Niles-Buchanan-Cass Area Transportation Study

DRAFT FOR

PUBLIC REVIEW

AND COMMENT

2045 LONG RANGE TRANSPORTATION PLAN

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AND COMMENT

Making Connections

The preparation of this document has been financed through the Federal Highway Administration (FHWA), the Federal Transportation Administration (FTA), the Michigan Department of Transportation (MDOT) and NATS member communities under provisions of the FAST (Fixing America's Surface Transportation) Act.

2019

June 11, 2019

DRAFT FOR

PUBLIC REVIEW AND COMMENT

Southwest Michigan Planning Commission

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BACKGROUND

MPO Organization

The Southwest Michigan Planning Commission (SWMPC) is one of fourteen regional planning and development regions in the state of Michigan. In 1981 SWMPC was designated by the Governor of Michigan to be the Metropolitan Planning Organization (MPO) for the Niles-Buchanan urbanized area. The SWMPC relies on this committee of the Niles-Buchanan-Cass Area Transportation Study (NATS) to provide local, state , and federal input toward the development of essential MPO work products

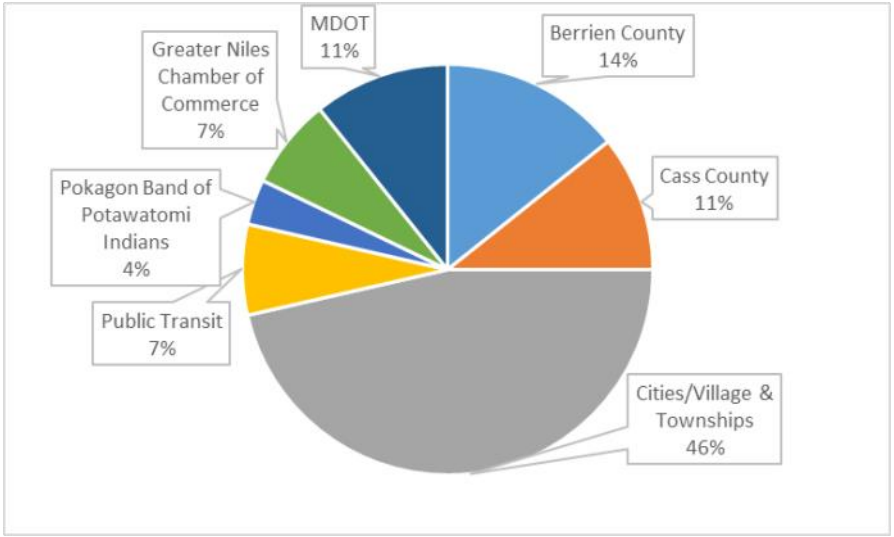
The staff at SWMPC provides transportation planning services for NATS and is guided by the advice of members from the NATS Policy Committee and Technical Advisory Committee. Members, such as cities, townships, villages, counties, public transit agencies, the airport authority, and road departments appoint representatives to serve on the following NATS committees:

1. The Technical Advisory Committee is comprised of planners, engineers, transit operators, and local units of government. This committee provides technical assistance to SWMPC staff and makes recommendations to the Policy Committee on potential actions.
2. The Policy Committee is comprised of representatives from similar agencies as the Technical Advisory Committee and is responsible for establishing transportation policies, overseeing the planning process, and providing a forum for cooperative decision-making.

NATS Policy Committee

NATS Policy Committee is organized to conform with federal requirements for an MPO. NATS Policy Committee is composed of 21 voting members from member communities, transportation departments and economic development agencies. The Policy Committee also has three non-voting members that include Federal Highway Administration, Federal Transit Administration, and Northwest Indiana Regional Planning Commission.

