What Moves You, TwinCATS?

2013-2040 Long Range Transportation Plan

For the Twin Cities Area Transportation Study (TwinCATS)



July 2013

Prepared by the

Southwest Michigan Planning Commission

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INTRODUCTION

PURPOSE OF THE PLAN

"What Moves You Berrien County," the 2040 Twin Cities Area Transportation Study (TwinCATS) Long Range Transportation Plan is an update of the 2035 Long Range Plan. The Plan explains how the communities in the planning area will address their transportation needs over the next 25 years, how they will prioritize improvements, and how federal, state, and local dollars will be used to further a system that supports highways, transit, bicycle and pedestrian facilities, airports, and harbors.

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

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

1. **The 3 Cs 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 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**

   TwinCATS was established in 1983, following benchmarks for concentration of population within a geographic area and the expectation of urban development. TwinCATS fits into a class of transportation planning organizations known as Metropolitan Planning Organizations (MPO). The MPO is charged with maintaining a continuing, comprehensive, and cooperative transportation planning process. 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 formulas for producing the local, non-federal match required for federal assistance in planning and transportation-related activities.

STUDY AREA

BERRIEN COUNTY

Berrien County is located in Michigan's southwest corner. The southern border of the County abuts the northern Indiana 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 as it shares a location within the Lake Michigan Watershed Basin with Berrien County. A few towns in the far southwest portion of the County are even within the farthest reaches of the Chicago commutershed. Definitions of a Chicago "Mega-Region" tend to include 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 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.

MPO STUDY AREA

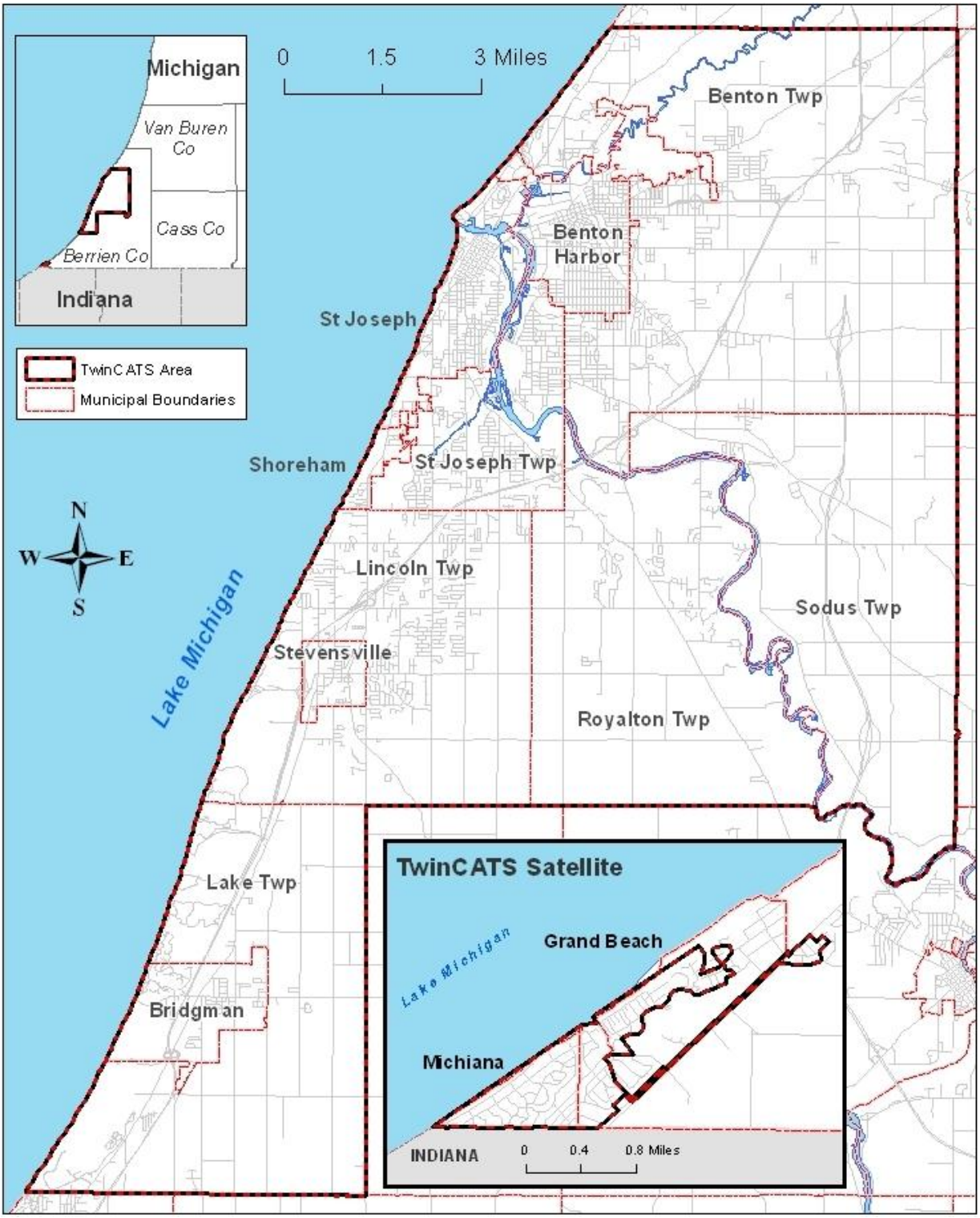
The Twin Cities Area Transportation Study (TwinCATS) conducts transportation planning functions for the Benton Harbor-St. Joseph urbanized area, as designated by the US Census. The TwinCATS area primarily includes communities that are in close proximity to Lake Michigan. In addition, the TwinCATS area contains non-adjacent satellite communities of the Village of Grand Beach and the Village of Michiana. This is the Michigan portion of the Michigan City, Indiana urbanized area, and the Northwestern Indiana Regional Planning Commission (NIRPC) planning area. Through an arrangement between SWMPC and NIRPC, SWMPC provides transportation planning services to Grand Beach and Michiana, via TwinCATS.

The 2010 Census changed the urbanized area for the TwinCATS study area. The change has occurred to the north of the current study area. Hagar Township will become the newest member to the TwinCATS committees. A discussion of the committees can be found in subsequent sections of this planning document.

Map 1 of the TwinCATS Study Area shows the current jurisdictions within the study area which include:

- Cities of: Benton Harbor, Bridgman, and St. Joseph
- Villages of: Grand Beach, Michiana, Shoreham
- Townships: Benton Charter, Lake Charter, Lincoln Charter, Royalton, St. Joseph Charter, and Sodus

Map 1 TwinCATS Current Planning Area and Jurisdictions



PARTNERS IN INDIANA

The Northwestern Indiana Regional Planning Commission (NIRPC) service area shares the northern Indiana border with Berrien County. TwinCATS member communities and SWMPC coordinate certain transportation projects and planning documents with transportation staff at NIRPC. In particular, recent studies of trails and transit service in our region have included stakeholders from both sides of the state line. For more information, please consult http://www.nirpc.org.

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 TwinCATS 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.

TWINCATS TECHNICAL ADVISORY COMMITTEE

The TwinCATS 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
Benton CharterTownship
City of Benton Harbor
City of Bridgman
City of St. Joseph
*Federal Highway Administration - Michigan Division
Cornerstone Alliance
*Federal Transit Administration
St. Joseph River Harbor Authority
*Northwestern Indiana Regional Planning Commission
Lake Charter Township
Lincoln Charter 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 Modeling
Royalton Township
St. Joseph Charter Township
Sodus Township
Southwest Michigan Regional Airport Board
*Southwest Michigan Planning Commission
St. Joseph River Harbor Authority
Village of Grand Beach
Village of Shoreham
Village of Stevensville

TWINCATS POLICY COMMITTEE

The TwinCATS 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 Board of Commissioners
Berrien County Community Development
Berrien County Road Commission
Benton Charter Township
City of Benton Harbor
City of Bridgman
City of St. Joseph
*Federal Highway Administration - Michigan Division
Cornerstone Alliance
*Federal Transit Administration
St. Joseph River Harbor Authority
*Northwestern Indiana Regional Planning Commission
Lake Charter Township
Lincoln Charter Township
*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
Royalton Township
St. Joseph Charter Township
Sodus Township
Southwest Michigan Regional Airport Board
*Southwest Michigan Planning Commission
St. Joseph River Harbor Authority
Twin Cities Area Transportation Authority (TCATA)
Village of Grand Beach
Village of Shoreham

LEGISLATION

Moving Ahead for Progress in the 21st Century (MAP-21) (49 USC Chapter 53) 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 their local projects in order to take advantage of 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 and a national freight network designated by critical rural freight corridors.
- **Environmental Streamlining Processes**- Substantial reductions in the average length of the environmental review process in order to expedite project delivery.

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

HISTORY OF THE STUDY AREA

BERRIEN COUNTY

René-Robert 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 up the river at the present city of Niles, Michigan. "Tis a spot, the best adopted of any to be seen, for the purpose of living;" French explorers stated in 1718 when observing the region. The French used Fort St. Joseph heavily until they left the area in 1763. The British held the fort until the Spanish captured it in 1781. Settlers began to enter Berrien County en masse in the early 1830s, when the County was officially organized and named for the sitting U.S. Attorney General. Settlers started to take advantage of the moderating effect of Lake Michigan on Berrien County's climate and its sandy soils, which provided a perfect environment for agriculture; in particular, the County became known for its breadth of fruits and vegetables. The first shipment of peaches from Berrien County to Chicago was sold in 1839. Berrien County's fruit production continued to grow as did its population. By the civil war in 1861-1865 the County's population stood at over 20,000.[1]

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 allowed highway construction to begin connecting the nation's population centers. This system expansion continued in earnest throughout the Depression, as highway construction provided a major source of employment.[2]

During World War II (1941-1945), highway expansion stopped, and transit system ridership across the country reached an all-time high. Streetcars, rail systems, and buses served as the primary means of travel for

[1] Southwest Michigan Business and Tourism Directory, July 2, 2008 http://www.swmidirectory.org/History_of_Berrien_County.html

[2] Urban Transportation Planning in the United States An Historical Overview, Revised Edition, November 1992, Edward Weiner

Americans. The post-war period saw a huge demand for new vehicles and space for homes as soldiers came home, settled down, and started families. 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.

As highways grew, so did the number of tools available to plan for their future expansion. Planners began to use travel surveys to study destinations of trips and basic factors affecting travel. Computer methods for forecasting future travel by using growth factors in origin-destination trips became popular among planners by the 1950s. In addition, organizations such as the American Association of State Highway and Transportation Professionals (AASHTO) 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 move towards an approach that better balanced highway and transit investments, and the urban, suburban, and rural location of infrastructure. In particular, 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 as conditions warrant. 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 transportation planning with land use, adopting a regional approach, and taking into account the environmental and social costs that highway and transit projects impose on communities. It was during this time period, then, that the framework for Metropolitan Planning Organizations (MPOs) came into being.

Despite these attempts to establish a multi-modal, regional transportation system, private automobile infrastructure continues to dominate transportation planning. In recent years, however, 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."[3] This new call for a system that

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

supports all modes, all abilities, and all types of land use is particularly timely for the southwest Michigan region, where an aging, dispersing 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 the TwinCATS region to the rest of Michigan and the nation. I-94 connects the TwinCATS area with Detroit and Ontario, Canada to the east, and Chicago, Milwaukee, Madison, and Minneapolis-St.Paul to the west. I-196 also splits off 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 connects South Bend with Benton Charter Township. US-12 provides an east-west connection across the state in the southern portion of the County. In addition M-139, M-63, and Red Arrow Highway serve as north-south connectors and business corridors in the County. More detailed information about roadways can be found in the Intermodal Considerations section of the plan.

RAIL

The Pere Marquette route on Amtrak provides once daily service in each direction between Grand Rapids and Chicago, with stops in St. Joseph and New Buffalo. To head eastward on Amtrak, passengers can go to Niles and board either the Blue Water or Wolverine routes towards Detroit and Port Huron. In addition, the South Shore Line provides commuter service to Chicago, with 14 daily departures from Michigan City and seven from South Bend. Each of these departure points is just a few miles from the Berrien County line in Indiana. More details about rail service can be found in the Assessment of Transportation Modes section of the plan.

TRANSIT

The TwinCATS region continues to observe a dispersing, aging population. Twin Cities Area Transportation Authority (TCATA) provides fixed-route and demand-response services in a 14-mile portion of the Benton Harbor-St. Joseph Urbanized area. The Berrien County Board of Commissioners operates the Berrien Bus, a demand-response service for all Census-designated rural areas within Berrien County. More details about transit service can be found in the Assessment of Transportation Modes section of the plan.

NON-MOTORIZED FACILITIES

TwinCATS supports major regional efforts to improve facilities for non-motorized transportation and trails. TwinCATS is part of the MDOT Southwest Region 9-County Non-Motorized Plan, the Southwest Michigan Alliance for Recreational Trails (SMART). In addition, jurisdictions within TwinCATS are a part of the Northern Indiana Regional Planning Commission (NIRPC)'s trail network planning. In 2012, TwinCATS formally adopted a Complete Streets Policy, pledging that as an MPO, it would promote roadway design that adequately supports the needs of all users, including pedestrians, bicyclists, transit riders, and motorists. More information about non-motorized facilities can be found in the Assessment of Transportation Modes section of the plan.

AVIATION

Southwest Michigan Regional Airport is the only public airport in the TwinCATS region. 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. More information about non-motorized facilities can be found in the Assessment of Transportation Modes section of the plan.

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, and 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.

TwinCATS 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 Twin Cities 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

SWMPC's Commitment to Public Participation

- Public involvement is an important element of a high quality transportation planning process;
- 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;
- 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;
- Informing and educating the public about transportation planning issues and the transportation planning process is key to obtaining good quality public input; and
- 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.

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 TwinCATS committees must actively solicit the ideas and comments of the people they serve.

TwinCATS Public Participation Plan

The TwinCATS 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

The TwinCATS transportation planning process is designed to be open to the public. Each month, on the third Monday, the TAC and Policy Committees meet at 9:30 a.m and 10:30 a.m., respectively, to discuss projects and other items related to transportation in the region. Both committees meet at the Southwest Michigan Regional Airport, 1123 Territorial Road Benton Harbor, MI 49022. 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 TwinCATS 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/twincats.asp or by contacting the SWMPC at:

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 TwinCATS 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 TwinCATS). According to the 2012 update to the 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 principle document was approved in 2011 with a later review and update of the plan in 2012, where specific attention was paid to the development of a target for the MPO to achieve in the area of public participation and engagement in 2012. The plan was formally adopted in 2011 by the MPO.

- **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 TwinCATS Policy Committee approved the goals and objectives in February 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) was done with assistance from MDOT and Committee members. Future socioeconomic 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.
- 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 D 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. Please see Appendix E for a full listing of comments received by the time this document was submitted.

LRTP PROJECTS

Notices indicating a public comment period for the LRTP projects were sent via e-mail and postal mail (see Appendix D 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. Members of the public were invited to the initial public outreach meeting on February 25, 2013. The formal comment period began April 1 and ended on April 11, 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. Please see Appendix D for public notices. The public had the opportunity to comment in person at the regular TwinCATS Technical Advisory Committee meeting on April 15, 2013 at 9:30 a.m. at Southwest Michigan Regional Airport or by submitting an e-mail or letter using the following contact information:

Southwest Michigan Planning Commission

185 E Main St

Benton Harbor, MI 49022

manig@swmpc.org; flowers@swmpc.org

(269)-925-1137 (x24) (x17)

Table 1 lists the LRTP projects and the following map represents the project location.

Table 1: LRTP Projects and Locations

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC ?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2014	Berrien	MDOT	I-94 WB	On I-94 WB from Red Arrow Highway (Exit 16) for 7.4 miles northeasterly to 0.5 miles northeast of Puetz Road. I-94 WB exit and entrance ramps at Exit 16 and Exit 22 extensions.	7.391	Restore and Rehabilitate	Mill existing and place two course HMA Overlay. Shoulder reconstruction. Median grading, replace or repair all culverts under I-94 WB except 84" Tanner Creek. Channel excavation of Thornton County Drain. Crown relocation to between center and outside lane. Underdrain installation. Dune grass planting. Ramp accel/decel extensions.	ROW	No	45,000	IM	5,000	M				15,000,000	113585
2014	Berrien	Village of Shoreham	Brown School Road	Lakeshore Drive,east to CSX railroad tracks	0.3	Reconstruct	Remove extg. road materials; lower sub-base; install storm sewer, stormwater detention basin; install concrete curb & gutter; install new aggregate base and HMA surface; install sidewalks, mark bike paths on each side.	CON	No	400,000	STP - Local			99,000	Local - Village	19% match from Village	520,000	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2014	Berrien	Berrien County Road Commission	Brown School Road	St. Joseph Township from Cleveland Avenue West to Village of Shoreham	0.3	Resurface	Resurface and place 5 foot wide paved shoulders.	CON	No	135,080	STP-Local			33,187	Local - Township (Specify township in Comments)	St. Joseph Charter Township	170,000	
2014	Berrien	Berrien County Road Commission	Hollywood Road	Hollywood Road: M-63 to 500 feet south of Glenlord; and Palladium Drive: Hollywood Road to 1000 feet west; and Maiden La	1.3	Restore & rehabilitate	Restore and rehabilitate	CON	ACC	286,444	STP-Any Area					Berrien County Road Commission	714,416	112091
2015	Berrien	MDOT	I-94	Urban: Empire Road over I-94, 1.7 mile E of Benton Harbor. Rural: Carmody Road over I-94, 2.3 miles E of I-196. County Line Road over I-94, 8.6 miles E of I-196	2.643	Bridge - other	Concrete Shallow overlay, Beam and substructure repair, Paint bearings, Joints, Railing retrofit, and approaches	CON	No	511,520	IM	56,836	M				1,937,326	110931
2015	Berrien	MDOT	US-31	at Napier Avenue	0.000	Roadside Facility	Carpool Lot Expansion and Resurface	PE	No	8,185	STP-State	1,815	M			None	97,000	116509

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2015	Berrien	MDOT	I-94	Urban: Empire Road over I-94, 1.7 mile E of Benton Harbor. Rural: Carmody Road over I-94, 2.3 miles E of I-196. County L	2.6	Bridge - other	Concrete Shallow overlay, Beam and substructure repair, Paint bearings, Joints, Railing retrofit, and approaches.	CON	No	1,611,593	IM	179,067	State Funds - Michigan Betterment			None	1,937,326	110931
2015	Berrien	Berrien County Road Commission	Marquette Woods Road Resurfacing, St. Joseph Ave to Roosevelt Rd	St. Joseph Ave. East to Roosevelt Rd.	0.5	Restore & rehabilitate	Improve the existing pavement section from the existing 22 feet edge to edge to 32 feet wide hot mix asphalt paved section including 8 foot shoulders consisting of 5 feet paved and 3 foot aggregate. Additionally, concrete sidewalks will be completed on both north and south sides or Marquette Woods Road to facilitate all modes of pedestrian traffic.	CON	No	407,000	STP-Local			101,400	Local - Township	Lincoln Charter Township	508,400	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2015	Berrien	City of St. Joseph	Botham Avenue Reconstruction Project	Botham Avenue - Niles Avenue (M-63) to Morton Avenue	0.3	Reconstruct	Full reconstruction of Botham Avenue from Niles Road to Morton Avenue. Work is anticipated to include new utilities: storm sewer, sanitary sewer and water main. Existing concrete pavement with curb and gutter will be replaced with HMA pavement and curb and gutter or concrete curb and gutter, dependent upon which option is the most cost effective. Sidewalk ramps will be replaced to meet current standards.	CON	AC	430,634	STP - Local			1,017,200	Local - City	AC: St. Joseph	1,343,300	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2016	Berrien	MDOT	I-94 WB	On I-94 WB from Red Arrow Highway (Exit 16) for 7.4 miles northeasterly to 0.5 miles northeast of Puetz Road. I-94 WB exit and entrance ramps at Exit 16 and Exit 22. extensions.	7.391	Restore and Rehabilitate	Mill existing and place two course HMA Overlay. Shoulder reconstruction. Median grading, replace or repair all cuvlerts under I-94 WB except 84" Tanner Creek. Channel excavation of Thornton County Drain. Crown relocation to between center and outside lane. Underdrain installation. Dune grass planting. Ramp accel/decel extensions.	CON	No	11,655,000	IM	1,295,000	M			None	15,000,000	113585

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2016	Berrien	City of St. Joseph	Botham Avenue Reconstruction Project	Botham Avenue - Niles Avenue (M-63) to Morton Avenue	0.3	Reconstruct	Full reconstruction of Botham Avenue from Niles Road to Morton Avenue. Work is anticipated to include new utilities: storm sewer, sanitary sewer and water main. Existing concrete pavement with curb and gutter will be replaced with HMA pavement and curb and gutter or concrete curb and gutter, dependent upon which option is the most cost effective. Sidewalk ramps will be replaced to meet current standards.	CON	ACC	205,333	STP - Local				Local - City	ACC: St. Joseph	1,343,300	
2016	Berrien	MDOT	I-94 WB	Red Arrow Highway (Exit 16) to I-94 BL (Exit 23)	7.4	Restore & rehabilitate	Mill Existing and Multiple Course HMA Overlay	CON	No	11,655,000	IM	1,295,000	State Funds - Michigan Betterment				15,000,000	113585
2016	Berrien	MDOT	US-31	at Napier Avenue	0	Roadside facility	Carpool Lot Expansion and Resurface	CON	No	63,025	STP-State	13,975	State Funds - Michigan Betterment				97,000	116509
2016	Berrien	Berrien County Road Commission	Shawnee Road Jericho to Date	Jericho to Date	0.5	Resurface	5 foot wide paved shoulders and resurfacing	CON	No	373,658	STP-Local			91,066	Local - Township	Lake Charter Township	450,000	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC ?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2016	Berrien	City of Benton Harbor	Colfax Avenue Resurfacing	May St to Britain Ave	0.8	Resurface	Cold mill and resurface Colfax Avenue from May St to Britain Avenue including ADA ramp replacements and minor drainage improvements.	CON	No	277,333	STP - Local			69,066	Local - City	Benton Harbor	340,000	
2017	Berrien	Berrien County Road Commission	John Beers Road: Hollywood Road West to Township Line	Hollywood Road thence West 0.51 Miles to West Township Line	0.5	Resurface	Resurface existing pavement that already has 4 foot wide paved shoulders.	CON	No	192,163	STP-Local			46,600	Local - Township	Royalton Township	225,000	
2017	Berrien	Berrien County Road Commission	Hilltop Road	M-63 (Niles Avenue) to BL-94 (Lakeshore Drive)	0.6	Miscellaneous	Hot patch and micro surface	CON	No	652,000	STP-Local			130,400	Local - Township	St. Joseph Charter Township	160,000	
2014	Berrien	Berrien County Transportation (Berrien Bus)	Rural Operating Funds	Rural Portions of TwinCATS MPO Area		Transit Operations	Public Transit Operations	T-Ops	No	26,030	5311	26,030	M				52,060	
2015	Berrien	Berrien County Transportation (Berrien Bus)	Rural Operating Funds	Rural Portions of TwinCATS MPO Area		Transit Operations	Public Transit Operations	T-Ops	No	26,030	5311	26,030	M				52,060	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC ?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2016	Berrien	Berrien County Transportation (Berrien Bus)	Rural Operating Funds	Rural Portions of TwinCATS MPO Area		Transit Operations	Public Transit Operations	T-Ops	No	26,030	5311	26,030	M				52,060	
2017	Berrien	Berrien County Transportation (Berrien Bus)	Rural Operating Funds	Rural Portions of TwinCATS MPO Area		Transit Operations	Public Transit Operations	T-Ops	No	26,030	5311	26,030	M				52,060	
2014	Berrien	TCATA	Public Transportation	Benton Harbor, St. Joseph, Benton Township		Transit operations	Bus operation	T-Ops	No	680,000	5307	704,343	CTF	445,657	Local - Transit Authority Funds	farebox and millage from City of Benton Harbor	1,830,000	
2014	Berrien	TCATA	New Line haul	Benton Harbor, St. Joseph, Benton Township,		Transit operations	It's a commuter route that takes low income passengers to an area that has potentially 70 employees	T-Ops	No	106,000	5316	106,000	CTF					
2014	Berrien	TCATA	Expanded Hours	Benton Harbor, St. Joseph, Benton Township		Transit operations	Provide fixed route service during times beyond the normal systems service hours	T-Ops	No	87,000	5316		CTF					
2014	Berrien	TCATA	Mobility Manager	Benton Harbor, St. Joseph, Benton Township		Transit operations	Mobility Manager to coordinate transportation needs for the disable passengers	T-Ops	No	75,000	5317		CTF					

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2016	Berrien	TCATA	Replacement Buses	Benton Harbor, St. Joseph, Benton Township		Transit Vehicle Replacements/Additions	Bus Replacement - replace two (2) 2010 cutaway buses with a 2016 or newer cutaway bus	T-Cap	No	100,000	CM		CTF	25,000	Local Transit Authority Funds	Farebox and Millage from City of Benton Harbor	125,000	
2017	Berrien	TCATA	Replacement Buses	Benton Harbor, St. Joseph, Benton Township		Transit Vehicle Replacements/Additions	Bus Replacement - replace three (3) 2010 cutaway buses with a 2016 or newer cutaway bus	T-Cap	No	168,000	CM	0	CTF	$42,000	Local Transit Authority Funds	farebox and millage from City of Benton Harbor	210,000	
2017	Berrien	Berrien Bus	Replacement Buses	Rural Portions of TwinCATS MPO Area		Transit Vehicle Replacements/Additions	Bus Replacement - replace four (4) less than 30' small buses with four (4) 2017 or newer less than 30' small buses	T-Cap	No	312,000	CM	78,000	CTF				390,000	
2015	Berrien	Berrien County Road Commission	Napier Avenue at Pipestone St.	Benton Harbor		Traffic Signal Upgrade	Traffic signal modernization including removal of existing signals and new mast arms, LED traffic signals, video detection, base mount controller & cabinet, sidewalk ramp upgrades, and preparations for corridor-wide interconnection	CON	No	160,000	CM						160,000	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2014	Berrien	Berrien County Road Commission	Roosevelt Road	From Hidden Pines trail South 1700 Ft		Non-motorized Improvements	1,700 lineal feet of 10 ft. wide, HMA non-motorized trail parallel to existing roadway. Work includes tree removal, machine grading, sand subbase, agg base, HMA surface, striping, detectable warning strips.	CON	No	92,800	CM			23,200			116,000	

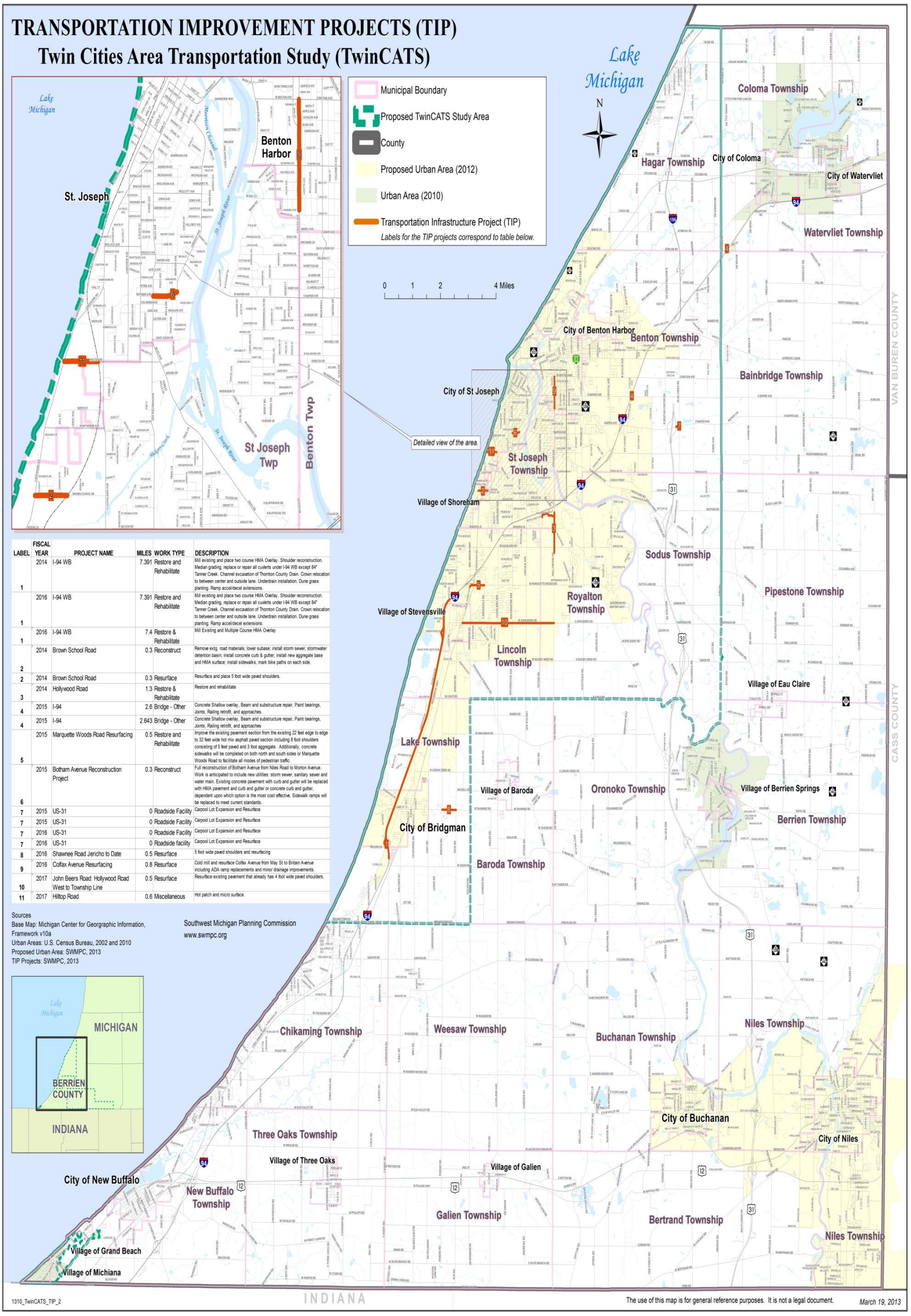
Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2014	Berrien	City of Benton Harbor	Pipestone St at Empire Avenue	Benton Harbor		Traffic Signal Upgrade	Traffic signal modernization including removal of existing signals and new mast arms, LED traffic signals, video detection, base mount controller & cabinet, sidewalk ramp upgrades, and preparations for corridor-wide interconnection	CON	No	220,000	CM						220,000	
2015	Berrien	City of Benton Harbor	Pipestone St at Britain Avenue	Benton Harbor		Traffic Signal Upgrade	Traffic Signal improvements including new controller, video detection, conduits and fiber optic cable, and other preparations for corridor-wide interconnection	CON	No	116,000	CM						116,000	
2016	Berrien	City of Benton Harbor	Pipestone St at Wall St	Benton Harbor		Traffic Signal Upgrade	Traffic Signal improvements including new controller, video detection, and preparations for corridor-wide interconnection	CON	No	65,000	CM						65,000	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2017	Berrien	City of Benton Harbor	Pipestone St at Jefferson St	Benton Harbor		Traffic Signal Upgrade	Traffic signal modernization including removal of existing signals and new mast arms, LED traffic signals, video detection, base mount controller & cabinet, sidewalk ramp upgrades, and other preparations for corridor-wide interconnection	CON	No	240,000	CM						240,000	
2017	Berrien	City of Benton Harbor	Pipestone St at Market St	Benton Harbor		Traffic Signal Upgrade	Traffic Signal improvements including new controller, video detection, conduits and fiber optic cable, and final preparations for corridor-wide interconnection	CON	No	209,000	CM						209,000	
2014	Berrien	SWMPC	Berrien County Rideshare	Berrien County		Miscellaneous	Southwest Michigan Planning Commission Rideshare Program to assist the community which includes citizens and businesses.		No	12,000	CM						12,000	
2014	Berrien	Berrien County Road Commission	Date Road	Over Keelo Creek		Bridge Replacement	Bridge Replacement	CON	No	720,000	BRO	135,000	M	45,000	COUNTY		900,000	

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2014	Berrien	Benton Harbor	Broadway Ave	Pipestone St to Empire Ave	0.90	Resurface	Mill and resurface road, minor drainage improvements, ADA sidewalk ramp replacements	CON		240,000	STP-Local			60,000	City		300,000	112087
2014	Berrien	MDOT	I-94	Westbound off ramp at Pipestone Road	0.172		Geometric improvement to realign ramp. Realignment will reduce congestion in the vicinity of the interchange.	A		1,000,000	CM	250,000	M				1,250,000	114962
2014	Berrien	MDOT	I-94	over Puetz Road	1.477	Trunkline Preconstruction GPA	Deep Overlay, Widening, Substructure Repair	PE		113,000	IM	13,000	M				126,000	88117
2014	Berrien	MDOT	I-94	over Puetz Road	1.477	Trunkline Preconstruction GPA	Deep Overlay, Widening, Substructure Repair	SUB		231,000	IM	26,000	M				256,000	88117
2014	Berrien	MDOT	I-94	over CSX Rail Road Spur (Abandonded)	1.508	Trunkline Preconstruction GPA	Deep overlay, widening, substructure repairs	PE		111,000	IM	12,000	M				123,000	118467
2014	Berrien	MDOT	I-94	over CSX Rail Road Spur (Abandonded)	1.508	Trunkline Preconstruction GPA	Deep overlay, widening, substructure repairs	SUB		38,000	IM	4,000	M				42,000	118467

Proposed Fiscal Year for Project Funding	County	Submitting Agency	Name of Project	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	What is the project phase?	AC/ACC?	Federal Cost	Federal Funding Source	State Cost	State Funding Source	Local Cost	Local Cost Source	Local Funding Comments	Total Project Cost	What is your MDOT job number
2040	Berrien	MDOT	US-31	Napier Avenue to I-94		New Route/structure (Capacity increase)	New freeway	CON	No	132,000,000	Unknown						132,000,000	

Map 2: LRTP Project Locations



LABEL	FISCAL YEAR	PROJECT NAME	MILES	WORK TYPE	DESCRIPTION
1	2014	I-94 WB	7.391	Restore and Rehabilitate	Mill existing and place two course HMA Overlay. Shoulder reconstruction. Median grading, replace or repair all cuvlerts under I-94 WB except 84" Tanner Creek. Channel excavation of Thornton County Drain. Crown relocation to between center and outside lane. Underdrain installation. Dune grass planting. Ramp accel/decel extensions.
1	2016	I-94 WB	7.391	Restore and Rehabilitate	Mill existing and place two course HMA Overlay. Shoulder reconstruction. Median grading, replace or repair all cuvlerts under I-94 WB except 84" Tanner Creek. Channel excavation of Thornton County Drain. Crown relocation to between center and outside lane. Underdrain installation. Dune grass planting. Ramp accel/decel extensions.
1	2016	I-94 WB	7.4	Restore & Rehabilitate	Mill Existing and Multiple Course HMA Overlay
2	2014	Brown School Road	0.3	Reconstruct	Remove extg. road materials; lower subase; install storm sewer, stormwater detention basin; install concrete curb & gutter; install new aggregate base and HMA surface; install sidewalks, mark bike paths on each side.
2	2014	Brown School Road	0.3	Resurface	Resurface and place 5 foot wide paved shoulders.
3	2014	Hollywood Road	1.3	Restore & Rehabilitate	Restore and rehabilitate
4	2015	I-94	2.6	Bridge - Other	Concrete Shallow overlay, Beam and substructure repair, Paint bearings, Joints, Railing retrofit, and approaches
4	2015	I-94	2.643	Bridge - Other	Concrete Shallow overlay, Beam and substructure repair, Paint bearings, Joints, Railing retrofit, and approaches
5	2015	Marquette Woods Road Resurfacing	0.5	Restore and Rehabilitate	Improve the existing pavement section from the existing 22 feet edge to edge to 32 feet wide hot mix asphalt paved section including 8 foot shoulders consisting of 5 feet paved and 3 foot aggregate. Additionally, concrete sidewalks will be completed on both north and south sides or Marquette Woods Road to facilitate all modes of pedestrian traffic.
6	2015	Botham Avenue Reconstruction Project	0.3	Reconstruct	Full reconstruction of Botham Avenue from Niles Road to Morton Avenue. Work is anticipated to include new utilities: storm sewer, sanitary sewer and water main. Existing concrete pavement with curb and gutter will be replaced with HMA pavement and curb and gutter or concrete curb and gutter, dependent upon which option is the most cost effective. Sidewalk ramps will be replaced to meet current standards.
7	2015	US-31	0	Roadside Facility	Carpool Lot Expansion and Resurface
7	2015	US-31	0	Roadside Facility	Carpool Lot Expansion and Resurface
7	2016	US-31	0	Roadside Facility	Carpool Lot Expansion and Resurface
7	2016	US-31	0	Roadside facility	Carpool Lot Expansion and Resurface
8	2016	Shawnee Road Jericho to Date	0.5	Resurface	5 foot wide paved shoulders and resurfacing
9	2016	Colfax Avenue Resurfacing	0.8	Resurface	Cold mill and resurface Colfax Avenue from May St to Britain Avenue including ADA ramp replacements and minor drainage improvements.
10	2017	John Beers Road: Hollywood Road West to Township Line	0.5	Resurface	Resurface existing pavement that already has 4 foot wide paved shoulders.
11	2017	Hilltop Road	0.6	Miscellaneous	Hot patch and micro surface

Sources
Base Map: Michigan Center for Georgraphic Information, Framework v10a
Urban Areas: U.S. Census Bureau, 2002 and 2010
Proposed Urban Area: SWMPC, 2013
TIP Projects: SWMPC, 2013

Southwest Michigan Planning Commission
www.swmpc.org

ILLUSTRATIVE LIST PROJECTS

Table 2 shows the projects that are on the illustrative list for the long range plan. The "Illustrative List" is essentially a wish list; it consists of projects that are desired by MPO member jurisdictions as part of the long range planning process, but nevertheless were not programmed in the 2014-2017 TIP due to funding constraints and necessary MPO project prioritization. Changes in funding during the current TIP and LRP cycles may mean that these projects are ultimately programmed.

Table 2 Illustrative List of TwinCATS Projects

Name/Location of Project	Submitting Agency	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	Federal Cost	Federal Funding Source	Local Cost	Local Funding Source
Red Arrow Highway	City of Bridgman	South City limits to North City limits.	1.7	Resurface	Cold milling and resurfacing of Red Arrow Hwy from the south City limits to the north City limits, including miscellaneous sidewalk and curb and gutter replacement, ADA ramps, and pavement markings. The roadway through this area is experiencing moderate transverse cracking, minor rutting and joint deterioration.	727,200	STP-Local	181,800	Local-City
Hollywood Road: Marquette Woods Road to Glenlord Road	Berrien County Road Commission	Marquette Woods Road to Glenlord Road	1.1	Restore & rehabilitate	Restore and add 5 foot wide paved shoulders	798,038	STP-Local	176,962	Local-Township
Marquette Woods Road Resurfacing	Berrien County Road Commission	Roosevelt Rd. to Cleveland Ave.	0.5 mi	Restore and Rehabilitate	Improve the existing pavement section from the existing 22 feet edge to edge to 32 feet wide hot mix asphalt paved section including 8 foot shoulders consisting of 5 feet paved and 3 foot aggregate.	345,000	STP-Local	86,000	Local-Township
Marquette Woods Road Resurfacing	Berrien County Road Commission	Cleveland Ave. to Washington Ave.	0.5 mi	Restore and Rehabilitate	Improve the existing pavement section from the existing 22 feet edge to edge to 32 feet wide hot mix asphalt paved section including 8 foot shoulders consisting of 5 feet paved and 3 foot aggregate.	353,000	STP-Local	88,000	Local Township

Name/Location of Project	Submitting Agency	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	Federal Cost	Federal Funding Source	Local Cost	Local Funding Source
Broadway Avenue Resurfacing	City of Benton Harbor	Pipestone Avenue to Empire Avenue	0.8	Resurface	Cold milling and resurfacing Broadway Avenue from Pipestone Avenue to Empire Avenue.Reconstruct ADA ramps with minor drainage improvements along with new pavement markings delineating on street bike lanes.	250,000	STP-Local	50,000	Local-City
Shawnee Road	Berrien County Road Commission	City of Bridgman to Jericho Road	0.5	Resurface	5 foot wide paved shoulders and resurfacing	368,325	STP-Local	81,675	Local-Township
Pipestone avenue Resurfacing	City of Benton Harbor	50 South of Main St to Britain Avenue	0.6	Resurface	Cold mill and resurface Pipestone Avenue from Main St to Britain Avenue with ADA ramp improvements and minor drainage improvements.	288,000	STP-Local	72,000	Local-City
Lakeview Avenue Resurfacing Project	City of Saint Joseph	Lakeview Avenue - Hilltop Road to West Highland Avenue.	0.4	Resurface	Cold Milling and HMA Overlay of Lakeview Avenue from Hilltop Road to West Highland Avenue. Storm sewer to be constructed in green space requiring removal and replacement of sidewalk in those locations. Sidewalk ramps will be replaced as needed to meet current standards.	421,000	STP-Local	196,300	Local-City
Fairplain Drive and Mall Drive	Berrien County Road Commission	M-139 to Pipestone Road	1.2	Restore & rehabilitate	Mill and Fill HMA pavement and construct sidewalks on both sides of road where feasible.	1,178,640	STP-Local	261,360	Local- City
John Beers Road: Hollywood to Scottdale	Berrien County Road Commission	Hollywood Road to Scottdale Road	1.1	Restore & rehabilitate	Widen for 5 foot wide paved shoulders and resurface.	392,880	STP-Local	87,120	Local-Township
Lincoln Avenue	Berrien County Road Commission	St. Joseph Charter Township: M-63 to Maiden Lane	1.5	Resurface	Hot patch and Micro surface	130,960	STP-Local	29040	Local-Township
Shawnee Date to Holden	Berrien County Road Commission	Date to Holden	0.5	Resurface	5 foot wide paved shoulders and resurfacing	368325	STP-Local	81675	Local-Township

Name/Location of Project	Submitting Agency	Indicate project limits (e.g. Fair St to First St)	Length in miles	What is the primary work type for this project?	Project Description Summary	Federal Cost	Federal Funding Source	Local Cost	Local Funding Source
Wallace Avenue Reconstruction Project	City of St. Joseph	Wallace Avenue - Lakeshore Drive (I94-BL) to South State Street.	0.4	Reconstruct	Reconstruction of Wallace Avenue from Lakeshore Drive to South State Street including HMA pavement, curb and gutter, storm sewer, sanitary sewer, and water main. Sidewalks and sidewalk ramps will be replaced as needed to meet current ADA standards. NOTE: Illustrative List 2018 Construction.	600,700	STP-Local	824,700	Local-City
Hilltop Road Resurfacing Project	City of St. Joseph	Hilltop Road - Lakeshore Drive (I94-BL) to CSX Railroad Tracks.	0.3	Resurface	HMA milling and resurfacing of Hilltop Avenue from Lakeshore Drive (I94-BL) east to CSX RR Tracks.	266,300	STP-Local	124,000	Local-City
Langley Avenue Resurfacing Project	City of St. Joseph	Langley Avenue - Pearl Street to Napier Avenue	0.8	Resurface	HMA milling and resurfacing of Langley Avenue from Napier Avenue to Pearl Street. Sidewalk ramps will be replaced to meet current ADA standards.	681,000	STP-Local	317,400	Local-City
Water Street Reconstruction Project	City of St. Joseph	Water Street - State Street to Vine Street.	0.1	Reconstruct	Reconstruction of Water Street from State Street to Vine Street. Sidewalk ramps will be replaced to meet current ADA standards.	199,800	STP-Local	213,400	Local-City

LRTP DRAFT

Notices indicating a public comment period for the LRTP draft were sent via e-mail and postal mail (see Appendix D 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 May 21, 2013 and ended on June 17, 2013. 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 TwinCATS TAC meeting on June 17, 2013 at 9:30 a.m. at the Southwest Michigan Regional Airport or by submitting an email or letter using the following contact information:

Gautam Mani

Associate Planner

Southwest Michigan Planning Commission (SWMPC)

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Benton Harbor, MI 49022

(269)-925-1137 x 24

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GOALS AND OBJECTIVES

The goals and objectives of the TwinCATS LRTP are to guide the development of the 2040 LRTP, the TwinCATS 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

FEDERAL TRANSPORTATION LEGISLATION-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 TwinCATS MPO local agencies, is that any federal funds used on roadways, bridges, transit systems, in the TwinCATS 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 TwinCATS 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 targets will be addressed in a separate chapter in this plan.

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. As the plan was being developed the MPO staff took into consideration the national goals and has integrated them into the development of the goals and objectives later in this document.

TWINCATS REGIONAL VISION

By 2040, the TwinCATS 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 TwinCATS 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, TwinCATS 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 TwinCATS 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 two 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
- TwinCATS Policy Committee approval in January 2013
- Public Comment sought on Goals and Objectives in February 2013

It is important to note that the TwinCATS goals and objectives are not in priority order.

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 SAFELY WITH THEIR DESTINATIONS

Objective: Provide a system 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.

GOAL 3 - PROVIDE AN ENVIRONMENT THAT PROMOTES LIVABLE COMMUNITY AND ENVIRONMENTAL RESPONSIBILITY

Objective: Produce a transportation system that has 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.

