth, population demographics, planned transportation systems, and land uses.

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Table 58 - Municipal Plans

Municipalities	Master Plan	Development Plan	Recreation Plan	Plan Location
Bertrand Township		1993 Bertrand Crossing Project	1993 General Development Plan	SWMPC Library
Buchanan Township	2002 Master Land Use Plan		1991 Recreation Plan	SWMPC Library
City of Buchanan	2008 Community Master Plan	2003 Downtown Blueprint	2001 Parks and Recreation Plan	In the SWMPC Library & online
Howard Township	2001 Master Plan		1999 Park and Recreation Plan	SWMPC Library
Milton Township	1999 Master Plan			SWMPC Library
City of Niles	2004 Community Master Plan	1997 Niles-Buchanan Area Planning Study	2002 Parks and Recreation Plan	SWMPC Library
Niles Township	2011 Master Plan		2008 Community Parks, Recreation, Open Space, and Greenway Plan	SWMPC Library
Ontwa Township	2011 Master Plan			CD in SWMPC Library

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APPENDICES

THIS WILL INCLUDE THE SIGNED COPY OF THE MOU

MEMORANDUM OF UNDERSTANDING
Between
THE MICHIANA AREA COUNCIL OF GOVERNMENTS
THE SOUTHWEST MICHIGAN PLANNING COMMISSION
THE CITY OF NILES and
THE SOUTH BEND PUBLIC TRANSPORTATION CORPORATION

This Memorandum of Understanding is an agreement between the Michiana Area Council of Governments (MACOG) and the Southwest Michigan Planning Commission (SWMPC) on behalf of the Designated Recipients and public mass transit operators within their respective geographical areas. This Memorandum is intended to define the basic process by which federal funds made available from the U.S. Department of Transportation, Federal Transit Administration (FTA), under Section 5307 of Title 49, United States Code Annotated, Chapter 53, as amended, are to be divided within the South Bend Urbanized Area.

This Memorandum shall serve as the basis of ordinances or resolutions, enacted by the policy boards of the respective agencies, to implement the capital programs funded by Section 5307.

The process is defined as follows:

1. After publication of the South Bend Urbanized Area annual apportionments in the Federal Register, MACOG will prepare the worksheet to split the apportionment between bus and rail, using the NTD FY data referenced in the Federal Register. This document will be distributed to the City of Niles and the South Bend Public Transportation Corporation within 15 days of the Federal Register publication.

2. Representatives of the City of Niles and the SBPTC will meet prior to submitting capital projects to MACOG or SWMPC. At this meeting, or subsequent meetings, the City of Niles and SBPTC will discuss the capital needs of each transit system and will cooperatively come to a sharing agreement regarding the level of funds that each will receive for the next four fiscal years.

3. The annual funding agreement shall be documented and submitted to the SWMPC and MACOG by the City of Niles, Michigan and the SBPTC within 30 days of receipt of the bus/rail apportionment split.

4. The General Manager of the SBPTC and the Representative of the City of Niles will provide annual letters to MACOG and the SWMPC certifying agreement by each party regarding the funding allocation by dollar amount to be attributed to both transit systems. These letters must be submitted no later than 30 days of receipt of the bus/rail apportionment split. If no agreement can be made between the two transit systems, then the decision will be made in a joint meeting between MACOG and the SWMPC. If a joint meeting is

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required, the Executive Director's of the respective MPO's will meet to develop an equitable agreement. The MPO Executive Director's will include the FTA designated recipients in the meeting. The agreement brokered between the MPO's will be reviewed and presented for approval at their next respective Policy Board meeting.

5. When projects are submitted for inclusion in the Transportation Improvement Program (TIP), MACOG will be responsible for prioritizing all projects in accordance with the documented

funding agreement in Indiana and the SWMPC will be responsible for prioritizing all projects in accordance with the documented funding agreement in Michigan. The SWMPC and MACOG assure that the funding split agreed to will be financially constrained. The MPOs further agree that the annual apportionment will be estimated over four years using the last Federal Register apportionment figures for the South Bend Urbanized Area. Adjustments to the increases or decreases in the actual FY apportionments shall be made as part of the annual update to the funding agreement.