NATS Policy Committee Membership

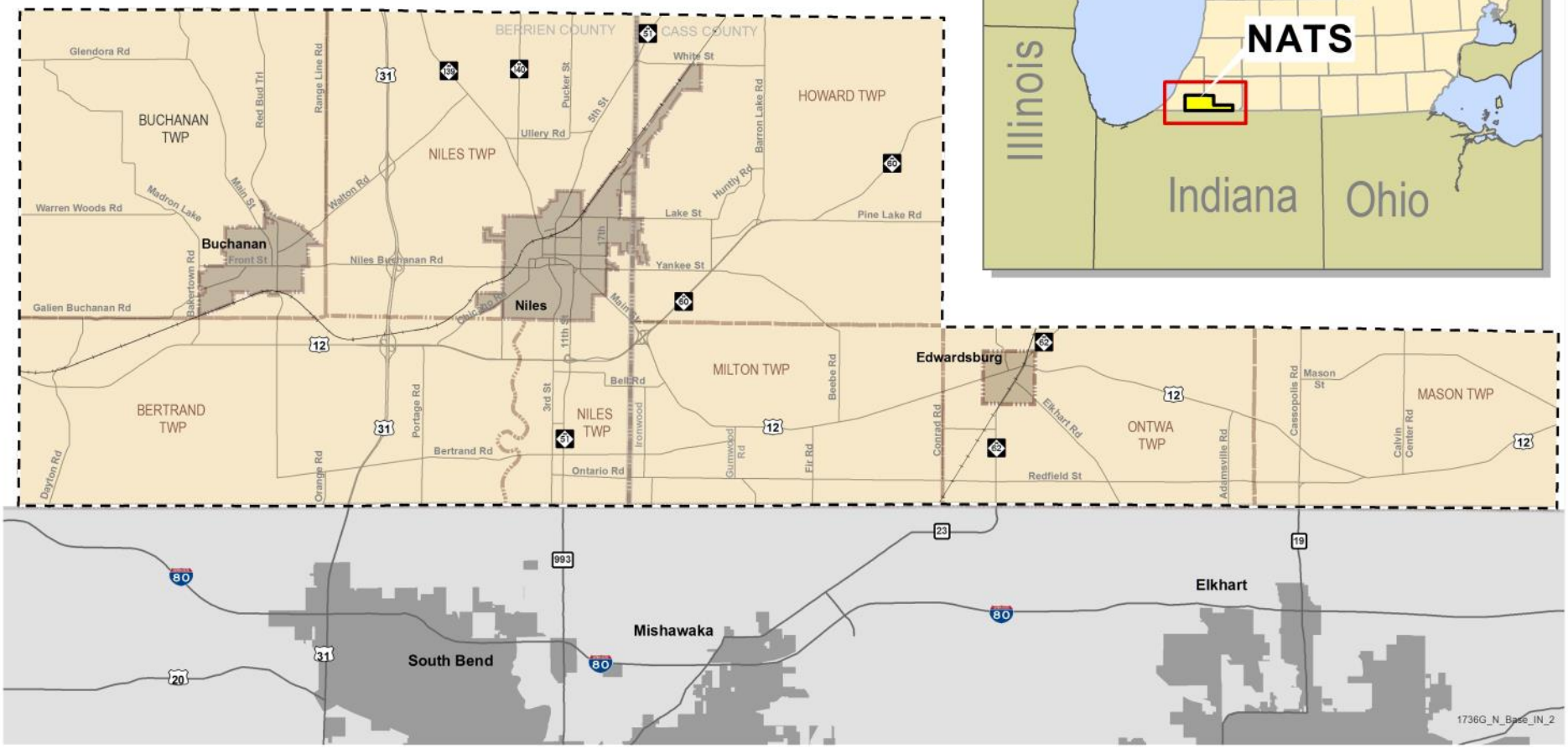


The SWMPC Governing Board is composed of appointed representatives from the counties of Berrien, Cass and Van Buren and affirms the decisions of the NATS Committee for various federally required plans and documents that include:

- Long Range Transportation Plan
- Unified Work Program
- Transportation Improvement Program
- Public Participation Plan

Metropolitan Area Boundaries

The Niles-Buchanan-Cass Area Transportation Study (NATS) planning area encompasses communities within the Michigan portions of the South Bend Urbanized Area and the Elkhart Urbanized Area. The NATS area is approximately 230 square miles and includes townships and villages within portions of Berrien and Cass Counties. The communities within the NATS planning area are strongly influenced by the population and economics of the Indiana cities that lie in close proximity, including South Bend, Mishawaka, and Elkhart.



2045 Long Range Transportation Plan

The development and adoption of a Long Range Transportation Plan is required by the U.S. Department of Transportation in order to receive federal funding under the Fixing America's Surface Transportation Act (FAST Act). The FAST Act is the most current federal legislation (adopted in 2015) that establishes transportation funding programs for all surface transportation modes.

The plan must have no less than a 20-year horizon date, represent all municipalities within the designated urbanized planning area and consider all modes of transportation. The plan must also address the ten planning factors to ensure the plan is consistent with national goals for transportation planning.

The Long Range Transportation Plan is the transportation vision for urbanized area just like a master plan can be the land use vision for a community.