Sources: http://www.fhwa.dot.gov/map21/pm.cfm

Table 3 MAP-21 Planning Factors

MAP-21 Planning Factors	TwinCATS 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

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.

I. 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:

Table 4: 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 4.

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 with local road agencies on 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 from the late 2000s economic decline, 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.
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.

II. 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 TwinCATS 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.

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 TwinCATS 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 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 will list the following information:

- Why the issue is important
- How SWMPC plans to measure the factor/gather information
- How the MPO process can impact this (if at all)

TWINCATS 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 to 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 TwinCATS 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.
    b. SWMPC will inventory key destination areas, 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 TWINCATS 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, 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 has been identified as a priority by the public and the TwinCATS Committee members to ensure an interconnected transportation system.

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 are not limited to, commuting data from MDOT, Census Transportation Planning Package (CTPP), Rideshare, schools, and train travel along the Blue Water, Wolverine, and Pere Marquette 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 the asset management database, MI state policy crash reports, MDOT, those 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, 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 the asset management database, MI state policy crash reports, MDOT, those 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.

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/

SOCIOECONOMIC DATA

This section discusses long-term trends in population, housing, and employment within the TwinCATS region. It presents relevant data from past and present Census datasets to provide a snapshot of how the population, housing and employment situation in the TwinCATS 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.

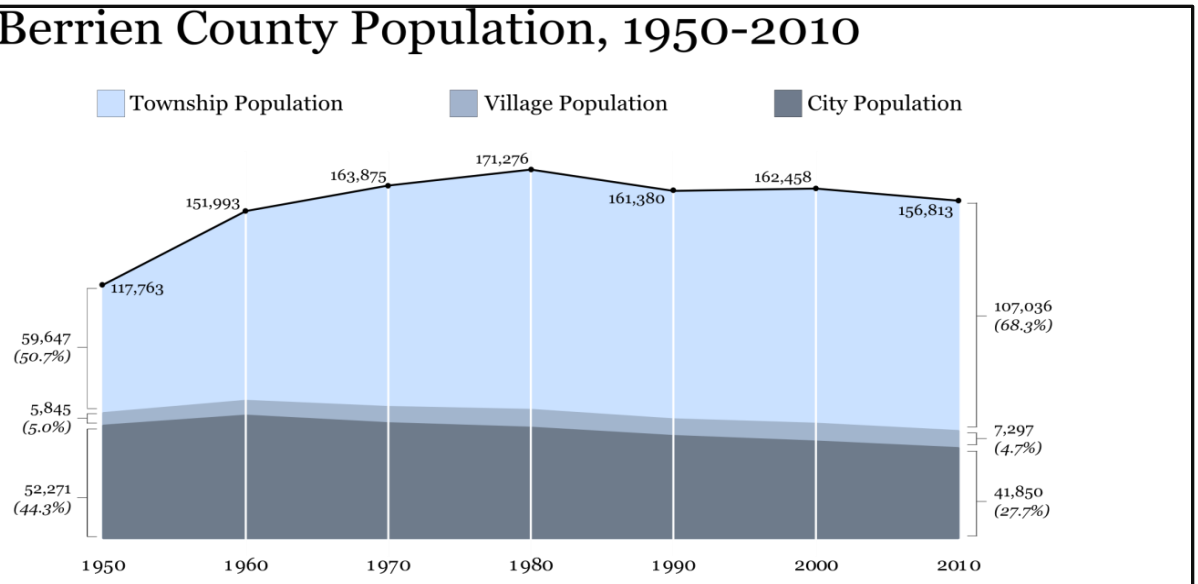
HOW WE GOT TO 2013: A LOOK AT THE REGION'S PAST AND PRESENT SOCIOECONOMIC TRENDS

Information from various datasets shown in the graphics in this section 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 County and at the municipal level can help explain conditions at the MPO level. The Extract also often compares Berrien County 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.

Figure 1: Total Population of Berrien County 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%

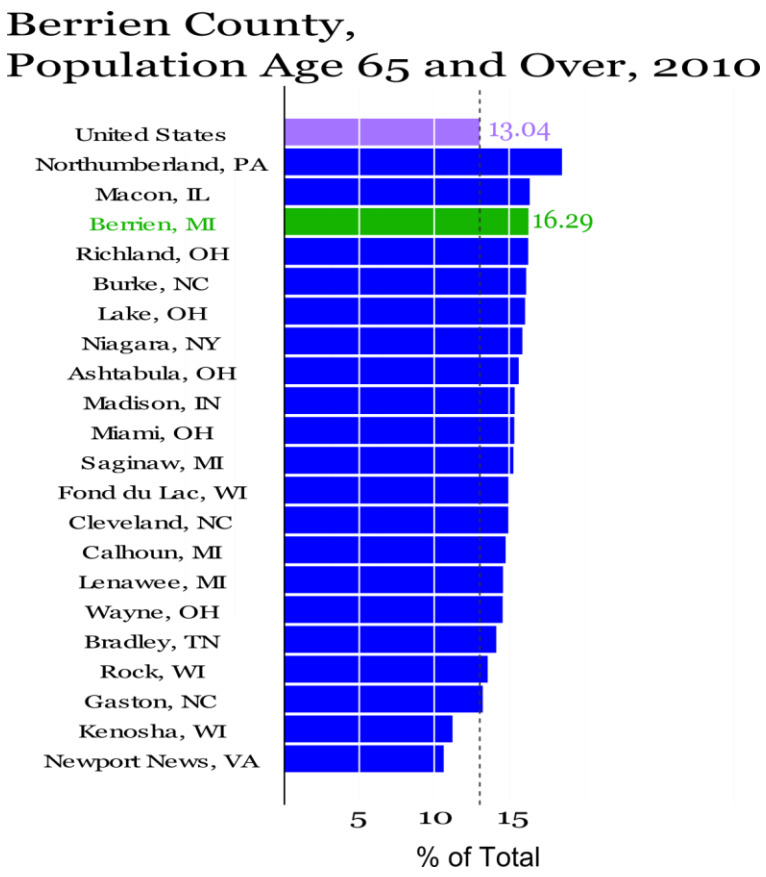
Village Name	1950 Pop	1950-2010 Pop Trend	2010 Pop	2000 - 2010 Pop Change
Baroda	344		873	1.7%
Berrien Springs	1,761		1,800	-3.3%
Eau Claire	480		625	-4.7%
Galien	610		549	-7.4%
Grand Beach	105		272	23.1%
Michiana	102		182	-9.0%
Shoreham	391		862	0.2%
Stevensville	480		1,142	-4.1%
Three Oaks	1,572		1,622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

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

In particular, Figure 2 illustrates that the share of the total population that is aged 65 and over is higher in Berrien County than in the nation as a whole and many other economically similar counties.

Figure 2: Berrien County Population Aged 65 and Older, 2010



This share of the population aged 65 and over represents an increase from 2000. Indeed, Berrien 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, declined. Figures 3 and 4 below show that the changes in age distribution of the population in Berrien County from 2000-2010 mirror national trends toward an older population.

Figure 3: Population Tree of Berrien County, 2000 and 2010

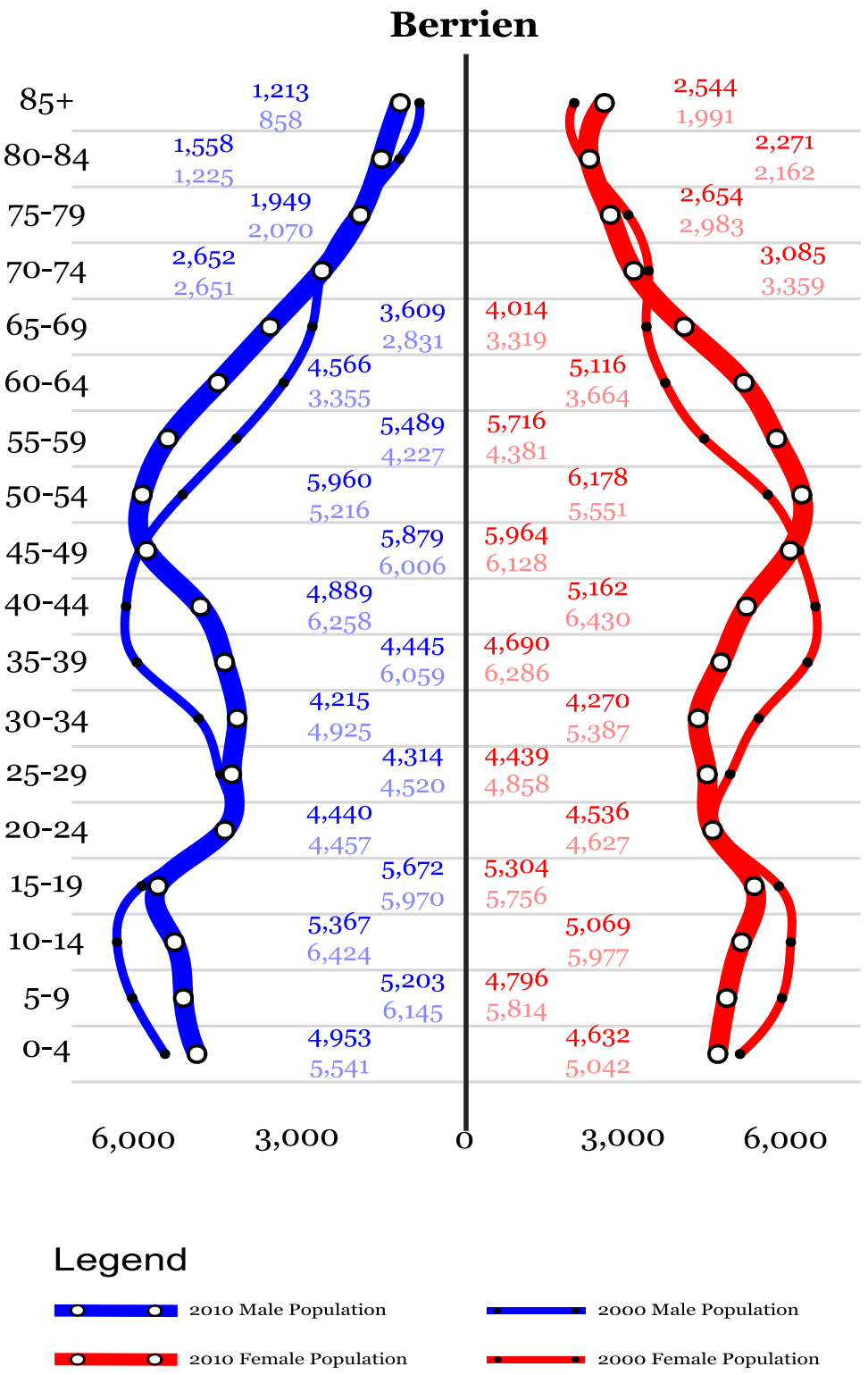
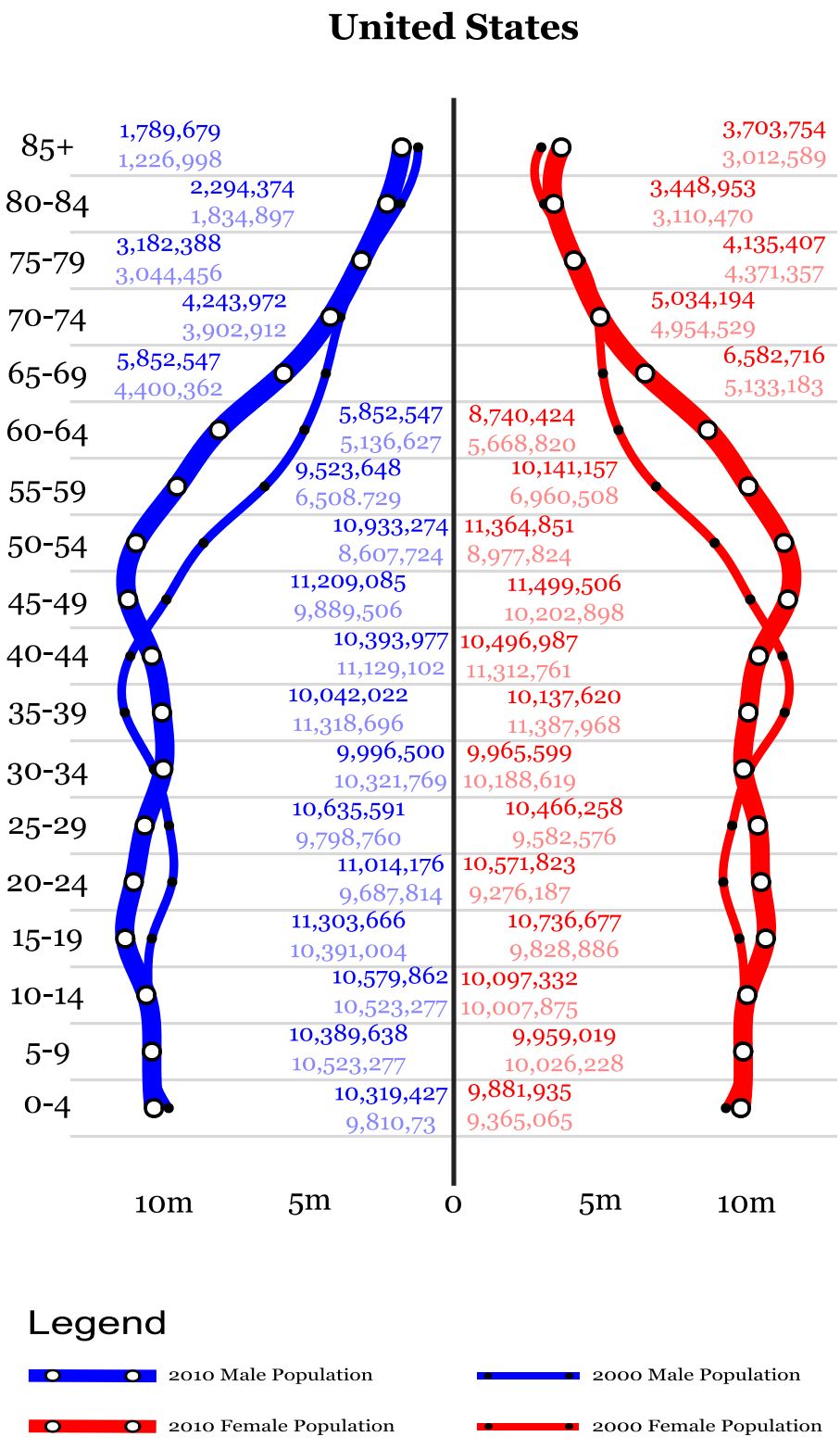
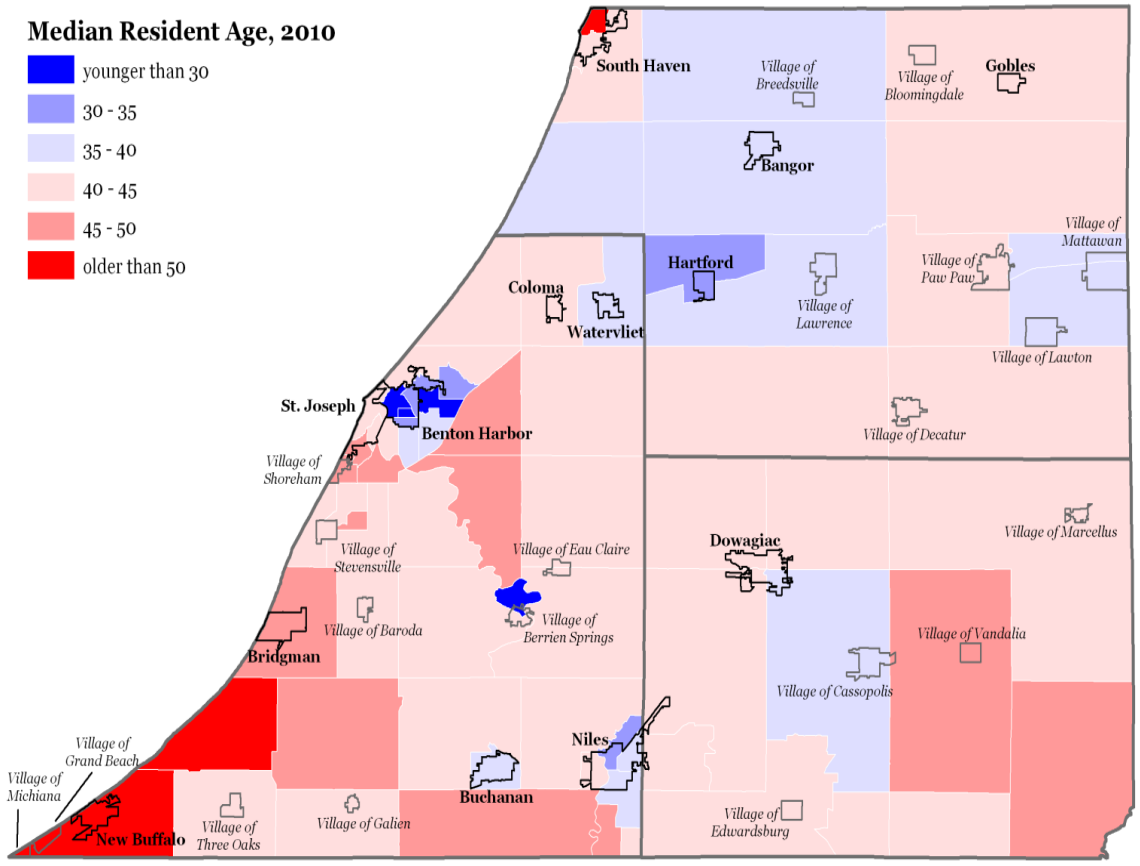


Figure 4: Population Tree of the United States, 2000 and 2010



This age distribution is not uniform throughout all the cities, villages, and townships of Berrien County however. 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. Berrien County will continue to require a variety of transportation solutions to truly service the entire TwinCATS and southwest Michigan regions.

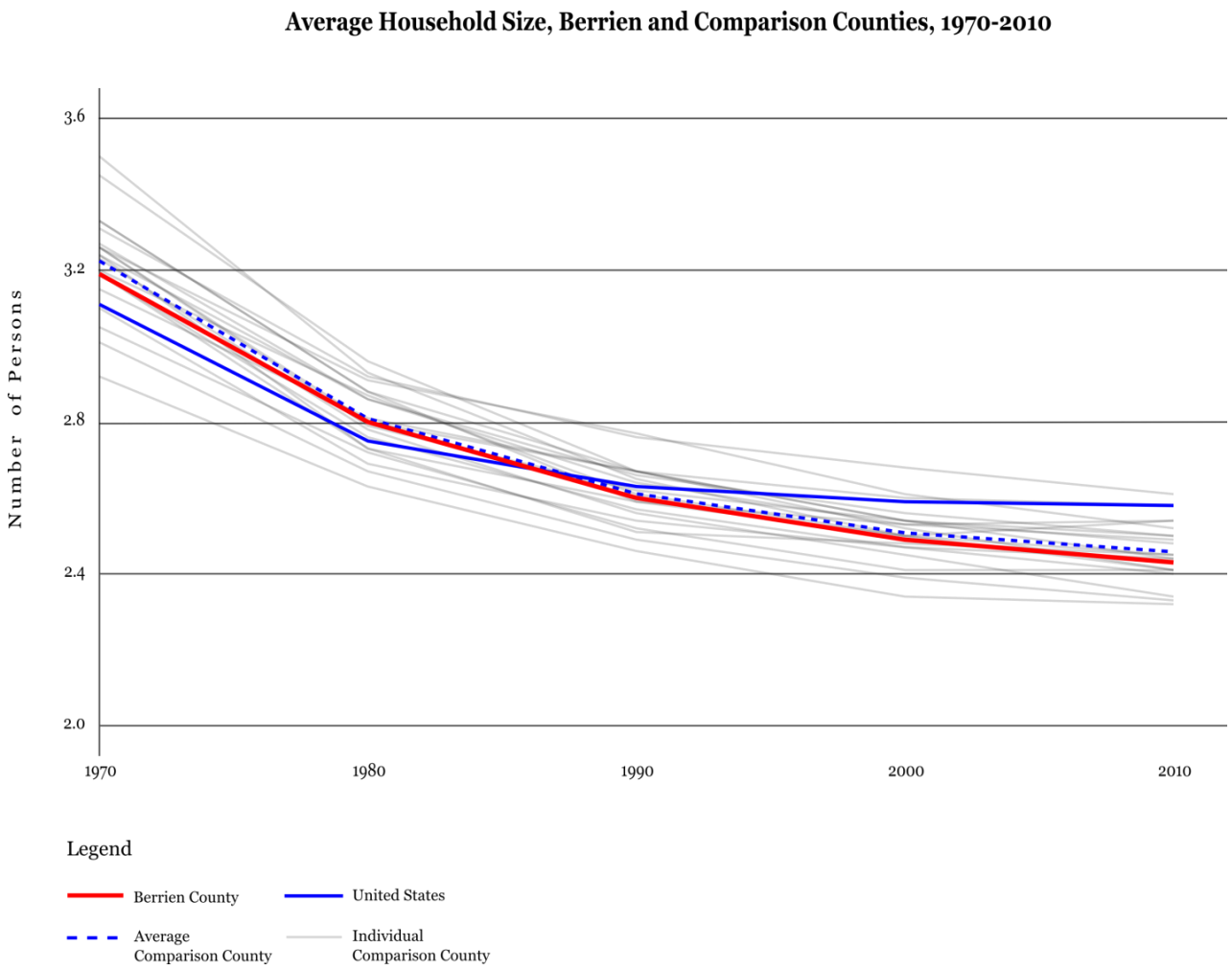
Map 3: Median Age of Residents, by Census Tract, Berrien County, 2010



HOUSEHOLDS AND HOUSING TRENDS

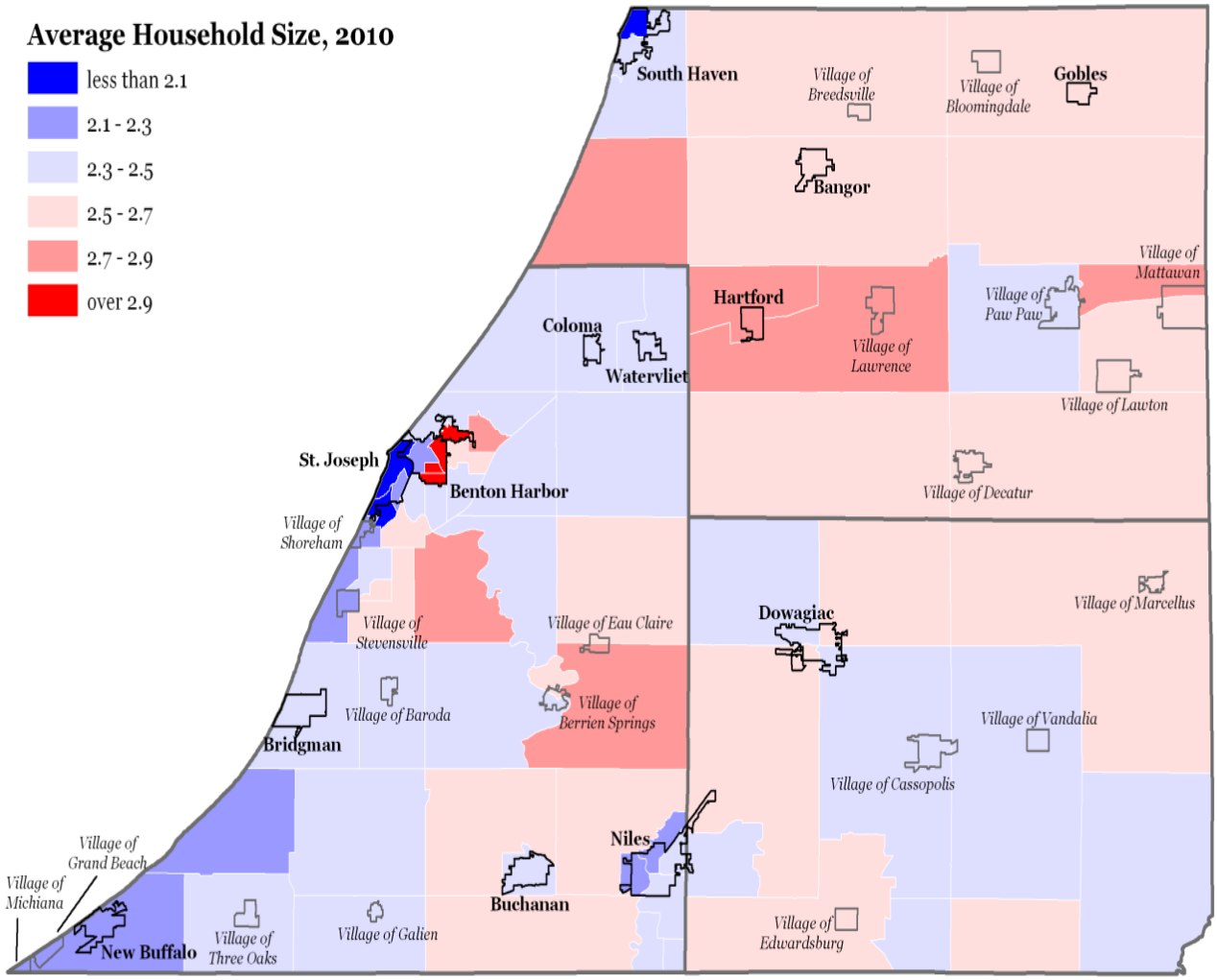
Census data between 1970 and 2010 shows a continuous decline in household size in Berrien County, mirroring national trends towards smaller families and more single-person households. Figure 5 shows household size over time in Berrien County, along with economically similar counties, and the United States as a whole.

Figure 5: Average Household Size, Berrien County 1970-2010



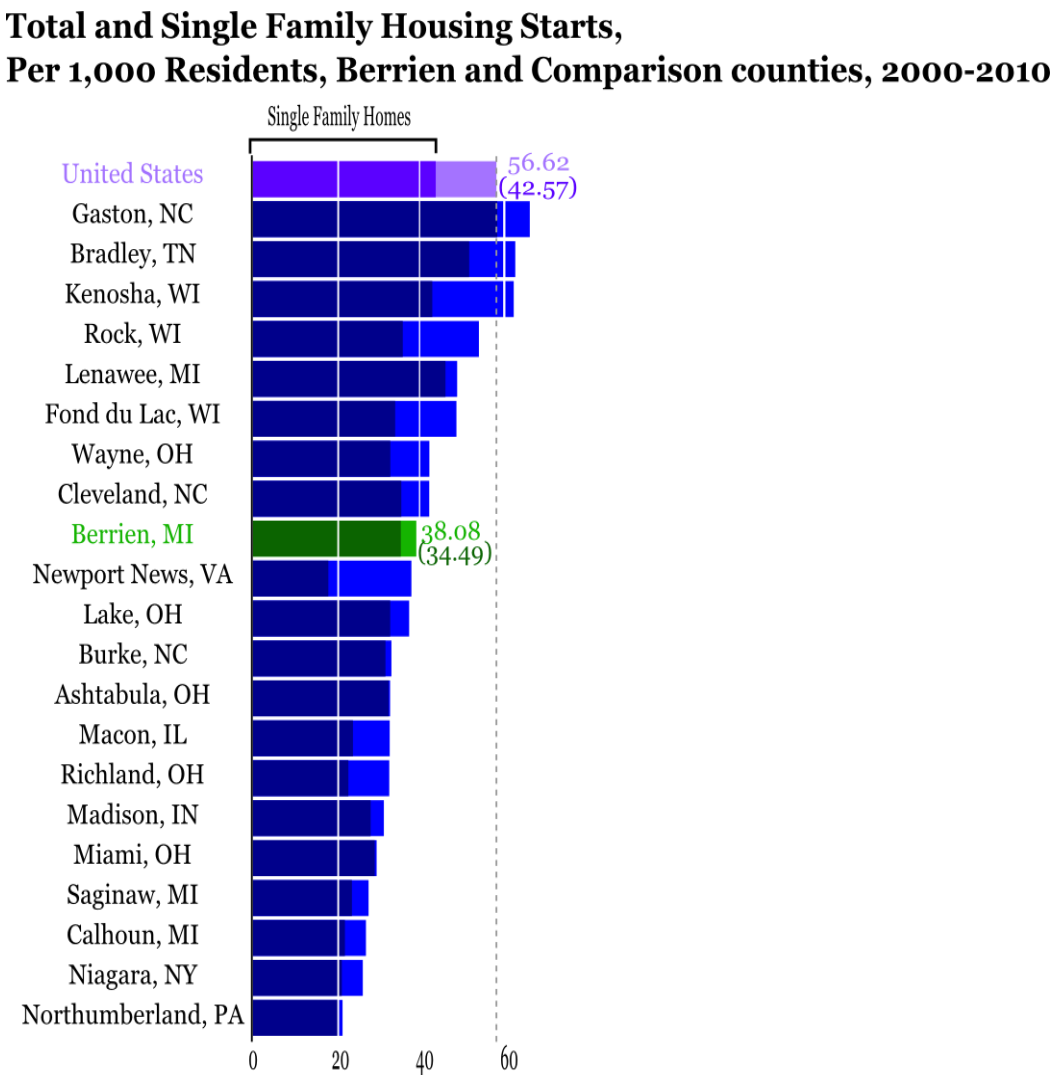
Throughout the TwinCATS area, household size varied considerably across jurisdictions. Additionally, on a regional level household size still varied considerably. Map 4 illustrates the variety in household sizes throughout southwest Michigan, indicating a need to provide a transportation network that supports families and single persons of all ages.

Map 4: Average Household Size, by Census Tract, Southwest Michigan, 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. Figure 6 illustrates new housing construction starts between 2000 and 2010, and the share of those starts that were single family for Berrien County, as well as economically similar counties, and the United States as a whole.

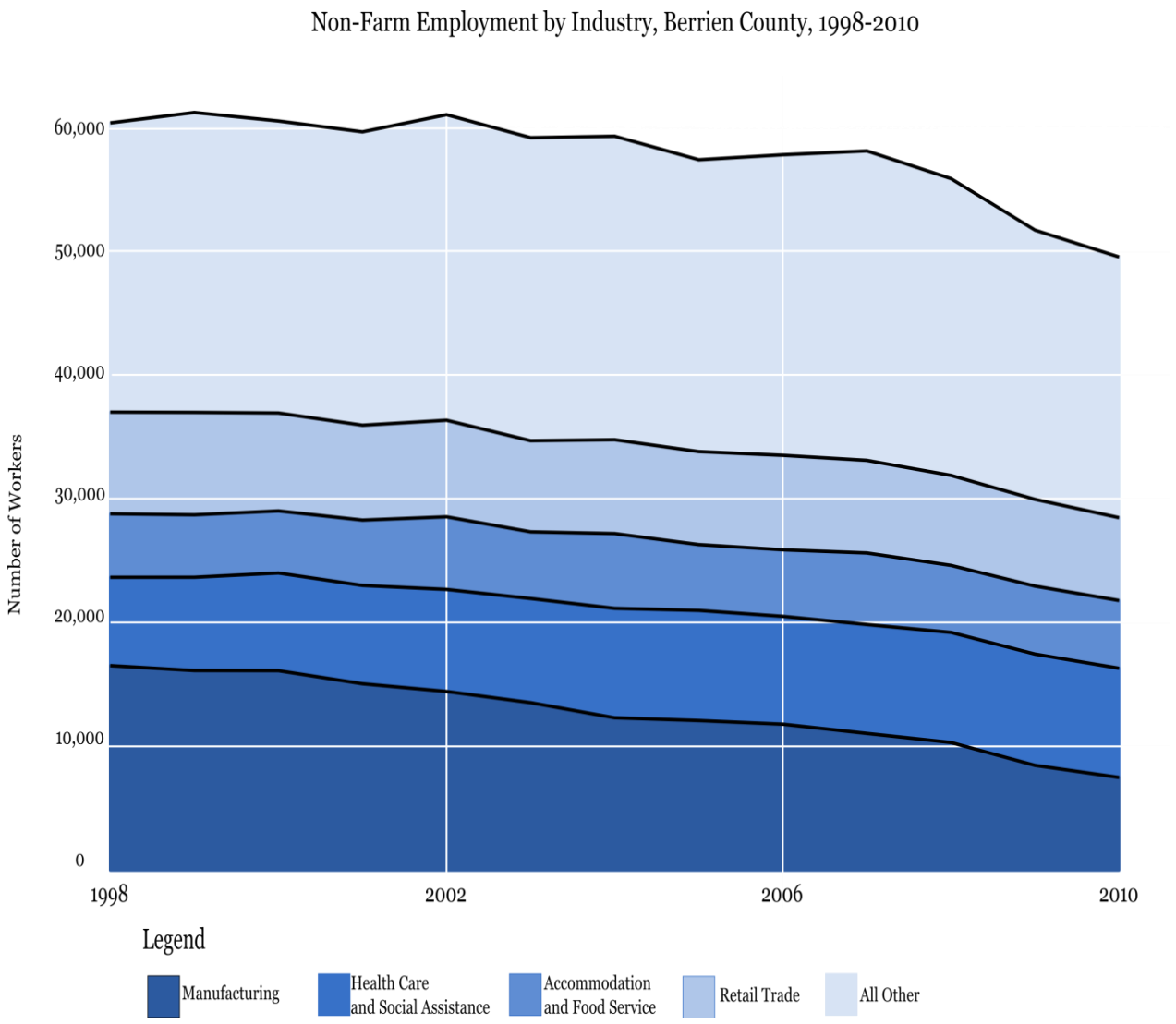
Figure 6: Total and Single Family Housing Starts, Berrien County, 2000-2010



EMPLOYMENT

Examining employment by economic sector in Figure 7, Berrien County had continued to experience a decline in manufacturing jobs between 1998 and 2010. While the total number of workers in Berrien County had declined, the share of total employment that falls in both the healthcare and social assistance and the retail sectors had increased during that time. This employment distribution would suggest that areas within the TwinCATS 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.

Figure 7: Non Farm Employment by Industry, Berrien County, 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 County 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 TwinCATS 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.

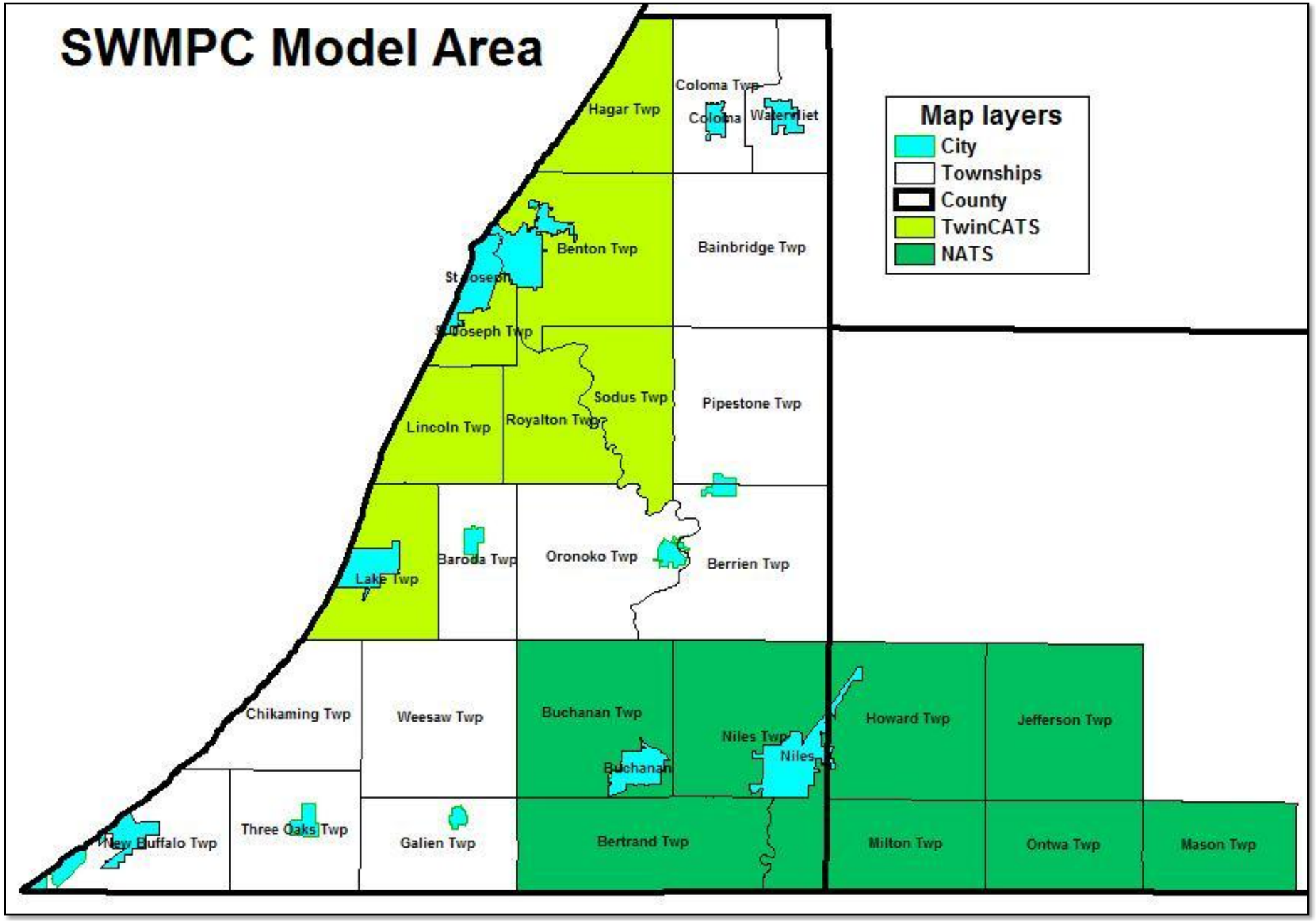
MODELING AREA

The 2010-2040 travel demand model combined the TwinCATS MPO and Niles Buchanan Cass Area Transportation Study (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 the Village of Edwardsburg; and 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, they currently have an important impact on the transportation characteristics of both 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.

Map 5: SWMPC Travel Demand Modeling 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.

   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.

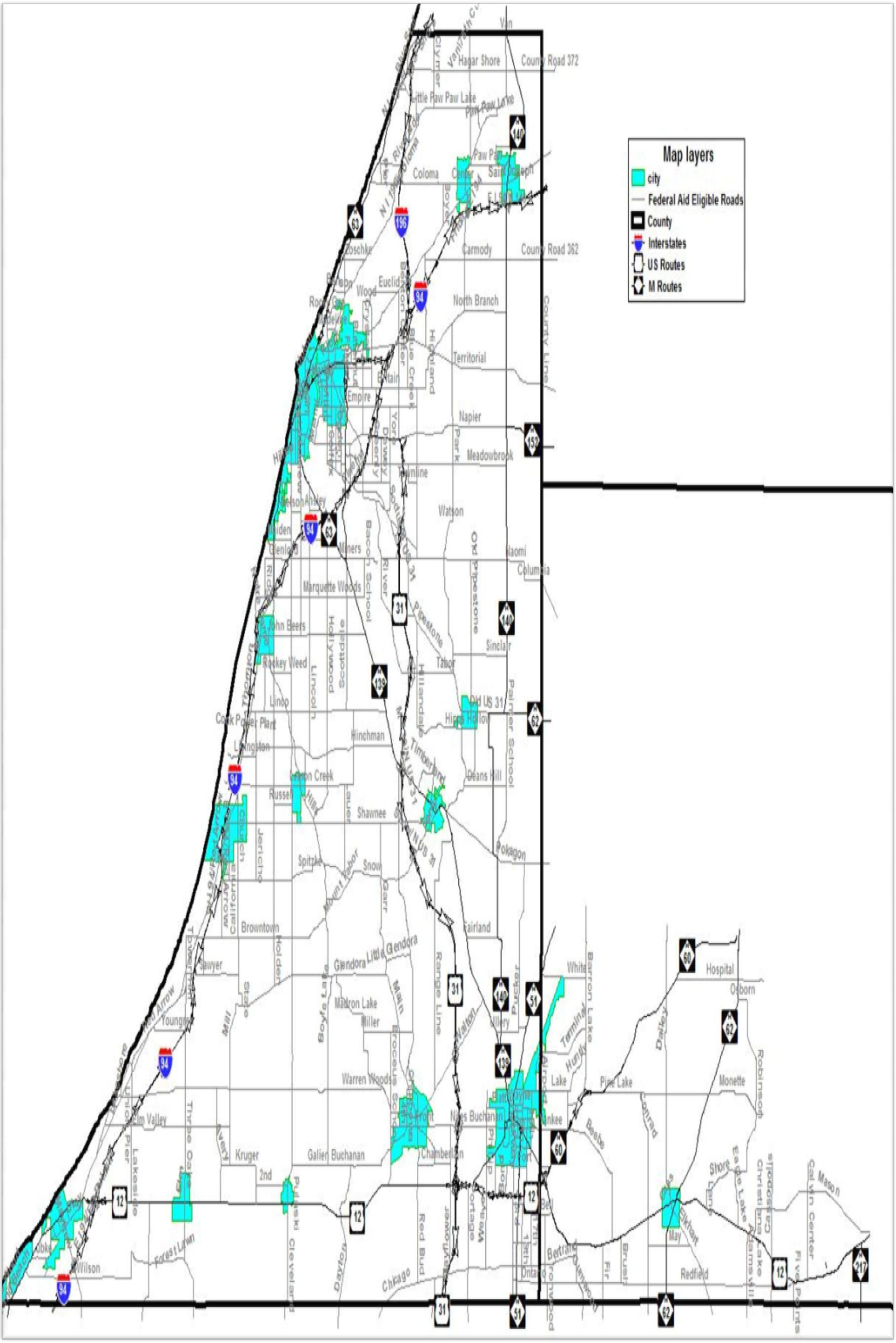
Table 5 SWMPC Traffic Analysis Zone Structure

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

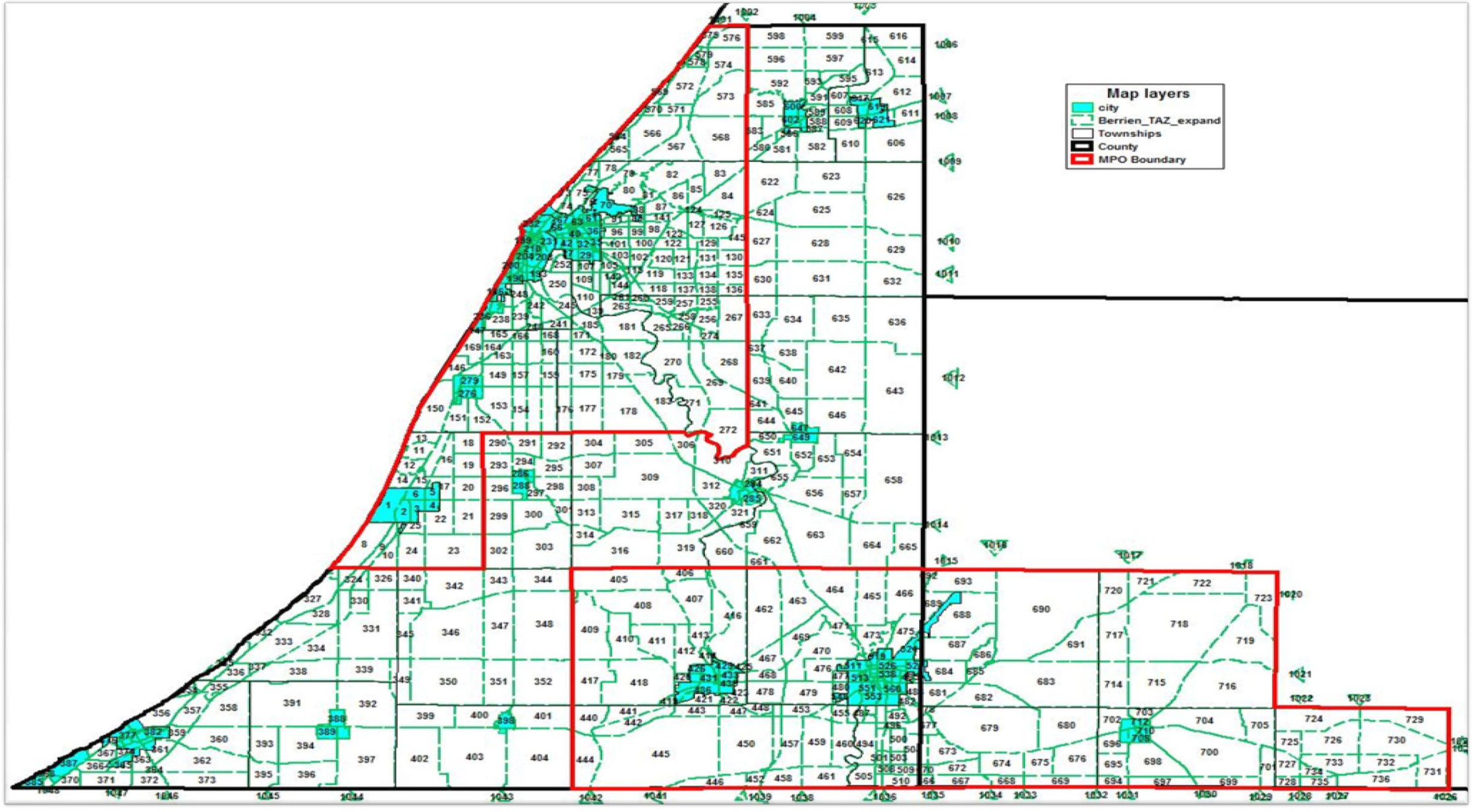
275-280	Stevensville - City	Berrien	TwinCATS
281-285	Berrien Springs - City	Berrien	
286-289	Baroda - Village	Berrien	
290-303	Baroda Township	Berrien	
304-321	Oronoko Charter Township	Berrien	
322-339	Chikaming Township	Berrien	
340-352	Weesaw Township	Berrien	
353-373	New Buffalo Township	Berrien	
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.