6. Paper copies of draft Section 5307 grant applications will be provided by the City of Niles and the SBPTC to their respective MPO prior to their submission to FTA. Paper copies of final Section 5307 grant applications will be provided to the respective MPO when the grant is executed. The SWMPC and MACOG will be responsible for reviewing and verifying that the programmed projects and associated costs are consistent with the current TIP and STIP. Each MPO will send a letter of concurrence to the FTA representative and to their corresponding state representative with copies to each transit system and MPO. The MPOs agree to perform the concurrence review in a timely manner, and shall report to the FTA and each other its concurrence or lack thereof within seven (7) working days of receipt of the draft grant application.

7. In the event of a change in Designated Recipients, the passage of new authorizing legislation for the FTA Section 5307 Program, or significant revisions to FTA Circular 9030.1D, discussion will be held between the SWMPC and MACOG to review the process outlined in this Memorandum.

8. This Memorandum of Understanding shall be reviewed every three years or when a signatory requests a written change.

CITY OF NILES

By: _____ Date: _____

Kelly Getman-Dissette, Transportation Coordinator

SOUTH BEND PUBLIC TRANSPORTATION CORP.

By: _____ Date: _____

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Maurice Pearl, General Manager

SOUTHWEST MICHIGAN PLANNING COMMISSION

By: _____ Date: _____

K. John Egelhaaf, Executive Director

MICHIANA AREA COUNCIL OF GOVERNMENTS

By: _____ Date: _____

Sandra Seanor, Executive Director

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APPENDIX

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THIS MAP IS REFERENCED UNDER TRANSIT DEPENDENT (ENLARGE – 11x14 LANDSCAPE)

Map ___ Current and Future Transit Dependent Populations in Berrien County

THIS IS A JPG FILE

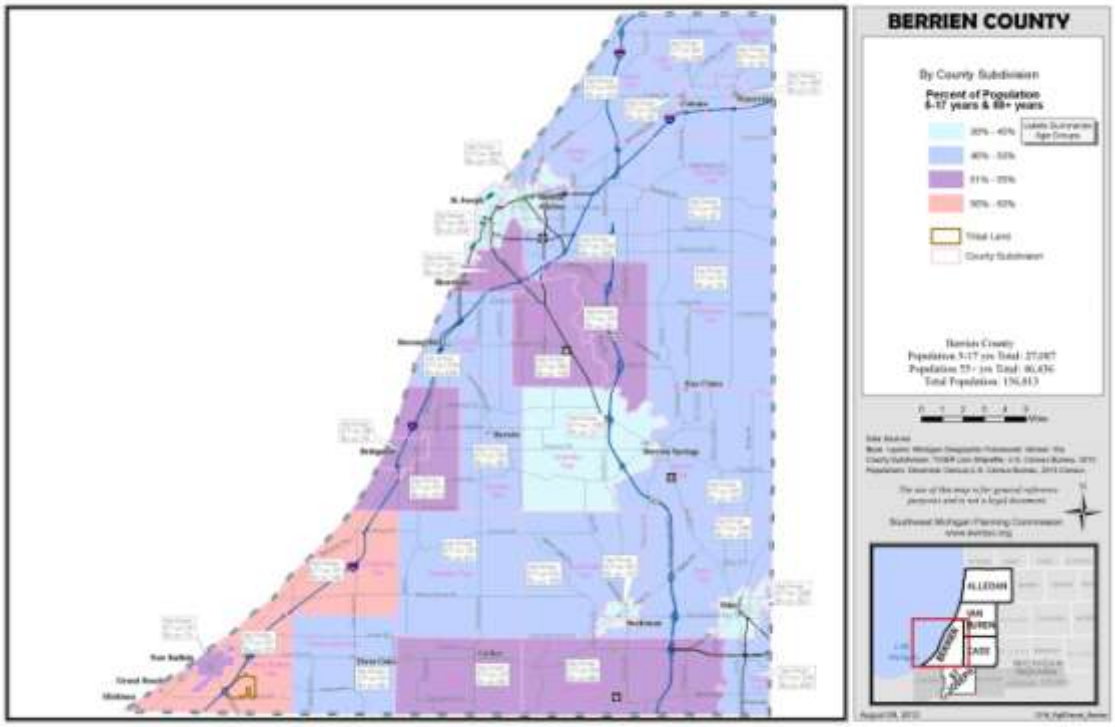

Table 1.4 NATS Study Area - Public Transit Provider Overview

(Made change to this table use this one for final- You were going to put this in the Appendix)