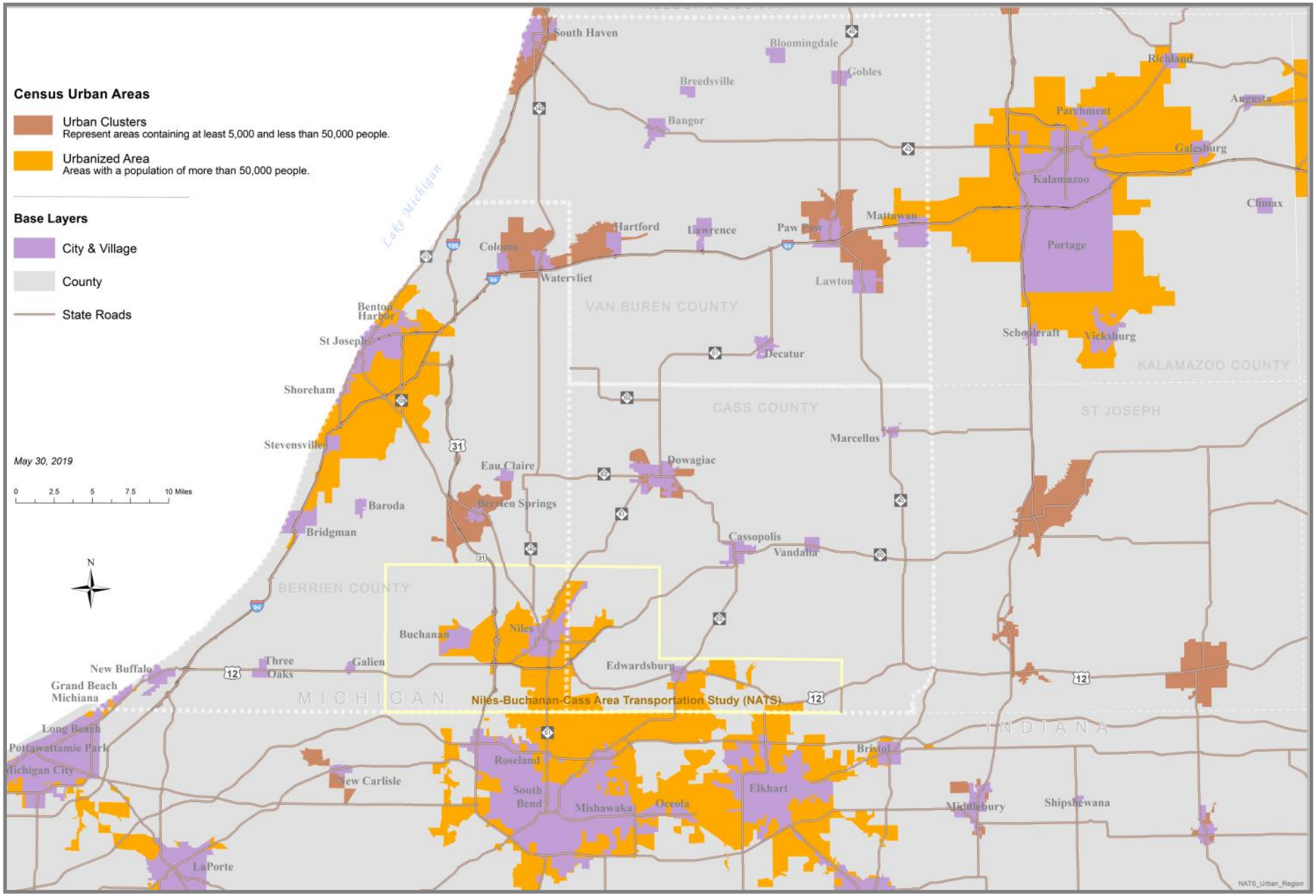
Making Connections->

NATS 2045 Long Range Transportation Plan Vision

To ensure public investments and policies are strategically used for the optimization of a safe, reliable and equitable transportation network that enhances economic opportunity, growth, and quality of life while preserving our environment.

FAST Act Planning Factors

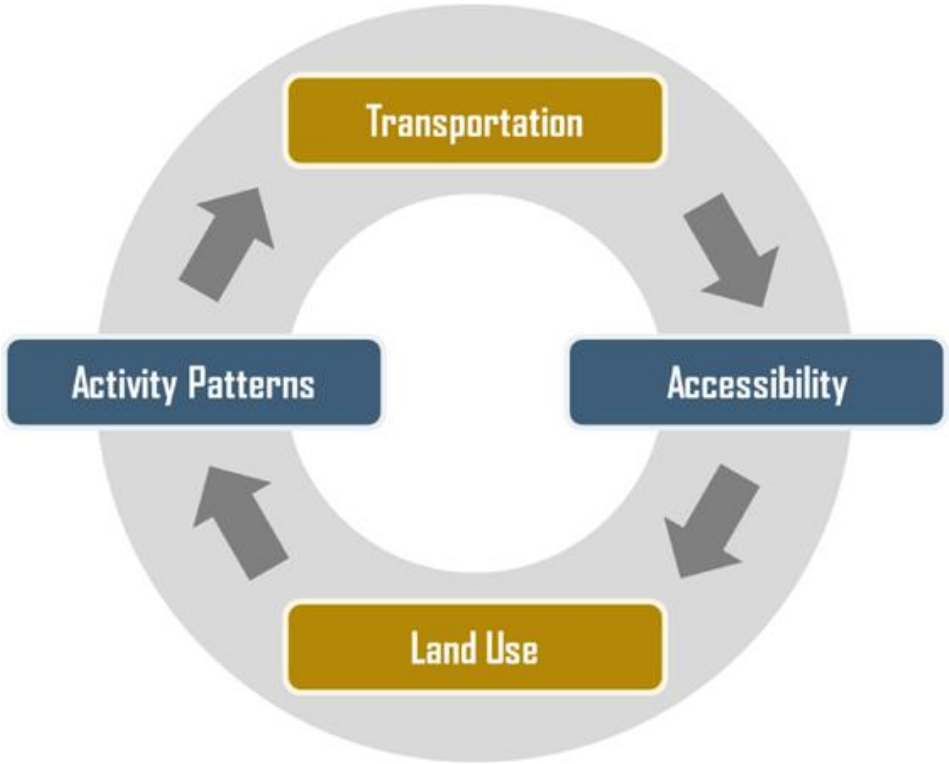
- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
- Increase the safety of the transportation system for motorized and non-motorized users.
- Increase the security of the transportation system for motorized and non-motorized users
- Increase the accessibility and mobility options available to people and for freight.
- Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Promote efficient system management and operation.
- Emphasize the preservation of the existing transportation system.
- Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts to surface transportation.
- Enhance travel and tourism.



REGIONAL CONTEXT

Transportation and Land Use

Transportation and land use considered together can respond better to community needs by combining economic vitality and mobility with quality-of-life and environmental issues. A municipality's land is perhaps its greatest resource. Changes to the way it is used can permanently shape the community's future.



The Importance of Transportation as Part of Local Land Use

Every local land use decision has a transportation consequence:

Residential developments may require modifications to existing roadway networks to ensure adequate access for motorists, pedestrians and bicyclists.

Industrial or commercial facilities may require parking and possible accommodations for public transportation and bicyclists in addition to roadway access enhancements.