Map 6: SWMPC Model Street System

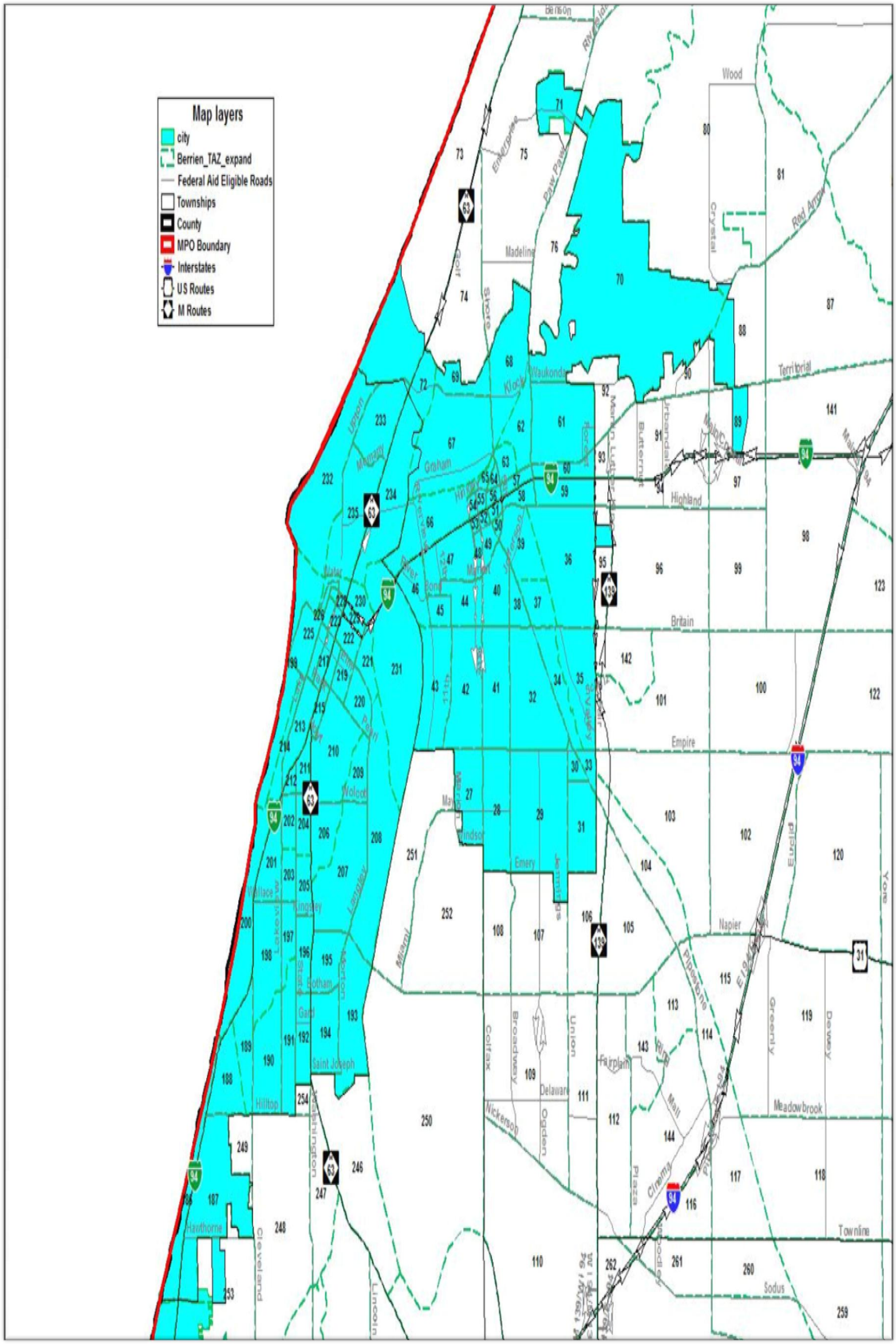


Map 7: SWMPC Traffic Analysis Zone Map



Map 8 illustrates TAZ structure in the TwinCATS region in further detail.

Map 8: Benton Harbor-St. Joseph Traffic Analysis Zone Structure



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 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 TwinCATS 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 TwinCATS 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 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

Table 6: Total Population by Jurisdiction

TwinCATS Total Population by Jurisdiction								
Jurisdiction	2010	2015	2020	2025	2030	2035	2040	% Change
Bridgman	2,291	2,247	2,222	2,201	2,192	2,188	2,183	-4.70
Lake Charter Twp	2,975	2,934	2,922	2,915	2,923	2,939	2,954	-0.70
Benton Harbor - City	9,953	9,993	9,848	9,720	9,544	9,389	9,230	-7.26
Benton Charter Twp	14,848	14,612	14,416	14,244	14,148	14,086	14,018	-5.59
Lincoln Charter Twp	13,546	13,384	13,337	13,310	13,355	13,434	13,509	-0.27
Stevensville Village	1,142	1,129	1,125	1,123	1,127	1,133	1,140	-0.19
Royalton Twp	4,766	4,746	4,767	4,795	4,850	4,916	4,983	4.55
Saint Joseph - City	8,365	8,163	8,033	7,916	7,843	7,787	7,729	-7.61
Shoreham Village	864	836	825	815	811	808	804	-6.94
St. Joseph Charter Twp	9,150	8,983	8,873	8,777	8,727	8,698	8,668	-5.27
Sodus Twp	1,932	1,880	1,844	1,811	1,789	1,770	1,751	-9.39
Hagar Twp	3,671	3,586	3,533	3,486	3,457	3,437	3,415	-6.97
Grand Beach/Michiana	694	690	686	683	684	687	689	-0.70
TwinCATS Total	74,197	73,182	72,432	71,797	71,450	71,273	71,074	-4.21

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 percent decrease. Comparatively, the total population of the State of Michigan is projected to increase by 3.06 percent between 2010 and 2040 (REMI).

For the TwinCATS area, the total population drops from 74,197 to 71,074 (a 4.21 percent reduction). The only community showing an increase in population is Royalton Township (with a 4.55 percent increase). Lincoln Charter Township and Stevensville show minimal change in population. (Table 2.1)

The rural areas within the SWMPC Model area experience a 3.89 percent 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.

Households

Table 7: TwinCATS Total Households by Jurisdiction

TwinCATS Total Households by Jurisdiction								
Jurisdiction	2010	2015	2020	2025	2030	2035	2040	% Change
Bridgman	954	950	956	954	955	953	947	-0.73
Lake Charter Twp	1,212	1,213	1,225	1,229	1,236	1,239	1,237	2.07
Benton Harbor - City	3,524	3,535	3,515	3,473	3,440	3,399	3,349	-4.98
Benton Charter Twp	5,929	5,929	5,947	5,923	5,912	5,883	5,831	-1.65
Lincoln Charter Twp	5,437	5,443	5,501	5,521	5,553	5,568	5,561	2.28
Stevensville Village	526	527	532	534	537	539	538	2.34
Royalton Twp	1,699	1,721	1,760	1,787	1,817	1,842	1,860	9.47
Saint Joseph - City	3,933	3,917	3,926	3,907	3,898	3,876	3,839	-2.39
Shoreham Village	393	386	387	386	386	384	382	-2.80
St. Joseph Charter Twp	3,743	3,716	3,735	3,726	3,725	3,714	3,687	-1.50
Sodus Twp	811	803	804	798	794	788	779	-3.94
Hagar Twp	1,540	1,530	1,535	1,528	1,526	1,518	1,505	-2.28
Grand Beach/Michiana	333	336	339	340	341	342	341	2.40
TwinCATS Total	30,034	30,007	30,161	30,106	30,122	30,045	29,855	-0.59

Households in the SWMPC model area are projected to total 72,901 by 2040, or a 1.77 percent increase from the 2010 base year. By comparison the State of Michigan is projected to have a 10.81 percent 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 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 TwinCATS area, households saw a minor reduction of 0.59 percent (from 30,034 households in 2010 to 29,855 households in 2040). Royalton Township is projected to experience the greatest increase in households

(9.47 percent). In addition, Lake Charter Township, Lincoln Charter Township, the Village of Stevensville, and the Grand Beach/Michiana area all project increases in households as well through 2040 (see Table 2.3).

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

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 percent increase. This is fairly consistent with the State of Michigan, which is expected to experience a 13.35 percent growth from 2010 to 2040 according (Source: REMI).

For the TwinCATS area, the total employment is expected to increase by 7.02 percent (from 50,085 jobs in 2010 to 53,600 jobs in 2040). The City of Benton Harbor is projected to have the greatest increase of 1,182 total jobs (or 18.24 percent), as a result of the Whirlpool relocation to downtown and other redevelopment plans for the city. The only community showing a decline in total jobs is Sodus Township, which loses 13 jobs (or 1.5 percent). Lincoln Charter Township, Lake Charter Township, Royalton Township, St. Joseph Charter Township, the City of Saint Joseph, and the City of Bridgman all are projected to have over a six (6) percent increase in jobs by 2040 (see Table 2.5).

Some concerns were expressed by TwinCATS TAC and Policy Committee members that employment projections were too low, and that they were already seeing new developments that exceeded expectations. It should be noted that each of these projections used 2010 as a base year, during which the modeling region was still in the midst of the national economic downturn. The magnitude of this downturn would have significantly impacted these base year numbers, with employment figures being particularly low in that year. Potential increases in regional employment since 2010 may explain the employment levels that Committee members have observed in 2012 and 2013.

Table 8: TwinCATS Total Employment by Jurisdiction

TwinCATS Total Employment by Jurisdiction								
Jurisdiction	2010	2015	2020	2025	2030	2035	2040	% Change
Bridgman	1,238	1,289	1,309	1,314	1,327	1,341	1,359	9.77
Lake Charter Twp	2,494	2,573	2,607	2,611	2,625	2,648	2,665	6.86
Benton Harbor - City	5,933	6,861	6,915	6,887	6,910	6,966	7,015	18.24
Benton Charter Twp	14,751	14,953	14,956	14,918	14,939	15,017	15,084	2.26
Lincoln Charter Twp	4,925	5,106	5,158	5,161	5,190	5,248	5,309	7.80
Stevensville Village	1,037	1,059	1,061	1,069	1,071	1,082	1,088	4.92

Royalton Twp	2,512	2,614	2,649	2,659	2,677	2,715	2,750	9.47
Saint Joseph - City	11,089	11,204	11,390	11,481	11,605	11,731	11,853	6.89
Shoreham Village	405	411	414	412	413	416	420	3.70
St. Joseph Charter Twp	3,754	3,867	3,920	3,933	3,963	4,017	4,066	8.31
Sodus Twp	867	870	864	857	852	853	854	-1.50
Hagar Twp	995	1,017	1,022	1,025	1,025	1,030	1,035	4.02
Grand Beach/Michiana	85	91	96	96	97	100	102	20.00
TwinCATS Total	50,085	51,916	52,362	52,423	52,695	53,164	53,600	7.02

For the rural areas, the projections show a 14 percent increase in total jobs (from 18,398 jobs in 2010 to 20,975 in 2040). The greatest increases are 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 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 (Ps) and attractions (As) 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 9.

Table 9: 2010 and 2040 External Station (Cordon) Trips

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
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.

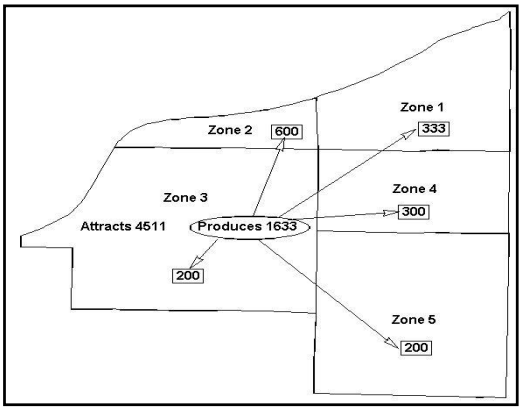
PHASE 3: TRIP DISTRIBUTION

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.

Trip Distribution Example (Not Actual SWMPC Model Area TAZ)



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.

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.

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.

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.

DEFICIENCY ANALYSIS

The following section analyzes deficiencies within the TwinCATS region, and in Coloma and Berrien Springs, which are significant small urban centers that can affect the model within the TwinCATS area. The table below shows segments that were approaching capacity in 2010, based on the Volume/Capacity (V/C) ratio. This ratio measures the 24-hour traffic volume on a roadway segment in relation to the designed capacity of the roadway. The closer to 1 the ratio is, the closer traffic on the roadway is to reaching, and potentially exceeding, its design capacity. V/C ratios over 0.80 present areas to monitor that could potentially exceed capacity.

Table 10: SWMPC Model Area Deficiencies-2010

SWMPC Model Area Deficiencies - 2010						
Route Name	**From**	**To**	**Length**	**Volume**	**V/C**	**Jurisdiction**
M-63 (Niles Road)	Hollywood Road	I-94	.2 miles	20299	0.92	St. Joseph Twp
M-63 (Niles Road)	I-94	Washington Ave	2.05 miles	16000-18700	0.85-0.94	St. Joseph Twp
M-139	Scottsdale Rd	M-63 (Niles Rd)	.11 miles	16814	0.8	Royalton Twp
Paw Paw Avenue	Center/Coloma	Coloma NCL	.6 miles	11780	0.94	Coloma

As the table above illustrates, in 2010, the TwinCATS region did not have any segments where travel volumes are at or above capacity. In fact, throughout the study area and nearby Coloma, only four roadway segments were approaching capacity. Of particular concern is M-63 (Niles Road) which is approaching capacity on two separate segments. It should also be noted that while M-139 may be approaching capacity, this model does not account for the large number of service drives present along that roadway, which take some of the traffic volume off of the actual road.

Table 11: SE Data Changes Between 2010 and 2040

SE Data Changes Between 2010 and 2040				
Demographic	**2010**	**2020**	**2030**	**2040**
Total Population	178,934	175,822	174,209	173,895
Population in HH	175,302	172,213	170,636	170,329
Households (Occupied)	71,636	72,851	73,252	72,901
Total Employment	87,845	93,339	94,515	96,770

Table 11 illustrates projected socioeconomic changes between 2010 and 2040 for Berrien County and five townships in Cass County, as outlined above. As shown, the overall population and the population living in households is projected to continue to decrease. At the same time, the total number of households is projected to increase, indicating a greater presence of smaller families and single-person households. Total employment is projected to increase, especially between 2010 and 2020 as the regional economy recovers.

Table 12: SWMPC Model Area Deficiencies- 2020

SWMPC Model Area Deficiencies- 2020						
Route Name	**From**	**To**	**Length**	**Volume**	**V/C**	**Jurisdiction**
M-63 (Niles Road)	Hollywood Road	I-94	.2 miles	20116	0.914	St. Joseph Twp
M-63 (Niles Road)	I-94	Washington Ave	2.05 miles	16200-18461	0.85-0.924	St. Joseph Twp
US-31 (Napier Avenue)	I-94 WB ramps	I-94 EB ramps	.128 miles	37100	0.843	Benton Charter Twp
M-139	Scottdale Rd	M-63 (Niles Rd)	.11 miles	16859	0.803	Royalton Twp
Paw Paw Avenue	Center/Coloma	Coloma NCL	.6 miles	11482	0.92	Coloma
M-139 (Ferry Street)	Cass Street	Main Street	.07 miles	15805	0.878	Berrien Springs

By 2020, two segments on M-63 are still expected to have travel volumes that approach capacity, as seen in Map 9. In addition, the I-94 entrance ramps off of Napier Avenue, which were not approaching capacity in 2010, will be approaching that level by 2020, as shown in Map 10. Not taking into account service drives, a segment along M139 will be approaching capacity. Outside of the TwinCATS region itself, a short stretch of M-139 in Berrien Springs will continue to approach capacity in 2020. In Coloma, Paw Paw Avenue will continue to approach capacity in 2020, as shown in Map 11.

Table 13: SWMPC Model Area Deficiencies- 2030

SWMPC Model Area Deficiencies - 2030						
Route Name	**From**	**To**	**Length**	**Volume**	**V/C**	**Jurisdiction**
M-63 (Niles Road)	Hollywood Road	I-94	.2 miles	20771	0.944	St. Joseph Twp
M-63 (Niles Road)	I-94	Washington Ave	2.05 miles	17000-19065	0.85-0.948	St. Joseph Twp
US-31 (Napier Avenue)	I-94 WB ramps	I-94 EB ramps	.128 miles	34809	0.8	Benton Charter Twp
M-139	Scottdale Rd	M-63 (Niles Rd)	.11 miles	17532	0.835	Royalton Twp
Paw Paw Avenue	Center/Coloma	Coloma NCL	.6 miles	11620	0.931	Coloma
Main Street	Hamilton Street	Kephart Street	.214 miles	7144	0.827	Berrien Springs

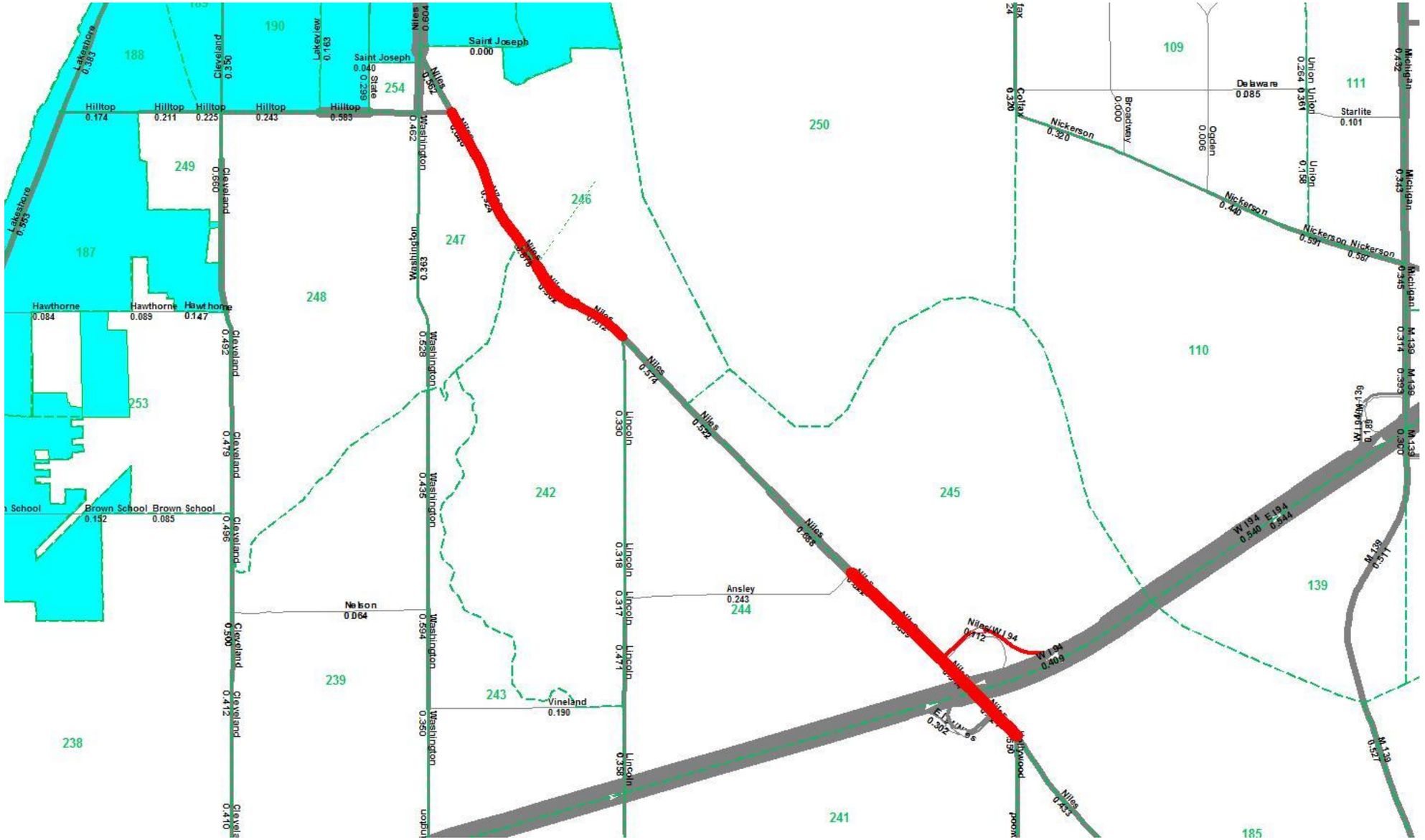
By 2030, the two segments of concern along M-63 are expected to continue to approach capacity. While having slightly less volume than in 2020, the I-94 entrance ramps off of Napier will continue to present a concern. Segments along M-139 in Royalton Township and Paw Paw Avenue in Coloma will continue to approach capacity, and by 2030, Main Street in Berrien Springs will be newly approaching capacity.

Table 14: SWMPC Model Area Deficiencies- 2040

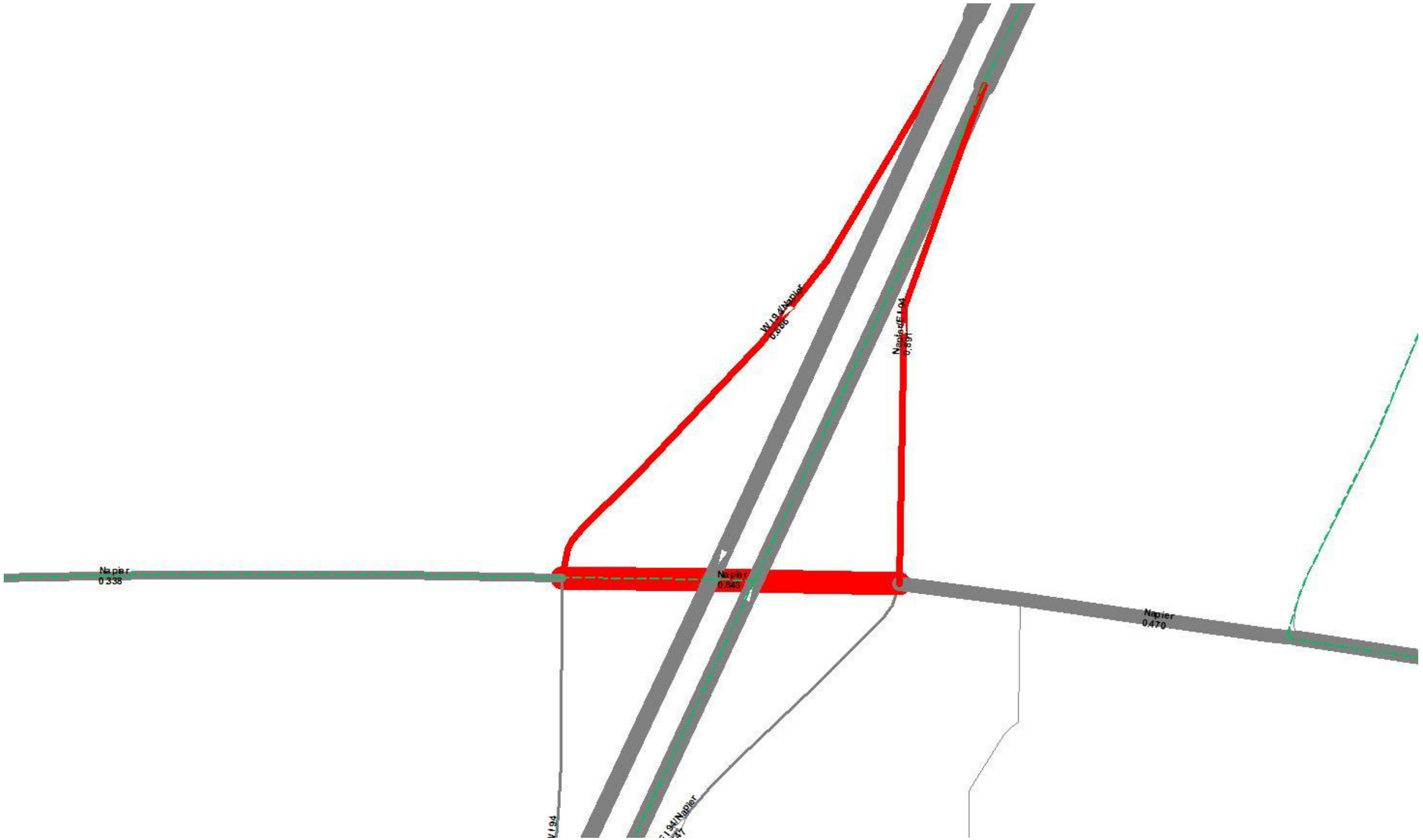
SWMPC Model Area Deficiencies - 2040						
Route Name	**From**	**To**	**Length**	**Volume**	**V/C**	**Jurisdiction**
M-63 (Niles Road)	Hollywood Road	I-94	.2 miles	20862	0.948	St. Joseph Twp
M-63 (Niles Road)	I-94	Washington Ave	2.05 miles	17000-19147	0.85-0.978	St. Joseph Twp
US-31 (Napier Avenue)	I-94 WB ramps	I-94 EB ramps	.128 miles	34800	0.8	Benton Charter Twp
M-139	Scottdale Rd	M-63 (Niles Rd)	.11 miles	17571	0.837	Royalton Twp
Paw Paw Avenue	Center/Coloma	Coloma NCL	.6 miles	11610	0.93	Coloma
Main Street	Hamilton Street	Kephart Street	.214 miles	7343	0.85	Berrien Springs

By 2040, both segments of concern along M-63 will be particularly close to reaching capacity as shown on Map 12. In addition, the I-94 ramps off of Napier Avenue and the segment along M-139 will continue to be areas where traffic volumes are of concern. Outside the TwinCATS region, Paw Paw Avenue in Coloma and Main Street in Berrien Springs will continue to present concerns for traffic flow throughout the modeling area. The segments in Berrien Springs that will be close to capacity are presented in Map 13.

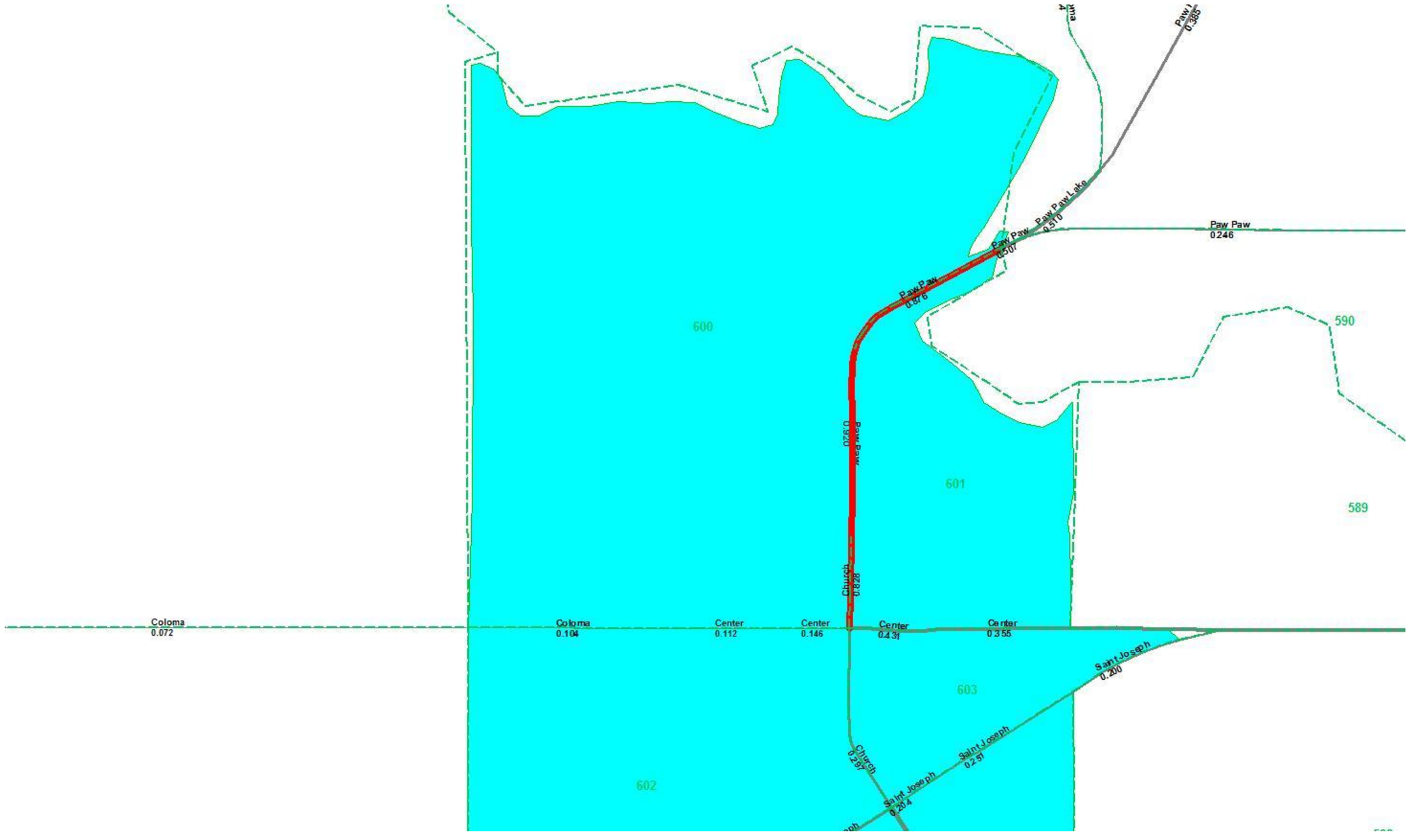
Map 9: M-63 Deficiencies, St. Joseph Township, 2030



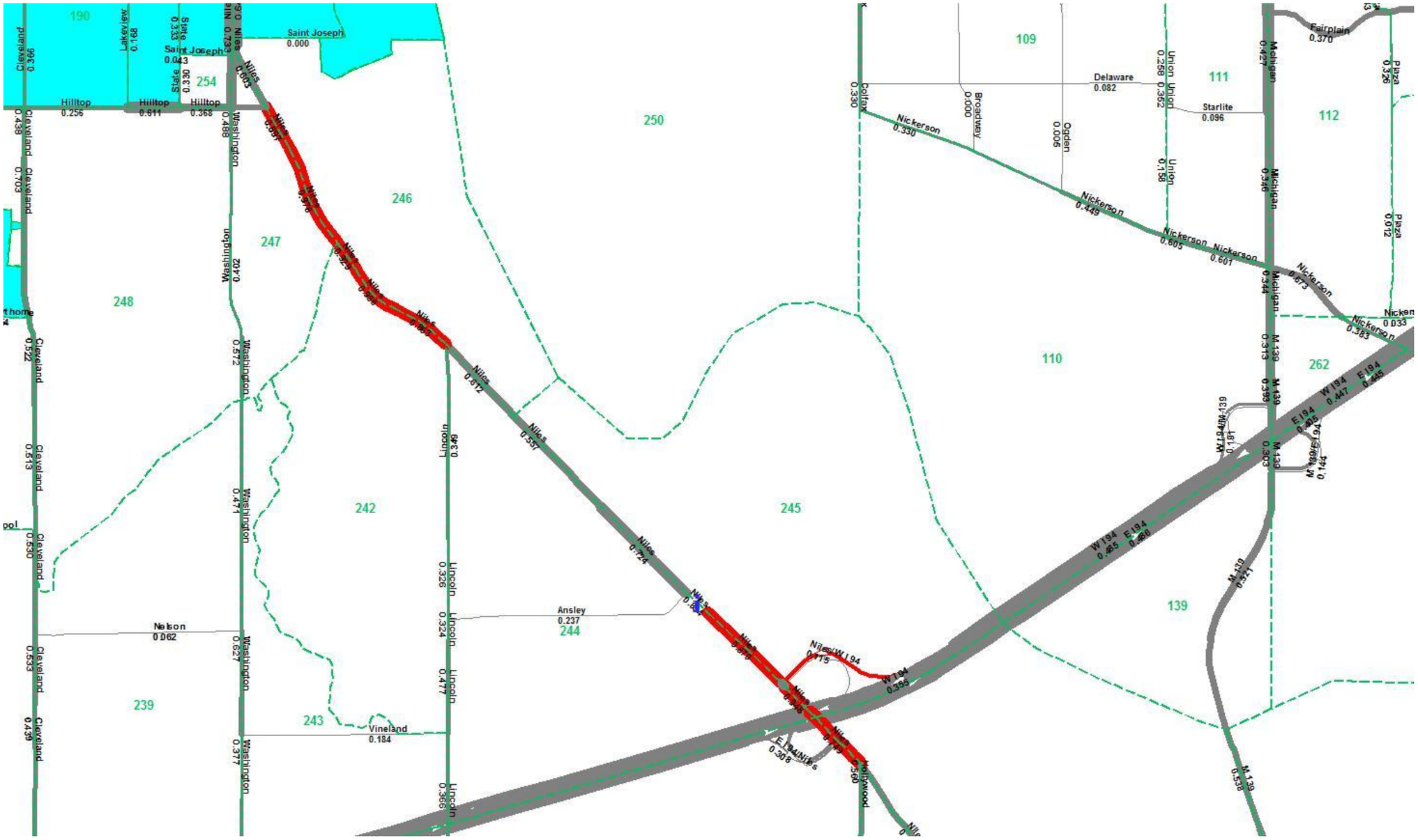
Map 10: Napier Avenue Deficiencies, Benton Township, 2020



Map 11: Paw Paw Avenue Deficiencies, Coloma, 2020



Map 12: M-63 Deficiencies, St. Joseph Township, 2040



Map 13: Berrien Springs Deficiencies, 2040

US-31

While the completion of the US-31 corridor is not being currently planned for, there is justification for incorporating the information about completion of the project by 2040. The extension would happen in the TwinCATS MPO boundary. A brief summary of what would occur 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 percent 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 percent 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 percent reduction).

MODELING NEXT STEPS

SWMPC has started to discuss with MDOT modelers the possibility of what will come next in the modeling of the region. Key to the next modeling discussion will be the changes that are experienced with the seasonal second home market and how that impacts business and the transportation system. There is currently only speculation as to the impacts that this has on the region. SWMPC will begin working with MDOT modelers to develop the necessary tools and data collectors to accurately reflect the changes in population, households, and employment numbers during the summer season. SWMPC will also begin to collect traffic count data on a series of roadways, where they believe that seasonal traffic patterns change. In 2015, MDOT will be doing the MI Travel Counts III, a statewide and regional household travel survey to better estimate model parameters for the Statewide and MPO models. MDOT will utilize this data in the development of the next model for the 2045 LRTP. In addition, a greater emphasis will be placed upon early coordination with the Indiana DOT and the MPOs in northern Indiana to coordinate models and planning.

CONCLUSION

The socioeconomic data projections and the travel demand model both suggest that the TwinCATS region as a whole will see only a few corridors on which volume will approach capacity, and none that exceed it. Travel patterns are certainly subject to change if projects similar to US-31 are completed. In addition, an aging, dispersing population may require an entirely new set of destinations that alters these models. Future transportation planning considerations will need to take into account both the model and observed demographic trends.

ASSESSMENT OF TRANSPORTATION MODES

RAIL

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 SERVICE

Amtrak is the only passenger rail service that operates in the study area. The National Railroad Passenger Corporation, providing service under the name of Amtrak (reporting mark AMTK), is operated and managed as a hybrid public private entity and began operations on May 1, 1971 to provide intercity passenger train service in the United States. Amtrak does require federal and state government investment, similar to other transportation modes throughout the country. The only train station in the study area resides in St. Joseph, directly on the shores of Lake Michigan. The station shares its building space with Silver Beach Pizza, a restaurant popular among residents and tourists. The station serves the destinations of Chicago and Grand Rapids along Amtrak's Pere Marquette line (see descriptions of Michigan's Amtrak lines below). There are benches for passengers to wait, and ample parking spaces are available beside the station. The Twin Cities Area Transportation Authority (TCATA) provides transit service to and from the station upon request.

To head to points east on Amtrak, however, rail passengers who live and work in the TwinCATS region may use the Niles train station. The structure was built in 1892 and 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. Here, employees maintain the track for high-speed service.

Michigan's three Amtrak lines are the Blue Water, Pere Marquette, and Wolverine, as shown in Map 14 below.

Map 14: Passenger Rail Service Routes in Michigan

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

Amtrak's three corridor passenger services are in reasonable proximity to the TwinCATS region including the Wolverine and the Blue Water lines 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 a group consisting of local governments, public transit agencies, chambers of commerce, metropolitan planning organizations, the Michigan Department of Transportation (MDOT), and Amtrak. The organization is called Westrain. The collaborative promotes the Pere Marquette and seeks to enhance the service while addressing service deficiencies.

Table 15: 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		$ 6,094,659.00	$ 3,276,210.00	$ 17,704,897.00
2011	187,065	106,662	503,290		$ 5,797,878.00	$ 3,197,106.00	$ 18,769,770.00
2010	157,709	101,907	479,782		$ 4,741,560.00	$ 2,912,070.00	$ 16,909,193.00
2009	132,851	103,246	444,127		$ 4,111,375.00	$ 2,818,294.00	$ 15,041,919.00
2008	136,538	111,716	472,393		$ 4,158,742.00	$ 2,975,391.00	$ 16,243,510.00

Table 15 shows that ridership on the Pere Marquette line has declined by 2.1 percent since 2008, but it did increase by 7.2 percent between 2010 and 2012. Ticket revenues on the Pere Marquette Line have increased by 12.5 percent since 2008.

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 deteriorated 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.

Table 16: Boarding and Disembarking

	Boarding				Disembarking		
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

Table 16 shows boardings and disembarking on the three Amtrak routes. There have been consistent increases in those boarding (entering the train to begin a trip) and disembarking (leaving the train to end a trip) at the Niles station for both routes, and at the St. Joseph station for the Pere Marquette route. This information is

particularly useful when considering the improved inter-connectedness to which TwinCATS aspires. Currently, there is no transit service for those arriving by train after 6:00 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. or Twin Cities Dial-A-Ride between 8:00 a.m. and 4:00 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 from Niles.

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, Michigan. 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 15: Chicago-Detroit/Pontiac Corridor Study Area

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

SOUTH SHORE LINE (MICHIGAN CITY, IN AND SOUTH BEND, IN)

The South Shore Line, operated by the Northern Indiana Commuter Transportation District, provides interurban electric commuter train service between South Bend, IN and Chicago, IL. Notably, during summer months, the South Shore Line is powered directly by 100 percent renewable energy sources. Michigan City, Indiana has two boarding sites, a street-running station on 11th St and an off-street station at Carroll Avenue. Plans currently exist to consolidate the two stations into a single street-running station, but no action has been taken so far to implement these plans. The South Shore Line has thirteen daily departures from Michigan City, and thirteen returns from Chicago. From the TwinCATS region, connection to the Michigan City sites is by personal automobile alone. 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 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.

CAPITOL AND LAKESHORE LIMITED

The Capitol and Lakeshore Limited service has two trains that leave from the South Bend, Indiana train station in the evening and return 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

Map 16: Midwest Regional Rail Initiative Study Area

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.

DETROIT-CHICAGO RAIL CORRIDOR STUDY

In partnership with the Illinois Department of Transportation and the Indiana Department of Transportation, the Michigan Department of Transportation is currently studying possible upgrades and formulating a plan for future rail improvements along the Chicago- Detroit/Pontiac corridor, under the name of Great Lakes Rail. In particular, the plan aims to allow for more railway segments where trains can operate at 110 mph, more daily passenger trains, and less conflict between passenger and freight rail. Throughout 2013, and in continuous consultation with the public, Great Lakes Rail has been working to develop Route Alternatives, an Environmental Impact Statement, and a Service Development Plan, all of which will be finalized in the fall of 2013. The cost of this study is $4 million, $3.2 million of which come from a Federal Railway Administration grant.

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"(State Rail Plan, 2011). 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

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.

Source: http://www.fra.dot.gov/Page/P0287

http://www.michigan.gov/documents/mdot/MDOT_MI_SRP_public_review_draft_2011-05-23_600dpi_353776_7.pdf

BENEFITS OF RAIL IN MICHIGAN

The Michigan State Rail Plan offers more information regarding the benefits of rail transportation than what is currently accessible to the MPO. 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 also provide significant economic benefits to the state.

1. *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.

2. *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 indicate 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 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 (Michigan State Rail Plan, 2011).

3. *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."(Source: Amtrak, http://www.amtrak.com/ccurl/216/645/CriticalLink2007_5.pdf). Additionally the American Association of State Highway and Transportation Officials, Transportation Invest in America Freight-Rail Bottom Line report of 2002 states; "if all freight-rail were shifted to trucks tomorrow, it would add 92 billion truck vehicle-miles-of-travel (VMT) 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". Source http://rail.transportation.org/Documents/FreightRailReport.pdf

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 over speed 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 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. These 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 in the air. With this scheme, the communication to a number of locomotives can be conducted with greater 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. 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.

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.

Source: http://www.fra.dot.gov/Page/P0287

http://www.michigan.gov/documents/mdot/MDOT_MI_SRP_public_review_draft_2011-05-23_600dpi_353776_7.pdf

ISSUES

A brief summary of rail deficiency issues that would directly impact the MPO is presented below.

Passenger Rail	Freight Rail
Connections once off of the train	Only statewide information regarding rail freight data for MPO
Connections to South Shore Line	No information on the tonnage of materials coming into and out of MPO
Potential removal of Pere Marquette line	
One daily train on Pere Marquette line	

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.

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 Charter.

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 feet wide to handle corporate jet traffic; the second is 14/32 with dimensions of 3,661 feet by 100 feet; and the third 18/36 with dimensions of 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 the 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: Military, Coast Guard and State 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, 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.

The complete Southwest Michigan Regional Airport Five Year Plan 2013-2018 can be found in Appendix J.

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

INDIANA

SOUTH BEND REGIONAL AIRPORT (SOUTH BEND, INDIANA)

The South Bend Regional 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 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 17 highlights the vast passenger connectivity that the airport provides throughout the country.

Map 17: South Bend Regional Airport Flight Destinations

ISSUES

Passenger Air Service
Public transit service from planning area to South Bend is not consistent for varied passenger air travel.
No train service from Amtrak's Blue Water or Wolverine connecting to South Bend Regional Airport.

Sources:

http://www.macog.com/PDFs/MPO/D05stfnl.pdf

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

http://instrument.landing-system.com/

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
- Four-foot paved shoulders
- Five-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:

- 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.

> "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

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 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." (Source: **Ray LaHood, United States Secretary of Transportation** http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm).

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, road 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. The 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 "Discover Michigan

Trails." The 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.

  The State Transportation Commission (STC) has set a deadline of December 31, 2013 for MDOT to revise procedures and guidelines needed to implement this policy. In particular, STC is requiring that MDOT develop a standard set of conditions and procedures for granting exceptions to the policy. MDOT will be required to give progress updates on implementation to the STC on an annual basis for more information regarding the implementation schedule. Please see the following website for more information:

  http://www.michigan.gov/documents/mdot/MDOT_NewPolicyIntegrationWhitePaperFinal_397570_7.pdf

INDIANA

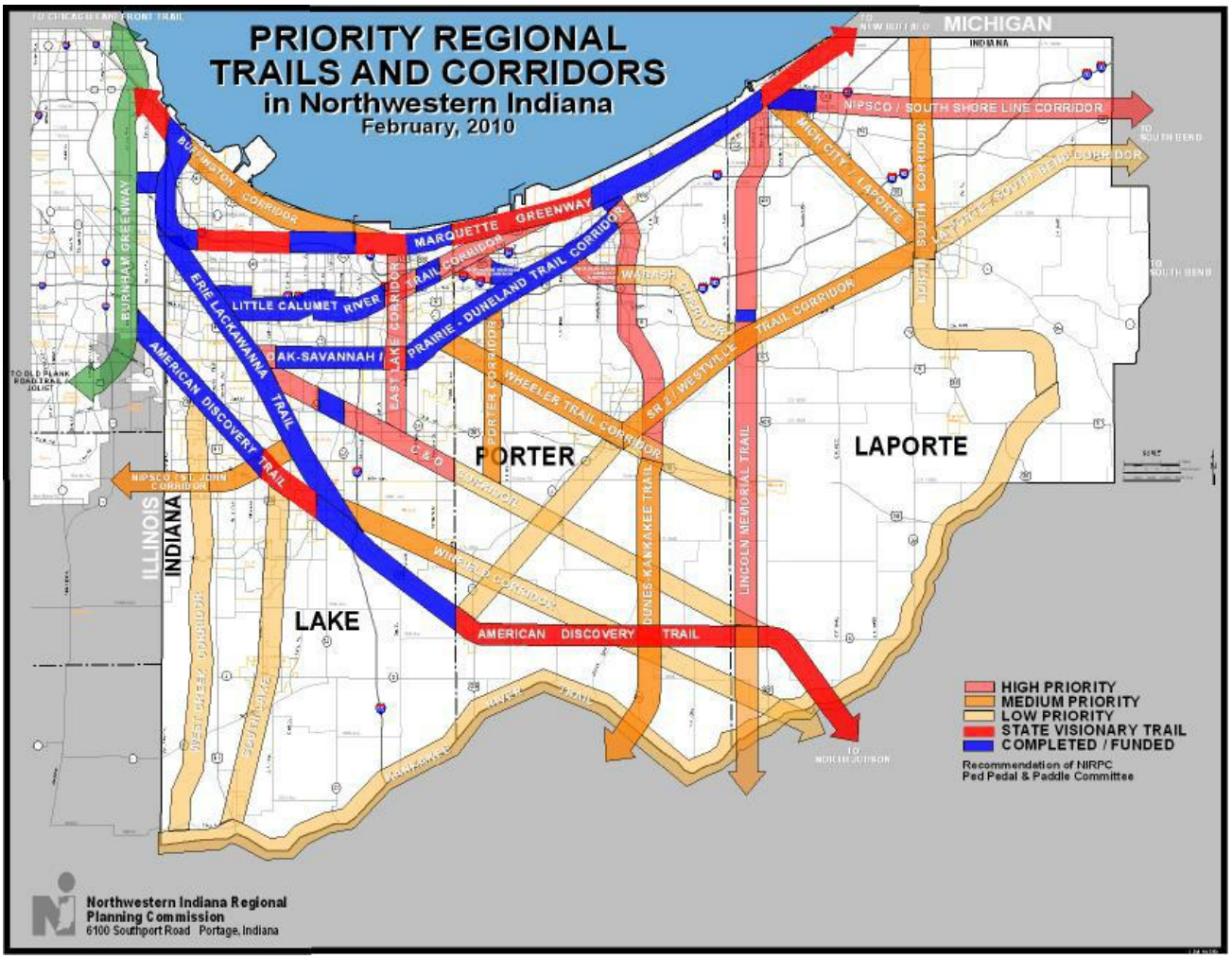
Northwestern Indiana Regional Planning Commission (NIRPC)

NIRPC shares a border with Berrien County. NIRPC is a regional council of local governments serving the citizens of Lake, Porter, and LaPorte counties in northwest Indiana. The TwinCATS planning region abuts the NIRPC planning area and as such, attempts have been made to provide non-motorized connections between the two areas.