Table 59 - NATS Study Area-Public Transit Provider Overview

	Berrien Bus	Buchanan Dial A Ride	Niles Dial-A-Ride	Cass County Public Transit
Service Overview	Curb-to-curb, advance reservation general public transportation. Rides reserved on 1st called/1st served basis. Also provides transportation services under contract for human service agencies.	Same day curb-to-curb service. 24 hour advance scheduling is preferred, but rides can be scheduled up to 1 hour in advance.	Same day curb-to-curb service. 24 hour. Advance scheduling is preferred, but rides can be scheduled up to 1 hour in advance. Also provides 1 fixed route.	Curb to Curb, advance reservation general public transportation. Rides reserved on 1st called/1st served basis. Also, provide transportation services under contract for human service agencies.
Service Area	Census designated rural areas of Berrien County. Therefore, serves geographically the largest area in the County. Population: 79,300	Dial-a-Ride services in City of Buchanan Township. Curb-to-curb same-day shuttle service for Buchanan residents to Niles.	Dial-a-Ride service within the city limits of Niles, Niles Township, and Bertrand Township. Fixed-route operates between Niles and South Bend, Indiana.	Cass County. - 508 square miles – Population -39,700 48/Per Square Mile
Service Days/Hours	Monday-Friday 5:00 A.M. – 5:00 P.M.	Dial-A-Ride:	Dial-A-Ride:	Monday – Friday 5:00 A.M – 5:00 P.M.
		Monday-Friday 7:00 A.M.-5:30 P.M.	Monday-Friday 7:00 A.M.-5:00 P.M.	
		Saturday 10:00 A.M.-3:00 P.M.	Saturday 10:00 A.M.-3:00 P.M.	
		Shuttle to Niles:	Fixed-Route:	
		Monday-Friday: 4 Round Trips	Monday-Friday	
		Saturday: 3 Round Trips	10:00 A.M.-5:00 P.M.	

Eligibility	Open to the general public once all agency contract obligations are met.	Open to the general public.	Open to the general public.	Open to the general public once all agency contract obligations are met
Annual Operating Expenses	$859,456	$195,355	$489,065	$622,885
Annual Passenger Trips	65,667	9,551	32,009	30,270
Fleet Size	26	3	6	11
Governance	Berrien Bus is organized under Public Act 94 and is overseen by 12 members who are elected and serve on the Berrien County Board of Commissioners.	Buchanan Dial-A-Ride is organized under Public Act 279 and is overseen by five elected officials who serve on the Buchanan City Commission.	Niles Dial-A-Ride Transit (DART) is organized under Public Act 279 of 1909 and is overseen by eight members who are elected at large and serve on the Niles City Council.	Cass County Public Transit is organized under Public Act 196 and is governed by nine appointed officials. All of the members are appointed by the Cass County Commissioners.
	Berrien County contracts with Transportation Management Inc. (TMI) for operation of Berrien Bus services. The TMI Operations Manager supervises services from the Berrien Bus facility in Berrien Springs. The facility also houses the maintenance shop and vehicles.	As of January 1, 2012 Buchanan Dial-A-Ride has consolidated an agreement with Berrien County to contract services through TMI	. Previously services were contracted out to a private transportation firm, but in 2011 the decision was made by City Council to have city staff operate the system.	Cass County contracts with Transportation Management Inc. (TMI) for operation of Cass County Transit services. The TMI Operations Manager supervises services from the Cass County Transit facility in Cassopolis. The facility also houses the maintenance shop and vehicles.
Primary Funding/Revenue Sources	-Federal Section 5311 -State Operating Assistance -Contracts with human service agencies	-Federal Section 5311 -State Operating Assistance	-Federal Sections 5307	- Federal Section 5311 - State operating assistance - Contracts with

	-Passenger Fares	-City of Buchanan Millage -Passenger Fares		human service agencies - Passenger fares

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