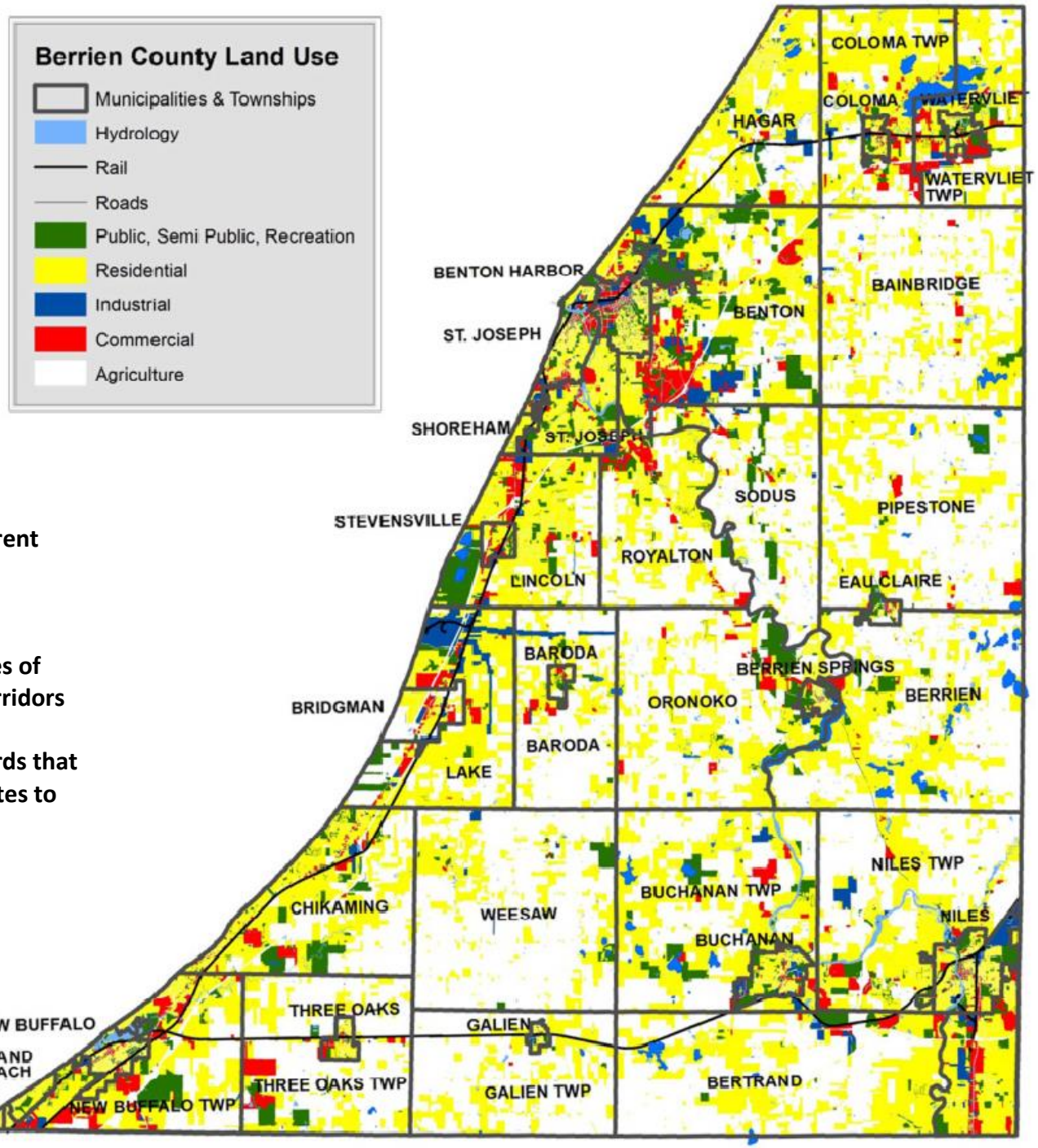
Commercial, industrial, retail or residential uses may have a variety of transportation impacts, including the need for turning lanes and traffic signal installations, and trip generation impacts that extend beyond municipal borders.

Link Land Use and Transportation Planning

- Tax dollars to infrastructure costs necessary to support development, such as roads and sewers.
- Costs of emergency services, roadway maintenance and other municipal services.
- Lack of coordinated land use and transportation can result in worsening air and water pollution resulting from additional roadway traffic and storm water runoff into our streams, rivers and lakes.
- Uncoordinated land use and transportation decision-making can result in park and ride facilities with no transit access, greater pedestrian injuries and deaths, and more time spent in the car per day away from our families.
- The conversion of open space or farmland to large residential subdivisions or big box retail or distribution centers can result in decreased air quality and a loss of community character.

Berrien County Master Plan

As shown on the existing land use map, from the 2015 Berrien County Master Plan, residential areas dominate in the NATS Area, whereas the surrounding area is largely agricultural. Agriculture, the rural landscape, plays an important cultural and economic value of the whole region. Recognizing the significance of the rural community drives the Plan's objective to promote higher density infill and redevelopment within the existing urbanized areas. Similarly, other objectives proposed in the Berrien County Master Plan are in direct alignment to address goals of the NATS Long Range Plan.