- Marquette Greenway – 37 miles:

  This corridor combines the former Grand Calumet River/Marquette Trail, Calumet Trail, and Singing Sands Corridors. The corridor extends from the Illinois state line to the Michigan state line. A section of trail is in place around Wolf Lake and Lake George in Hammond. Two miles of the old Indiana Harbor Belt Railway have been converted to a crushed limestone trail in the Miller section of Gary. The former Calu-met Trail Corridor is a crushed limestone path from Mineral Springs Road to the Porter/LaPorte County Line and is completely owned by the Northern Indiana Public Service Company (NIPSCO). Finally, the former Singing Sands Corridor contains a segment in Michigan City's Washington Park. A preliminary conversation was held between SWMPC, the Friends of Harbor Country Trails, NIRPC, and the City of New Buffalo in 2012 to discuss short- and long-term potential to extend the Marquette Greenway across the Michigan state line, with a terminus in the New Buffalo area. If an extension does occur, it would possibly allow for connections between the Marquette Greenway and existing or planned trails in southwest Michigan.

Map 18: NIRPC Non-Motorized Priority Corridors



Source: NIRPC, 2010

III. REGIONAL EFFORTS

SOUTHWEST MICHIGAN NON-MOTORIZED TRANSPORTATION PLAN

In 2011, the Southwest Michigan Planning Commission completed a nine-county non-motorized transportation plan on behalf of the Michigan Department of Transportation, which covered the nine 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.

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.

A bog in Southwest Michigan.

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.

IV. LOCAL EFFORTS

COMPLETE STREETS POLICY

In June of 2012, the TwinCATS Policy Committee adopted a Complete Streets Policy to guide the MPO in its selection of projects and development of plans. Through collaboration between elected officials, government agencies, and citizens, the goals of the policy are to:

1. Ensure that the safety and convenience of all users of the transportation system are accommodated, including pedestrians, bicyclists, users of mass transit, people with disabilities, older adults and young children, motorists, freight providers, emergency responders, and adjacent land users;

2. Ensure that all area residents have access to vital destinations regardless of their ability to drive, and to recognize the diverse needs of different transportation users;

The I-94 Business Loop in Benton Harbor.

3. Incorporate Complete Streets principles into all aspects of the transportation project development process, from project identification and selection to design, implementation, and follow-up evaluation;

4. Create a comprehensive, integrated, and connected transportation network that promotes integrated, sustainable development and attractive and economically vibrant communities;

5. Ensure the use of the latest and best design standards, policies, and guidelines, including such measures as accessible intersection and mid-block crossings, improved signals and signs, bicyclist and pedestrian way-finding, improved lighting, traffic calming measures, and a host of other mechanisms to improve the ease of mobility for non-motorized users.

6. Ensure that Complete Streets design solutions are flexible enough to meet the needs of all users while fitting within their local contexts.

The TwinCATS Complete Streets Policy applies to new major projects that seek to use federal funds, as well as those local roads over which SWMPC has programming authority. The Policy is intended to be implemented at each stage of the project, from project selection, to design, to implementation and monitoring. For complete text of the Complete Streets Policy, please go to:

http://www.swmpc.org/downloads/walk_and_roll_draft_complete_streets_policy_final_6182012.pdf.

TWINCATS WALK AND ROLL PLAN

In 2011, the TwinCATS Policy Committee officially adopted a non-motorized plan, known as the TwinCATS Walk & Roll Plan, which was amended into the 2009-2035 Long Range Transportation Plan. The plan was designed to help TwinCATS member jurisdictions target future transportation investments towards those areas that currently lack, or have insufficient, infrastructure to cater to all transportation modes. The plan identifies geographic locations throughout the study area where pedestrians, bicyclists, and transit users face particular challenges, and offers possible measures that member jurisdictions could take to improve these facilities in future projects. This survey of current non-motorized facilities and safety concerns can also assist communities in preserving non-motorized linkages that already exist.

In particular, the plan identifies the following obstacles, present at some locations in the study area, to safe, efficient, and comfortable movement of pedestrians, bicyclists, and transit users:

- Absence of sidewalks
- Sidewalks in poor condition
- Absence of marked bike paths
- Unpaved or poorly maintained shoulders
- Difficult road crossing
- Excessive door-to-door service for transit due to lack of pedestrian connections on roadways, leading to increased wait times for some customers.

In 2013, TwinCATS committee members created a “Top Ten” list from this plan, denoting segments of roadway that the committee believes should be priorities for future non-motorized projects. These segments and accompanying data are listed in Table 17 below. Included in this set of comparisons is the total number of public survey responses that identified each segment as a priority. In addition, local elected officials were asked to rate the segment on a scale from 1-5 in terms of priority for non-motorized infrastructure, five being the highest.

Table 17: Top Ten Priority Non-Motorized Segments, TwinCATS

"Top 10" Priority Non-Motorized Segments December 2012									
Street Name	End Point #1	End Point #2	Bike/Ped Crashes - Total	Car Crashes - Total	ADT Estimate	Posted Speed	Local Official Ranking	Survey - # of mentions	Municipality
Marquette Woods Rd	Cleveland Ave to the West	Washington Ave to the East	0	53	4,500	35	5	0	Lincoln Twp
Marquette Woods Rd	Roosevelt Rd to the west	Cleveland Ave to the east	1	66	5,000	35	5	0	Lincoln Twp
Marquette Woods Rd	St Joseph Ave to the west	Roosevelt Rd to the East	0	32	6,400	35	3	0	Lincoln Twp
Empire Ave	Colfax Ave to the west	Pipestone St to the east	20	302	7,000	25	5	4	Benton Harbor
Pipestone Rd	M-139 to west	Napier Ave to south	1	169	8,500	35	5	3	Benton Township
Empire Ave	Pipestone St to west	M-139 to east	4	109	700		5	4	Benton Harbor
Lakeshore Dr	Cleveland Ave to the north	Hilltop Rd to the south	1	86	11,000	45	3	32	St Joseph
St Joseph Ave	Lincoln Twp border to the north	John Beers Rd to the south	1	19	8,500	30	5	0	Stevensville
Red Arrow Hwy	Lincoln Twp border to the north	Lincoln Twp border to the south	1	155	11,000	45	3	17	Stevensville

For the complete plan, including maps of locations with particular challenges, please see: http://www.swmpc.org/walkbiketwincats.asp.

BENEFITS OF NON-MOTORIZED TRANSPORTATION

Non-motorized transportation has become increasingly important as many people come to 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 percent 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 choices 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 with less pedestrian-vehicular conflicts at intersections.

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 within the TwinCATS 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.

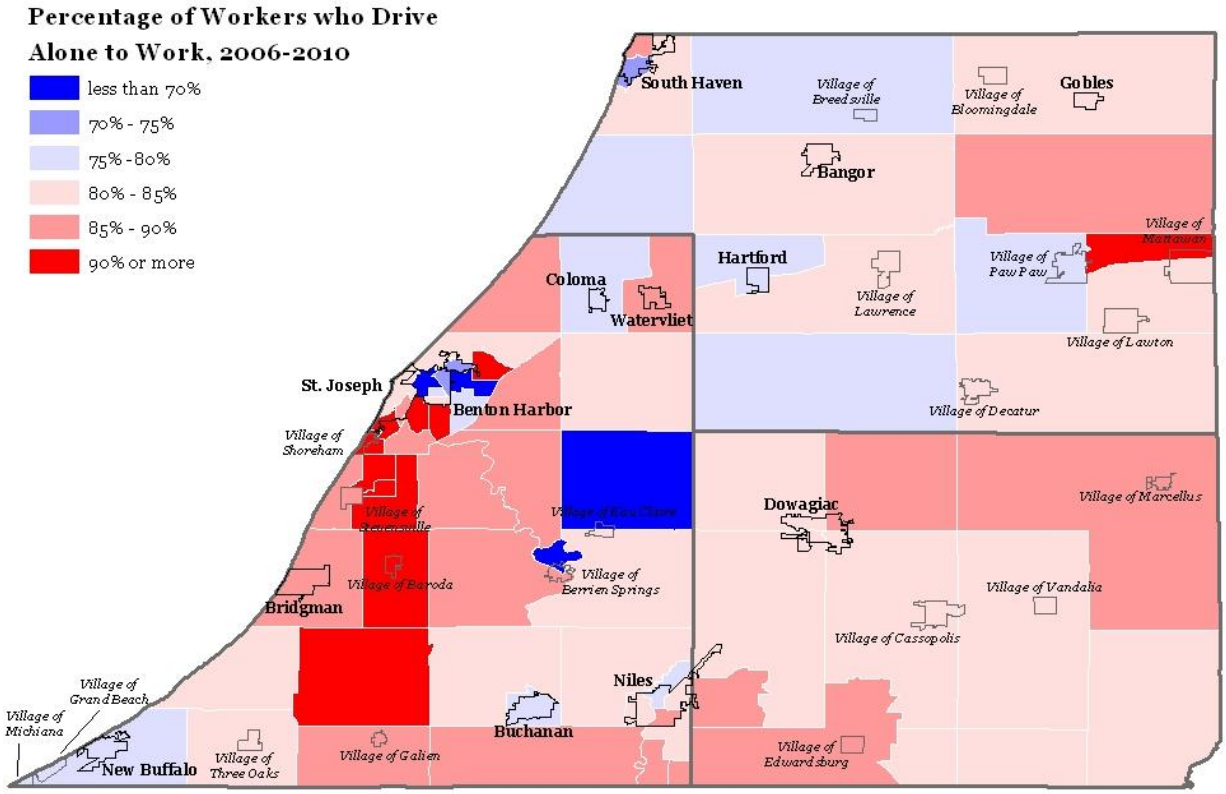
Table 18: Commute Modes of Residents in Berrien County and Michigan, 2006-2010

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

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

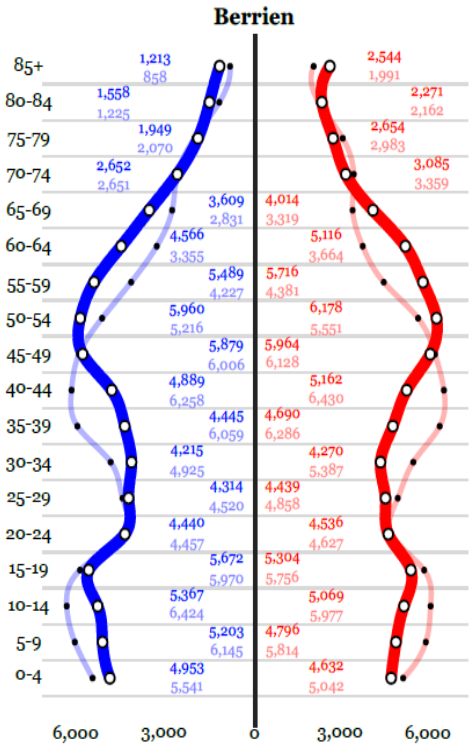
Still, the dominance of driving alone is not uniform throughout the study area. The map below shows that certain areas of southwest Michigan contain higher concentrations of residents who tend to use a mode other than the personal automobile for their daily commute.

Map 19 Percentage of Commuters Who Drove Alone to Work, 2006-2010



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.

Figure 8: Population Tree for Berrien County



Elderly and Disabled Populations

Figure 8 shows changes in the population's age composition between 2000 and 2010 for males and females in Berrien County. 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, they will likely rely less on single occupancy vehicles as their primary means of travel. As an MPO, TwinCATS 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.

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 to live 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 and pedestrian and bicycle facilities that connect them with employment and cultural attractions.

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:

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.
Source:
http://www.theatlanticcities.com/co

- **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.
- **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 percent, biking by 122 percent, and walking by 37 percent.[4]
- **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 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. The cost of owning a car 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.

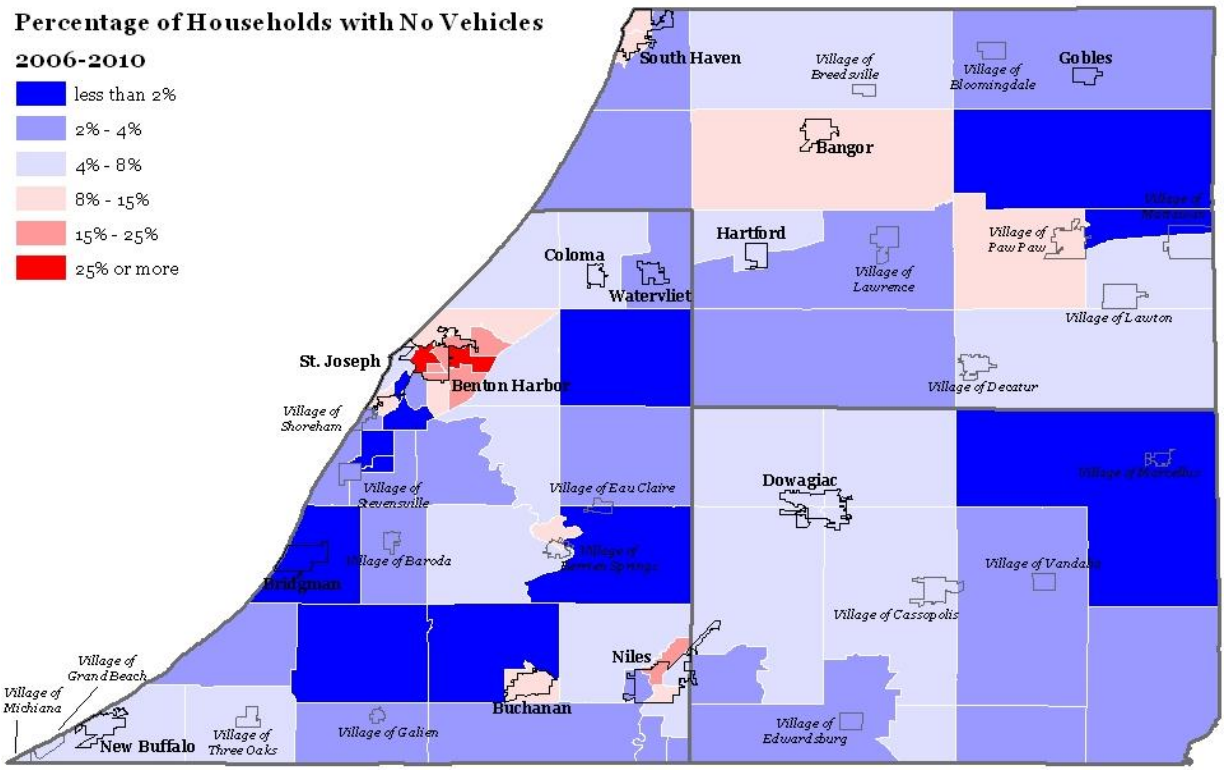
A lack of a car may particularly impact these populations because entry-level employment centers in the region tend to be located close to high-speed, high-traffic roadways, including M-139 and areas near I-94 exits 29 and 23. The provision of sidewalks is intermittent and may be absent in many situations. Some of the jobs in these

[4] The Atlantic Business, 2012. http://www.theatlantic.com/business/archive/2012/08/why-are-young-people-ditching-cars-for-smartphones/260801/.

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.

Map 20: Percentage of Households with No Vehicles, 2006-2010



ISSUES

- An aging, dispersing population that may not be able to use or rely on personal automobiles to connect them with distant services in the future.
- Intermittent and incomplete sidewalks and bicycle lanes throughout the region, with much of the needed infrastructure being disconnected from employment centers.

FREIGHT CONSIDERATIONS

Freight transportation, whether by rail, truck, or ship, contributes significantly to both 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 290, it is likely that a large portion of that traffic travels through this 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 new federal legislation, as well as the effects that all modes of freight transport have on the region, including recent projects far beyond the planning boundary of TwinCATS.

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.

- 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.

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.

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 on to Chicago. There are seven to eight trains traveling along the tracks on a daily basis. There is a mix of both passenger and freight. Use of CSX tracks has been on the 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.

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. In addition, the Heartland Corridor allows the routing of double-stacked trains from the port of Norfolk, Virginia to Columbus Ohio, and then onward to Chicago.

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 TwinCATS 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.[5]

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.

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

Regions adjacent to TwinCATS 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.[6] 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.[7]

THE CHICAGO EFFECT

The proximity of this region to Chicago will continue to have profound impacts on freight movement throughout TwinCATS member jurisdictions. Chicago is in a unique position nationally as it continues to be both a rail and

[5] Federal Highway Administration, Office of Freight Management and Operations. (2012). *Freight Facts and Figures 2012*.

[6] Northwestern Indiana Regional Planning Commission (2010). *NIRPC Final Freight Report.* http://www.nirpc.org/media/5588/nirpc_freight__report_final_updated_8_30_2010.pdf

[7] Michiana Council of Governments. (2004). The MACOG Freight Transportation Study: An Analysis of Freight Capacity and Movement in Northern Indiana http://www.macog.com/PDFs/MPO/D05stfnl.pdf.

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 as a freight center allows it to experience a multiplier effect.[8] For example, when there is growth in the air transport sector, demand for use of the rail transport sector increases as well. With this multiplier effect, it is inevitable that many products seen in Chicago's freight distribution facilities will pass through the TwinCATS region, or reach end users here, at some point in the supply chain.

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."[9] 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. The commonplace existence of global supply chains means 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. It might also mean an increase in freight coming from large ports on the east coast and a lesser dependence on goods coming through from the west coast of the United States.

Figure 9: Post Panamax Ship Capacity

[8] Chicago Metropolitan Agency for Planning. (2012). Chicago's Metropolitan Freight Cluster: A Drill-Down Report on Infrastructure, Innovation and Workforce.http://www.cmap.illinois.gov/c/document_library/get_file?uuid=80610300-0acd-4e57-8d74-293ddc637c14&groupId=20583

[9] Colliers International, (2012). North American Port Analysis: Preparing for the First Post-Panamax Decade. http://www.colliers.com/en-US/US/~/media/Files/MarketResearch/UnitedStates/Colliers_PortReport_2012q2_final.ashx?campaign=Colliers_Port_Analysis_NA_Aug-2012

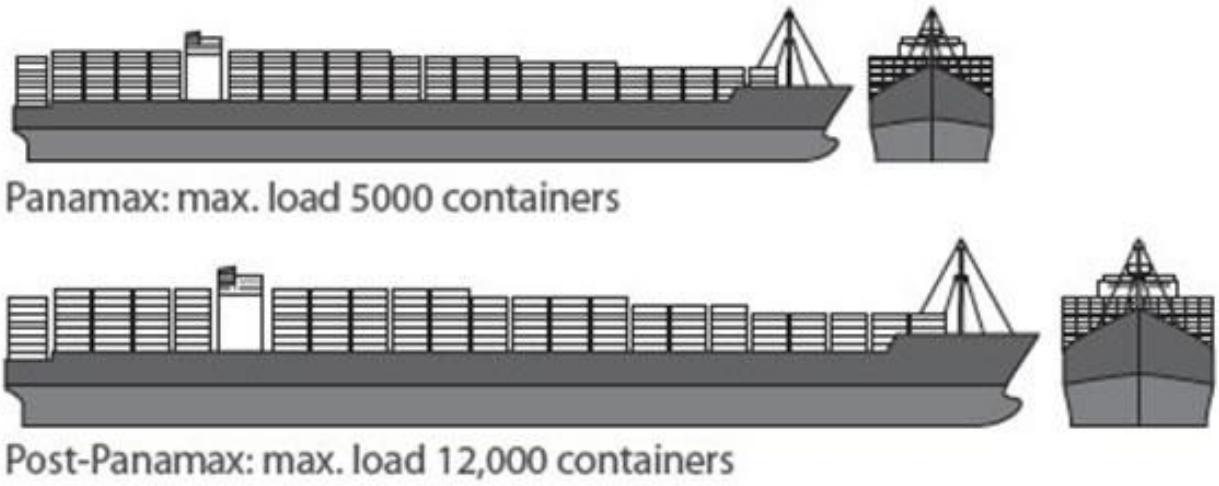


Image Source: Colliers, 2012 http://www.colliers.com/en-US/US/~/media/Files/MarketResearch/UnitedStates/Colliers_PortReport_2012q2_final.ashx?campaign=Colliers_Port_Analysis_NA_Aug-2012

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 TWINCATS

Within the TwinCATS region, too, trucking has been a significant mode of freight movement. The table below shows average daily traffic volumes of commercial vehicles for selected major roadway segments within the TwinCATS region in 2000, 2007, and 2011. Not surprisingly, I-94 is the dominant roadway on which the commercial traffic travels. The overwhelming dominance of 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 TwinCATS region is not itself a major hub or distribution center for freight operations.

The table 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 some roadway segments saw an increase in commercial traffic between 2000 and 2007, almost every segment saw a decrease between 2007 and 2011. The closure of

additional manufacturing facilities in Chicago, northern Indiana, and the TwinCATS region in response to the economic downturn may have contributed to the decline in freight movement in recent years.

Table 19: TwinCATS Commercial Average Daily Traffic (CADT)

Table 19. TwinCATS Region Commercial Average Daily Traffic (CADT): A Sampling of 25 Major Roadway Segments*

Route	From	To	2000 CADT	2007 CADT	2011 CADT	% Change from 2000-2011
I-94	GRANDMERE RD/JOHN BEERS	W JCT I-94 BL ST. JOSEPH	13100	13631	10636	-18.81
I-94	JCT I-196 UAL ST JOE	FRIDAY RD	10500	8205	6661	-36.56
I-94	NAPIER AVE	E JCT I-94 BL ST. JOSEPH	14400	13332	10404	-27.75
I-94	PIPESTONE RD	NAPIER AVE	14400	13332	10404	-27.75
I-94	RED ARROW HWY SCL BRIDGMAN	GRANDMERE RD SCL STEVENSVILLE	13100	13631	10636	-18.81
I-94	SAWYER RD	RED ARROW HWY SCL BRIDGMAN	13100	13631	10636	-18.81
I-94	W JCT I-94 BL ST JOSEPH	JCT M-63	14400	13745	10726	-25.51
M-63	JCT US-31	JCT I-94	399	574	524	31.33
M-63	SCL ST. JOSEPH	NAPIER AVE	683	720	367	-46.27
M-63	SCL BENTON HARBOR	NCL BENTON HARBOR	839	885	152	-81.88
M-63	UAL BENTON HARBOR @MAPLE	JCT I-196	590	117	100	-83.05
M-139	JCT I-94	NAPIER AVE.	627	427	389	-37.96
M-139	NAPIER AVE.	PIPESTONE AVE.	627	427	389	-37.96
M-139	PIPESTONE AVE	BEGIN DIVIDED N OF EMPIRE ST	627	380	348	-44.50
M-139 SB	SCL BENTON HARBOR	JCT I-94BL BENTON HARBOR	627	380	173	-72.41
BR-94	CLEVELAND ST.	LAKE BLVD	500	843	770	54.00
BR-94	ECL BENTON HARBOR	JCT M-139	380	401	270	-28.95
BR-94	JCT M-139	BEGIN DIVIDED @ URBANDALE	252	266	270	7.14
BR-94	LAKE BLVD	S JCT M-63	500	843	770	54.00

BR-94 EB	N JCT M-63	WAYNE ST	300	316	270	-10.00
BR-94 WB	N JCT M-63	WAYNE ST	300	316	270	-10.00
BR-94	PAW PAW ST	ECL BENTON HARBOR	380	401	270	-28.95
BR-94	PIPESTONE AVE.	PAW PAW ST	394	416	270	-31.47
BR-94	SCL SHOREHAM	NCL SHOREHAM, SCL ST JOSEPH	412	843	770	86.89
BR-94	W JCT I-94 ST JOSEPH	SCL SHOREHAM	412	843	770	86.89

* Source: Michigan Department of Transportation Traffic Monitoring Information System (TMIS). The figures represent 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.

II. 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 20 highlights the Class I railroads in southwest Michigan and the main commodities that are transported.

Table 20: 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.

AIRPORT FREIGHT SERVICE

The South Bend Regional Airport is northcentral 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- (Greyhound) and intra-city (Transpo-South Bend city bus service) buses, and the Chicago South Shore and South Bend interurban commuter railroads.

ISSUES

Rail and Truck Freight Service	Airport Freight Service
Increased weight of trucks on roadways that already require urgent maintenance	MPO has limited freight information regarding air transport from South Bend Regional Airport is transported into the study area.
Connectivity between rail, water, and road freight movements	

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 County. 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 Study. In 2011, the KFH group was selected to conduct a three-year countywide transit consolidation feasibility study with the purpose of identifying opportunities to coordinate or consolidate transit services in Berrien County. The study will provide detailed analysis of the following opportunities:

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

Since 2010 a Mobility Manager has been in place. 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.

HOW WELL ARE TRANSIT NEEDS BEING FULFILLED IN THE ST. JOSEPH BENTON HARBOR URBANIZED AREA?

- Transit is of critical importance as part of a life-sustaining network for many residents, especially for older adults, people with disabilities and low income households. Twin Cities Area Transportation Authority (TCATA) is the public transit agency that serves the communities of Benton Harbor, Benton Township and the City of St. Joseph.

- There are four independently operated public transit systems spread throughout the County of Berrien. Twin Cities Area Transportation Authority (TCATA) is the designated transit provider in the St. Joseph Benton Harbor UZA and Berrien Bus is the designated rural provider for areas in the County not served by Niles Dial a Ride and Buchanan Dial a Ride. See Map 21.

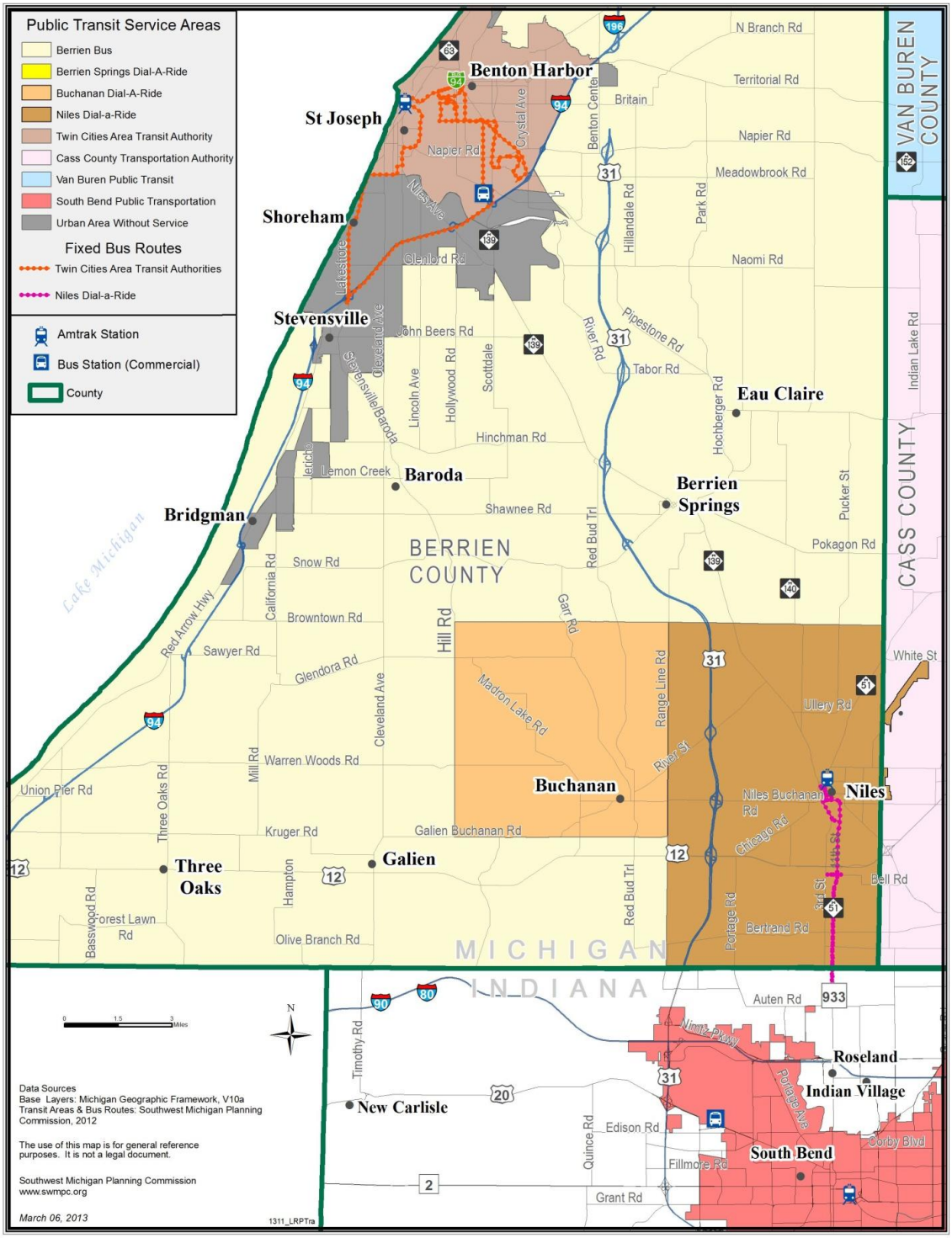
- Some level of public transit service is provided in 28 of Berrien County's 30 municipalities, townships and villages. However, many of these areas are limited in the amount and frequency of service they receive, especially in more rural areas of the county.

- Berrien Bus can take people on trips that originate from communities in the designated urbanized areas to communities in the designated rural areas or on trips that originate from rural areas. However, Berrien Bus cannot provide service for trips that originate and conclude within the designated St. Joseph Benton Harbor urbanized area.

- The four independently operated transit agencies have combined annual budgets totaling over $3.5 million. Three out of the four transit agencies receive local support in the form of a millage.

- Many of the life-sustaining needs of elderly, disabled, and low-income residents in Berrien County are being met, but there are large gaps in services that need to be addressed in the future.

Map 21: Public Transit Service Areas in Berrien County



EXISTING TRANSIT SERVICE WITHIN THE TWINCATS MPO

The TwinCATS study area is served by two transit providers: Twin Cities Area Transportation Authority (TCATA) and Berrien Bus. TCATA provides service within the Benton Harbor-St. Joseph urbanized area. Berrien Bus is a county-operated entity that provides service to or from the urbanized area, but not within it. The sections that follow provide further details on the state of current service in the TwinCATS MPO area.

TWIN CITIES AREA TRANSPORTATION AUTHORITY (TCATA)

Twin Cities Area Transportation Authority (TCATA) became an authority and began operations in 1975. TCATA's original authority and service area consisted of the communities of the City of Benton Harbor, Benton Charter Township, City of St. Joseph, St. Joseph Charter Township and Lincoln Charter Township; all of these communities were members of the authority. Subsequent reductions of member communities in the authority reduced its membership to one community, the City of Benton Harbor.

Today, TCATA serves approximately 24,000 residents within a fourteen square mile service area, about fifty- two percent of the St. Joseph-Benton Harbor urbanized area. The remaining forty-eight percent of the St. Joseph-Benton Harbor urbanized area receives no service from TCATA (see Appendix H: Twin Cities Area Transportation Authority funding letter). TCATA provides same day curb-to-curb Dial-A-Ride service to the City of Benton Harbor, Benton Charter Township and the City of St. Joseph with limited service to destinations in St. Joseph Charter and Royalton Townships. TCATA also operates two fixed routes that provide hourly service six days a week in the Benton Harbor and St. Joseph areas. Communities outside of the St. Joseph-Benton Harbor urbanized area in Berrien County are served by Berrien Bus, Niles Dial a Ride, and Buchanan Dial a Ride.

GOVERNANCE

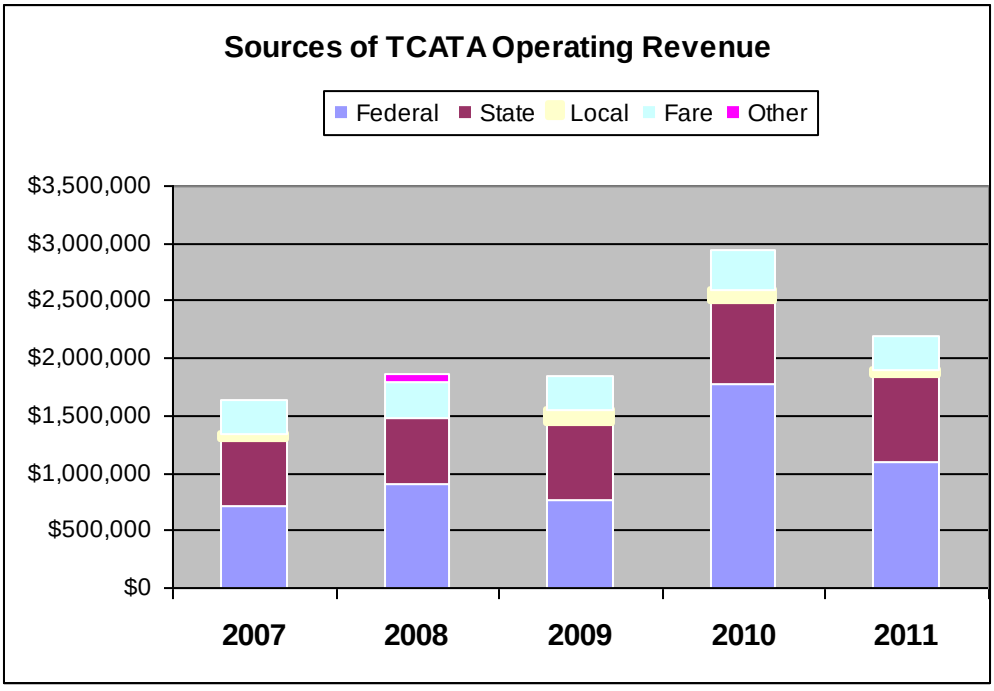
The Twin Cities Area Transportation Authority is organized under the Michigan Mass Transportation System Authorities Act 55 of 1963. The Authority is governed by a Board of Trustees comprised of members appointed by the City of Benton Harbor including one member of the public residing in the city of Benton Harbor, the city manager *(Emergency Financial Manager)* two members at large *(Area Agency on Aging, Disability Network of Southwest Michigan)* and the executive director of TCATA.

For the exclusive purposes of financing the contractual obligation created by a contract between the City of Benton Harbor and TCATA the City of Benton Harbor passed a levy of .243 mills ($23.43 per $1000) on all real and tangible personal property in the City of Benton Harbor for a period of twenty years in 2008. Prior to the current levy, the rate was 1.004 mills. The revenue generated by this levy is approximately $128,000 per year.

FUNDING

TCATA's operating costs are covered by a combination of federal, state and local funding as well as passenger fares. The City of Benton Harbor, TCATA's only source of local funds, is funded through a twenty year transit millage the city has in place. Figure 10 shows a breakdown of the sources of TCATA's operating revenue from 2007-2011. TCATA receives federal funds from FTA 5307 formula funding, while the apportioned state funding is primarily for operating expenses. Since 2010 TCATA has also received FTA 5316 and 5317 funding to operate the Red Route and fund the Mobility Manager position which is contracted out to the Southwest Michigan Planning Commission. There was a spike in funding beginning in 2010 because of a one-time ARRA grant from the FTA. The adoption of MAP 21 in July 2012 drastically changed these programs. The federal transportation act no longer contains Section 5316 (JARC) and 5317 (New Freedom). Section 5317 was merged with 5310 and will continue to be administered by MDOT. See the MPO TIP Financial Section for a more detailed description of each of the funding sources.

Figure 10: Sources of TCATA Operating Revenue



Data Source: National Transit Database 2007-2011

FARE STRUCTURE

TCATA's fare structure for their curb to curb Dial A Ride service is based on municipal boundaries rather than trip distance. This structure came about because all local funding for TCATA is solely from the City of Benton Harbor millage and therefore trips to and within the communities of Benton Township and the City of St. Joseph pay additional fares. Table 21 illustrates fare structure for Dial A Ride service and illustrates fare structure for fixed route service.

Table 21: TCATA Fare Structure

Travel Within City of Benton Harbor	
Full Fare – City of Benton **To / From** City of Benton Harbor	$2.00
½ Fare for seniors, disabled, children and students - Residents	$1.00
Travel To and From Benton Township & City of St. Joseph	
Full Fare – Benton Township **To / From** City of St. Joseph	$3.00
½ Fare for seniors, disabled, children and students –Non Residents	$1.50
Travel To and From Royalton Township	
Full Fare – City of Benton Harbor **To / From** Royalton Twp.	$4.50
½ Fare for seniors, disabled, children and students	$2.25
Full Fare – Benton Township or City of St. Joseph **To / From** Royalton Twp.	$6.00
½ Fare for seniors, disabled, children and students	$3.00

Regular (Ages 12-59)	$1.00
Senior (Age 60+)	$.50
Disabled	$.50
Youth (Ages 1-11)	$.50
Children Under age 1)	Free

TRANSIT DEPENDENT POPULATIONS

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 such individuals from driving and/or owning a reliable automobile, thus leaving ridesharing, public transit, and other community transportation options as the only other motorized forms of transportation available.

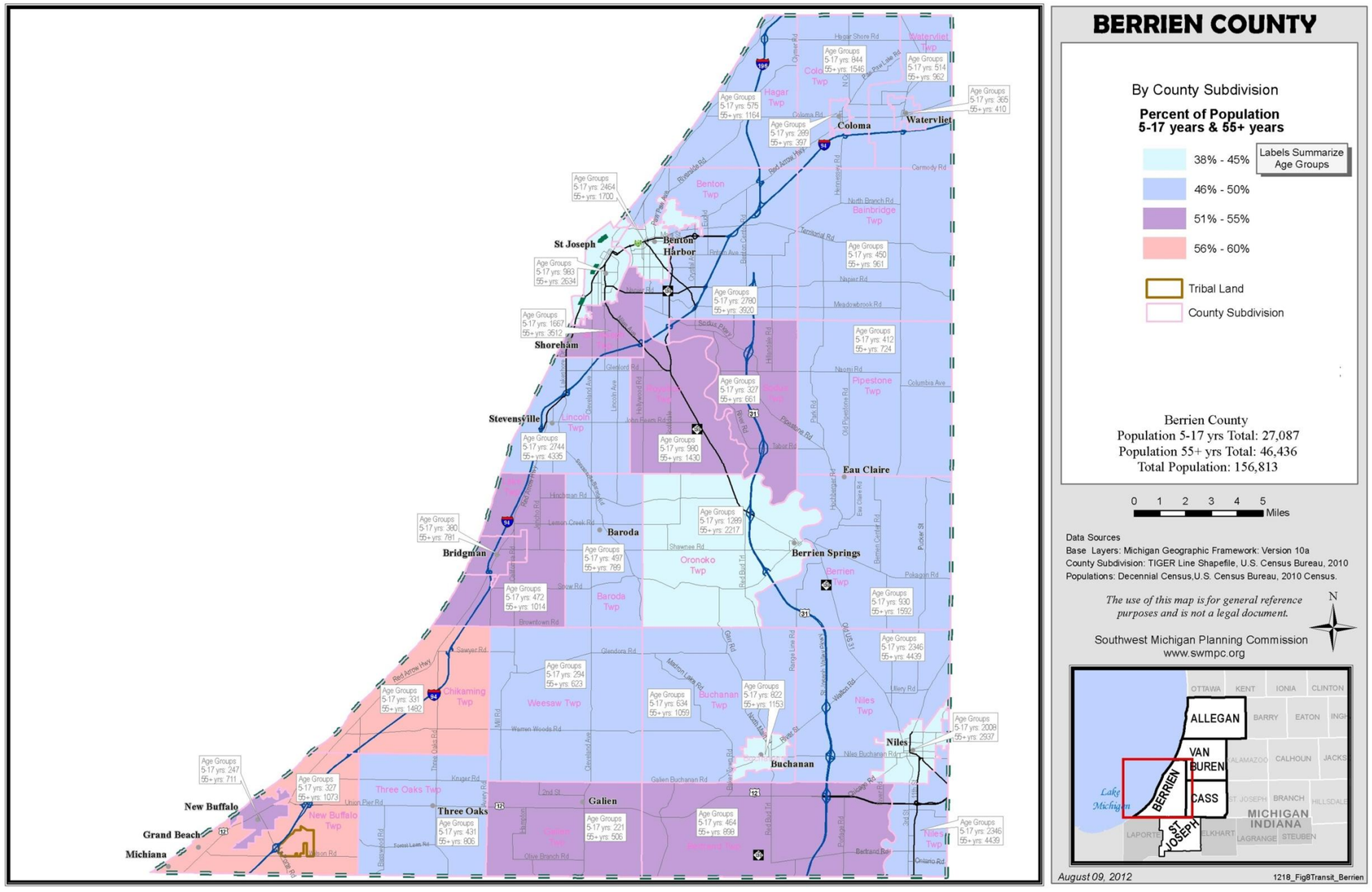
TCATA's primary service area is comprised of three communities; the City of Benton Harbor, Benton Charter Township and the City of St. Joseph. The three communities have a population of 33,152 people that reside in one of the 13,394 households. A large percentage of the population within the service area can be considered transit dependent and they reside in the City of Benton Harbor and Benton Charter Township.

Within the City of Benton Harbor forty-two percent of households have a median income of under $15,000, and twenty-nine percent of Benton Charter Township's household income is under $15,000. The income per capita in the City of Benton Harbor is only $9,745, which includes all adults and children and is the lowest per capita in Michigan. The City of Benton Harbor population's median age is twenty-eight, considerably younger than the State of Michigan's median age of thirty-nine and the City of St. Joseph median age of forty-two. See Table 22 and Map 22 for more information.

Table 22 Service Area Population

Jurisdiction	Benton Charter Township	City of Benton Harbor	City of St. Joseph	Michigan
Population	14,749	10,038	8,365	9,883,640
Pop. Density	456	2,268	2,602	175
Pop. Change	-8.99%	-16.52%	-4.57%	-0.50%
Median Age	36	28	42	39
Households	5,913	3,548	3,933	3,872,508
Unemployment Rate*	8.20%	8.20%	8.20%	9.80
Income per Cap.	$15,426	$9,745	$27,892	$23,797
Household Income	$28,415	$18,970	$39,623	$46,932

Map 22 Current and Future Transit Dependent Populations in Berrien County



Financial, legal and age limitations preclude many households in the City of Benton Harbor from owning or operating an automobile (See Map 23). It is not surprising that almost eighteen percent of the households in the City of Benton Harbor commute using public transit or ridesharing; much higher than the state average of twelve percent. Almost all households in the City of St. Joseph indicated that they do not use public transit as a commute option, but TCATA driver logs indicate many seniors use public transit to access groceries and some medical services. Public transit use for commuting by households in Benton Charter Township was less than one percent. This low number is deceiving because according to 2011 TCATA passenger trip data over 24,142 passenger trips were provided in 2011 from origins to destinations within Benton Charter Township.

A large majority of the service area's commute time is fifteen minutes or less. For people dependent on transit this short commute time is due to the fact that many entry level service jobs that are accessible by public transit are located in Benton Charter Township. See Table 23 for more information.