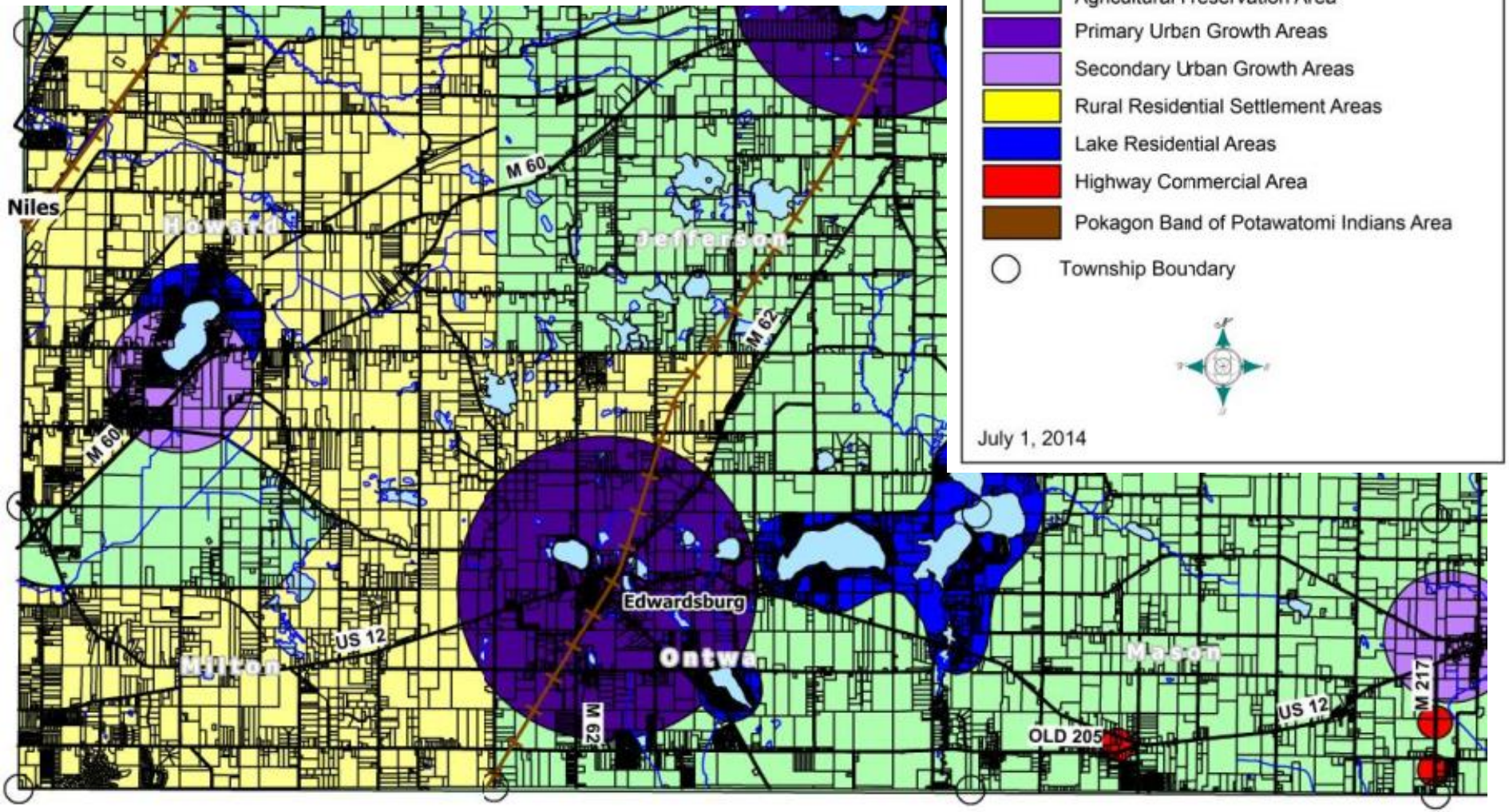


- ◊ **Maintain and provide efficiencies in the current transportation system**
- ◊ **Connect centers of employment, education, commerce, and housing with multiple modes of transportation, including non-motorized corridors**
- ◊ **Advocate "complete streets" design standards that correlate with state initiatives like Safe Routes to Schools and Building Healthy Communities**

Land Use *	Acres	Percent
Residential	132,573	36.1%
Commercial	14,202	3.9%
Industrial	6,870	1.9%
Public/ Semi-public	23,611	6.4%
Agricultural	176,265	47.9%
Roads	14,082	3.8%

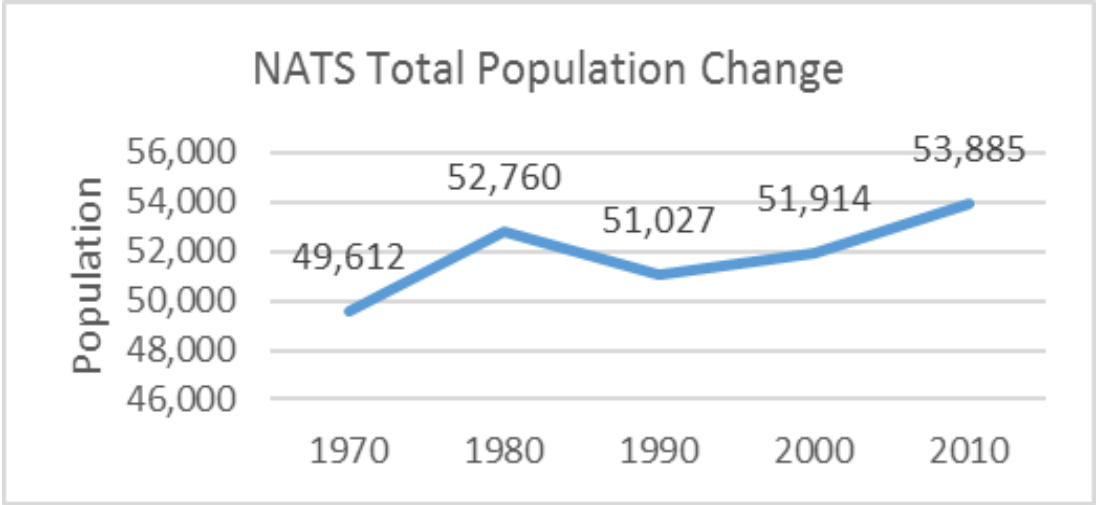
Cass County Master Plan

As shown on the Future Land Use map, from the 2014 Cass County Master Plan, rural residential and agricultural preservation areas dominate in the NATS area, with Edwardsburg area representing a primary urban growth area. A main goal of the Plan for transportation and mobility is to maintain and enhance a transportation and circulation system that responds to the county's predominant rural character, the county's regional and local needs, with emphasis on convenient, safe and efficient movement for all modes of travel including vehicular, pedestrian, and other non-motorized travel.

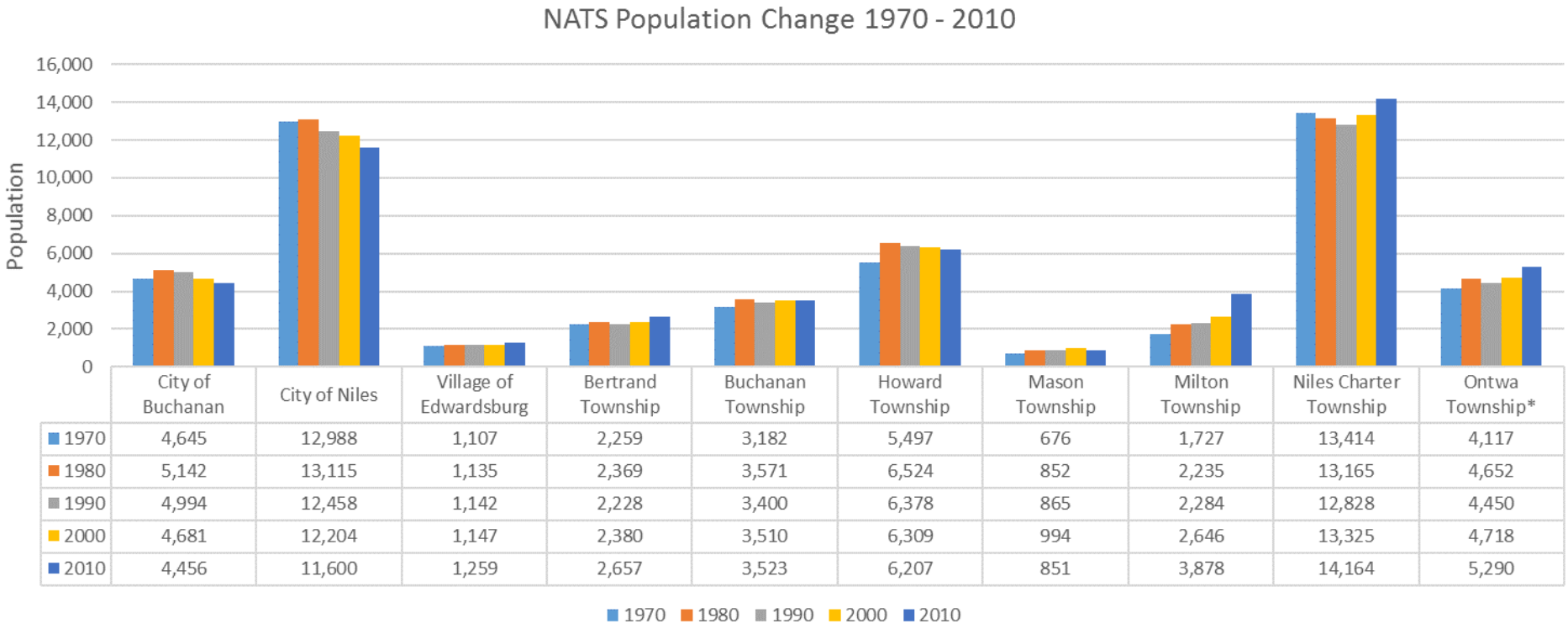


Population

During the past four decades, the population of NATS has increased 8.6 percent, standing now at 53,885. This net increase of 4,273 was largely driven by an increase in of populations in the townships as well as a slight population increase in the Village of Edwardsburg. City populations declined during this time period. Overall, the population remains relatively stable, with the City of Niles and Niles Township representing 48% of the total population in NATS.



Source (below and above figures): U.S. Census Bureau



	City of Buchanan	City of Niles	Village of Edwardsburg	Bertrand Township	Buchanan Township	Howard Township	Mason Township	Milton Township	Niles Charter Township	Ontwa Township*
1970	4,645	12,988	1,107	2,259	3,182	5,497	676	1,727	13,414	4,117
1980	5,142	13,115	1,135	2,369	3,571	6,524	852	2,235	13,165	4,652
1990	4,994	12,458	1,142	2,228	3,400	6,378	865	2,284	12,828	4,450
2000	4,681	12,204	1,147	2,380	3,510	6,309	994	2,646	13,325	4,718
2010	4,456	11,600	1,259	2,657	3,523	6,207	851	3,878	14,164	5,290

Population Shift

Comparing 1970 to 2010, the total population has not increased dramatically; however, there has been a shift in population numbers between townships, villages, and cities. The largest increase in population has occurred in Milton Township, which has grown 125% larger in the last forty years. The greatest decrease in population has occurred in the City of Niles, which lost about 10% of its people in the last forty years.

	Population					% Change
Jurisdiction	1970	1980	1990	2000	2010	1970-2010
Cities						
City of Buchanan	4,645	5,142	4,994	4,681	4,456	-4.1%
City of Niles	12,988	13,115	12,458	12,204	11,600	-10.7%
Villages						
Village of Edwardsburg	1,107	1,135	1,142	1,147	1,259	13.7%
Townships						
Bertrand Township	2,259	2,369	2,228	2,380	2,657	17.6%
Buchanan Township	3,182	3,571	3,400	3,510	3,523	10.7%
Howard Township	5,497	6,524	6,378	6,309	6,207	12.9%
Mason Township	676	852	865	994	851	25.9%
Milton Township	1,727	2,235	2,284	2,646	3,878	124.6%
Niles Charter Township	13,414	13,165	12,828	13,325	14,164	5.6%
Ontwa Township*	4,117	4,652	4,450	4,718	5,290	28.5%

NATS AREA:

Townships +18.5%

Villages +13.7%

Cities -8.9 %

	Population Forecast			
Jurisdiction	2015	2025	2035	2045
Cities				
City of Buchanan	4,382	4,324	4,329	4,283
City of Niles	11,358	11,224	11,266	11,177
Townships				
Bertrand Township	2,668	2,682	2,738	2,761
Buchanan Township	3,457	3,475	3,550	3,582
Howard Township	6,359	6,337	6,465	6,540
Mason Township	3,113	3,185	3,337	3,456
Milton Township	4,301	4,546	4,900	5,220
Niles Charter Township	13,900	14,152	14,624	14,919
Ontwa Township	6,866	6,837	6,970	7,046
NATS	**56,404**	**56,762**	**58,179**	**58,984**

Note: No forecast data specific to the Village of Edwardsburg was provided, rather it is included in the forecast numbers for Ontwa Township.