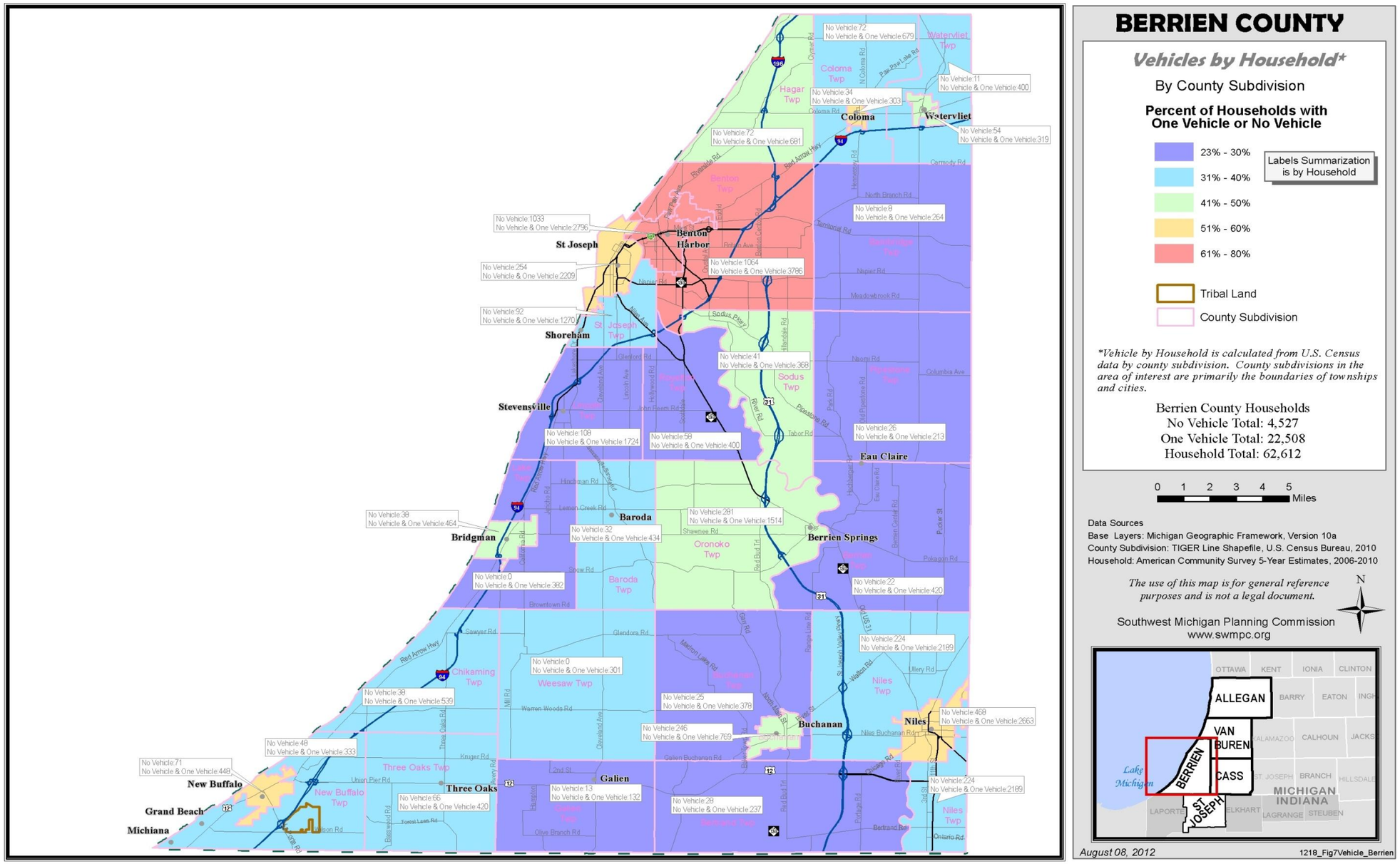
Table 23: Commute Mode and Time by Jurisdiction

Transportation	City of Benton Harbor	Benton Charter Township	City of St. Joseph	Michigan
Commute Time	18.8	19.5	17.3	26.3
COMMUTE MODE				
Auto (alone)	71.95%	78.13%	87.76%	82.51%
Carpool	14.20%	14.46%	4.72%	9.28%
Mass Transit	3.53%	0.61%	0.00%	1.35%
Work at Home	3.31%	3.97%	3.78%	3.45%
COMMUTE TIME TO WORK	City of Benton	Benton Charter Township	City of St. Joseph	Michigan

	Harbor			
Commute Less Than 15 min.	49.58%	41.88%	59.51%	29.93%
Commute 15 to 29 min.	37.67%	45.16%	29.41%	38.19%
Commute 30 to 44 min.	9.11%	8.30%	6.55%	18.92%
Commute 45 to 59 min.	1.29%	1.82%	2.09%	7.03%
Commute greater than 60 min.	2.35%	2.83%	2.45%	5.93%

US Census – 2010

Map 23: Number of Vehicles in Household- Berrien County



BERRIEN COUNTY

*Vehicles by Household**

By County Subdivision

Percent of Households with One Vehicle or No Vehicle

- 23% - 30%
- 31% - 40%
- 41% - 50%
- 51% - 60%
- 61% - 80%

Labels Summarization is by Household

- Tribal Land
- County Subdivision

**Vehicle by Household is calculated from U.S. Census data by county subdivision. County subdivisions in the area of interest are primarily the boundaries of townships and cities.*

Berrien County Households
No Vehicle Total: 4,527
One Vehicle Total: 22,508
Household Total: 62,612

0 1 2 3 4 5 Miles

Data Sources
Base Layers: Michigan Geographic Framework, Version 10a
County Subdivision: TIGER Line Shapefile, U.S. Census Bureau, 2010
Household: American Community Survey 5-Year Estimates, 2006-2010

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

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A large percentage of the City of Benton Harbor and Benton Charter Township population is employed in the service sector and warehousing and transportation occupations. Statewide thirty-two percent of workforce is employed in those sectors while that number is almost doubled in Benton Harbor and Benton Charter Township. The majority of these occupations require shifts that begin or end after TCATA's hours of operation and many times public transit is not a commute option. See Table 24 for more information.

Table 24: Populations by Occupation

Occupation	City of Benton Harbor	Benton Charter Township	City of St. Joseph	Michigan
Management, Business, and Financial Operations	3.94%	7.69%	12.67%	12.63%
Professional and Related Occupations	6.22%	11.01%	26.89%	20.10%
Service	**26.99%**	17.68%	13.52%	14.18%
Sales and Office	22.74%	24.43%	25.57%	25.55%
Farming, Fishing, and Forestry	0.57%	1.39%	0.25%	0.46%
Construction, Extraction, and Maintenance	5.96%	6.47%	6.49%	9.21%
Production, Transportation & Material Moving	33.61%	31.35%	14.59	17.87%

US Census - 2010

In order to bring workers and industries together, the state continues to focus programs and initiatives centered on workforce development. Lake Michigan College plays an integral role in those initiatives. There are several programs in place at LMC to ensure more students and adults can access a college education and the increased earnings potential it provides. The LMC 2012 enrollment indicated that over 20 percent of their students reside

in Benton Harbor and Benton Charter Township while over 60 percent of the enrollment resides within the TwinCATS study area.

TCATA currently provides demand response service from origins located in the City of Benton Harbor, Benton Charter Township and the City of St. Joseph to Lake Michigan College. Lake Michigan College is ranked in the top five demand response service destinations within TCATA's service area. This is illustrated in Appendix A.

COMMUNITY MOBILITY OPTIONS FOR OLDER ADULTS

Increases in life expectancy 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 males and 48 years for females.[10] 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.[11]

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.[12] This group of older adults may not be able to drive personal vehicles into their later years. According the 2010 U.S. Census there are several communities in the TwinCATS study area that have twenty percent or more of their population over the age of 65. The overall study area is home to over 11,000 people over the age of 65. See Table 25 for more information.

[10] http://www.census.gov/prod/1/pop/p23-190/p23190-g.pdf

[11] http://www.census.gov/compendia/statab/2012/tables/12s0104.pdf

[12] http://www.census.gov/newsroom/releases/archives/aging_population/cb10-72.html

Table 25: Older Adult Population of TwinCATS Member Communities

Twin CATS Communities	Total Population	Age 65 and above	Percentage of Total Population
Benton Charter Township	14,953	2,188	15%
Benton Harbor City	10,256	885	9%
Bridgman City	2,746	281	10%
Hagar Township	3,708	676	18%
Lake Charter Township	2,995	617	21%
Lincoln Charter Township	14,512	2,105	14%
Pipestone Township	2,191	363	17%
Royalton Township	4,587	577	13%
St. Joseph City	8,394	1,464	17%
St. Joseph Charter Township	10,007	1,881	19%
Sodus Township	2,134	437	20%
Total	76483	11474	15%

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. A Michigan Department of Transportation 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.

For older adults who are unable or choose not to drive, support for community transportation options will become increasingly important. Public transportation, human service transportation and private providers will need to take these age related mobility characteristics into their transportation mix of services. For example there may be older adults who have no family or friend supports that require enhanced or non-traditional transportation services because of reduced mobility.

Neither traditional public transit services nor special demand services will come anywhere near meeting mobility needs of the country's aging population.

A number of more traditional transportation services are currently available to meet some of the needs of older adults who no longer drive and still require or desire mobility. They include TCATA, Amtrak, Berrien Bus, and Greyhound.

There is limited supplemental transportation available within the study area that specifically provides service to older adults. Adults sixty years and older can receive services from seven independently operated senior service centers and meal sites located throughout Berrien County. Each of the seven 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 in its service area. However, the frequency and service area varies from one senior center to the next. There is little or no coordination that takes place between the seven centers in the provision of transportation services, leaving some residents with very limited transportation options.

For example, an older adult who resides in the Niles Senior Service area has access to county-wide and cross-county transportation services, 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 26 on the following page.

Table 26: Berrien County Senior Service Providers

Senior Center / Origins	Destinations	Center Hours	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** 8:00-4:30pm	**Monday-Friday** 9:00-4:00pm	Three – 12 passenger vans (One lift equipped)	Lakeland Hospital Napier Royalton
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** 9:00am-4:00pm	**Monday-Friday** 9:00am-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** 8:30am-4:30pm	**Monday-Friday** 8:30am-4:30pm	Five vehicles ranging in size from 7 passenger to 24 passenger (One lift equipped)	Lakeland Hospital - Napier Royalton Meijer – Benton Harbor
Niles Senior Center ***City of Niles, City of Buchanan, Niles Twp.***	City of Niles City of Buchanan Battle Creek (hospital) South Bend Medical destinations.	**Monday-Friday** 8:00am-4:00pm	**Monday-Friday** 8:00am-4:00pm	One 4-5 passenger mini vans	Lakeland Hospital Niles South Bend Medical
Senior Center / Origins	**Destinations**	**Center Hours**	**Transportation Hours**	**Number of Vehicles**	**Popular Destinations**

North Central Senior Services ***City of Coloma, Coloma Twp, Hagar Twp, Watervliet Twp, City of Watervliet***	Berrien County	**Monday-Friday** 8:00am-4:00pm	**Monday-Friday** 9:00am-3:00pm	Two 6 passenger vans One 4 passenger sedan	Royalton Watervliet Meijer - Benton Harbor
St. Joseph Lincoln Senior Services ***City of St. Joseph, St. Joseph Charter Twp. Lincoln Twp. Royalton Twp. Village of Stevensville***	City of St. Joseph, St. Joseph Twp. Lincoln Twp. Royalton Twp. Village of Stevensville Benton Twp. City of Benton Harbor	**Monday-Friday** 8:00am-4:00pm	**Monday-Friday** 9:00 am- Noon	One 12 passenger bus One 7 passenger van One 5 passenger suv	Lakeland Hospital Napier Royalton
River Valley Senior Services ***City of New Buffalo Three Oaks Twp. Galien Twp. Lake Twp.*** ***City of Bridgman***	New Buffalo Three Oaks Galien Twp. Lake Twp. Bridgeman ,St. Joseph Watervliet, Battle Creek, Benton Harbor Royalton Twp.	**Monday-Friday** 9:00am-4:00pm	**Monday-Friday** 9:00am-4:00pm	One 12 passenger van	Lakeland Hospital, Meijer - Stevensville

The TCATA operating data summarized below in Table 27 provides a five year overview of the combined operating data for demand response and fixed route service.

The average increase in TCATA public transit ridership was 16 percent between 2007- 2011, while passenger miles service averaged an increase of about 6 percent. Over the same five year period TCATA experienced a 4 percent decrease in passengers per revenue hour with a 5 percent increase in the number of service revenue hours.

Table 27: System Operating Data for All Services

Fiscal Year	Unlinked Trips	Unlinked Trips	Annual Revenue Miles	Vehicle Hours
2007	156,890	156,890	440,722	34,610
2008	169,424	169,424	464,892	35,043
2009	153,800	153,800	440,656	39,200
2010	148,311	148,311	570,795	49,035
2011	139,284	139,284	595,635	46,511

Source: FTA National Transit Data Base

Changes in operating data can be impacted by changes in hours, operations, and new or discontinued services. Table 28 below provides an overview of the changes in service that have taken place during the FY 2007-2011 time period.

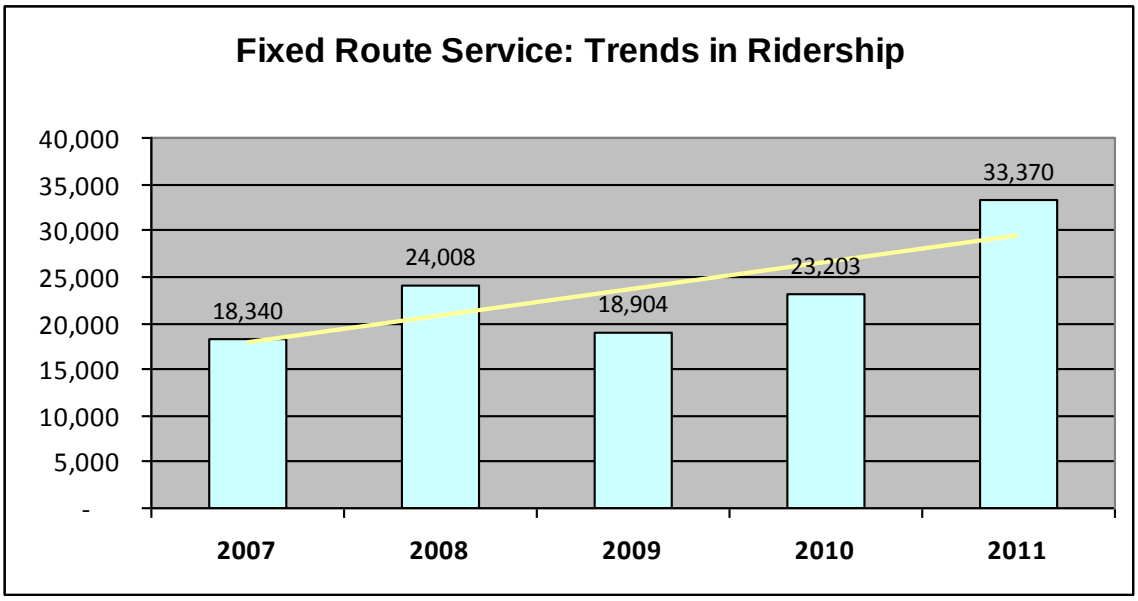
Table 28: TCATA Service Changes

Mode of Service	Service Prior FY 2007- 2009	Service Changes FY 2009-2010	Service Changes FY 2010-2012
	Hours	Hours	Hours
Demand Response	Monday - Friday 6:00 am - 6:00 pm Saturday 8:00 am - 4:00 pm	Monday - Friday 6:00 am - 6:00 pm Saturday 8:00 am - 4:00 pm	Monday - Friday 6:00 am - 6:00 pm Saturday 8:00 am - 3:00 pm
Blue Route	Monday - Friday 8:00 am - 5:00 pm Saturday 8:00 am - 4:00 pm	Monday - Friday 6:00 am - 10:00 pm Saturday 8:00 am - 10:00 pm	Monday - Friday 6:00 am -10:00 pm Saturday 8:00 am - 10:00 pm
Red Route		Monday - Friday 6:00 am - 6:00 pm Saturday 8:00 am - 3:00 pm	Monday - Friday 6:00 am -10:00 pm Saturday 8:00 am - 10:00 pm
Green Route		Monday - Friday 8:00 am - 5:00 pm Saturday 8:00 am - 10:00 pm	Eliminated

During FY 2007 and 2008 the Blue route was the only fixed route service provided by TCATA. During that time period the Blue route utilized two vehicles to provide service every thirty minutes and operated nine hours per day Monday through Friday and seven hours per day on Saturdays.

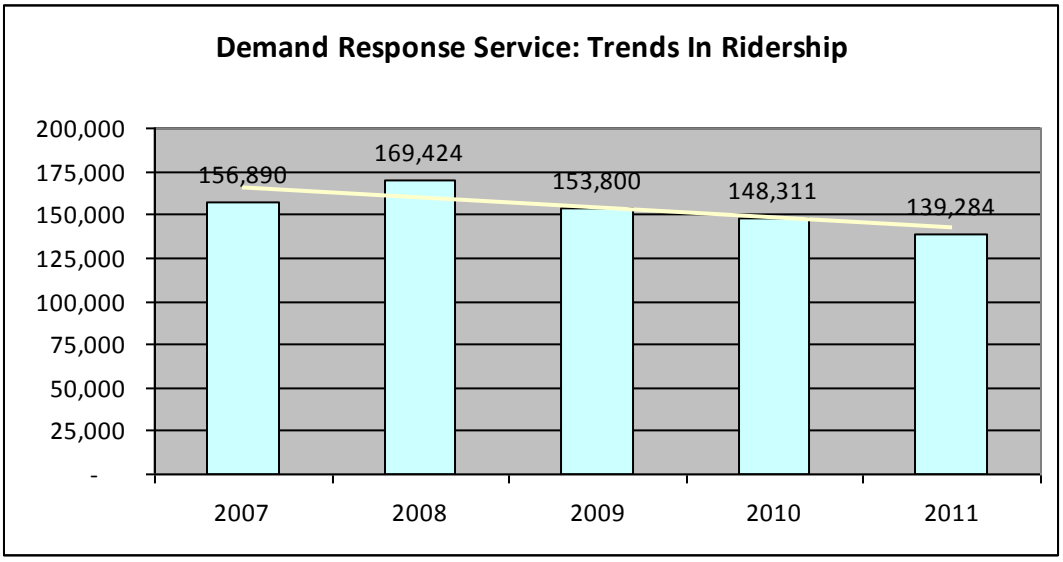
In FY 2009 a Job Access Reverse Commute grant was awarded to increase the Blue route's hours of service by seven hours during the week and seven hours on Saturday. A grant from the same source in FY2009 also provided funding in the amount of $280,000 to support a new fixed route that utilized one vehicle and mirrored the extended hours of the blue route. A third route (Green) was created during FY 2009 and operated nine hours per day on week days. The route was discontinued in the middle of FY 2010.

Figure 11: Fixed Route Ridership, 2007-2011



Data Source: National Transit Database 2007-2011

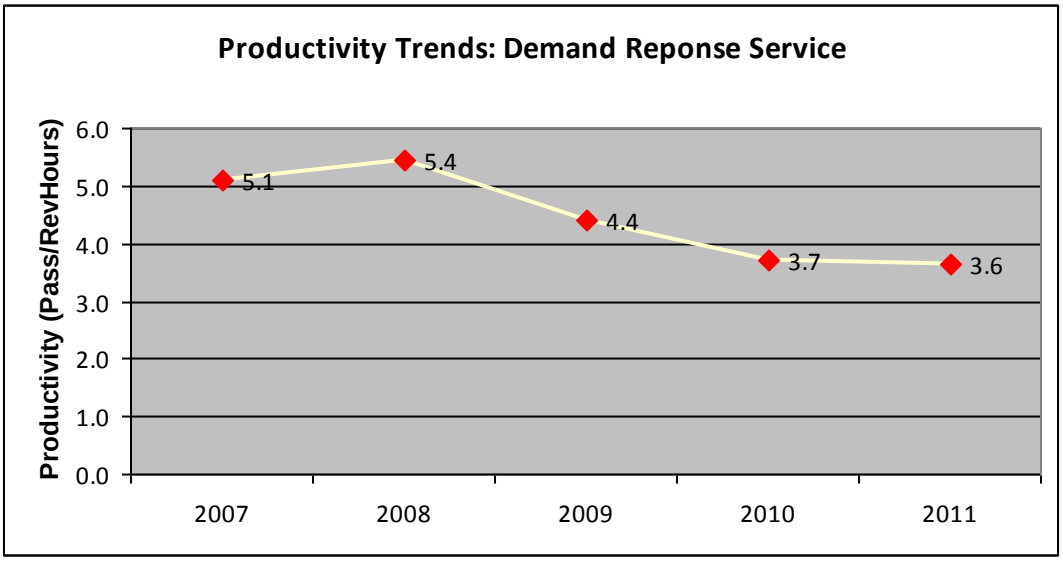
Figure 12: Demand Response Service Ridership, 2007-2011



Data Source: National Transit Database 2007-2011

The Federal Transit Administration and the Michigan Department of Passenger Transportation evaluate public transit services for both efficiency *(doing things right) and effectiveness (doing the right things*). Efficiency is usually analyzed by operating cost per hour, per mile or cost per passenger trip. Effectiveness emphasized by passenger productivity is usually analyzed by passenger trips per mile or hour. TCATA 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.

Figure 13 Productivity: Demand Response Service



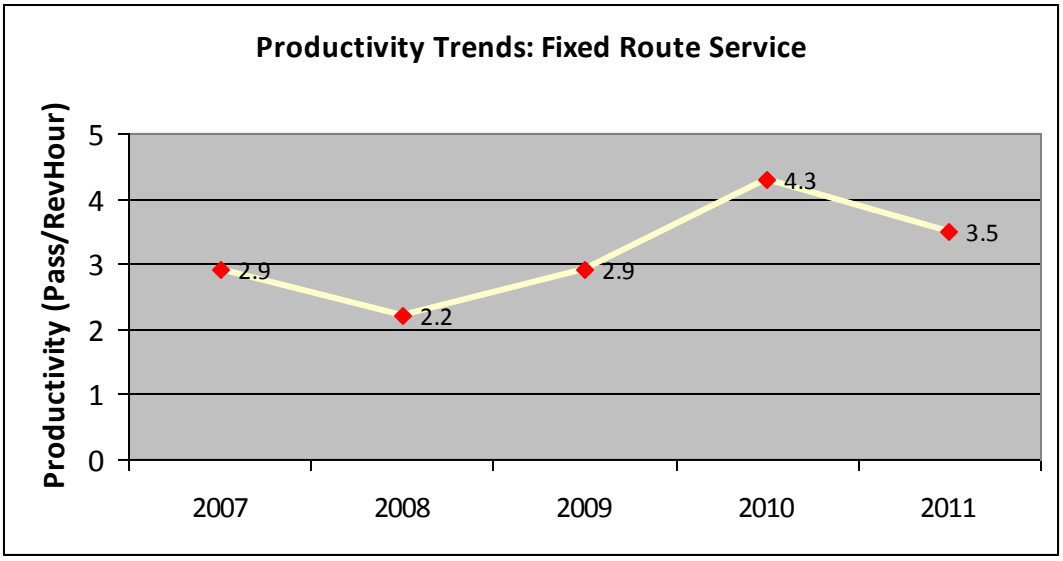
Data Source: National Transit Database 2007-2011

According to the ridership operating data provided above, the demand response service has decreased over the last three years. On a national level, the average demand response passenger per hour productivity goal is at least two passengers per hour. The fact that TCATA demand response service is higher than the average ridership per hour is likely due to the population density of the core ridership from the City of Benton Harbor and parts of Benton Charter Township.

In many parts of TCATA's service area there is a duplication of service where both demand response service and fixed routes serve the same area. Customers refer to the scheduled fixed route service as the "special" service and the demand response service as the "regular" service. This is counter to operations of most transit systems that typically encourage customers to ride fixed route services and only provide demand response type service for customers unable to access scheduled fixed route services. Typically in small urban areas more extensive

scheduled services are operated than are currently in place within TCATA's service area. The fixed route service is a much less expensive service to operate in terms of cost per passenger. An increase in number of efficient and effective fixed routes would draw passengers from the demand response service toward the fixed route service.

Figure 14: Productivity Trends in Fixed Route Service



Data Source: National Transit Database 2007-2011

TCATA's fixed route productivity based on trips per hour is below the industry norms. This may be in part a result of areas in Benton Harbor and Benton Charter Township where there is both fixed route and Dial A Ride service. During FY 2007 and 2008 the Blue route was the only fixed route service provided by TCATA. During that time period the Blue route utilized two vehicles to provide service every thirty minutes and operated nine hours per day Monday through Friday and seven hours per day on Saturdays.

Data indicates that in FY 2009 and FY 2010 when three fixed routes were in place, trips per revenue hour increased by two people per hour from FY 2008.

RED ROUTE

Route Description

The Red route has been in service since December 2009 and since that time the route has experienced consistent growth in ridership. The route operates Monday through Friday from 6:00 am – 10:00 pm and on Saturday from 8:00 am – 10:00 pm. This hourly one way loop route originates in the City of Benton Harbor at Union, an area with higher than average poverty rates, unemployment and no access to a vehicle. Along the route there are several clusters of entry level employment opportunities and life sustaining services including Lakeland Hospital, Berrien County Court House, Michigan WORKS, and two large grocery stores. The Red route also offers an option to flex to locations along the route if the route is on schedule.

Based on 2012 annual data, the Red route served four passengers per hour and the annual ridership was 19,196 A contributing factor to the low ridership per hour is the routes length, the one way loop configuration and the lack of sidewalk infrastructure along several segments of the route.

This route has been funded through FTA JARC 5316 since its inception, however in July 2012 MAP-21, Section 5316 Job Access and Reverse Commute program was combined into the urban (5307) and rural (5311) formula funding programs. Going forward TCATA can use their 5307 formula funds to fund this route.

BLUE ROUTE

Route Description

The Blue route operates Monday through Friday from 6:00 am – 10:00 pm and on Saturday from 8:00 am – 10:00 pm. This hour loop route originates in the City of Benton Harbor at TCATA headquarters and provides services to several housing developments, social service agencies and retail locations. The route is serviced by two vehicles that leave on the hour and half hour. The majority of stops along the route receive service every thirty minutes with the exception of Intercare, DHS, and River Terrace which receive service every fifteen minutes with inbound and outbound stops. The Blue route also offers an option to flex to locations along the route if the route is on schedule. The early morning (6:00 am – 8:00 am) and the late night (6:00 pm -10:00 pm) portion of this route's hours have been funded through FTA JARC 5316 funds since 2009.

Based on 2012 annual data, the Blue route served almost four passengers per hour and the annual ridership was 32,294. Contributing factors to the low ridership per hour are the route's use of two vehicles to provide the

service every thirty minutes, and the lack of sidewalk infrastructure along several segments of the route in Benton Charter Township on M139, Mall Drive and Pipestone.

POTENTIAL FOR ADDITIONAL FIXED ROUTES AND IMPROVED PEDESTRIAN CONNECTIVITY

Many transit trips require pedestrian or bicycle connections. In addition to having well-planned routes, a good transit system provides its riders with safe, accessible stops. To encourage active use of the current TCATA routes and any planned future routes, a network of sidewalks bike lanes or shared use paths could connect transit stops to neighborhoods and popular destinations and improve the efficiency of the fixed routes. It would be increase the efficiency if the bus stops were located adjacent to the corridor. Unfortunately the current stops within the townships of Benton Charter and St. Joseph require the bus to pull off the route onto private property to pick up passengers. Currently there is a lack of pedestrian and bicycle connections along several corridors forcing public transit to place fixed route stops on private property that are off the corridor. This lack of infrastructure increases the routed length and time of the route.

Table 29 below identifies corridors within the TwinCATS study area that exhibit strong indicators of need and opportunity for fixed route transit service. These indicators include population density, employment density, activity centers, demographic characteristics associated with transit dependency and large volume of existing riders.

Table 29 Areas with Strong Indication of Need for Better Connectivity Through Transit

Corridor	From	To	Jurisdiction	Responsible Agency
Mall Drive	M-139	Pipestone Ave	Benton Township	Berrien Road Commission
Hilltop Road	Niles Ave.	Lakeshore Drive (BL94)	City of St. Joseph, St. Joseph Twp.	Berrien Road Commission, City of St. Joseph
Napier Ave.	Miami Road	Pipestone Ave	City of St. Joseph, St. Joseph Twp. Benton Twp.	Berrien Road Commission

M 139	Britain Ave.	Nickerson Ave.	Benton Twp	Berrien Road Commission, MDOT
Fair Ave.	Britain Ave.	Territorial Road	Benton Twp. City of Benton Harbor	Berrien Road Commission, Benton Harbor
Martin Luther King	Britain Ave.	Territorial Road	Benton Twp. City of Benton Harbor	Berrien Road Commission

STRATEGIES

Use current demand-response services more efficiently to expand capacity of current services offered to individuals who need human service and specialized transportation by integrating countywide rural service, small urban dial a ride services, and fixed route services.

There is an existing demand for transportation that is not currently being met because of capacity restraints. This demand is anticipated to grow tremendously over time, yet services will remain constrained because of a lack of funding and/or the lack of political will to provide additional funding. As such, it is up to human service agencies and transportation service providers to make strategic decisions that can help stretch available dollars, making their services operate more efficiently while at the same time maintaining acceptable levels of service.

Integrating both demand response service (for seniors and disabled persons) and fixed route services (for able-bodied riders) can be a cost-effective way to reduce the number of general public demand response trips. With the reduction in general public demand response trips there is additional capacity to provide rides to those individuals who require specialized transportation.

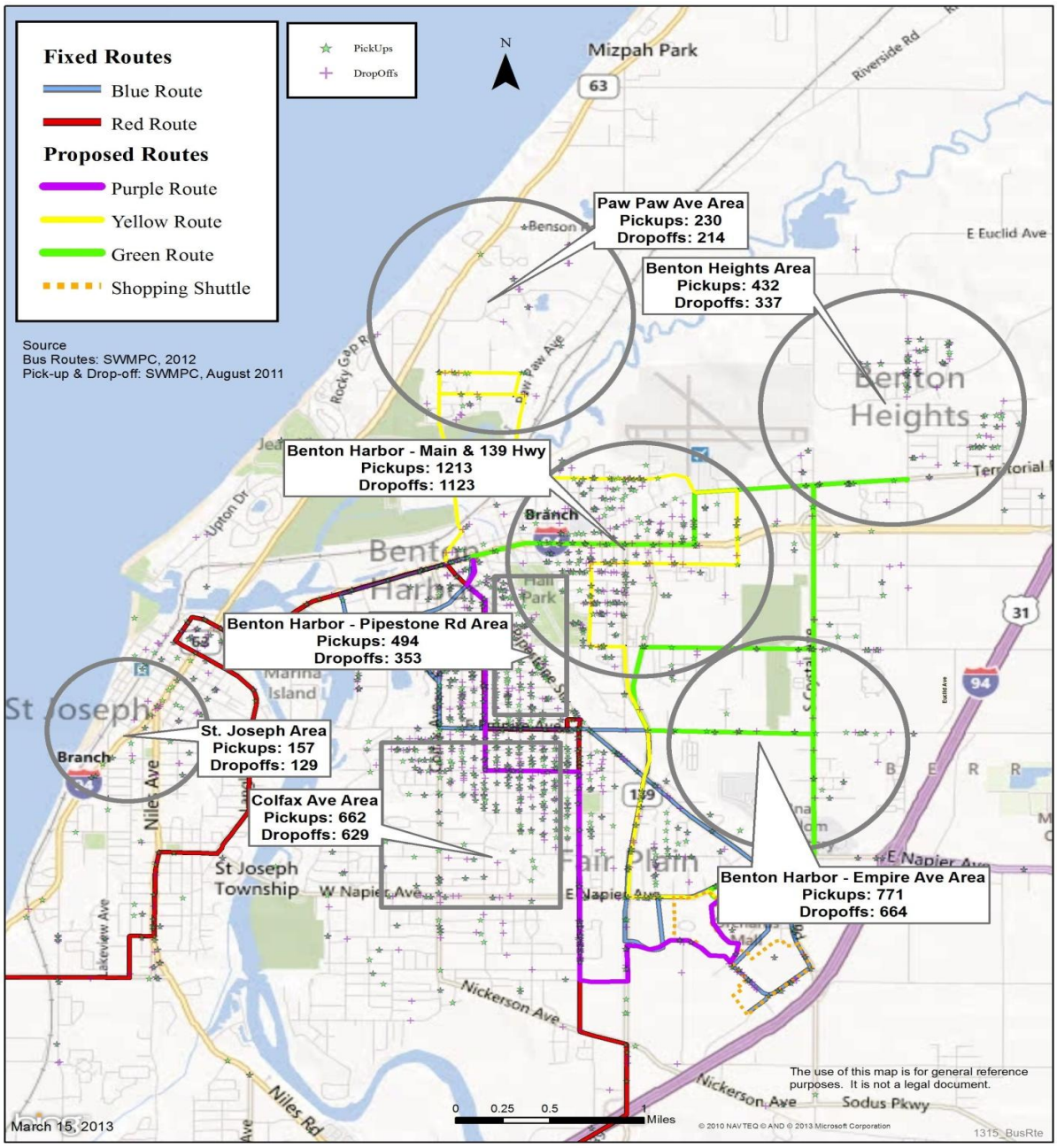
With this in mind, proposed conceptual routes have been created, including a combination of fixed routes in higher density areas and flex-route service in lower density areas with scheduled transfer points throughout the service area. The fixed route service recommendations have been developed utilizing TCATA demand response service driver log data to identify popular destinations and origins.

Beyond the high density activity corridors, there are other key travel patterns that indicate opportunities for public transit. Consultation with the management of Berrien Bus indicated that many of their “Contract Routes” could support a bus feeder system connecting rural passengers to fixed route services.

The goal of all of these new service concepts is to provide an optimized route structure to increase the ability of public transit to accommodate trips between cities in rural and urban areas in Berrien County.

Map 24: Proposed and Current Fixed Routes in Berrien County

Map 25: Top Pickup Spots for Dial-A-Ride Service



Make fixed routes more accessible, thereby decreasing rider dependence on demand-response service, by creating a pedestrian- and bicycle-friendly infrastructure that will encourage people to walk and bicycle to transit stops.

To promote and maintain active lifestyles, people need a variety of transportation options beyond personal automobiles, including walking, bicycling, and public transit. As state and local agencies design transportation systems, it is critical to provide routine accommodation for all users of the roadway, including pedestrians, bicyclists, individuals with disabilities, seniors, users of public transportation, and motorists. This is particularly important for seniors, since elderly populations are increasing.

Implement "complete streets" policies to provide for the safe and convenient travel of all users of the roadway, including pedestrians, bicyclists, public transit users, motorists, children, seniors, and people with disabilities.

"Complete streets" is a design strategy to ensure that all roads provide routine accommodation for all users, including bicyclists, transit users, and pedestrians of *all ages and abilities.* This is done by including or enhancing pedestrian and bicycle infrastructure during routine road maintenance and repair, new construction, and redesign. Comprehensive complete streets solutions include: 1) traffic calming measures, such as widening sidewalks, raising medians, and narrowing roadways; 2) placing bus stops in a safe and convenient environment; and 3) making various improvements (e.g., refuge medians) for disabled travelers—all of which play a role in reducing the number of crashes and reducing pedestrian risk of injury.

CONCLUSION

The TwinCATS study area has a significant population of seniors, people with disabilities and people with lower incomes, and one that therefore has extensive transportation needs. There is an increasing demand for services from people with health, mobility and income limitations. A large portion of the Benton Harbor Saint Joseph Urbanized Area has no transit service available, making some trips within the Twin Cats Study area impossible.

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, including TCATA, Niles Dial-A-Ride, and Buchanan Dial-A-Ride. It is possible that in the future, the three urban systems and the county rural could cooperate to create an integrated countywide system. The Berrien Countywide Public Transit Feasibility Study is currently examining the possibility of either combining the resources of the four transit agencies into a single countywide system, or developing a consolidation plan to make the travel between communities in Berrien County more seamless, with the same fares, scheduling matches, and clear transfer procedures. 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.

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 TwinCATS 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. The lack of an interchange between US-31 and I-94/I-196 means an increase in freeway-bound traffic on Pipestone Road and Napier Avenue, further stressing pavement in those areas. 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. Currently, however, the completion of US-31 is not in MDOT's Five Year Statewide Transportation Improvement Plan.

Figure 15: Letter from MDOT Director Kirk Steudle to Rep. Al Pscholka

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

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H-LAN-0 (01/11)

- **Berrien County Equestrian Centers -** A specialization is 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.

INDIANA

The Northwestern Indiana Regional Planning Commission handles the transportation planning and coordination of the transportation system in northwestern Indiana. Please refer to NIRPCs LRP for more information on projects that could potentially impact the TwinCATS region indirectly in the future at http://www.nirpc.org.

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.

- **Intelligent Transportation Systems (ITS)** - Investments in intelligent transportation systems technology can provide consumers and managers with real-time information on the state of the transportation network. ITS technology can be used to create screens on highways that inform drivers of travel time to destinations and possible delays. Where an accident or construction happen on the road network, advanced knowledge may help road users to select alternative routes that will be less congested. Similarly, real-time information on vehicle movements can assist transit providers and freight haulers with evaluating efficient delivery of services and potentially increasing on-time performance. At the cutting edge of ITS systems is the possibility of vehicles that can send automated signals to one another in order to avoid conflicts and collisions, which will increase safety on the transportation system.

- **Plug-In Electric Vehicles-** Recent concerns about greenhouse gas emissions and pollution have led the push to power vehicles with methods other than traditional gasoline. The popularity of hybrid gas-electric vehicles, combined with the introduction of completely electric vehicles, means that both urban and rural areas will need to have specialized infrastructure to accommodate these vehicles in the near future. MPO staff and local partners will continue to monitor developments in this emerging area of transportation and assist local agencies in preparation when requested.

- **Bike and Car Sharing-** Within Southwest Michigan, SWMPC has a formal federally-funded program encouraging car and vanpooling, particularly when traveling to work on a daily basis, in order to save fuel costs. Several popular national companies also offer opportunities for carpooling and shared rides between urban areas, which participants can schedule online. An increasingly attractive option for individuals who use a car only for occasional, short trips are formal car sharing services such as ZipCar and HourCar. These car sharing arrangements allow a member to book a car for a pre-specified amount of time, and return the

car to the same location. Similar arrangements are in place in cities with bicycles, as part of an effort to encourage active transportation. MPO staff will continue to manage the rideshare program within each of the three counties, and with guidance from MPO committees, explore the feasibility of car sharing and bike sharing arrangements in the context of southwest Michigan.

FUTURE METROPOLITAN PLANNING AREA

During the development of this LRTP, TwinCATS committees 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 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
- Travel patterns

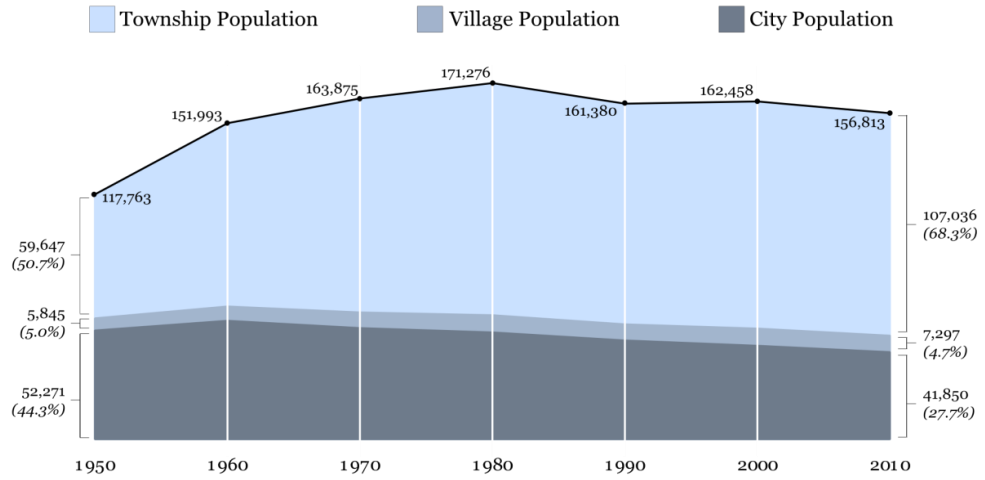
The MPO staff will use the American Community Survey (ACS) information which releases 1-year, 3-year, and 5-year data products **every year** to monitor the above listed information. As the new Census information will not be released before the next long range plan update, the MPO will rely on the information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

TRENDS

Between 1950 and 2000, Berrien County's population shifted away from incorporated cities and villages and into townships. Based on updated data from the 2010 Census, this trend has shown no sign of changing. In fact, Berrien County's overall population decreased between 2000 and 2010 and continues to fall below its highest level in 1980. The following diagram, illustrated in a previous section, illustrates long term trends in population movement.

Figure 16: Berrien County Total Population, 1950-2010

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%

GEOGRAPHIES

When the 2010 Census information was released, MPO staff expected to see connections to the existing urban areas. There had been some indications that the urban cluster in Coloma would extend south and connect to the northern portion of the TwinCATS MPO area through Benton Charter Township. However, the population growth in this area seemed to be trending northward into Van Buren County, and away from the TwinCATS MPO. Therefore, the Coloma area was not proposed to be part of the 2010 adjusted census urban boundary or part of the planning boundary for the study area. This will continue to be an area that is monitored by the MPO staff as the urban area boundaries are very close in proximity to one another.

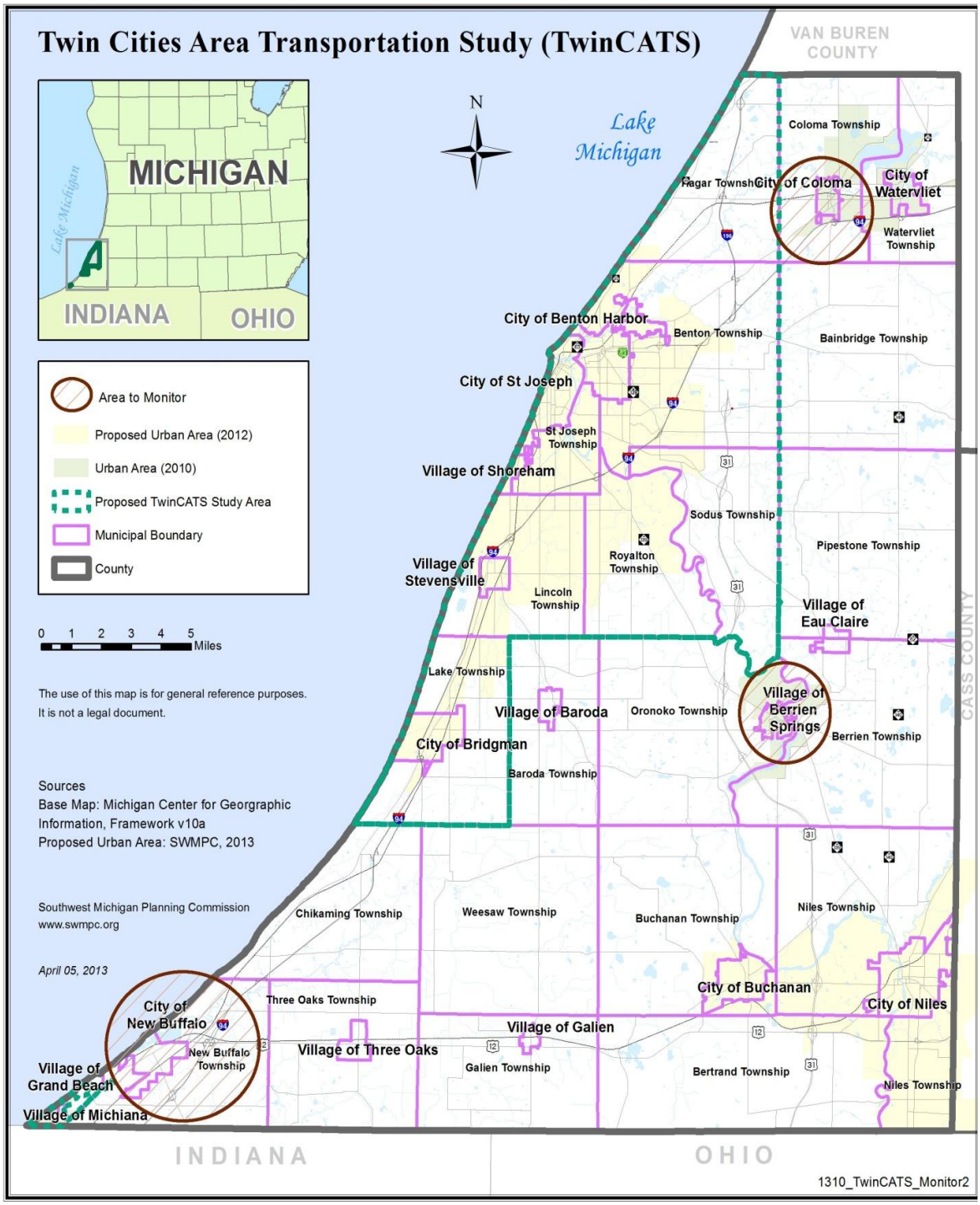
Another area that the MPO will be monitoring closely is along Berrien County's Lake Michigan coastline, specifically in the New Buffalo area. The Village of Grand Beach is already a satellite member of the TwinCATS MPO because it constitutes the Michigan portion of the Northern Indiana Planning Commission (NIRPC) planning area. However, Grand Beach was the only community in that portion of the County to experience population growth between 2000 and 2010, with the City of New Buffalo, New Buffalo Township and Michiana Village losing population. Therefore, the New Buffalo area was not proposed as part of the 2010 Adjusted Census Urban Boundary.