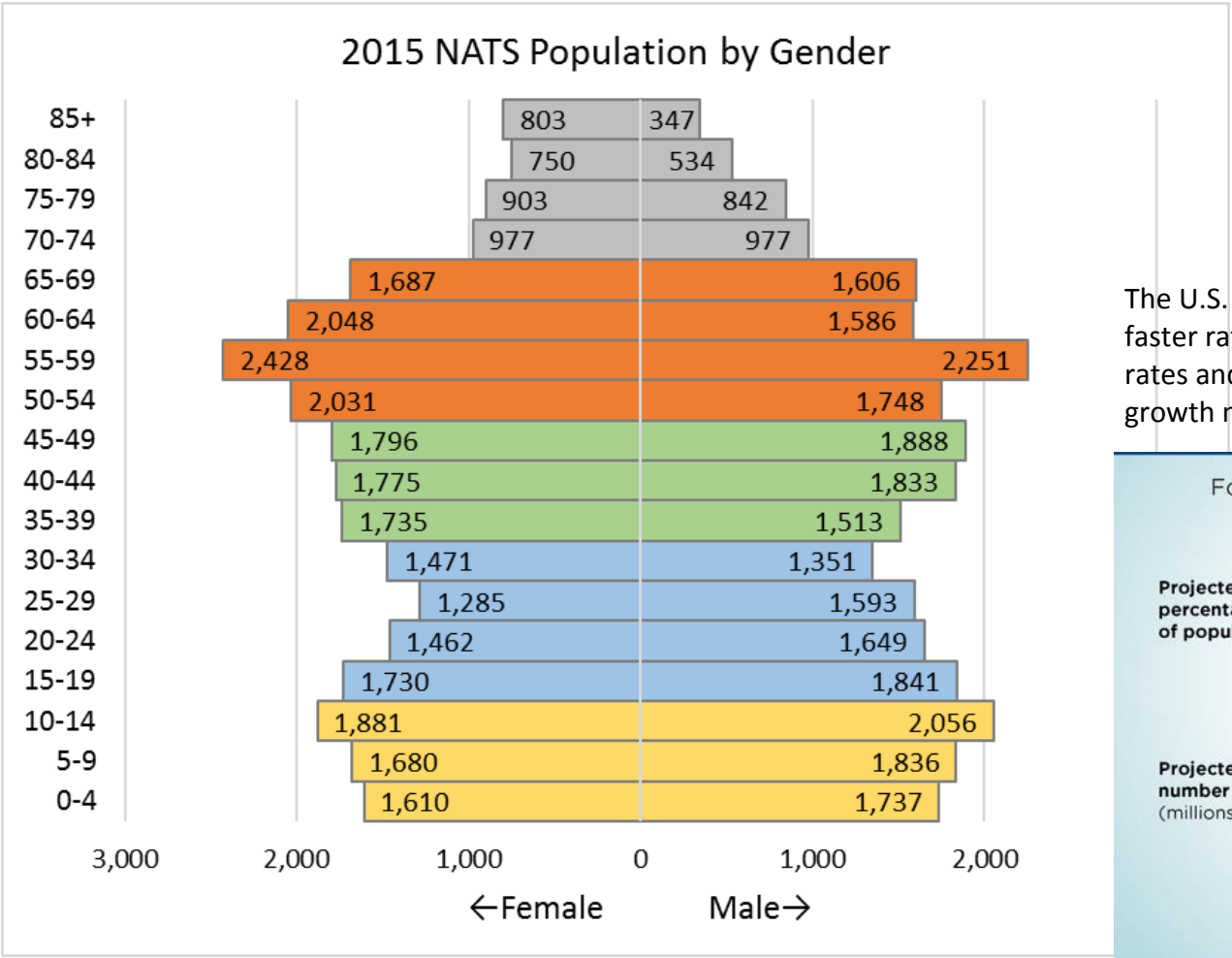
Population forecasts for 2015-2045 for the NATS region show the continuation of current trends: growth in townships and decrease in cities for a net increase in population.

Generations

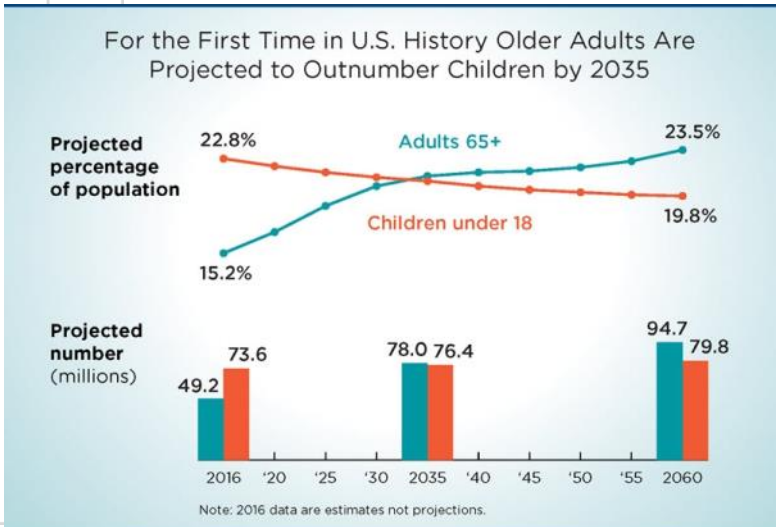
The Millennials and Boomers are the two largest age cohorts alive today nationwide and within the NATS planning area.

Millennials between 15 and 34 years of age and will be 45 to 64 by 2045. Baby Boomers, ages of 50-69 in 2015 will be 80 years and older by 2045. The Gen X population in 2015 represents 19% of the NATS area population, in 2045 will be 64-79.

Generation	Percent
Silent/Greatest (born before 1945)	11%
Baby Boomers (1945-1964)	28%
Gen X (1965-1979)	19%
Millennials (1980-2000)	22%
Generation Z (2000-2015)	20%



The U.S. population age 65 and older is growing at a faster rate than the population under age 65. Lower birth rates and increased longevity have led to this rapid growth not just in the United States but across the world.