Current growth patterns indicate that the Metropolitan Area Boundary will not be expanding within the next twenty years, as the overall population of Berrien County continues to decline. Still certain communities will be monitored as they may continue to experience population growth

- Royalton Township grew 23 percent between 2000 and 2010.
- Baroda Township's declined between 2000 and 2010, but the village's population increased slightly and new development in this area indicates the possibility of population growth. The village is already a TwinCATS member.

Despite an overall population decline, there still is the possibility for pockets of growth, and a potential transformation of the TwinCATS planning boundary over the next 35 years. The map of areas to monitor highlights the communities discussed above that will be examined closely over the duration of this long range transportation plan.

Map 26: Areas to Monitor for Potential Future Inclusion in MPO Planning



MPO TIP 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 Twin Cities 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 means that they represent 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.

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. 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 TwinCATS urban area changes. This review will take place in the summer of 2013, after the TIP has been submitted.

Surface Transportation Program (STP): STP funds are designed 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 TwinCATS region will receive approximately $821,634 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): HSIP funds are intended 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 that goes directly to the TwinCATS MPO, local agencies are eligible to apply for these funds as stated above.

Congestion Mitigation and Air Quality Improvement (CMAQ): CMAQ funds are 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 as rideshare 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 County that can be utilized for projects within the MPO. For FY 2014 Berrien County received an allocation of $578,210. 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 (TAP): TAP 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. TwinCATS did not receive an allocation because its population was too small under the criteria set by the statewide distribution formula. However, TwinCATS member jurisdictions are still eligible to apply for TAP funds via a statewide competitive process, based on the merits of the individual project.

BASE AND ASSUMPTIONS USED IN FORECAST CALCULATIONS OF FEDERAL HIGHWAY FUNDS

Each year, the targets (amount TwinCATS is expected to receive) are calculated for each of these programs, based on federal apportionment documentation and state law. 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 make assumptions based on long-term historical trends unusable. Table 30 contains the federal transportation revenue projections for the 2014-2017 TIP.

Table 30: TwinCATS Federal Highway Transportation Revenue Projections

Fiscal Year (FY)	STP	CMAQ Funds (Berrien County)	TOTAL
2014	$821,634	$578,210	$1,399,844
2015	$838,067	$578,210	$1,416,277
2016	$854,828	$578,210	$1,433,038
2017	$871,925	$578,210	$1,450,135
TOTAL:	$3,386,454	$2,312,841	$5,699,295

PART II. 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.[13] 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,

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

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.[14]

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 match funding comes 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 together all of the distributions to cities, villages, and county road commissions, in the NATS area, to that for the TwinCATS area, an overall distribution total can be derived for the region. That amount that Berrien County Act 51 agencies can plan to receive in the TwinCATS area was $11,363,725.21 in FY 2011.

The Financial Work predicted an increase of 0.4 percent in state revenues for fiscal years 2014 through 2017. Table 31 shows the amount of MTF funding cities, villages, and road commissions in the TwinCATS area are projected to receive during the four-year TIP period, based on the agreed-upon rates of increase.

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

Table 31: Projected MTF Distribution to Act-51 Agencies in the TwinCATS Region for Highway Projects

2014	2015	2016	2017	Total
11,500,636.09	11,546,638.63	11,592,825.18	11,639,196.48	46,279,296.38

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.

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, 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 $460,897.20 a year with total local funding for the 2010-2014 period totaling approximately $2,304,456. It is

highly unlikely that there will be increases in local funding over the four-year TIP period. For the projects currently listed in the TIP there will be approximately 1,466,317 in the form of local funding.

Table 32: Road Projects with Local Match

Funding Year	Road projects with local match
2014	$129,855
2015	$1,116,910
2016	$149,675
2017	$69,877
Total	$1,466,317

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.

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.[15] 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.

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

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 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 to be taken off the top before the 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.[16] 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, 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 TwinCATS planning area and details the method used to estimate these costs. Table 33 highlights the total lane miles (the miles of federal aid eligible roads multiplied by the total number of lanes) for the system.

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

Table 33: Federal Aid Eligible Miles in the TwinCATS system

	Federal Aid Lane Miles
State Trunkline	349.365
Local Federal Aid Roads	379.358
All Federal Aid Eligible	728.331

Source: Roadsoft Database, 2013

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 highway system (roads with "I-," "US-," and "M-" designations).[17] About 349.365 lane miles of the state trunkline system are located the TwinCATS region. Assuming an allocation of $6,500 per lane mile for the operations and maintenance cost, MDOT should spend approximately $2,270,873 in the TwinCATS 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 of $5,000 per lane mile. This was then applied to the total lane mileage of non-trunkline federal-aid eligible roads in the TwinCATS 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 34.

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

Table 34: Projected Available Highway Operations and Maintenance Funding

FY	MDOT Estimate	Local Estimate	Regional Total
2014	$2,270,873	$1,896,790	$4,167,662
2015	$2,361,707	$1,972,662	$4,334,369
2016	$2,456,176	$2,051,568	$4,507,744
2017	$2,554,423	$2,133,630	$4,688,054
TOTAL	$9,643,178	$8,054,650	$17,697,829

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 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 sufficient 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 TwinCATS region, all projects accommodated for inflation from the submitting agency. Table 35 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. This is a summary.

Table 35: Highway Fiscal Constraint Demonstration

TwinCATS	2014		2015		2016		2017	
Funding	Avail	Prog	Avail	Prog	Avail	Prog	Avail	Prog
STP	$821,634.48	$821,524	$838,067.16	$837,634	$854,828.50	$856,324	$871,925.07	$854,163
CMAQ Berrien County	$578,210.29	$453,000	$578,210.29	$126,000	$578,210.29	459,000	$578,210.29	$494,000
TOTAL	$1,399,844.77	$1,274,524.00	$1,416,277.45	$963,634.00	$1,433,038.79	$1,315,324.00	$1,450,135.36	$1,348,163.00
Net Balance*	$125,320.77		$452,643.45		$117,714.79		$101,972.36	

**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 Berrien 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.

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.[18] Federal transit funding is similar to federal highway funding in that 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. Transportation Management Areas (TMAs), which are areas with populations of 200,000 or more, are given their own apportionment. Areas with population between 50,000 and 199,999, including the TwinCATS MPO, are awarded funds by the governor from the governor's apportionment.

Section 5310, Elderly and Persons with Disabilities: This program is intended to enhance mobility for seniors and persons with disabilities by providing funds for programs to serve the special needs of transit-dependent populations beyond traditional public transportation services and Americans with Disabilities Act (ADA) complementary paratransit services. Section 5310 incorporates the previous New Freedom Program and Elderly and Disabled Program. Operating assistance is also now available under this program.

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

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. Agencies in the TwinCATS MPO that would be eligible for these funds include Twin Cities Area Transportation Authority (TCATA) and Berrien Bus.

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 TwinCATS 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. Based on guidance from MDOT personnel, the TwinCATS region is slated to receive approximately $85,000 in 5339 funds annually. However, as of the approval date of this plan, the allocation amount has not been received officially from the state in writing.

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 County that can be utilized for projects within the MPO. For FY 2014 Berrien County will receive an allocation of $578,210. 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 36 shows the federal transit forecast for the FY 2014-17 TIP period.

Table 36: Federal Transit Funding Forecast for 2014-17

TwinCATS FY	Sec 5307	Sec 5310 (Sen/Dsbld)	Sec 5311 (Rural) Operating Funds	Sec 5339 Bus & Bus Facilities*	CMAQ Funds Berrien (Cass)	Total
2014	1,046,241	60,828	26,358	90,000	578,210	1,801,637
2015	1,060,679	61,667	26,721	91,260	578,210	1,818,537
2016	1,075,316	62,518	27,089	92,538	578,210	1,835,671
2017	1,090,155	63,380	27,462	93,832	578,210	1,853,039
Total	4,272,391	248,393	107,630	367,630	2,312,841	7,380,884

*TwinCATS MPO is eligible for the 5339 funds; however, MDOT is still finalizing its policy to allocate these funds as of the development of this plan. Unofficial guidance from MDOT suggests that the funding amount for TwinCATS will be $85,000 in 2014. A 1.4 percent growth rate was applied to the 5339 funds as it was to the other funding categories.

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, is 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.[19] Distributions from the CTF are used by public transit

[19] Hamilton, William E. *Act 51 Primer* (House Fiscal Agency, February 2007), p. 4.

agencies for matching federal grants and also for operating expenses. Approximately $157 million was distributed to the CTF in FY 2011.[20]

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 TwinCATS region received in FY 2013. The CTF amounts in the TwinCATS region were not constant from 2011 to 2013 for one reason:

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.

Funding was adjusted upward by 3.75 percent for state match and 0.37 percent 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 TwinCATS transit agencies are shown in Table 37, broken down by state match and state operating.

Table 37: State Transit (CTF) Revenue Projections for TwinCATS

FY	Sec 5307 State Operating	Sec 5307 Capital	Sec 5311 (Rural) Operating Funds State	Sec 5339 Bus & Bus Facilities (State)	Total
2014	848,126	36,312	15,055	Unknown	899,493
2015	851,264	37,673	15,110	Unknown	904,047
2016	854,413	39,085	15,165	Unknown	908,663
2017	857,574	40,550	15,221	Unknown	913,345
Total	3,411,377	153,620	60,551	Unknown	3,625,548

The third column of Table 37, 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

[20] MDOT Report 139 for 2011, Schedule A.

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 any 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 figures. Presuming that transit agencies spend all money that they receive each year, these data can be used for revenue projections as well. In addition, the agencies provided data on other miscellaneous funding.

Table 38: Local Transit Revenue Projections

FY TwinCATS	Berrien Bus	TCATA
2014	364,649	513,162
2015	364,649	513,162
2016	364,649	513,162
2017	364,649	513,162
TOTAL	1,458,596	2,052,648

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.[21] 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 requests from all agencies. 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 39 shows the amounts estimated to be available for transit capital and operations during the FY 2014-FY 2017 TIP period.

Table 39: Anticipated Amounts to be Expended on Transit Capital and Transit Operations

FY TwinCATS	TCATA Capital*	TCATA Operations*	Berrien Bus Capital	Berrien Bus Operations	Total
2014	0	2,204,000	0	52,060	2,256,060
2015	0	2,204,000	0	52,060	2,256,060
2016	125,000	2,204,000	0	52,060	2,381,060
2017	210,000	2,204,000	390,000	52,060	2,856,060
Total	335,000	8,816,000	390,000	208,240	9,749,240

These tables show the total project costs for FY 2014-2017 capital and operations with federal, state, and local funds for all of the TwinCATS transit agencies.

*TCATA submitted items for expected requests for 2014 only. These figures do not reflect the true capital and operations expected to be needed and received. Therefore only 2014 figures were used for this specific agency. The operations figures from 2014 were simply copied into the out years of 2015-2017. The items listed in the

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

TCATA capital come from the requested capital improvements through the CMAQ program which have been approved through the TwinCATS committee through FY 2017. It is anticipated that TCATA will submit applications for other funding years.

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 the 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 40 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.

Table 40: Transit Fiscal Constraint Demonstration

FY	Available Federal	Programmed Federal	Available State	Programmed State	Available Local	Programmed Local
2014	1,801,637	974,030	899,493	836,373	877,811	445,657
2015	1,818,537	706,030	904,047	730,373	877,811	445,657
2016	1,835,671	806,030	908,663	730,373	877,811	470,657
2017	1,853,039	874,030	913,345	730,373	877,811	445,657
Total	7,380,884	3,360,120	3,625,548	3,027,792	3,551,244	1,715,109

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.[22] 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 impact 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, include 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."

Based on guidance from local FHWA representatives, a list of projects from the LRTP was sent to each agency that submitted a project. Agencies that applied for projects were asked on their applications whether their projects would expand traffic capacity. In addition, agency contacts were asked to review each of their projects and determine responses to the following three questions:

- Will this project alter traffic patterns?
- Are all proposed improvements in the existing right-of-way?
- Is the project for resurfacing, safety, bus replacement, etc.?

In general, the projects proposed for LRTP are resurfacing/reconstruction projects that were entirely within the existing right-of-way, and even those projects that required new right-of-way did not add capacity or alter traffic patterns. One proposed project, the Botham Avenue Reconstruction Project in St. Joseph, involves simultaneous expansion of the water distribution system, as part of a local water distribution plan.

A possible project that may eventually expand traffic capacity in the region is the US-31 freeway. The US-31 Freeway project in Berrien County has been under development for over 30 years. The objective of the project has been to provide a freeway from the Indiana-Michigan border (and the Interstate 80 toll road to the south) to a logical terminus at the I-94/I-196 interchange. This freeway has been constructed up to Napier Avenue, and the current US-31 Freeway Connection to I-94 project seeks to provide a cost effective and environmentally sensitive alternative to complete the segment of US-31 between Napier Avenue and I-94.

According to MDOT, as of March 2013, the US-31 interchange project remains a deferred project. MDOT has completed design and plan review, and is acquiring real estate in the right-of-way per design requirements. Since design completion, no further progress has been made because of the absence of the funding needed to proceed with construction. MDOT's focus since 2004 has been on system preservation, leaving little funding available for new freeway construction. For more information on the US-31 connection to I-94 project, visit the project specific website:

http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22860---,00.html

A three step process was used to help meet federal environmental mitigation requirements in the TwinCATS region:

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. Identify and assess likely impacts on these species and areas from transportation projects.
3. Address possible mitigation strategies.

In addition to reaching out to community partners, SWMPC staff began to identify potentially impacted natural resources using GIS software and other tools available.

The first part of this section identifies Berrien County's endangered, threatened, and candidate species according to federal and state lists. The intent of this section is to raise awareness of the variety of sensitive species in the MPO region. Specific projects that actually encounter endangered, threatened, or candidate species will need to carefully consider how to proceed with the project in order to avoid or mitigate any possible

impacts on the species. The next part of the report identifies the MPO region's environmentally sensitive resources and the proximity of where the 2014-2017 transportation projects will be located.

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." 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 anadromous 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 County is home to many species that are included in the candidate, endangered, or threatened species categories.

Table 41 Includes threatened and endangered, and candidate species defined as follows:

- **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 USFWS has concluded that they should be proposed for addition to the Federal endangered and threatened species list. Candidate species receive no legal protection; however, conservation is encouraged since they may warrant future

protection under the Act. 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."

Table 41: Endangered Species of Berrien County

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.

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

Appendix B Biological Rarity Probability Value Map displays the probability of finding the species indicated in Table 41. The biological probability value is designed to highlight areas with known occurrences of rare species or high quality natural communities. This map can help protect biodiversity and minimize potential regulatory problems by directing development away from areas with a high likelihood of encountering a sensitive species. 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. All of the planned transportation projects have a high or moderate probability of rare species or high quality natural communities present in the buffer area. The data in this map is coarse, but depending on the intensity of the transportation improvement project, care should be taken to identify species or high quality natural communities that could be impacted in the buffer areas.

ANALYSIS OF ENVIRONMENTALLY SENSITIVE AREAS

SWMPC has included the environmentally sensitive resources listed below in the effort to mitigate impacts in the region. It should be noted that not all resources have been included in the analysis. In general, resources were included if data were readily available in digital format for mapping, data was available for the entire TwinCATS region and data were reasonably up-to-date and expected to remain so in the near future. Just because an environmentally sensitive resource is not included in this analysis does not mean that is should not be considered at the project level.

Environmentally Sensitive Resources (maps found in Appendix B):

1. Culturally Significant Places (parks, trails, cemeteries, schools, boat launches and cultural, historical and archeologically significant sites)
2. Critical Dunes
3. Agricultural Lands
4. Wetland Areas
5. Watersheds and Water Features - lakes, rivers, streams, county drains, trout lakes/streams, flood prone areas, wetlands, groundwater recharge areas, drinking wells and wellhead protection areas
6. Forested Lands
7. Potential Conservation Areas
8. Bio-Rarity Areas

Protection of endangered species can often be the reason for creation of parks and preserves, and many of these species are found in wetlands. In addition, locations of endangered species often fluctuate depending on season, habitat condition, and human development patterns.

Culturally Significant Places: Parks, Trails, and Other Recreational Lands - not including golf courses or camps. Cemeteries **-** an area set apart for or containing graves, tombs, or funeral urns, especially one that is not a churchyard; burial ground; graveyard.

Wetlands: land that has a wet and spongy soil, as a marsh, swamp, or bog.

Watersheds and Water Features: Floodplains - 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.

Other water features include lakes, ponds, rivers, coldwater streams, and county drains.

Well heads: Michigan's Well Head Protection Program (WHPP) was developed in response to 1986 amendments to the federal Safe Drinking Water Act (SDWA). Unlike many programs throughout the country, wellhead protection is a voluntary program which is implemented on a local level through the coordination of activities by local, county, regional, and state agencies. Guidelines for the program were developed by the Michigan Department of Environmental Quality (MDEQ). Although the program is voluntary, Public Water Supply Systems (PWSS) who choose to participate in wellhead protection must develop a local WHPP consistent with the guidelines established by the state. Local WHPPs must specifically address seven elements which include the establishment of roles and duties, wellhead protection area (WHPA) delineation, identification of potential sources of contamination within the WHPA, development of strategies to manage potential sources and minimize threats to the PWSS, development of contingency plans for water supply emergencies, identification of procedures for the development of new well sites and incorporate them into the local WHPP, and provide opportunities for public participation.

Forested Lands - Forested areas provide many benefits such as recreational and aesthetic opportunities, providing wildlife habitat, stabilizing stream banks and slopes, reducing erosion and sedimentation, acting as a barrier to reduce noise, filtering water and cleaning the air. Forested areas could be impacted if trees are removed, heavy equipment is utilized nears woodlands or polluted stormwater enters forested areas.

Forested areas in southwest Michigan are fragmented by agriculture and development. The remaining forested lands should be protected as much as possible. Appendix B Forested Areas Map indicates where planned transportation projects could impact forested areas. Four of the 13 planned projects have at least ¼ of the acreage in the ¼ mile buffer area as forested land and the potential to impact forested areas.

Potential Conservation Areas - Natural areas are a fundamental component of a community's long-term environmental and economic health. Natural areas perform important natural functions such as water filtration and they provide recreational opportunities and wildlife habitat that enhance the overall vitality of a community. Abundant natural resources once surrounded population centers in the area. Now, much reduced in size, natural areas are becoming fragmented by agriculture and development. These remaining sites are the foundation of this area's natural heritage; they represent the last remaining remnants of the areas native

ecosystems, natural plant communities and scenic qualities. Consequently, it is to a community's advantage that these sites be carefully integrated into the planning for future development.

Striking a balance between development and natural resource conservation and preservation is critical if southwest Michigan is to maintain its unique natural heritage. Map 27 indicates where the most significant Potential Conservation Areas (PCAs) are located. PCAs 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. Scoring criteria used to prioritize potential conservation area sites included: total size, size of core area, length of stream corridor, landscape connectivity, restorability of surrounding land, vegetation quality, and biological rarity score (for more information on this see section on endangered species).

FEMA identifies flood plain areas for disaster planning purposes.

The next step in the process was to identify the 2014-2017 transportation projects which are in close proximity to these natural resources by mapping the resources and transportation project limits. The planned transportation projects for the TwinCATS area are listed in Table 42.

The likelihood of possible impacts from the planned projects are represented on a series of resource maps found in Appendix B that show a buffer area around the planned projects. SWMPC staff utilized GIS software to map each project with a buffer, depending on the type of environmental resource[23], to show the potential area that could be affected. The buffer was applied to each transportation project as follows:

- Water features, wetlands, floodplains, and woodlands sites were given a buffer size of 1,320 feet of a road project, or one-quarter mile.
- 250 feet of a site project (i.e. bridge replacement)
- Parklands, cemeteries, conservation easements, and cultural sites were given a 250 foot buffer from potential projects

Potentially impacted resources are highlighted on each map. Following Table 42 is a narrative description of environmentally sensitive resources.

For completed maps, please see Appendix B. The findings from an analysis of these maps are presented below.

23 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.

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 in a pro-active manner by project stakeholders to prevent potential negative impacts to the environment. Table 42 found in this section, and the maps in Appendix B, each 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.

Table 42 Environmental Features Potentially Impacted by 2013-2040 LRTP Projects

PROJECT NAME	BUFFER (ft)	PCA	POTENTIAL WETLAND	CRITICAL DUNE	COLDWATER STREAMS	WATER FEATURES	FLOOD ZONE	FORESTED AREA*	PARKS & PRESERVES (250 ft)	AGRICULTURAL AREAS	WATER FEATURE NAMES
I-94 WB	1320	X	X	X		X	X	X	X	X	Unnamed streams
Brown School Road	1320	X	X		X	X	X	X			
Brown School Road	1320	X	X		X	X	X	X			
Hollywood Road	1320	X	X		X	X				X	
I-94	250										
I-94	250										
Marquette Woods Road Resurfacing	1320	X	X		X	X	X	X		X	
Botham Avenue Reconstruction Project	1320	X	X		X	X	X				
US-31 Roadside Facility	250									X	
Shawnee Road Jericho to Date	1320					X				X	
Colfax Avenue Resurfacing	1320	X	X			X	X				
John Beers Road: Hollywood Road West to Township Line	1320	X	X		X	X	X			X	
Hilltop Road	1320					X					

All of the proposed transportation projects listed in the table 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. The sections that follow present additional considerations for currently scheduled transportation projects.

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 accurately measure progress in meeting both transportation goals and environmental stability needs.

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.

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Four creeks that are at least partially within the TwinCATS region were part of the survey: Blue Creek, Yellow Creek, Love Creek, and Pipestone Creek.

The main potential barriers to species movement within the TwinCATS area appear to be culverts, which are drains that allow water to flow under a road or railroad. According to the 2011 study, the vast majority of the culverts observed in the TwinCATS area do not completely stop fish movement. However, with the exception of a long stretch of Yellow Creek in St. Joseph Township and Royalton, most of the culverts currently in place do block at least some fish species movement.

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 region. 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.

CULTURALLY SIGNIFICANT PLACES

Appendix B: Significant Places Map shows where all of the community parks are located within the study area; these do not include golf courses or camps. SWMPC has identified public parks dedicated to open spaces and recreation areas in the region using county and statewide databases. Possible impacts on parks and recreation areas should be considered during the planning, design, construction, and maintenance of transportation projects. Parks and recreation areas are considered impacted if land is acquired for a project, if land is otherwise occupies in a manner that is adverse to the recreational purpose of the land, or if a project in the proximity of the land substantially impacts it purpose.

Appendix B: Significant Places Map indicates where those areas with non-motorized facilities, schools, cemeteries, and boat launches. Non-motorized facilities can range from off-road walking/biking trails, to on-road bicycle lanes, to paved shoulders, to sidewalks. Possible impacts on non-motorized facilities should be considered during the planning, design, construction, and maintenance of transportation projects. Non-motorized facilities are considered impacted if they are removed, if travel patterns are changes to the detriment of pedestrian/bicyclist safety, or if existing non-motorized pathways are bisected thereby reducing connectivity along the pathway or between destinations.

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 TwinCATS 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 TwinCATS 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.
    - 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. [24]

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.

[24] 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.

WATERSHEDS POTENTIALLY IMPACTING THE TWINCATS 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 reasonable proximity to the TwinCATS 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.

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?

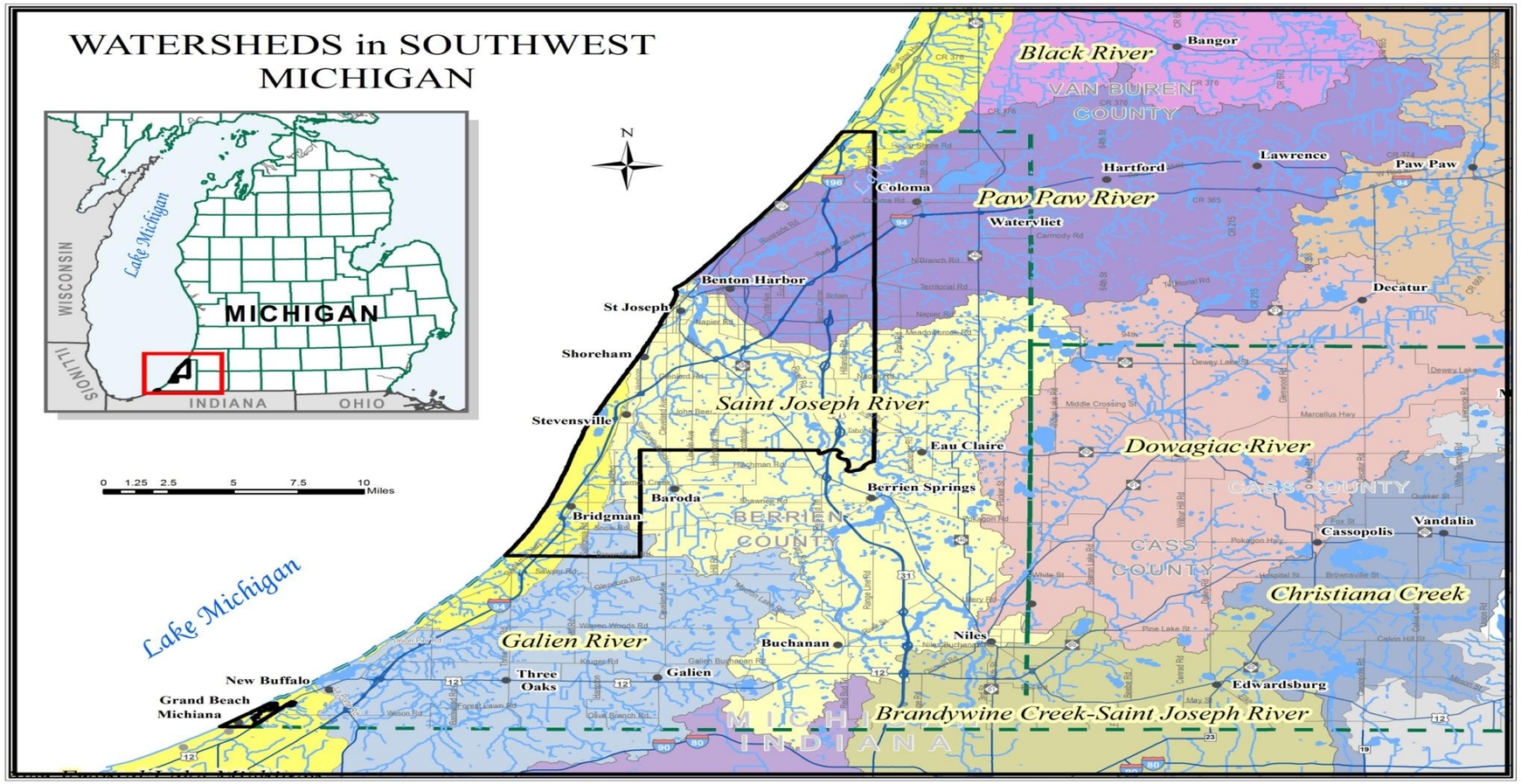
A watershed is the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. You are sitting in a watershed now. Homes, farms, ranches, forests, small towns, big cities and more can make up watersheds. Some watersheds cross county, state, and even international 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. Map 27 delineates the watersheds of Southwest Michigan.

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 percent of the total watershed area.

The rain and snow that falls onto a watershed and does not evaporate is stored in the soil. 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.

A discussion of each of the watersheds impacting the TwinCATS region can be found in the pages that follow.

Map 27: Watersheds in Southwest Michigan



Legend

- Twin Cities Area Transportion Study (TwinCATS) -proposed
- County
- Water Features

Watersheds

- Saint Joseph River
- Black River
- Paw Paw River
- N Branch Paw Paw River
- Galien River
- Dowagiac River
- Christiana Creek
- Brandywine Creek-St Joseph River
- Lake Michigan Drainage

Data Sources
Base Layers: Michigan Geographic Framework, V10a
Watersheds: U.S. Department of Agriculture, Service Center, 2012

June 11, 2013

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

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 percent living in Michigan. The most populated county is St. Joseph, IN. The watershed is largely agricultural. More than 50 percent of the riparian habitat is agricultural/urban, while 25-50 percent remains forested. Learn more about this watershed and the management plan at http://www.stjoeriver.net/.

GALIEN

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 percent rural land, 23 percent forest land, and 5 percent 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.

PAW PAW

The Paw Paw River flows westward through southwestern Lower Michigan before joining the St. Joseph River and emptying into Lake Michigan near the City of Benton Harbor. The PPRW encompasses approximately 285,557 acres (446 square miles) in Kalamazoo, Van Buren and Berrien Counties with the largest portion in Van Buren County (203,720 acres). In the eastern portion of the watershed, the North Branch joins the South Branch to become the main stem of the Paw Paw River. Other significant tributaries include Brandywine Creek, Hayden Creek, the East Branch, the West Branch, Brush Creek, Pine Creek, Mill Creek, Blue Creek and Ox Creek. The total length of the Paw Paw River and these significant tributaries is approximately 145 miles. The PPRW includes

5,818 acres of lakes and ponds. For more information about the Paw Paw River Watershed, please visit http://www.swmpc.org/pprw.asp.

CONSULTATION

The 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 greater 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 TwinCATS 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.

The Consultation List is presented in the table below.

Table 43: Consultation List

Name	Specification	City	State
Abonmarche Consultants, Inc.		Benton Harbor	MI
Area Agency on Aging Region VI		St Joseph	MI
Benton Charter Township		Benton Harbor	MI
Benton Harbor Area Schools	High School	Benton Harbor	MI
Berrien Bus		Berrien Springs	MI
Berrien Co. Community Development		St. Joseph	MI
Berrien County	Road Commission	Benton Harbor	MI
Berrien County	Parks & Recreation	St. Joseph	MI
Berrien County	Administration	St. Joseph	MI
Berrien County Board of Commissioners		St. Joseph	MI
Berrien County Conservation District		Berrien Springs	MI
Berrien County Drain Commissioner		St. Joseph	MI
Berrien County Historical Association		Berrien Springs	MI
Berrien County Planning Commission		St. Joseph	MI

Berrien County Public Transit		Berrien Springs	MI
Berrien Regional Education Service Agency		Berrien Springs	MI
Berrien Springs Public Schools	High School	Berrien Springs	MI
Bridgman Public Schools	High School	Bridgman	MI
CARE-A-VAN		Coloma	MI
Chikaming Open Lands		Lakeside	MI
City of Benton Harbor		Benton Harbor	MI
City of Benton Harbor	Dept of Public Works	Benton Harbor	MI
City of Benton Harbor	Economic Development	Benton Harbor	MI
City of Bridgman		Bridgman	MI
City of New Buffalo		New Buffalo	MI
City of St Joseph		St Joseph	MI
Coloma/Watervliet Area Chamber of Commerce		Coloma	MI
Consumer's Energy Inc		Covert	MI
Consumers Power Company		Kalamazoo	MI
Cornerstone Alliance		Benton Harbor	MI
Countryside Academy		Benton Harbor	MI
Department of Human Services	Berrien County	Benton Harbor	MI

Disability Network of SW MI - Berrien/Cass		St Joseph	MI
Eau Claire Public Schools	High School	Eau Claire	MI
Federal Highway Administration	Michigan Division	Lansing	MI
Friends of Harbor Country Trails			MI
Friends of the St Joseph River		Athens	MI
Hagar Township		Riverside	MI
Lake Charter Township		Bridgman	MI
Lakeshore Public Schools	Administration	Stevensville	MI
Lakeshore Public Schools	High School	Stevensville	MI
Lincoln Charter Township		Stevensville	MI
Mary's City of David		Benton Harbor	MI
MDEQ	Head Quarters	Lansing	MI
MDEQ	Air Quality Division	Lansing	MI
MDEQ	Surface Water Quality Division	Plainwell	MI
MDEQ Kalamazoo	Water Division	Kalamazoo	MI
MDOT	Coloma TSC	Benton Harbor	MI
MDOT	Southwest Region	Kalamazoo	MI
MDOT	Bureau of Transportation Planning	Lansing	MI
MDOT	Intermodal Section	Lansing	MI
MDOT	Multi-Modal Transportation Services Bureau	Lansing	MI

MDOT	Non-Motorized Transportation	Lansing	MI
MDOT	Passenger Transportation Division	Lansing	MI
MDOT	Statewide Planning	Lansing	MI
MDOT	Urban/Public Transportation	Lansing	MI
MDOT	Intermodal Section	Lansing	MI
MDOT	Bureau of Transportation Planning	Lansing	MI
Merritt Engineering Inc		Stevensville	MI
MI Dept of Agriculture	Environmental Stewardship Division	Lansing	MI
MI Dept of Agriculture & Rural Development		Lansing	MI
MI Dept of Natural Resources	Lansing	Lansing	MI
MI Dept of Natural Resources	Plainwell	Plainwell	MI
Michigan Association of Railroad Passengers		Livonia	MI
Michigan Association of Railroad Passengers		Livonia	MI
Michigan Economic Develop Corp		Lansing	MI
Michigan House 78th District		Lansing	MI
Michigan House 79th District		Lansing	MI
Michigan Senate 21st District	Lansing Office	Lansing	MI
Michigan Works	Benton Harbor	Benton Harbor	MI

MSU Extension	Berrien County	Benton Harbor	MI
National Railroad Passenger Corp		Niles	MI
Natural Resources Conservation Service	Berrien County	Berrien Springs	MI
NW Indiana Regional Plan. Commission		Portage	IN
Pokagon Band of Potawatomi Indians		Dowagiac	MI
Preserve the Dunes		Riverside	MI
River Valley Public Schools	High School	Three Oaks	MI
Royalton Township		St Joseph	MI
Sarett Nature Center		Benton Harbor	MI
Sodus Township		Sodus	MI
Southwest Michigan Community Action Agency		Benton Harbor	MI
Southwest Michigan Land Conservancy		Portage	MI
Southwest Michigan Regional Airport		Benton Harbor	MI
St. Joseph Charter Township		St Joseph	MI
St. Joseph High School		Saint Joseph	MI
St. Joseph Public Schools	Administration	St. Joseph	MI
St. Joseph River Harbor Authority	Berrien County Administration Center	St. Joseph	MI
State Historic Preservation Office	Preserve America	Lansing	MI
SW MI Home Builders Association		Berrien Springs	MI

The Nature Conservancy		Comstock Park	MI
Twin Cities Area Transportation Authority		Benton Harbor	MI
Village of Grand Beach		Grand Beach	MI
Village of Michiana		New Buffalo	MI
Village of Shoreham		St Joseph	MI
Village of Stevensville		Stevensville	MI
Western Michigan University	Southwest Campus	Benton Harbor	MI
Wightman & Associates, Inc		Benton Harbor	MI

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 TwinCATS 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 TwinCATS 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 TwinCATS 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 TwinCATS 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).

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 percent 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 percent 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 C.

CONCLUSION

After reviewing the EJ maps with the project locations, it has been determined that there will be no disproportionately 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. Most local projects programmed in TwinCATS have a goal of preservation and maintenance, thus avoiding negative environmental consequences associated with new construction. It should be noted that only roadway projects were mapped here. The proposed new line haul route for TCATA was not mapped, as the final route configuration has yet to be worked out. Depending on its location, the new route could significantly benefit EJ populations. In addition, several other projects such as the mobility manager have no specific geographic location within the TwinCATS region and therefore could not be mapped. The mobility manager assists with outreach to transit dependent populations, which may include certain segments of the EJ populations.

In addition, traffic signal upgrades were not mapped, as this would potentially lead to the maps becoming far too cluttered and confusing. There are traffic signal upgrades programmed in both EJ and non-EJ areas, demonstrating that the efficiency and air quality benefits of these projects will be derived regionally.

AIR QUALITY ANALYSIS

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, Benton Harbor

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.

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.
- 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.
- May 21, 2012, Federal Register notice, (77FR 30160), revoked the 1997 ozone standard for transportation conformity purposes only.

IMPACT TO STATE OF MICHIGAN AND TWINCATS STUDY AREA

In a letter dated April 30, 2012 from Lisa P. Jackson of 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 designating all of Michigan 'unclassifiable/attainment'." This letter is located in Appendix F.

According to an MDOT Office Memorandum from Pete Porciello dated June 14, 2012, "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 TwinCATS, which 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, TwinCATS does

not need to demonstrate air quality conformity or perform an air quality analysis for this 2013-2040 long range transportation plan update.

Sources:

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

http://www.epa.gov/oms/

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.

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.

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

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

Table 44: Coordination with State LRP Goals

MDOT LRP Goals **MDOT's goals are in no particular order*	TwinCATS 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, 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	**4**
Strengthening the State's Economy – Provide transportation infrastructure and services that strengthen the economy and competitive position of Michigan and its	**1, 4**

regions for the 21st Century.	
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 TwinCATS 2040 LRTP goals. TwinCATS 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.

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 conducts 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

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 (NIRPC)

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 (NIRPC) 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, removing logs, replacing culvert and cleaning 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 percent of federal aid eligible roads good, 65 percent fair, and 10 percent in poor condition. Non- Federal aid roads rated 12 percent of federal aid eligible roads good, 53 percent fair, and 35 percent 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, and 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

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 use.

Table 45: Community Planning Documents

Municipality	Master Plan	Development Plan	Recreation Plan	Plan Location
City of Benton Harbor	2011 Master Plan	2010 Downtown Strategic Plan		In the Library & online
Benton charter Township	2002 Comprehensive Land Use Plan			In the Library
City of Bridgman		1997 General Development Plan	2005 Parks and Recreation Plan	In the Library
Village of Grand Beach	2009 Master Plan			CD in the Library & online
Lake Charter Township	2007 Master Plan		2004 Parks and Recretion Plan	In the Library
Lincoln Charter Township		2002 Development Plan	2011 Recreation Plan	In the Library
Village of Michiana	2005 Master Plan			Online
Royalton Township				
Village of Shoreham	2009 Comprehensive Land Use Master Plan			In the Library
Sodus Township		2004 General Development Plan		In The library
Village of Stevensville	2001 Comprehensive Master Plan			In the Library

St. Joseph Charter Township	2007 Comprehensive Plan		2003 Parks and Recreation Plan	In the Library
City of St. Joseph	2007 Master Plan Comprehensive		2011 Parks and Recreation Master Plan	In the Library

APPENDIX A: TRANSIT SERVICE BY JURISDICTION

The following tables show Twin Cities Area Transportation Authority (TCATA) Dial a Ride service and expenditures between and within different jurisdictions in the TwinCATS region.

TCATA 2012 Dial A Ride Passenger Trips Between Communities.

Passenger is picked up in one community and travels to another community

Communities	Outbound Trips**	Inbound Trips**	Total Trips	Total Expense
City of Benton Harbor / Benton Twp.	22,744	19,989	42,733	$579,887
City of Benton Harbor / Royalton	1393	1042	2435	$33,043
City of Benton Harbor / City of St. Joseph	5875	3978	9853	$133,705
City of Benton Harbor / St. Joseph Twp.	581	373	954	$12,946
City of Benton Harbor / Lake Michigan College	4662	3320	7982	$108,316
City of St. Joseph / St. Joseph Twp.	240	270	510	$6,921
City of St. Joseph / Royalton	200	272	472	$6,405
City of St. Joseph / Lake Michigan College	393	331	724	$9,825
Benton Twp. / City of St. Joseph	7024	5839	12863	$174,551
Benton Twp. / Royalton	941	912	1853	$25,145
Benton Twp. / Lake Michigan College	2647	2426	5073	$68,841
Benton Twp. / St. Joseph Twp.	813	686	1499	$20,341
St. Joseph Twp. / Royalton	122	36	158	$2,144
St. Joseph Twp. / Lake Michigan College	235	192	427	$5,794
Royalton / Lake Michigan College	61	38	99	$1,343

TCATA 2012 Dial A Ride Passenger Trips Within Communities.

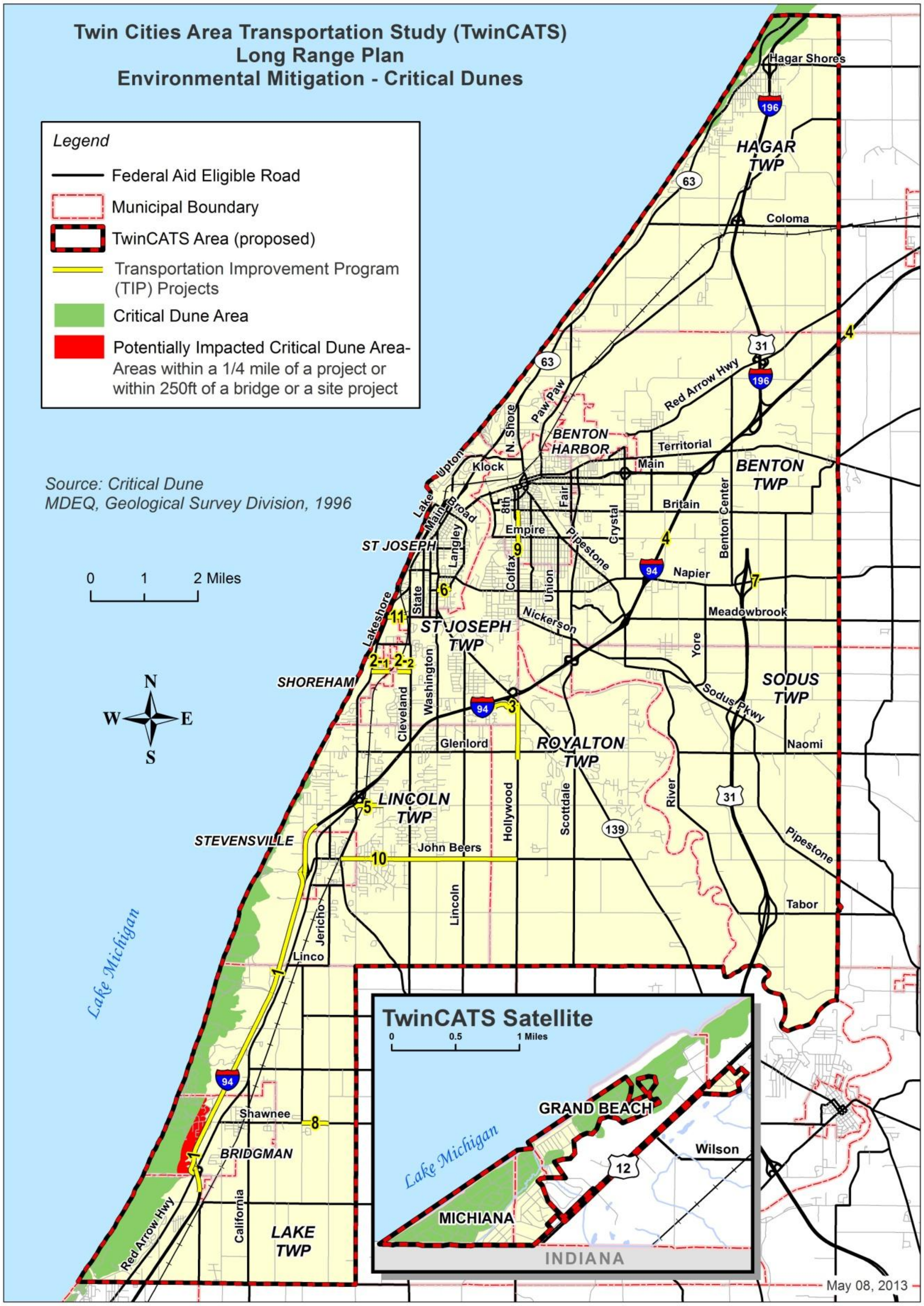
Passenger is picked up and dropped off within the same community.

Community	Trips**	Total Expense*
Within City Benton Harbor	12933	$175,500.81
Within City St. Joseph	2175	$29,514.75
Within Benton Twp	24142	$327,606.94
Within St. Joseph Twp.	15	$203.55
Within Royalton	4	$54.28

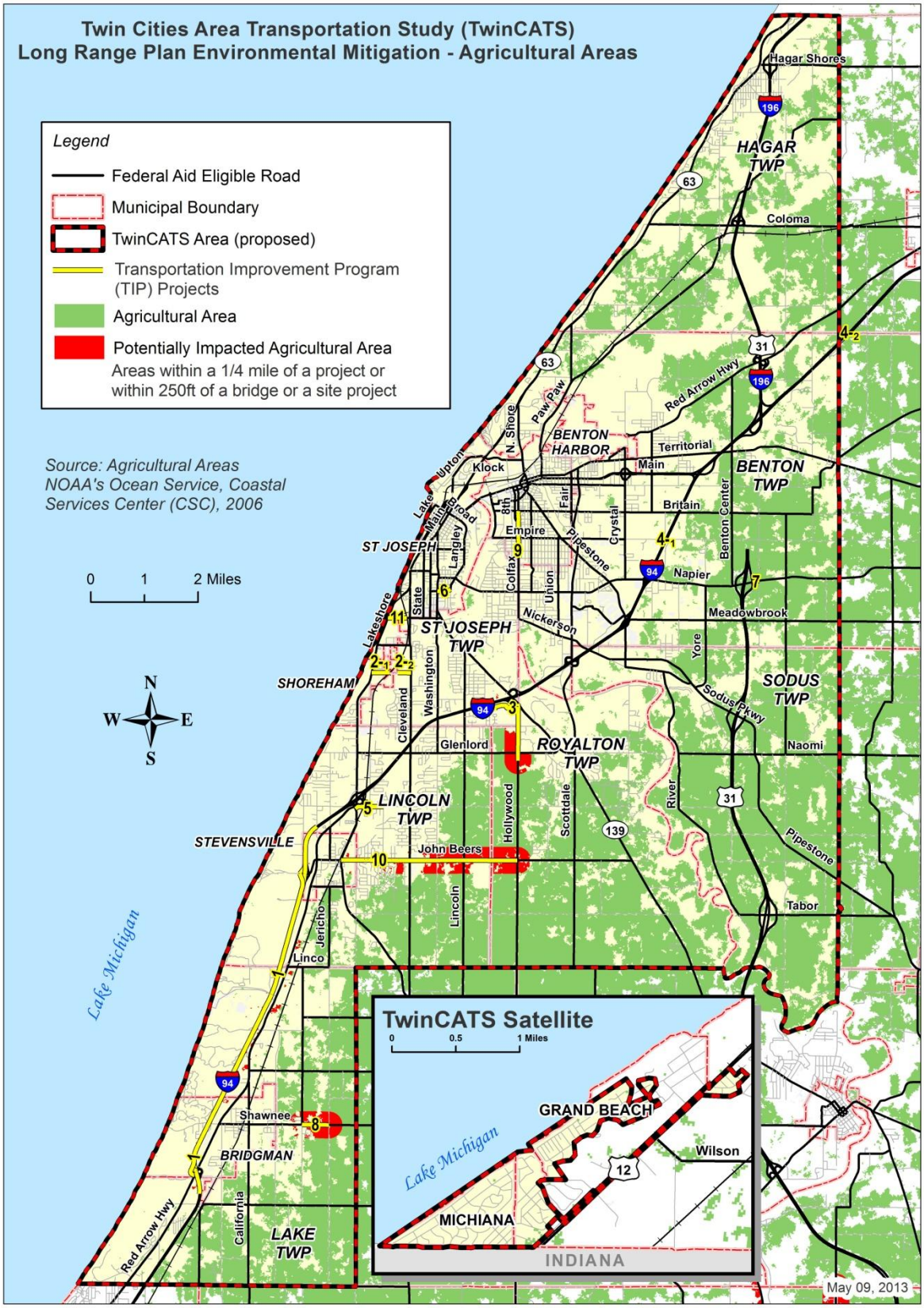
***Twin Cities Area Transportation Authoirty 2012 Year to Date Report*

**Data Source 2011 National Transit Database $13.57 per trip*

APPENDIX B: ENVIRONMENTAL MITIGATION MAPS



Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan
Environmental Mitigation - Critical Dunes
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Critical Dune Area
Potentially Impacted Critical Dune Area- Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Critical Dune
MDEQ, Geological Survey Division, 1996
0 1 2 Miles
N
W
E
S
Lake Michigan
Hagar Shores
HAGAR TWP
Coloma
Red Arrow Hwy
BENTON HARBOR
Territorial
Main
BENTON TWP
Britain
Klock
Empire
Napier
Meadowbrook
ST JOSEPH
ST JOSEPH TWP
Nickerson
SHOREHAM
SODUS TWP
Sodus Pkwy
Naomi
ROYALTON TWP
Glenlord
LINCOLN TWP
STEVENSVILLE
John Beers
Pipestone
Tabor
Linco
Shawnee
BRIDGMAN
LAKE TWP
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
Wilson
MICHIANA
INDIANA
May 08, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan Environmental Mitigation - Agricultural Areas
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Agricultural Area
Potentially Impacted Agricultural Area
Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Agricultural Areas
NOAA's Ocean Service, Coastal Services Center (CSC), 2006
0 1 2 Miles
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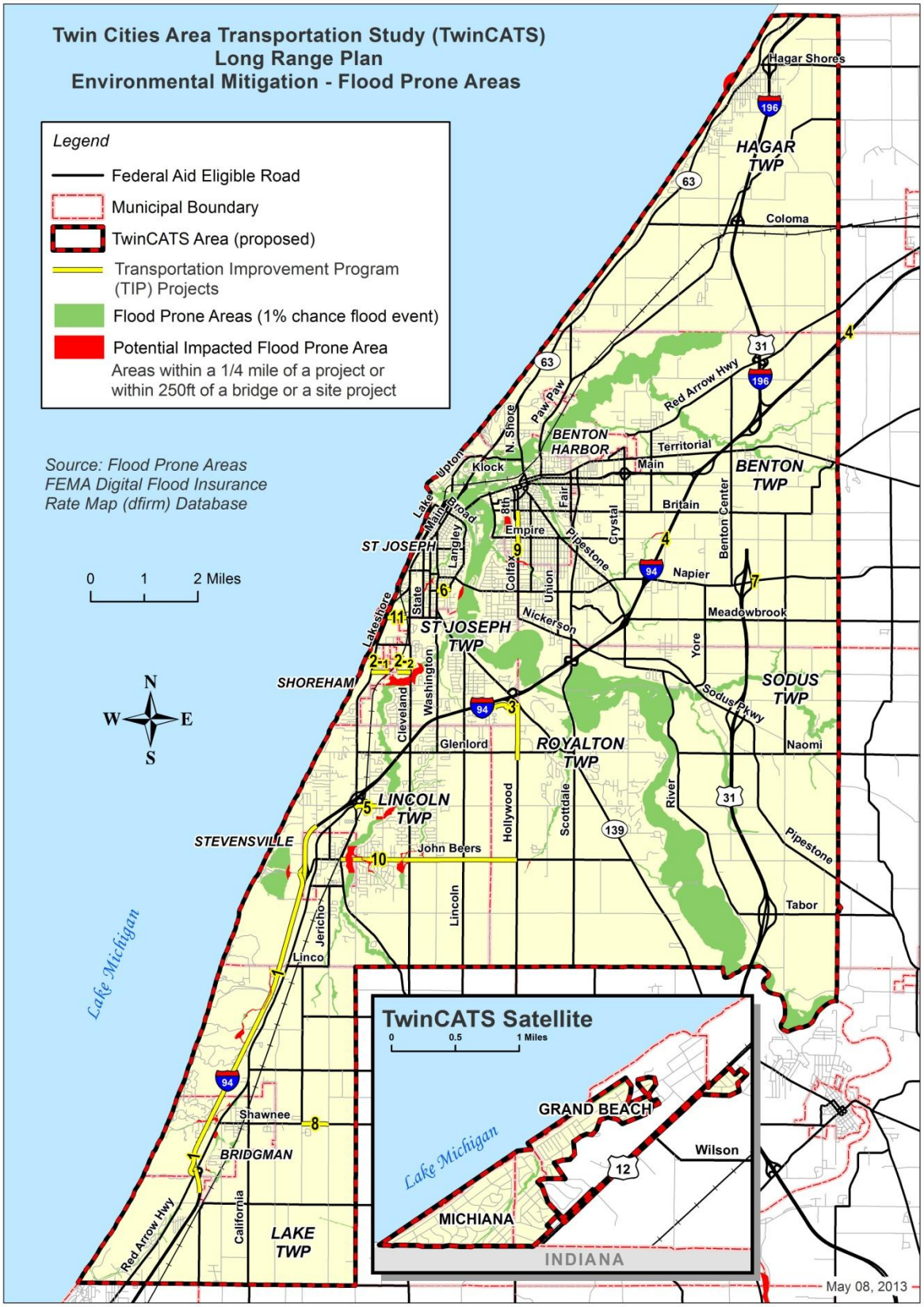
Hagar Shores
HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
ST JOSEPH
ST JOSEPH TWP
SHOREHAM
SODUS TWP
ROYALTON TWP
LINCOLN TWP
STEVENSVILLE
BRIDGMAN
LAKE TWP
Napier
Meadowbrook
Glenlord
Naomi
John Beers
Tabor
Shawnee
Linco
Lake Michigan
Red Arrow Hwy
Territorial
Main
Britain
Empire
Klock
Upton
Lake
Main
Broad
N. Shore
Paw Paw
8th
Fair
Crystal
Pipestone
Benton Center
Langley
Colfax
Union
Nickerson
State
Lakeshore
Cleveland
Washington
Yore
Sodus Pkwy
Hollywood
Scottdale
River
Lincoln
Jericho
California
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
Wilson
MICHIANA
INDIANA
Lake Michigan
May 09, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan
Environmental Mitigation - Flood Prone Areas
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Flood Prone Areas (1% chance flood event)
Potential Impacted Flood Prone Area
Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Flood Prone Areas
FEMA Digital Flood Insurance
Rate Map (dfirm) Database
0 1 2 Miles
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HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
ST JOSEPH
ST JOSEPH TWP
SHOREHAM
SODUS TWP
ROYALTON TWP
LINCOLN TWP
STEVENSVILLE
BRIDGMAN
LAKE TWP
Lake Michigan
Territorial
Main
Britain
Napier
Meadowbrook
Glenlord
Naomi
John Beers
Tabor
Shawnee
Linco
Red Arrow Hwy
Paw Paw
Upton
Klock
Empire
Langley
Colfax
Union
Nickerson
State
Lakeshore
Washington
Cleveland
Yore
Sodus Pkwy
Hollywood
Scottdale
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Benton Center
Crystal
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GRAND BEACH
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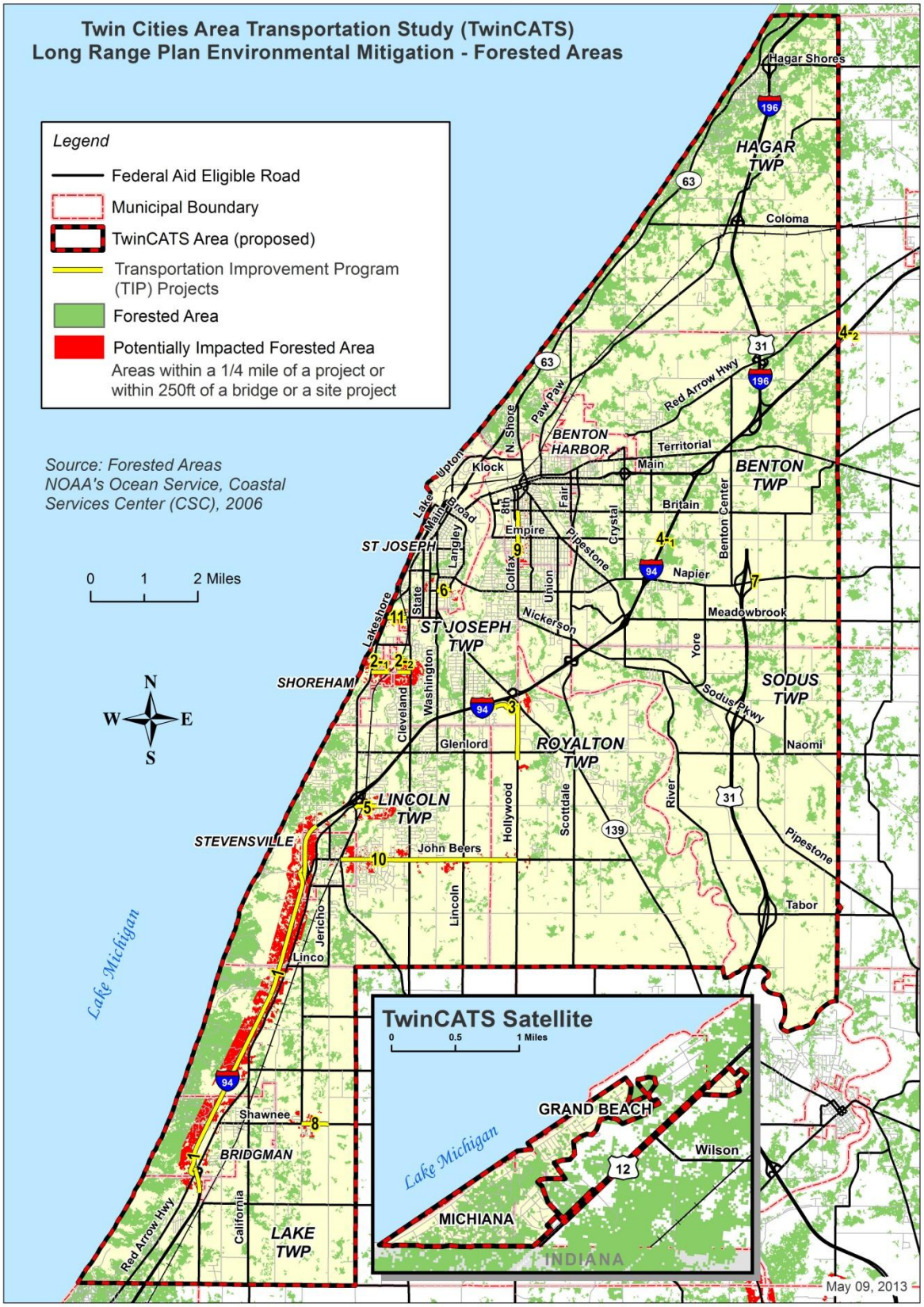
Lake Michigan
May 08, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan Environmental Mitigation - Forested Areas
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Forested Area
Potentially Impacted Forested Area
Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Forested Areas
NOAA's Ocean Service, Coastal Services Center (CSC), 2006
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HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
ST JOSEPH
ST JOSEPH TWP
SHOREHAM
SODUS TWP
ROYALTON TWP
LINCOLN TWP
STEVENSVILLE
BRIDGMAN
LAKE TWP
Napier
Meadowbrook
Glenlord
Naomi
John Beers
Tabor
Britain
Territorial
Main
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Lake Michigan
Red Arrow Hwy
Paw Paw
N. Shore
Upton
Lake Michigan Road
Langley
Colfax
Union
Nickerson
Pipestone
Crystal
Benton Center
Fair
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State
Lakeshore
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Sodus Pkwy
Hollywood
Scottdale
River
Lincoln
Jericho
California
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
Wilson
MICHIANA
INDIANA
Lake Michigan
May 09, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan
Environmental Mitigation - Potential Conservation Areas
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (Proposed)
Transportation Improvement Program (TIP) Projects
Potential Conservation Area (PCA)
Potentially Impacted Conservation Area
Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Potential Conservation Area (PCA)
Michigan Natural Features Inventory
Potential Conservation Area Model
for Southwest Michigan, 2007
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HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
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ST JOSEPH TWP
SHOREHAM
Napier
Meadowbrook
SODUS TWP
Glenlord
ROYALTON TWP
Naomi
LINCOLN TWP
STEVENSVILLE
John Beers
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BRIDGMAN
LAKE TWP
Lake Michigan
Territorial
Main
Britain
Empire
Klock
Upton
Lake Shore
Main Broad
N Shore
Paw Paw
Red Arrow Hwy
Benton Center
Pipestone
Crystal
Fair
8th
Langley
Colfax
Union
Nickerson
State
Lakeshore
Yore
Sodus Pkwy
Washington
Cleveland
Hollywood
Scottdale
River
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California
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
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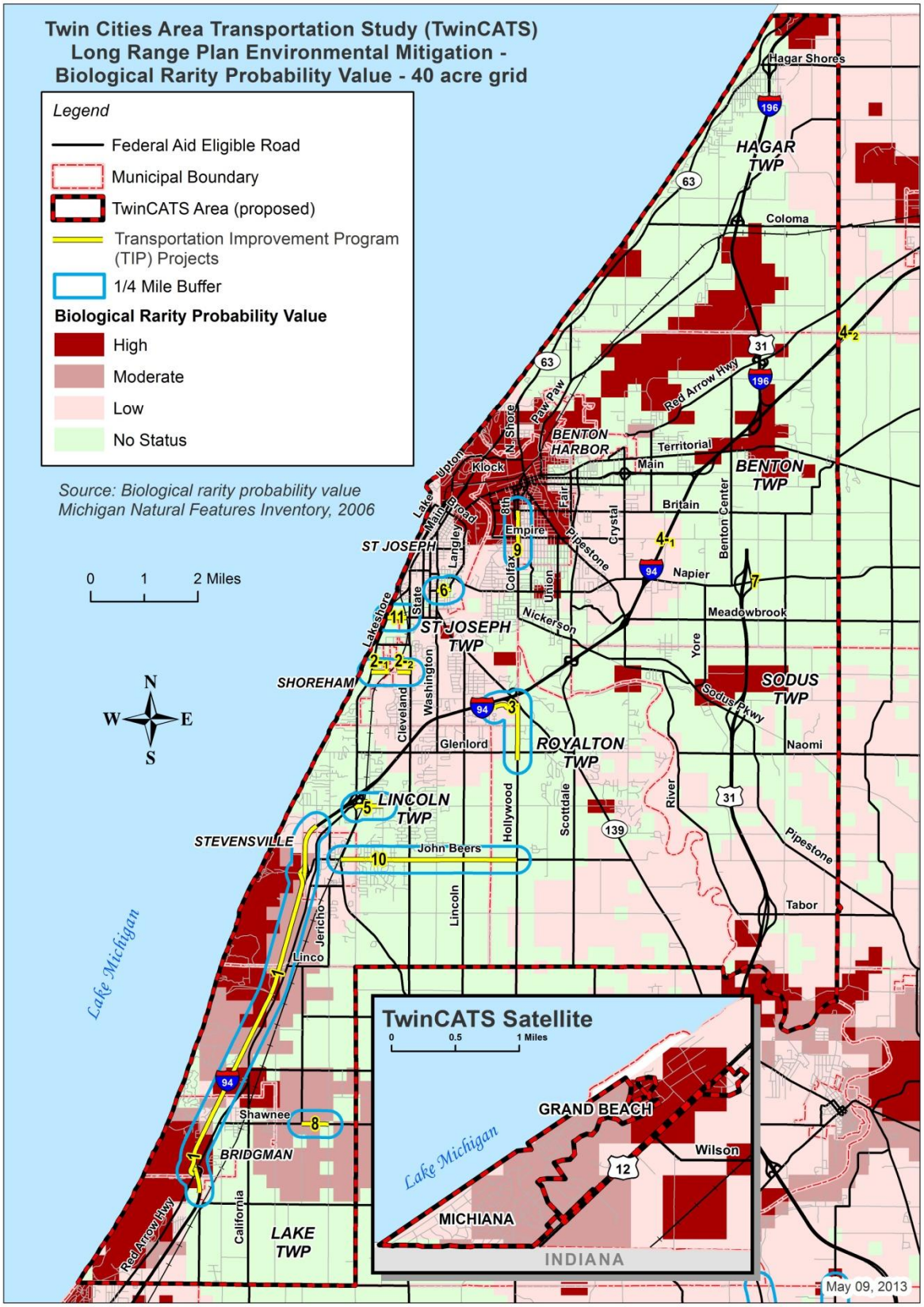
INDIANA
Lake Michigan
May 08, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan Environmental Mitigation -
Biological Rarity Probability Value - 40 acre grid
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
1/4 Mile Buffer
Biological Rarity Probability Value
High
Moderate
Low
No Status
Source: Biological rarity probability value
Michigan Natural Features Inventory, 2006
0 1 2 Miles
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HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
ST JOSEPH
ST JOSEPH TWP
SHOREHAM
SODUS TWP
ROYALTON TWP
LINCOLN TWP
STEVENSVILLE
BRIDGMAN
LAKE TWP
Napier
Meadowbrook
Glenlord
Naomi
Tabor
Britain
Territorial
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John Beers
Shawnee
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Lake Michigan
Red Arrow Hwy
Paw Paw
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Sodus Pkwy
TwinCATS Satellite
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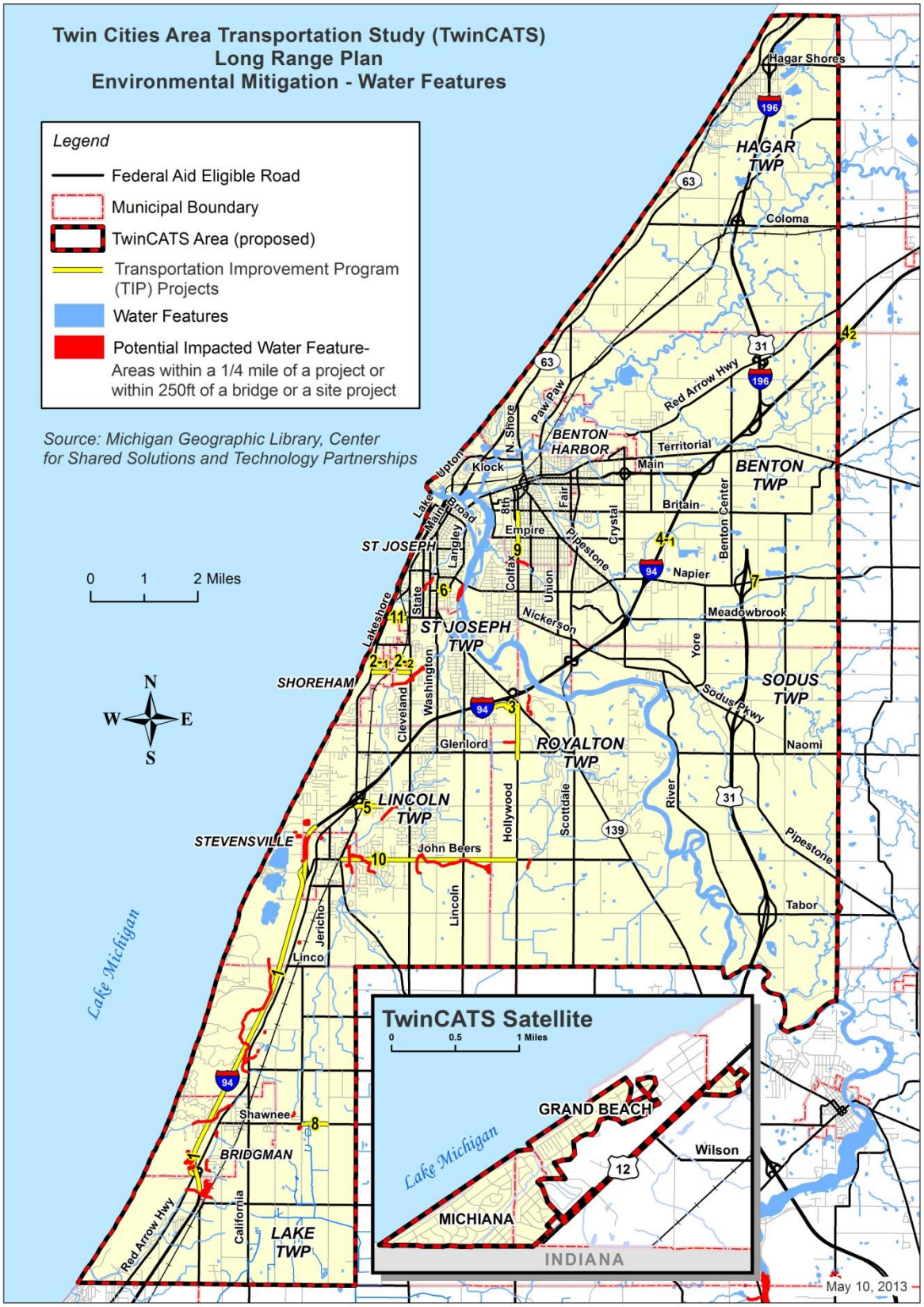
INDIANA
Lake Michigan
May 09, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan
Environmental Mitigation - Water Features
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Water Features
Potential Impacted Water Feature-
Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Michigan Geographic Library, Center for Shared Solutions and Technology Partnerships
0 1 2 Miles
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Hagar Shores
HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
Territorial
Main
Britain
Red Arrow Hwy
Paw Paw
N. Shore
Upton
Klock
Lake
Main
Broad
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Crystal
Benton Center
Empire
Pipestone
Langley
ST JOSEPH
Colfax
Union
Napier
Meadowbrook
Nickerson
State
Lakeshore
ST JOSEPH TWP
Yore
SODUS TWP
SHOREHAM
Washington
Cleveland
Sodus Pkwy
Glenlord
ROYALTON TWP
Naomi
LINCOLN TWP
Hollywood
Scottdale
River
STEVENSVILLE
John Beers
Pipestone
Tabor
Lincoln
Jericho
Linco
Lake Michigan
Shawnee
BRIDGMAN
California
LAKE TWP
Red Arrow Hwy
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
Wilson
MICHIANA
INDIANA
May 10, 2013


Twin Cities Area Transportation Study (TwinCATS)
Long Range Plan
Environmental Mitigation - Wetland Areas
Legend
Federal Aid Eligible Road
Municipal Boundary
TwinCATS Area (proposed)
Transportation Improvement Program (TIP) Projects
Wetland
Potentially Impacted Wetland- Areas within a 1/4 mile of a project or within 250ft of a bridge or a site project
Source: Wetlands
Michigan Geographic Library, Center for Shared Solutions and Technology Partnerships
0 1 2 Miles
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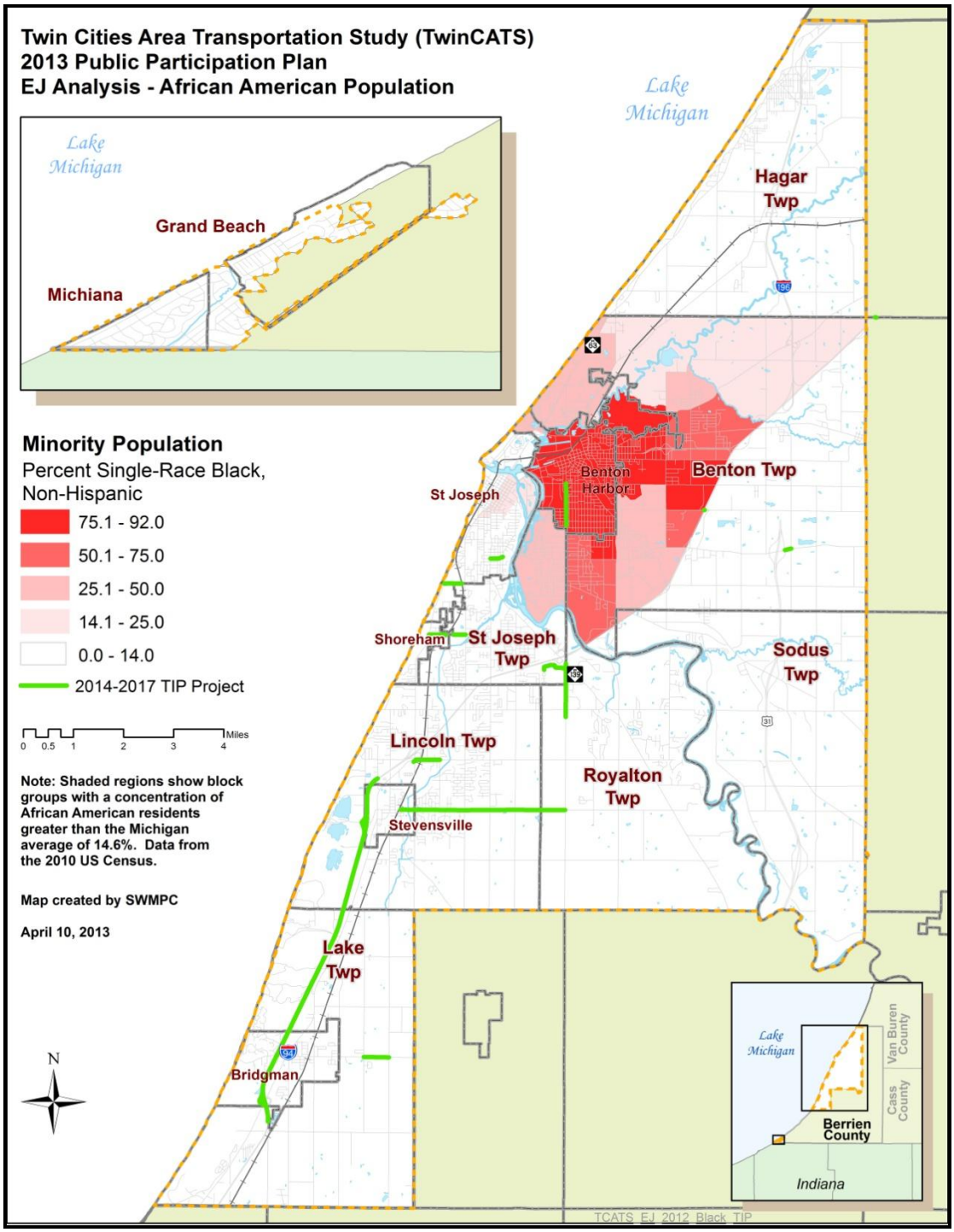
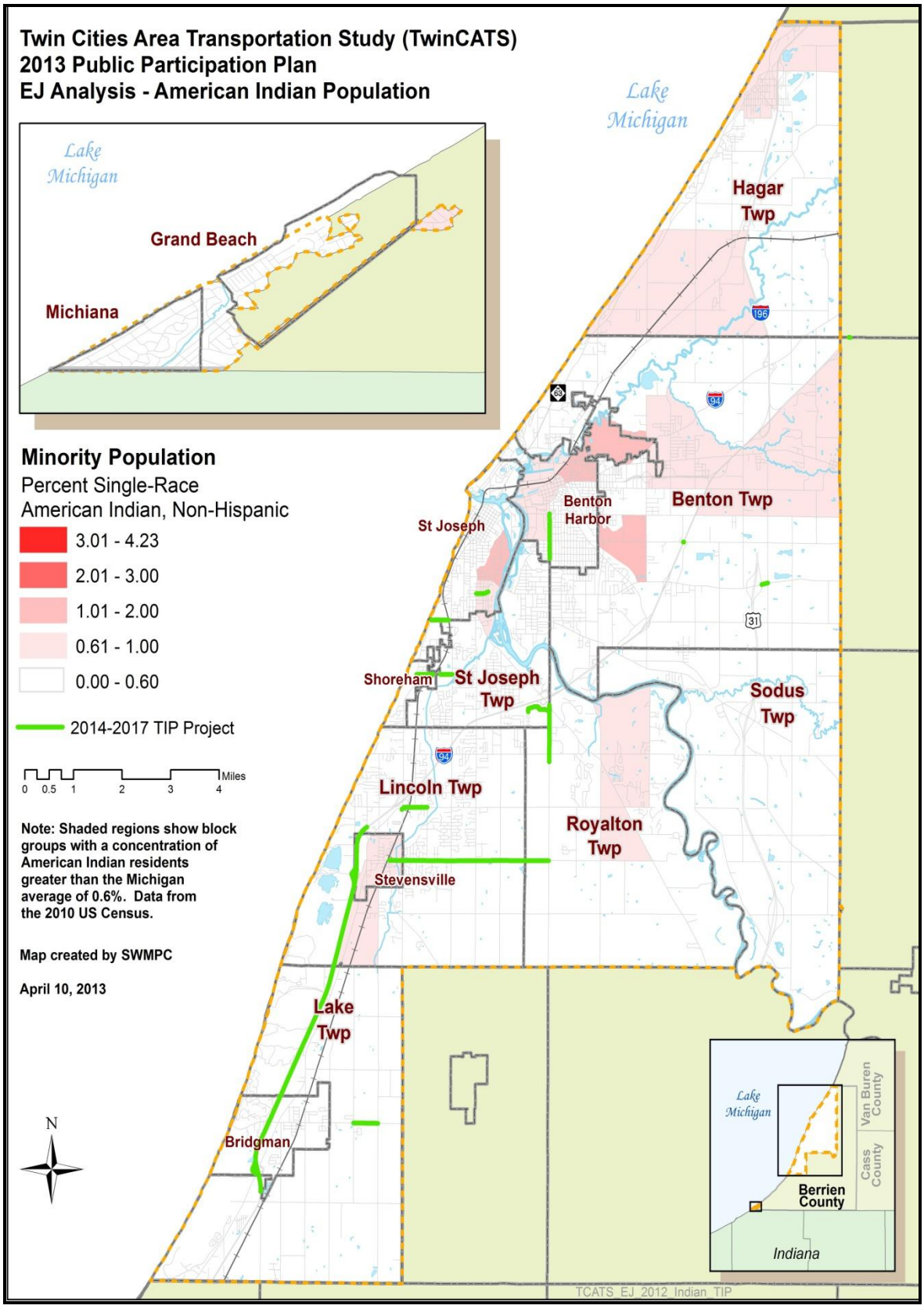
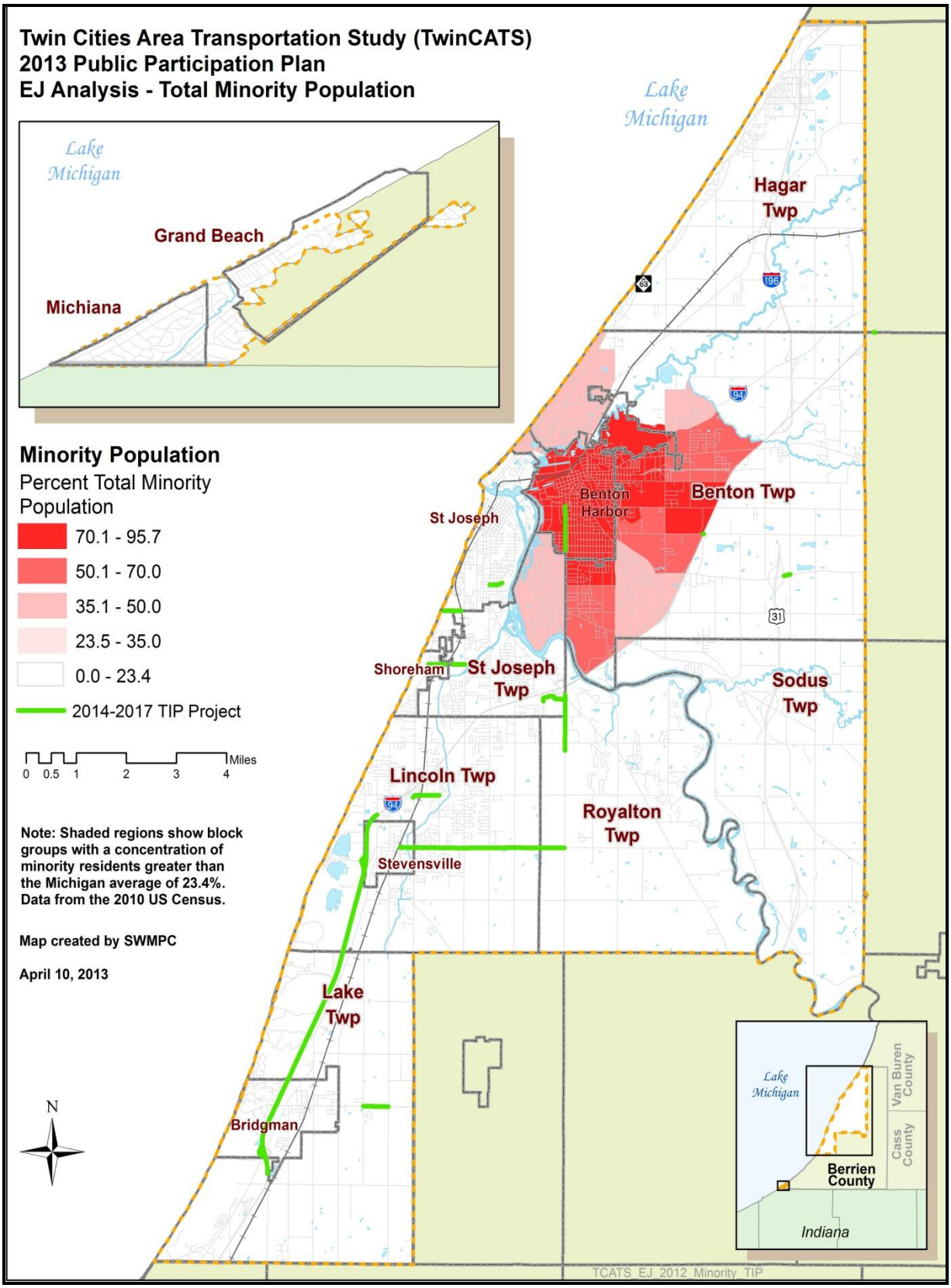
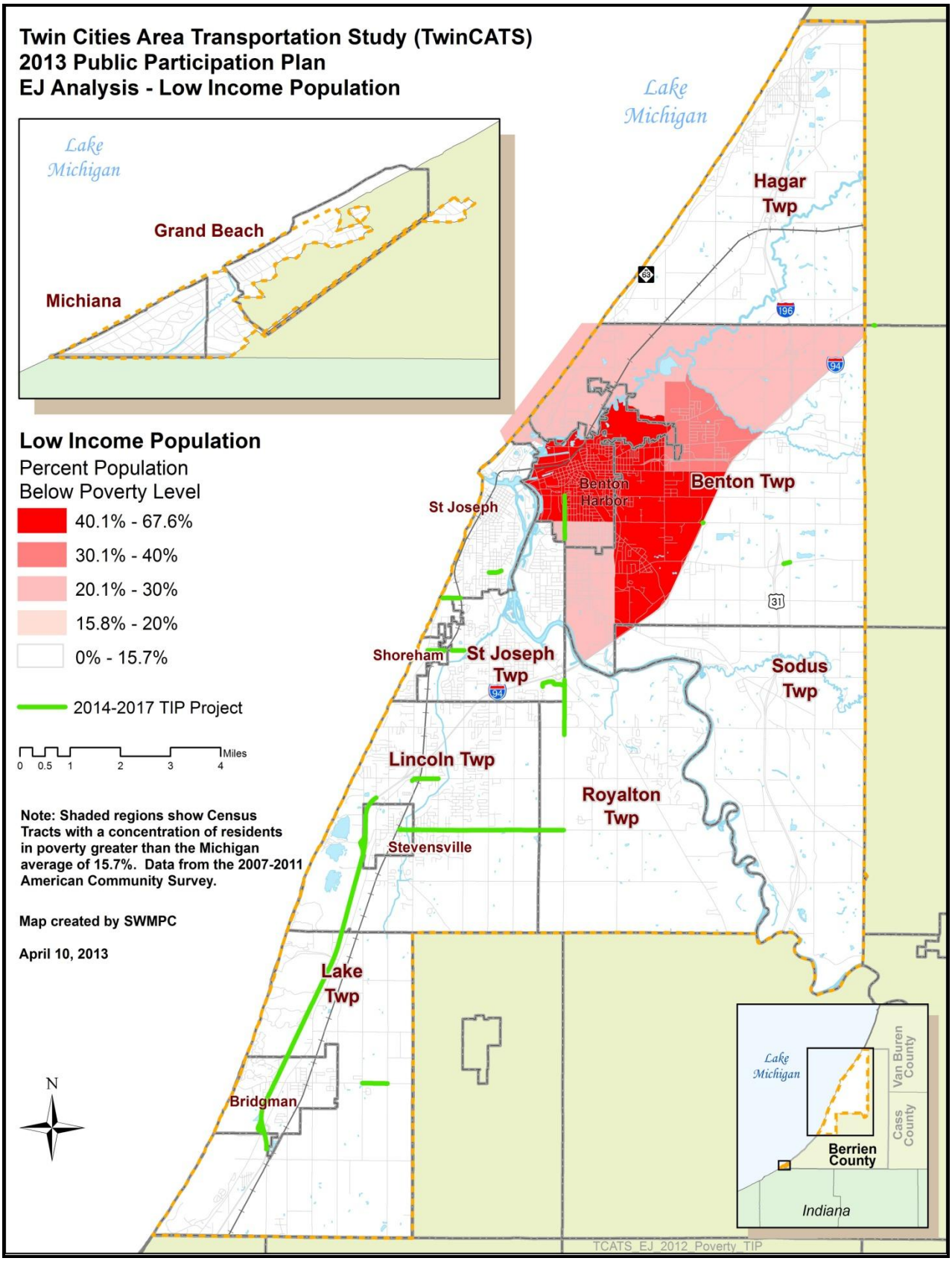
HAGAR TWP
Coloma
BENTON HARBOR
BENTON TWP
Territorial
Main
Britain
Klock
Upton
Lake
Main
Broad
8th
Fair
Empire
Pipestone
Crystal
Benton Center
Napier
Meadowbrook
Red Arrow Hwy
Paw Paw
N. Shore
ST JOSEPH
Langley
Colfax
Union
Nickerson
State
Lakeshore
ST JOSEPH TWP
SHOREHAM
Washington
Cleveland
Yore
SODUS TWP
Sodus Pkwy
Naomi
Glenlord
ROYALTON TWP
LINCOLN TWP
Hollywood
Scottdale
River
John Beers
STEVENSVILLE
Lincoln
Jericho
Linco
Tabor
Pipestone
Lake Michigan
Shawnee
BRIDGMAN
California
LAKE TWP
Red Arrow Hwy
TwinCATS Satellite
0 0.5 1 Miles
GRAND BEACH
Wilson
MICHIANA
INDIANA
Lake Michigan
May 08, 2013

APPENDIX C ENVIRONMENTAL JUSTICE MAPS




Twin Cities Area Transportation Study (TwinCATS)
2013 Public Participation Plan
EJ Analysis - American Indian Population
Lake Michigan
Grand Beach
Michiana
Minority Population
Percent Single-Race
American Indian, Non-Hispanic
3.01 - 4.23
2.01 - 3.00
1.01 - 2.00
0.61 - 1.00
0.00 - 0.60
2014-2017 TIP Project
0 0.5 1 2 3 4 Miles
Note: Shaded regions show block groups with a concentration of American Indian residents greater than the Michigan average of 0.6%. Data from the 2010 US Census.
Map created by SWMPC
April 10, 2013
N
Hagar Twp
Benton Harbor
Benton Twp
St Joseph
Shoreham
St Joseph Twp
Sodus Twp
Lincoln Twp
Royalton Twp
Stevensville
Lake Twp
Bridgman
Van Buren County
Cass County
Berrien County
Indiana
TCATS_EJ_2012_Indian_TIP


Twin Cities Area Transportation Study (TwinCATS)
2013 Public Participation Plan
EJ Analysis - Total Minority Population
Lake Michigan
Grand Beach
Michiana
Minority Population
Percent Total Minority Population
70.1 - 95.7
50.1 - 70.0
35.1 - 50.0
23.5 - 35.0
0.0 - 23.4
2014-2017 TIP Project
0 0.5 1 2 3 4 Miles
Note: Shaded regions show block groups with a concentration of minority residents greater than the Michigan average of 23.4%. Data from the 2010 US Census.
Map created by SWMPC
April 10, 2013
N
Hagar Twp
Benton Harbor
Benton Twp
St Joseph
Shoreham
St Joseph Twp
Sodus Twp
Lincoln Twp
Royalton Twp
Stevensville
Lake Twp
Bridgman
Van Buren County
Cass County
Berrien County
Indiana
TCATS_EJ_2012_Minority_TIP


Twin Cities Area Transportation Study (TwinCATS)
2013 Public Participation Plan
EJ Analysis - Low Income Population
Lake Michigan
Grand Beach
Michiana
Low Income Population
Percent Population
Below Poverty Level
40.1% - 67.6%
30.1% - 40%
20.1% - 30%
15.8% - 20%
0% - 15.7%
2014-2017 TIP Project
0 0.5 1 2 3 4 Miles
Note: Shaded regions show Census Tracts with a concentration of residents in poverty greater than the Michigan average of 15.7%. Data from the 2007-2011 American Community Survey.
Map created by SWMPC
April 10, 2013
N
Hagar Twp
Benton Harbor
Benton Twp
St Joseph
Shoreham
St Joseph Twp
Sodus Twp
Lincoln Twp
Royalton Twp
Stevensville
Lake Twp
Bridgman
Van Buren County
Cass County
Berrien County
Indiana
TCATS_EJ_2012_Poverty_TIP

APPENDIX D: PUBLIC INVOLVEMENT NOTICES

AFFP
NATS & TwinCATSThe Niles-Bucha

Affidavit of Publication

STATE OF MICHIGAN } SS
COUNTY OF BERRIEN }

Donna Knight, being duly sworn, says:

That she is Classified Manager of the Niles Daily Star, a daily newspaper of general circulation, printed and published in , Berrien County, Michigan; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

May 31, 2013

NATS & TwinCATS
The Niles-Buchanan-Cass Area Transportation Study (NATS) and Twin Cities Area Transportation Study (TwinCATS) would like to announce the official release of their Long Range Transportation Plans and Transportation Improvement Programs for public comment to begin on May 30, 2013 and end on June 8, 2013. All of the documents can be viewed electronically as indicated below. If you would like to receive a hard copy of the plan, please contact the SWMPC at 185 E. Main St., Suite 701 Benton Harbor, MI 49022; Phone: (269) 925-1137; Fax: (269) 925-0288 or email at manig@swmpc.org.

TwinCATS
· Long Range Transportation Plan can be viewed at http://www.swmpc.org/twincats2040.asp
· Transportation Improvement Program can be viewed at http://www.swmpc.org/twincats1417tip.asp
NATS
· Long Range Transportation Plan can be viewed at http://www.swmpc.org/nats_2040.asp
· Transportation Improvement Program can be viewed at http://www.swmpc.org/nats_1417_tip.asp.

That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Donna Knight

Classified Manager

Subscribed to and sworn to me this 31st day of May 2013.

Rhonda Rauen

Rhonda Rauen, Notary Public, Berrien County, MI

My commission expires: September 20, 2014

RECEIVED
JUN 3 2013
BY: .....

03103028 00012172

Terri Moore
Southwest Michigan Planning Comm
185 E. Main Street, Suite 701
BENTON HARBOR, MI 49022

AFFP
LRP & TIP Public HearingsPUBLI

Affidavit of Publication

STATE OF MICHIGAN } SS
COUNTY OF BERRIEN }

Jennifer Flewellen, being duly sworn, says:

That she is Classified Manager of the Herald Palladium, a Daily newspaper of general circulation, printed and published in St Joseph, Berrien County, Michigan; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

March 17, 2013

LRP & TIP Public Hearings
PUBLIC COMMENTS SOUGHT FOR TRANSPORTATION PLANNING WORK THROUGHOUT BERRIEN AND CASS COUNTY
The public is encouraged to attend a series of three public meetings held by the Twin Cities Area Transportation Study (TwinCATS) http://www.swmpc.org/twincats.asp and the Niles-Buchanan-Cass Area Transportation Study (NATS) http://www.swmpc.org/nats.asp metropolitan planning organizations to discuss the status of the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRP) that cover the Benton Harbor and St. Joseph area (TwinCATS) and the Niles, Buchanan, and southern Cass County region (NATS).
TwinCATS meetings will be held from 5-7 pm at Michigan Works 499 W Main St., Benton Harbor, MI 49022 on March 20, April 17, and May 22, 2013.
NATS meetings will be held from 5-7 pm at the Niles Public Library 620 E Main St., Niles, MI 49120 on March 27, April 24, and May 29, 2013.
If you cannot attend the public meetings your comments may be sent to Suzann Flowers, Transportation Planner at the Southwest Michigan Planning Commission flowerss@swmpc.org; phone (269) 925-1137 x 17; fax (269) 925-0288; mail 185 E. Main St. Suite 701 Benton Harbor, MI 49022.

Publisher's Fee: $ 102.72
That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Subscribed to and sworn to me this 17th day of March 2013.

Karin Crawford, Notary Public Berrien Co, Michigan

60002289 60388156 269-925-0288

TERRI MOORE
SW MICH PLANNING COMMISSION(HP)
185 E MAIN
SUITE 701
BENTON HARBOR, MI 49022

AFFP
TwinCATS/NATS Long Range Plan

Affidavit of Publication

STATE OF MICHIGAN }
COUNTY OF BERRIEN } SS

Lynne Cobianco, being duly sworn, says:

That she is Classified Manager of the Herald Palladium, a Daily newspaper of general circulation, printed and published in St Joseph, Berrien County, Michigan; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

September 25, 2011

TwinCATS/NATS Long Range Plan Goal Development Workshops

The Southwest Michigan Planning Commission is seeking public input at 2 meetings being held to discuss transportation priorities within the Twin Cities Transportation Area and the Niles-Buchanan-Cass Transportation Area.

Wed., Oct. 12, 2011
5:30-7:00 p.m.
Michigan Works-Benton Harbor
499 W. Main St.
Benton Harbor, MI 49022

Wed., Oct. 19, 2011
6:00-7:30 p.m.
Niles District Library- Community Room
602 E. Main St.
Niles, MI 49120

For more information on the Long Range Plan development process contact Planner Suzann Flowers, Southwest Michigan Planning Commission, 185 E. Main St., Suite 701, Benton Harbor, MI 49022-- 269-925-1137 x17-- flowerss@swmpc.org OR go to www.swmpc.org/2013lrp.asp
HP/adv. September 25, 2011

Publisher's Fee: $ 81.12
That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Lynne Cobianco

Subscribed to and sworn to me this 25th day of September 2011.

Karin K. Crawford

Karin Crawford, Notary Public Berrien Co, Michigan
My commission expires 10/18/2012

60002289 60236270 269-925-0288

TERRI MOORE
SW MICH PLANNING COMMISSION
185 E MAIN
SUITE 701
BENTON HARBOR, MI 49022

AFFP
NATS & TwinCATSThe Niles-Bucha

Affidavit of Publication

STATE OF MICHIGAN } SS
COUNTY OF BERRIEN }

Jennifer Flewellen, being duly sworn, says:

That she is Classified Manager of the Herald Palladium, a Daily newspaper of general circulation, printed and published in St Joseph, Berrien County, Michigan; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

May 30, 2013

Publisher's Fee: $ 86.88
That said newspaper was regularly issued and circulated on those dates.
SIGNED:

Subscribed to and sworn to me this 30th day of May 2013.

Karin Crawford, Notary Public Berrien Co, Michigan

NATS & TwinCATS
The Niles-Buchanan-Cass Area Transportation Study (NATS) and Twin Cities Area Transportation Study (TwinCATS) would like to announce the official release of their Long Range Transportation Plans and Transportation Improvement Programs for public comment to begin on May 30, 2013 and end on June 8, 2013. All of the documents can be viewed electronically as indicated below. If you would like to receive a hard copy of the plan, please contact the SWMPC at 185 E. Main St., Suite 701 Benton Harbor, MI 49022; Phone: (269) 925-1137; Fax: (269) 925-0288 or email at manig@swmpc.org.

TwinCATS
- Long Range Transportation Plan can be viewed at http://www.swmpc.org/twincats2040.asp
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NATS
- Long Range Transportation Plan can be viewed at http://www.swmpc.org/nats_2040.asp
- Transportation Improvement Program can be viewed at http://www.swmpc.org/nats_1417_tip.asp.

Ad Number: 4391494, Publication: TRIB, Magnification: 1X

LRP & TIP Public Hearings

PUBLIC COMMENTS SOUGHT FOR TRANSPORTATION PLANNING WORK THROUGHOUT BERRIEN AND CASS COUNTY

The public is encouraged to attend a series of three public meetings held by the Twin Cities Area Transportation Study (TwinCATS) http://www.swmpc.org/twincats.asp and the Niles-Buchanan-Cass Area Transportation Study (NATS) http://www.swmpc.org/nats.asp metropolitan planning organizations to discuss the status of the Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRP) that cover the Benton Harbor and St. Joseph area (TwinCATS) and the Niles, Buchanan, and southern Cass County region (NATS).

TwinCATS meetings will be held from 5-7 pm at Michigan Works 499 W Main St., Benton Harbor, MI 49022 on March 20, April 17, and May 22, 2013.

NATS meetings will be held from 5-7 pm at the Niles Public Library 620 E Main St., Niles, MI 49120 on March 27, April 24, and May 29, 2013.

If you cannot attend the public meetings your comments may be sent to Suzann Flowers, Transportation Planner at the Southwest Michigan Planning Commission flowerss@swmpc.org; phone (269) 925-1137 x 17; fax (269) 925-0288; mail 185 E. Main St. Suite 701 Benton Harbor, MI 49022.

1t: 3: 17

APPENDIX E: PUBLIC COMMENTS RECEIVED AND RESPONSES

As part of the public outreach efforts, MPO staff hosted three open houses, where members of the public were welcome to come, learn about the MPO process, and make comments on the TIP and Long Range Transportation plan. These meetings were held March 20, April 17, and May 22, 2013. In addition, we welcomed and actively sought comments via email and telephone.

At Meeting

Meeting 3/20/13

There were no members of the public present.

Meeting 4/17/13

Discussed during Session (after Brief Presentation on the MPO)

Roundabouts are great at slowing traffic down, but trucks still use roads that have them. On Main St in Benton Harbor, the roundabouts are too small. Landscaping and the roundabout materials can be damaged, in addition to potential vehicular accidents. These roundabouts also require regular maintenance and should be part of the regular project programming process.

Meeting times are problematic. Members of the public cannot attend meetings that are in the morning. Flowers and Mani stated that we actually go above and beyond what's required, and that we have a participation plan in place that outlines how we do outreach.

Question from the public on what air quality conformity is. Mani explained that the section details our compliance with federal air quality standards, and that we are in "attainment-maintenance", meaning that we were previously non-compliant for particulate matter.

Question: "US-31 has been going on way too long. When will it ever get done?" Flowers responded that it is a long term project. The pipeline is being re-routed. MDOT is focused on preservation right now, and the project is not on MDOT's five year plan.

One member of the public recommended upgrades to Red Arrow Highway—to go from four to three lanes, which will ensure that cars are not passing each other and creating hazardous conditions for cyclists on the shoulder. Shoulders could also be widened on some stretches. Mani said he would look at traffic counts to see exactly which segments of Red Arrow had been examined previously.

One member of the public expressed concerns with bicycles not being allowed on Amtrak. Mani and Flowers responded that the plan does now try to set the stage for intermodal connectivity in our region, but the bikes-on-trains issue is still a work in progress.

One member of the public asked about large, unnecessary parking lots, and whether there could be policies put in place to use existing parking rather than dedicating new asphalt to automobiles. Mani and Flowers responded by saying that this is a local land use issue, over which TwinCATS and SWMPC have no authority.

Meeting 5/22/13

One member of the public was in attendance. No comments were given.

Responses to Questionnaire at 4/17/13 meeting

Do you have any concerns or questions regarding the proposed list of TIP projects that will be funded in Fiscal Years 2014, 2015, 2016, and 2017?

"Huh?"

"In the Long Range Plan- Part V Rail issues- Amtrak does not allow bicycles on Michigan trains. South Shore Line also does not allow bicycles on their trains. On Amtrak, one must disassemble and place the bike in a bag or box for shipping. This is impractical for tourism. Amtrak also does not allow tourists to bring their golf clubs on their trains. Again must be boxed for shipping. I've made numerous comments to MDOT on need for bike lanes on Red Arrow Highway, Napier to M-139 and have received no confirmation of receipt."

Any transportation projects that you think need to be done?

"I-94 & M-63 interchange. Light for I-94 exit is far too long. Light for M-63 South is far too short."

"Improving safety on major corridors i.e. Red Arrow, Napier, M-139 et. Al. by redesigning roads to accommodate non-motorized transportation (pedestrians, bicyclists, wheelchairs). Many secondary roads need larger shoulders to accommodate bike lanes."

What types of transportation do you think we should be focusing on?

"Niles Avenue and Lakeshore Drive. Only one lane each way w/continual center turn lane is constraining."

"Improving safety for alternate modes of transportation. Improving connectivity at alternate modes of transportation. Bicycle→ Trains--→Bicycle (wheelchairs) -→ home or business, including hotels."

What are the transportation hot spots in your community?

"3 way corner at Niles Road, Niles Avenue, and M-139"

"I-94 Overpass at Exit 23- Red Arrow is treacherous for pedestrians walking or cyclists passing under the I-94 overpass. Red Arrow Highway from Stevensville/Baroda Road to Glenlord could go on a 'lane diet.'"

Any other comments, suggestions, or concerns?

"Meetings need to be scheduled in the evening. As you said, there are conflicts at all times, so why not evening meeting so workers and people going to school can go to these meetings?"

“The addition of the Harbor Marina Project will add to the congestion in both St. Joseph and Benton Harbor. Plans for this project don’t include alternate modes of transportation other than autos. I have showed [Mani] some possibilities for bike paths, whistle stop, and walkways from the project from St. Joseph to Benton Harbor. Could you please inform me of any future bicycle road design seminars?”

Public Comments Received via Email

“At a time when more attention is now on public health and healthier lifestyles, there are a number of local areas where I believe there is a critical need for revision and accessibility for residents to move around the greater Benton Harbor area and especially around public housing and with an access to shopping. Not everyone owns a car or can afford limited bus transportation.

First and foremost is the area along the street that runs between the Target shopping center and Michael's proceeding to Meijers, Lowe's, Walmart, etc. There are 2 housing developments--one on each side of the road--and yet these residents do not have sidewalks or bike paths to safely access the area stores. As a result, many are forced to walk, ride bikes, push baby strollers and shopping carts, and operate their motorized wheelchairs in the middle of a very busy street. This is extremely dangerous at all times, but especially in the winter when there is not even the alternative of attempting to walk in the piled snow on each side. Those driving to and from work along this stretch are frequently faced with the dangerous situation of this kind of traffic competing with motorized vehicles in the dark.

Another area where there is an extreme need that I've observed is all along Napier Ave between Pipestone and the St. Joseph River. Again, there are public housing and residential neighborhoods and schools and no way to walk or bike safely along that highly-traveled stretch.

On both North Shore and Paw Paw Avenue heading north from the City of Benton Harbor, there also is no safe way for residents to get to the city and shopping, schools, daycare, church, etc. because there are no sidewalks or bike lanes. People who reside in Benton Manor and other neighborhood residences, are frequently encountered walking, pushing baby strollers, riding bikes in the streets on both dangerous hills and curves with no other place to go at all hours of day and night and in all kinds of weather.

Finally, I live on Paw Paw Avenue and walk my dog along that road to get to other neighborhoods daily. Paw Paw Avenue is a designated heavy-truck route where traffic travels 55 mph (or faster as there are times when people think that it is a great race track to test high speeds for half mile and mile distances). Because there are no sidewalks or a safe paved shoulder, I frequently encounter people who are on cell phones or texting and are swerving and headed straight toward me and my dog. I'm trying to be healthier; however, I'm not sure that fearing for my life every time that I attempt to do so is beneficial.

If the focus is on a healthier, more active society, then I believe that any transportation studies need to also focus on improving the network for people who choose--or are forced to use--other means to get around the area. I would certainly walk or ride my bike to more places if I felt that it was a safe route to do so. I would park my car in one location and walk from store-to-store in the area mentioned above if there was a safe sidewalk structure in place to get between each of the stores. And, that would definitely be more environmentally sound as we would be producing less carbon pollution.

Please share my comments with the necessary parties involved."

- Thank you,

Bette Pierman, Benton Harbor, MI

"Disability Network Southwest Michigan affirms the importance of public transit in accessing economic and civic opportunities. Many people with disabilities rely solely on public transit to get around their communities, and strategies that strengthen the effectiveness and efficiency of public transit mean that more people with disabilities can fully participate in community life. Many people with disabilities in Berrien County currently have no access to public transit. The intent to use demand-response services more efficiently and to integrate current local transit services as a way of expanding service capacity will mean that more people with disabilities will be able to live the lives they choose. Increased accessibility of fixed routes support people with disabilities in living truly spontaneous lives, as more people will be able to access the same services options everyone else can use to travel in the community. Comprehensive, reliable, accessible, effective transportation options are a critical piece of an inclusive, liveable community where everyone can thrive."

-Joanne Johnson, on behalf of the Disability Network of Southwest Michigan

"I have been talking to several developers in the area and some of them see Benton Harbor evolving into a tourist/retirement area around the golf course. With that demographic it seems the area may need a transportation design that looks like what they do in Florida or Arizona.....golf cart paths everywhere to allow for greater density by having smaller roads and tight parking. It also is a proven way to get people to use small light electric vehicles instead of large cars and SUVs.

"People living from St. Joseph all the way to the Whirlpool Administration Center on M63 would be able to travel some sort of cart path with their electric golf cart into Benton Harbor for shopping and entertainment. Younger people would be able to use these paths for bicycles and other alternative transportation, but the most important thing would be to allow older people and tourists to go out to eat and get groceries with their electric golf cart. It would allow the density to increase by a huge amount and promote electric vehicles that are already being produced in large quantities for a low cost....no waiting for new technology that may never come . . . I have a golf cart at home in a rural area. I use it almost every day to haul things over to my in-laws house or to property we own just down the street. It saves me a lot of time and money over using my SUV."

- Bryan Tutton (works in Benton Harbor, MI)

“My comments on the long range plan are the same as I have submitted in the past.
I never received any confirmation from MDOT as to whether they were received or what their reaction was to my comments. I've noticed lately that traffic counters have been placed at various locations along the stretch of Red Arrow (3-lane) from Glenlord Road to St. Joseph. A comparison of this data with counts taken (if available) along the stretch from John Beers south to the state line (4-lane) could be done to support a "lane diet" for Red Arrow and striping of the shoulders for bike/pedestrian lanes.

As well as Red Arrow, I believe that improvements could be made to Napier and M-139 for alternate modes of transportation. See latest incident reported in the Herald Palladium on boy receiving serious head injuries by cement truck on Napier. Why do we continue to find this acceptable?!”

-Eric Mallen, Lincoln Charter Township

TwinCATS TAC and Policy Committee members approved MPO staff members to respond to these public comments at the June 17, 2013 TwinCATS meeting. At the request of the TwinCATS Policy Committee, the responses are not included in the published LRP document but were sent to the individuals who made the comments.

APPENDIX F AIR QUALITY CORRESPONDENCE

MDOT Michigan Department of Transportation

OFFICE MEMORANDUM

DATE: June 14, 2012

TO: Dal McBurrows, Pamela Boyd

FROM: Pete Porciello

SUBJECT: Briefing from MDOT's air quality meeting with DEQ on 6/11/12

MDOT Statewide Planning Section Staff met with DEQ counterparts to discuss general Air Quality topics on June 11, 2012.Present were:

MDOT
Dalrois McBurrows, Pamela Boyd, Pete Porciello, Mark Kloha

DEQ
Barb Rosenbaum, Bob Irvine, Tom Shanley, Dave Mason, Mary Maupin, Bob Rusch

Complete Michigan NAAQS Attainment Status

Ozone:
EPA's designations for Ozone under the recently published 2008 standard (.075ppb) put Michigan in attainment/unclassifiable status for Ozone statewide. The standard takes effect on 7/20/2012.

Only the transportation conformity requirements of the existing 08ppb standard are revoked effective 1 year from the implementation date of the new standard (July 20, 2013). Conformity requirements could begin under those standards sometime in 2014-2015 depending on the date the standard is published. *Requirements for CMAQ are in effect until later guidance or funding reauthorization bill language changes them.*

After July 2013, conformity 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. Actual designations may not occur until 2014 with SIP revisions not needed until about 2018. 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).

Annual and 24-hour PM 2.5
The 7 county SEMCOG area is designated out of attainment for the Annual and 24-hour PM2.5 standard. Although DEQ has requested redesignation of the area to attainment, that request has not yet been approved by USEPA pending resolution of a lawsuit related to the PM 2.5 standard.

Nitrogen Dioxide (NO2)
Michigan is in attainment for Nitrogen Dioxide

Carbon Monoxide (CO)
Michigan is in attainment for CO. An area consisting of part of Wayne, Oakland and Macomb Counties is in attainment/maintenance.

Particulate Matter less than 10 Microns (PM10)
Michigan is in attainment of the PM10 standard.

Lead (Pb)
Michigan is in attainment for lead except for a small area of less than 1 square mile in Ionia County in Belding.

Sulfur Dioxide (SO2)
Michigan is currently in attainment for SO2, but will have an area in Wayne County designated nonattainment sometime this year. It is not likely that there will be a regional transportation conformity requirement for this pollutant.

How does the Ozone monitoring data look so far for this season?

DEQ reported that the monitoring data so far could show violations in Allegan County, part of Detroit and Muskegon for Ozone. However, with designations not coming again until sometime around 2014, Michigan would not have to engage in the inventory and rate of progress plan process unless such designations are published for the new 2008 (.075) ozone standards or the revised standards that are coming in 2013-2014.

There will be an area of Detroit designated nonattainment for Sulfur Dioxide sometime this year, but transportation conformity should not be required as part of the regulatory actions for attaining the SO2 standard.

How will DEQ proceed in the event of a new nonattainment area?

The process of creating an emissions inventory and using interagency consultation to develop an attainment plan will be the same as previously followed from the Michigan SIP. Regarding transportation conformity, the Conformity SIP will still be a valid guideline for creating baselines and inventories for the purposes of any new transportation conformity requirements that occur.

Interagency Workgroup Activity

Review of projects for air quality analysis should continue for the next year, or until nonattainment designations are made. If the .08ppb standard is revoked on 7/20/13 and no new nonattainment areas are named under the new .075 standard, Ozone conformity requirements will cease until such time as Michigan has a designated nonattainment area for Ozone under the new standard.

MDOT Update on MOVES implementation

MDOT updated DEQ on the MOVES 2010b model implementation and invited staff to visit MDOT to learn how to use and set up the model. DEQ is interested in learning how the model was packaged and pushed by DIT to MDOT machines so that they can look at a similar way to load the model at DEQ. MDOT announced that there should be a refresher training to reacquaint staff with the use of MOVES in August, along with the distribution of revised vehicle population data that is the most up to date available. MDOT also described a change to the air quality chapters in the TIPS. These will be replaced by a universal air quality document which details methods of calculating and reporting conformity. Technical documentation will be electronic for all future conformity demonstrations.

MOVES uses for climate change activities were discussed, and a brief mention of the next version of MOVES (MOVES2013) which should handle climate change issues. There will be more database records needed for that and it will involve a change to MDOTs master spreadsheet files in order to accommodate the revisions. The off road modules are not working yet, so in the meantime, DEQ will continue to use the NMIM modeling for off road emissions. Consultations and continued discussions on this will be needed in order to be sure that procedures are established to validate the information obtained and to make the proper transition to the use of the MOVES model for off road emissions.

CMAQ issues

Because it is not known what the transportation reauthorization funding bill will contain for CMAQ language, and whether or not the core provisions of the program will change, a discussion of what if's occurred and MDOT shared a handout with DEQ describing the known impacts to date on the program.

Other issues from DEQ

LADCO, regional emissions inventories will be due in December. These will need to be created with MOVES for every Michigan County which will require transportation model information and MOVES data bases for each county in Michigan. DEQ will be forwarding information about the inventory call to staff for action.

Continued Dialogue Needed

MDOT and DEQ discussed meeting quarterly or perhaps more often to discuss upcoming issues and to keep in touch with events and air quality needs. Staff from both departments will also be attending meetings to assure that partners have access to updates and information related to transportation and air quality. DEQ will also play a role in information on point and area pollution needs as well as stationary source emissions issues that are relevant to the attainment of the NAAQS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 0 9 2011

REPLY TO THE ATTENTION OF:

The Honorable Rick Snyder
Governor of Michigan
P.O. Box 30013
Lansing, Michigan 48909

Dear Governor Snyder:

This letter is to notify you of the U.S. Environmental Protection Agency's preliminary response to Michigan's air quality designation recommendations for the revised 2008 ozone National Ambient Air Quality Standards (NAAQS).

On March 12, 2008, EPA revised its NAAQS for ground-level ozone to provide increased protection of public health and the environment. EPA lowered the primary 8-hour ozone standard from 0.08 parts per million (ppm) to 0.075 ppm to protect against health effects associated with ozone exposure, including a range of serious respiratory illnesses and increased premature death from heart or lung disease. EPA revised the secondary 8-hour ozone standard, making it identical to the primary standard, to protect against adverse welfare effects, including impacts on sensitive vegetation and forested ecosystems.

History shows us that better health and cleaner air go hand-in-hand with economic growth. Working closely with the states and tribes, EPA is implementing the standards using a common sense approach that improves air quality and minimizes the burden on state and local governments. As part of this routine process, EPA is working with the states to identify areas in the country that meet the standards and those that need to take steps to reduce ozone pollution. Within one year after a new or revised air quality standard is established, the Clean Air Act requires the Governor of each state to submit to EPA a list of all areas in the state, with recommendations for whether each area meets the standard. As a first step in implementing the 2008 ozone standards, EPA asked states to submit their designation recommendations, including appropriate area boundaries, by March 12, 2009. In September 2009, EPA announced it was reconsidering the 2008 ozone standards. EPA later took steps to delay the designation process for the 2008 ozone standards pending outcome of the reconsideration. In September 2011, the Office of Management and Budget returned to EPA the draft final rule addressing the reconsideration of the 2008 ozone standards. On September 22, 2011, EPA restarted the implementation effort by issuing a memorandum to clarify for state and local agencies the status of the 2008 ozone standards and to outline plans for moving forward to implement them. EPA indicated that it would proceed with initial area designations for the 2008 standards, and planned to use the recommendations states made in 2009 as updated by the most current, certified air quality data from 2008-2010. While EPA did not request that states submit updated designation recommendations, EPA provided the opportunity for states to do so.

After considering Michigan's March 12, 2009 ozone designation recommendations and other relevant technical information, including 2008-2010 air quality data, EPA intends to designate the entire state of Michigan as unclassifiable/attainment for the 2008 ozone NAAQS.

EPA is committed to working with the states and tribes to share the responsibility of reducing ozone air pollution. Current and upcoming federal standards and safeguards, including pollution reduction rules for power plants, vehicles and fuels, will assure steady progress to reduce ozone-forming pollution and will protect public health in communities across the country. We look forward to a continued dialogue with you and your staff as we work together to implement the 2008 ozone standards. Should you have any questions, please do not hesitate to contact me at 312-886-3000, or Cheryl L. Newton, Director, Air and Radiation Division, at 312-353-6730.

Sincerely,

Susan Hedman,
Regional Administrator

cc: Dan Wyant, Director, and G. Vinson Hellwig, Chief
Michigan Department of Environmental Quality

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 30 2012

THE ADMINISTRATOR

The Honorable Rick Snyder
Governor of Michigan
P.O. Box 30013
Lansing, Michigan 00004-8909

Dear Governor Snyder:

The U.S. Environmental Protection Agency today is taking the next step to address ozone air quality by issuing final area designations for the 2008 National Ambient Air Quality Standards for ozone. This action, required under the Clean Air Act, lets communities know if their outdoor air is meeting the national standards for ground-level ozone and which areas are violating, or contributing to violations of, the national standards.

The EPA strengthened the ozone standards on March 12, 2008, to increase protection of public health and the environment. Breathing air containing high levels of ozone, a key ingredient in smog, can reduce lung function, trigger respiratory symptoms, and worsen asthma or other respiratory conditions. Ozone exposure also can contribute to premature death, especially in people with heart and lung disease. The new standards, which also protect against damage to sensitive vegetation and forested ecosystems, are a key part of the EPA's commitment to a clean, healthy environment. As we have done for more than 40 years, the EPA will work with you to improve air quality and continue to protect the health of our citizens.

As part of the designations process, the EPA worked closely with states, tribes and local governments to identify areas in the nation that meet the standards and those that need to take steps to reduce ozone pollution. After reviewing the most recent certified ozone air quality data for your state and evaluating factors to assess contribution to nearby levels of ozone, 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 designating all of Michigan "unclassifiable/attainment." I appreciate the information that Michigan shared with the EPA throughout this process to assess ozone air quality.

History shows that cleaner air, better health and economic growth go hand-in-hand. For areas designated "unclassifiable/attainment," the challenge is to maintain clean air. Working closely with the states and tribes, the EPA is implementing the 2008 ozone standards using a common sense approach that protects air quality, maximizes flexibility and minimizes burden on state, tribal and local governments.

I recognize that the EPA shares the responsibility with the states and tribes for managing ozone air pollution. I also recognize that air pollution crossing state boundaries can contribute to downwind violations of the standards. Current and upcoming federal standards and safeguards, including pollution reduction rules for power plants, industrial facilities, vehicles and fuels, will ensure steady progress to reduce smog-forming pollution and will protect public health in communities across America.

The EPA will be assisting state, tribal and local air agencies by identifying currently available emission reduction measures as well as relevant information concerning their efficiency and cost-effectiveness. State, local and tribal agencies will be able to use this information in developing emission reduction strategies, plans and programs to attain and maintain cleaner air.

I look forward to continuing to work with you and your staff as we strive to advance our shared goal of clean air. Additional technical information on the ozone designations can be found at www.epa.gov/ozonedesignations. If you have questions, please contact me, or your staff may call Sarah Hospodor-Pallone, Deputy Associate Administrator for Intergovernmental Relations, at 202-564-7178.

Sincerely,

Lisa P. Jackson

U.S. Department of Transportation
Federal Highway Administration

Michigan Division

315 W. Allegan Street, Room 201
Lansing, MI 48933
517-377-1844 (office)
517-377-1804 (fax)
Michigan.FHWA@dot.gov

January 14, 2013

In Reply Refer To:
HDA-MI

Mr. Dave Wresinski, Director
Bureau of Transportation Planning (B340)
Michigan Department of Transportation
Lansing, Michigan

Dear Mr. Wresinski:

This letter is in response to your letter to our office dated November 7, 2012. In the letter, you had four specific statements relating to both air quality and metropolitan transportation plan schedules. Below are your statements in italics with our comments following. These questions were answered with advisement from air quality staff in our headquarters.

The May 21, 2012 Federal register notice (77 FR 30160) pertains to revocation of the 1997 ozone standard. Note that the notice did not address other pollutants (eg, PM-2.5 or CO) or change their associated regulations.

1. *MPOs that have LRTP updates due in 2013 that were previously classified non-attainment are exempt from demonstrating conformity if updated plans are due or approved after the July 20, 2013 date.*

   Correct. After July 20, 2013, areas that are in attainment for the 2008 ozone standard will not have to demonstrate transportation conformity for ozone. It is important to note that MPOs that are nonattainment or maintenance for other air quality standards will need to demonstrate conformity for those pollutants.

2. *MPOs now have the option of updating their LRP's on a five-year cycle versus a four-year cycle as a result of attainment designation for ozone.*

   Not yet. The May 21, 2012 Federal Register notice, as cited above, revoked the 1997 ozone standard for transportation conformity purposes only. It did not completely revoke the standard; therefore an area's nonattainment or maintenance status for the 1997 ozone standard has not changed. Per the planning regulations found in 23 CFR 450.322(c), plans need to be updated at least every four years for nonattainment and maintenance areas. Therefore, until the 1997 ozone standard is revoked completely, MPOs that are nonattainment or maintenance for the 1997 standard will need to update their long range plans at least every four years.

We have also spoken with the Environmental Protection Agency (EPA) staff to determine progress towards complete revocation of the 1997 ozone standard. We do not have a date of when this may occur but will keep you informed as we learn of progress. It is important to note that MPOs that are nonattainment or maintenance for other air quality standards will continue the four year transportation plan update cycle when the 1997 ozone standard is completely revoked.

3. *MPO LRTP update schedules are based on the date the last LRTP conformity finding was approved by FHWA and the Federal Transit Administration for non-attainment areas and the date the MPO Executive Committee approves LRTP updates in attainment areas.*

   Correct. Per 23 CFR 450.322 (a), the effective date of metropolitan plans in non-attainment and maintenance areas is "...the date of a conformity determination issued by FHWA and FTA...", and "...its date of adoption by the MPO..." for attainment areas.

   As mentioned previously, when EPA completely revokes the 1997 ozone standard and an area is no longer in non-attainment or maintenance, the five-year plan update cycle will apply and is based on the MPO approval date.

4. *MPOs are required to develop and update LRTPs with at least a 20-year planning horizon, as stated in 23 CFR 450.322, and maintain a 20-year horizon during the life of the plan.*

   Correct. Per 23 CFR 450.322 (a), the 20-year horizon is as of the "effective date" of the Plan (as described in Question 3 above). However, MPO's are encouraged to select a horizon year which would maintain at least a 20-year horizon until the next plan update is completed.

We have previously met with MDOT Planning staff to address these issues and assist in outlining a schedule for development of long-range plans for each MPO. I will set-up an additional meeting on this topic, to be sure both MDOT and FHWA have the same understanding of the issues and that your questions have been answered.

Please feel free to contact me at (517) 702-1827 or Andy.Pickard@dot.gov if you should need further assistance.

Sincerely,

Andy Pickard PE, AICP
Transportation Planning Team Leader

For: Russell L. Jorgenson, P.E.
Division Administrator

APPENDIX G: CONSULATION COMMENTS RECEIVED AND RESPONSES

"The proposed projects look reasonable. There are many roads and infrastructures in those area in need of repair. Is there a proposal to extend the US-31 extension to I-94; if so, when?"

-Sherman Reed, District Conservationist, Berrien Springs

"There were only a few comments made from the six divisions within our Department. If you are not familiar those divisions (offices) they are as follows: Air Quality Division (AQD), Resource and Redevelopment Division (RRD), Water Resources Division (WRD), Office of Drinking Water and Municipal Assistance (ODWMA), Office of Oil Gas and Minerals (OOGM) and the Office of Waste Management and Radiological Protection (OWMRP). As you might expect these six divisions handle a wide range of programs.

Staff in the AQD made the general comment that when grinding or crushing concrete adequate dust control measures must be in place. If you have specific questions with regard to this, please contact Mary Douglas, Kalamazoo District Supervisor, AQD at 269.567.3545.

Staff in the RRD made not comment but did offer the following link to the Environmental Mapper, which can be checked at any time to determine if there are known sites of environmental contamination in a specific project area. That link is: http://www.mcgi.state.mi.us/environmentalmapper/ if you have additional questions with regard to RRD programs you can contact Frank Ballo, Kalamazoo District Supervisor, RRD, at 269.567.3531 or David Heywood, Kalamazoo Assistant District Supervisor, RRD at 269.567.3522.

Staff in the OWMRP remind you to please dispose of solid waste from these projects appropriately. If you have specific questions with regard to waste disposal please contact me at the number below.

Additional contacts in our office are: Kameron Jordan, Kalamazoo District Supervisor, WRD, at 269.567.3565, or Jerrod Sanders, Kalamazoo Assistant District Supervisor, WRD at 269.567.3579. Amy Lachance, Kalamazoo and Grand Rapids District Supervisor, ODWMA at 616.490.9590. Lou Schineman, Lansing District Supervisor (Kalamazoo Field Office) OOGM at 517.241.1531.

I wish you the best of luck on the success of your projects."

- Fred Sellers, Michigan Department of Environmental Quality

" One thing that I don't think I saw in the 2013-2040 TwinCATS Long Range Transportation Plan any work on Napier Ave near I-94. The health department will be moving to the former Tyler Honda building just east of the on ramp to westbound I-94, and a large number of our clients have significant transportation barriers. To me, the ideal situation would be an increased capacity for non-motorized transportation (sidewalks, bike lanes, etc.) on Napier from Pipestone Road to Lake Michigan College, a traffic light at Napier and Euclid Ave (this will be the

main entrance to the new county campus), and a fixed-route with a stop at that new county campus. It is my understanding that the county is anticipating having a Berrien Bus transfer point at our new facility. If Dial-a-Ride or other transportation also had stops/transfer points there, important transportation connection would be made."

-Nicki Britten, Berrien County Health Department

APPENDIX H: TCATA FUNDING LETTER

LETTER OF AGREEMENT BETWEEN BERRIEN COUNTY AND TWIN CITIES AREA TRANSPORTATION AUTHORITY.

June 16, 2011

Bill Purvis, Director:

The purpose of this letter is to set forth in writing the understanding between the County of Berrien, as operators of Berrien County's transit system (Berrien*B*us), and the Twin Cities Area Transportation Authority (TCATA), as operators of TCATA Dial-A-Ride, concerning the cooperative distribution of Federal Transit Administration (FTA) formula funds to the two transit agencies operating in the Benton Harbor Urbanized Area. This letter of understanding shall be renewed on an annual basis unless the County of Berrien and TCATA mutually agree to a longer term.

This understanding, based on discussions between the two systems, is to use a local urban-area apportionment methodology parallel to that used in the annual apportionment of funds from the FTA to the State of Michigan for the urban transit agency formula program. The FTA provides formula funding to urban transit agencies based upon decennial census population and population density numbers. These decennial numbers are combined with an annual factor to determine funding to the State of Michigan for each urbanized area. By this understanding, the County of Berrien and TCATA will similarly utilize the population of their respective transit system service areas to determine the share of funding available to each entity. Funding which is available, but which is based on population not served by one of the two transit agencies will be split equally between the two until such time as service area boundaries change so that the populations within any service area change by 5% or more, at which time the corrected population figures will be used and the percentage adjusted accordingly. On an annual basis either system may decline their share of funding for the unserviced area and allow the other system to use 100% of the available funding for that area.

Using this methodology and 2010 Census figures, the distribution formula for FY 2011 is set out as follows:

- Total Benton Harbor Urbanized Area Population – 60,386 persons
- TCATA Urban Service Area Population – 31,819 persons = 52.69% of available funds
- Berrien County's transit system Service Area Population -- 0 persons = 0% of available funds
- Unserviced Urban Population – 28,567 persons = 47.30% of available funds

For FY 2011 Berrien County declines their share of funding for the unserviced portion of the urbanized area. This permits TCATA to obtain 100% of the available funding for the Benton Harbor Urbanized Area for FY 2011.

Sincerely,

_____	_____	_____	_____
Dave Pagel, Chairman Board of Commissioners Berrien County	Date	Twin Cities Area Transportation Authority	Date
_____	_____		
M. Louise Stine, County Clerk	Date		

APPENDIX J:SOUTHWEST MICHIGAN REGIONAL AIRPORT CAPITAL IMPROVEMENT PROGRAM, 2013-2018

The table on the next page outlines Southwest Michigan Regional Airport's planned projects for the years 2013-2018. This document is required by the FAA, in similar manner to the way FHWA and FTA require MPOs to submit a Transportation Improvement Program (TIP), outlining short term projects.

MICHIGAN STATE BLOCK GRANT PROGRAM

AIRPORT CAPITAL IMPROVEMENT PROGRAM (CIP) FY-2013* to FY-2018

*ACIP includes current development year (2013 already programmed - minor changes acceptable)

Airport Name:	Southwest Michigan Regional Airport	Airport Identifier: BEH	Date prepared:7/27/12 Revised: 10/29/12
Associated City:	Benton Harbor, Michigan		Prepared By: Bob Leisenring
Sponsor:	Southwest Michigan Regional Airport Authority		Sponsor email address & phone: Lee Scherwitz /director@swmiairport.com/269-927-3194
		NPIAS Airport Code: B	

Development Year	Project Description	Shown on ALP? (Yes or No)	ACIP Code**	NPIAS Priority Rating**	Federal Entitlements	Federal Apportionment	Federal Discretionary	State	Local	Total	Remarks/Item Justification - Provide as much detail as possible.
	Carryover-$105,000										
2013	Runway 14/32 Justification Study	NA	PL-PL-MA	66	$54,900			$3,050	$3,050	$61,000	This project will support the runway safety area project for Runway 14/32. It will be a phased planning and preliminary engineering effort to determine the future and ultimate length-width of the runway. The planning portion will consist of a user survey to determine justification for the pavement dimensions. The engineering portion will consist of a topographic survey and enough design engineering to determine the location of the Runway 14 threshold.
2013	Land Acquisition for Rwy 32 RPZ- Phase I Fee Acquisition	Yes	ST-RW-SF	48	$166,500			$9,250	$9,250	$185,000	One commercial property is required for fee simple acquisition and 12 easements are currently required for the 14/32 runway shift. This phase of land acquisition includes the fee simple acquisition. Additional avigation easements for approach clearing may be necessary, pending the results of the current ALP update (2012). The Sponsor has acquired additional parcels within the approach area with local funds. The Airport may seek reimbursement for these properties at a later date.
	Carryover-$33,600										
2014	Land Acquisition for Rwy 14/32 Approach- Phase II Easements	Yes	ST-RW-SF	48	$183,600	$81,900		$14,750	$14,750	$295,000	One commercial property is required for fee simple acquisition and 12 easements are currently required for the 14/32 runway shift. This phase of land acquisition includes the easement purchases. Additional avigation easements for approach clearing may be necessary, pending the results of the current ALP update (2012). The Sponsor has acquired additional parcels within the approach area with local funds. The Airport may seek reimbursement for these properties at a later date.
2014	Design Shift Rwy 14/32 for RSA Compliance	Yes	ST-RW-SF	48		$99,000		$5,500	$5,500	$110,000	This project involves the design for Runway 14/32, which will be shifted to accommodate full RSAs on both runway ends. This will include a rehab and narrowing of the existing runway surface to create an ultimate (3505'x60') runway, the last rehabilitation on the runway was in 1991. (CAT Ex Required) (Projected PCI 68, PCI 82 in 2010) Note: To date, the FAA has stated a reimbursable agreement is not required for the VASI's removal and disposal.
	Carryover-$0										
2015	Shift Rwy 14/32 for RSA Compliance (3505'x60') and Rehabilitate Existing Runway Surface & Lighting	Yes	ST-RW-SF	48	$150,000	$1,389,000		$85,500	$85,500	$1,710,000	Runway 14/32 will be shifted to the south to accommodate full RSAs on both runway ends. This will include a rehab and narrowing of the existing runway surface to create an ultimate (3505'x60') runway. The last rehabilitation on the runway was in 1991. (CAT Ex Required) (Projected PCI 68, PCI 82 in 2010) Note: To date, the FAA has stated a reimbursable agreement is not required for the VASI's removal and disposal.
	Carryover-0										
2016	Design - Convert Rwy 18/36 to Taxiway - South of 14/32	Yes	CA-TW-CO	59	$54,000			$3,000	$3,000	$60,000	This project will include the design for the conversion of the existing Runway 18/36 to a taxiway.
	Carryover-$96,000										
2017	Convert Rwy 18/36 to Taxiway - South of 14/32	Yes	CA-TW-CO	59	$246,000	$618,000		$48,000	$48,000	$960,000	Runway 18/36 will be converted to a taxiway due to substantial obstructions in the approach areas as well as non-compliant RSAs and extensive costs to correct these issues.
	Carryover-0										
2018	SRE - Cab Forward Chassis with Runway Broom	NA	ST-EQ-SN	47	$150,000	$457,500		$33,750	$33,750	$675,000	A new cab forward chassis with runway broom will be necessary to facilitate removal of snow on the runway pavements. An equipment justification for the broom will be completed as part of the design for this project.

APPENDIX K: RESOLUTIONS OF APPROVAL

SOUTHWEST MICHIGAN PLANNING COMMISSION
185 East Main Street, Suite 701, Benton Harbor, MI 49022
Phone: 269-925-1137 • Website: www.swmicomm.org

RESOLUTION APPROVING THE TWIN CITIES AREA TRANSPORTATION STUDY (TwinCATS) 2013-2040 LONG RANGE TRANSPORTATION PLAN

Whereas, the Southwest Michigan Planning Commission is the designated Metropolitan Planning Organization for the Benton Harbor – St. Joseph Federal Aid Urban Area; and

Whereas, the SWMPC has designated the Twin Cities Area Transportation Study (TwinCATS) Technical Advisory and Policy Committees as the committees responsible for developing the Long Range Transportation Plan, the Transportation Improvement Program and all other transportation-related planning activities for the designated metropolitan planning area, and

Whereas, the TwinCATS Long Range Transportation Plan has been developed pursuant to provisions of the Moving Ahead for Progress in the 21st Century (MAP-21); and

Whereas, the TwinCATS Long Range Transportation Plan identifies transportation facilities and activities that should function as an integrated metropolitan transportation system in conformity with the Michigan Department of Transportation and the Federal Highway Administration; and

Whereas, the TwinCATS Long Range Transportation Plan was analyzed for fiscal constraint of proposed projects and activities over the 27-year planning horizon, was developed through a process that included input from citizens, public agencies and other interested parties and has demonstrated conformity with the State Implementation Plan for Air Quality, and

Whereas, the TwinCATS Long Range Transportation Plan has identified goals, objectives, policies, recommendations, strategies and activities consistent with the goals and objectives of the Michigan Department of Transportation.

Be it Resolved, the TwinCATS Policy Committee approves the 2013-2040 Twin Cities Area Transportation Study Long Range Plan and has determined that the Plan conforms to the State Implementation Plan.

This action is taken pursuant to rules and regulations of the Federal Highway Administration and the Michigan Department of Transportation by vote of the TwinCATS Policy Committee, this the 15th day of July in the year 2013.

ATTEST: _____
Robert L. Judd, Policy Committee Chairman

ATTEST: _____
John Egelhaaf, Executive Director
Southwest Michigan Planning Commission

SOUTHWEST MICHIGAN PLANNING COMMISSION
185 East Main Street, Suite 701, Benton Harbor, MI 49022
Phone: 269-925-1137 • Website: www.swmicomm.org

RESOLUTION APPROVING THE TWIN CITIES AREA TRANSPORTATION STUDY (TwinCATS) 2013-2040 LONG RANGE TRANSPORTATION PLAN

Whereas, the Southwest Michigan Planning Commission (SWMPC) is the designated Metropolitan Planning Organization for the Benton Harbor – St. Joseph Federal Aid Urban Area; and

Whereas, the SWMPC has designated the Twin Cities Area Transportation Study (TwinCATS) Technical Advisory and Policy Committees as the committees responsible for developing the Long Range Transportation Plan, the Transportation Improvement Program and all other transportation-related planning activities for the designated metropolitan planning area; and

Whereas, the TwinCATS Long Range Transportation Plan has been developed pursuant to provisions of the Moving Ahead for Progress in the 21st Century (MAP-21); and

Whereas, the TwinCATS Long Range Transportation Plan identifies transportation facilities and activities that should function as an integrated metropolitan transportation system in conformity with the Michigan Department of Transportation and the Federal Highway Administration; and

Whereas, the TwinCATS Long Range Transportation Plan was analyzed for fiscal constraint of proposed projects and activities over the 27-year planning horizon, was developed through a process that included input from citizens, public agencies and other interested parties, and has demonstrated conformity with the State Implementation Plan for Air Quality, and

Whereas, the TwinCATS Long Range Transportation Plan has identified goals, objectives, policies, recommendations, strategies and activities consistent with the goals and objectives of the Michigan Department of Transportation, and

Whereas the TwinCATS Policy Committee adopted the Long Range Transportation Plan at its June 17, 2013 meeting;

Be it resolved, the Southwest Michigan Planning Commission approves the 2013-2040 Twin Cities Area Transportation Study Long Range Plan and determines that the Plan conforms to the State Implementation Plan.

This action is taken pursuant to rules and regulations of the Federal Highway Administration and the Michigan Department of Transportation by vote of the Southwest Michigan Planning Commission, this the 16th day of July, 2013.

ATTEST: _____
Jeff Radtke, Chair
Southwest Michigan Planning Commission

ATTEST: _____
John Egelhaaf, Executive Director
Southwest Michigan Planning Commission