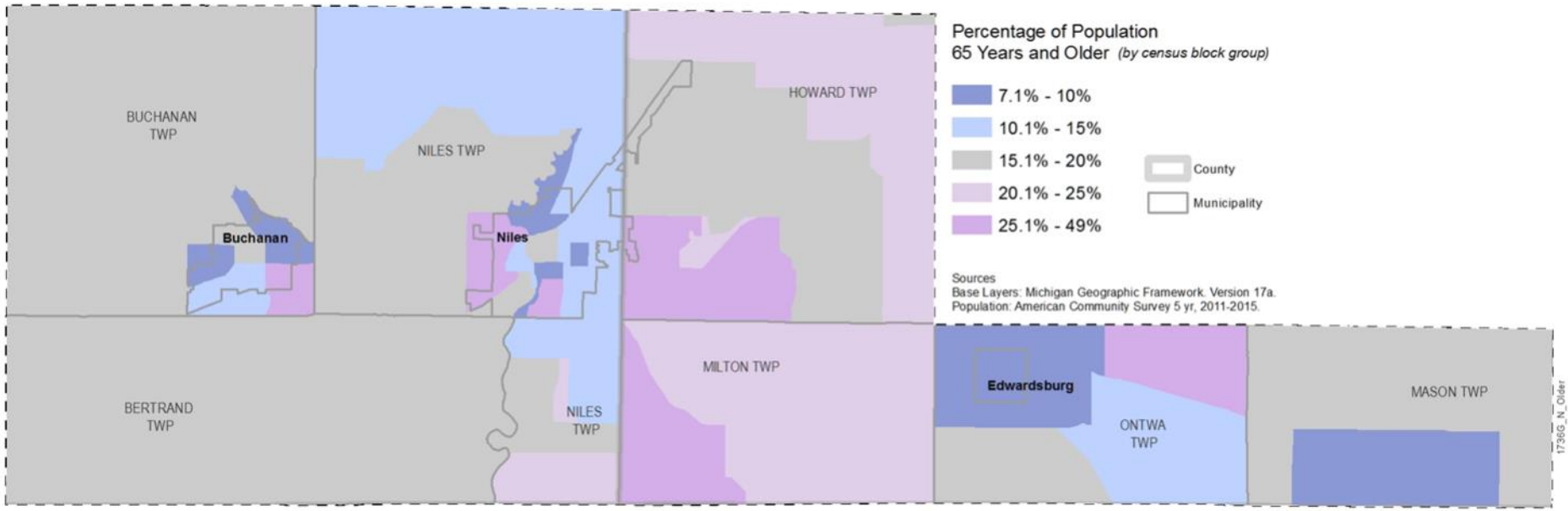


Aging Population

Aging in place requires a combination of good design in the home and connections to good social, health and transportation services.

Many communities will face challenges in meeting the mobility needs of at least some seniors in the near future and that the interrelation of housing location and mobility choices will play a big role.

Geography	Total Population	Population 65 and Over	Percent 65 Years and Over
Bertrand Township	2,630	623	23.7%
Buchanan City	4,401	893	20.3%
Buchanan Township	3,510	797	22.7%
Niles City	11,450	2,164	18.9%
Niles Charter Township	14,008	2,858	20.4%
Howard Township	6,169	1,579	25.6%
Mason Township	2,916	487	16.7%
Milton Township	3,866	1,086	28.1%
Ontwa Township	6,531	1,267	19.4%



Households

The number of households and their size is an indicator of how the population is distributed over the NATS area. Overall, the number of households by jurisdiction remained relatively steady between 2010 and 2015. The most significant gain was in the City of Buchanan with the addition of 314 households whereas Niles Charter Township saw the largest decline of 247 households. The majority of jurisdictions had a significant increase in the percent of one-person households.

2010-2015

Largest Increase

City of Buchanan

+314 Households

Largest Decline

Niles Charter Township

-247 Households

Jurisdiction	Year	Number of Households	1-Person	2-Person	3-Person	4+ Person
Cities						
City of Buchanan	2010	1,713	29.5%	29.6%	20.1%	20.8%
	2015	2,027	45.0%	23.1%	15.6%	16.3%
City of Niles	2010	4,691	33.7%	31.0%	13.5%	21.8%
	2015	4,567	36.1%	32.7%	9.6%	21.6%
Villages						
Village of Edwardsburg	2010	488	23.6%	39.1%	18.0%	19.3%
	2015	446	41.5%	27.8%	9.9%	20.9%
Townships						
Bertrand Township	2010	1,014	19.0%	47.0%	13.1%	20.8%
	2015	1,016	18.2%	41.2%	18.5%	22.0%
Buchanan Township	2010	1,351	19.2%	44.8%	9.8%	26.3%
	2015	1,295	23.0%	37.6%	16.4%	23.0%
Howard Township	2010	2,517	22.9%	36.9%	18.4%	21.8%
	2015	2,524	21.1%	45.7%	21.0%	12.2%
Mason Township	2010	1,084	23.7%	33.9%	16.6%	25.8%
	2015	997	23.1%	33.4%	11.0%	32.5%
Milton Township	2010	1,239	12.5%	34.9%	16.4%	36.2%
	2015	1,449	19.4%	46.7%	15.9%	18.0%
Niles Charter Township	2010	5,523	26.7%	38.7%	13.0%	21.6%
	2015	5,276	25.1%	36.4%	16.1%	22.4%
Ontwa Township	2010	2,389	22.9%	35.9%	12.6%	28.7%
	2015	2,477	23.7%	41.2%	13.7%	21.3%

Housing Preferences

There is a growing preference for attached and smaller detached homes. Nationwide, research shows that about 40 percent of respondents would choose to own or rent an apartment or townhouse if it had an easy walk to shops and restaurants and offered a shorter commute to work. About 60 percent of those preferring detached options would choose smaller lots if they had the same attributes.

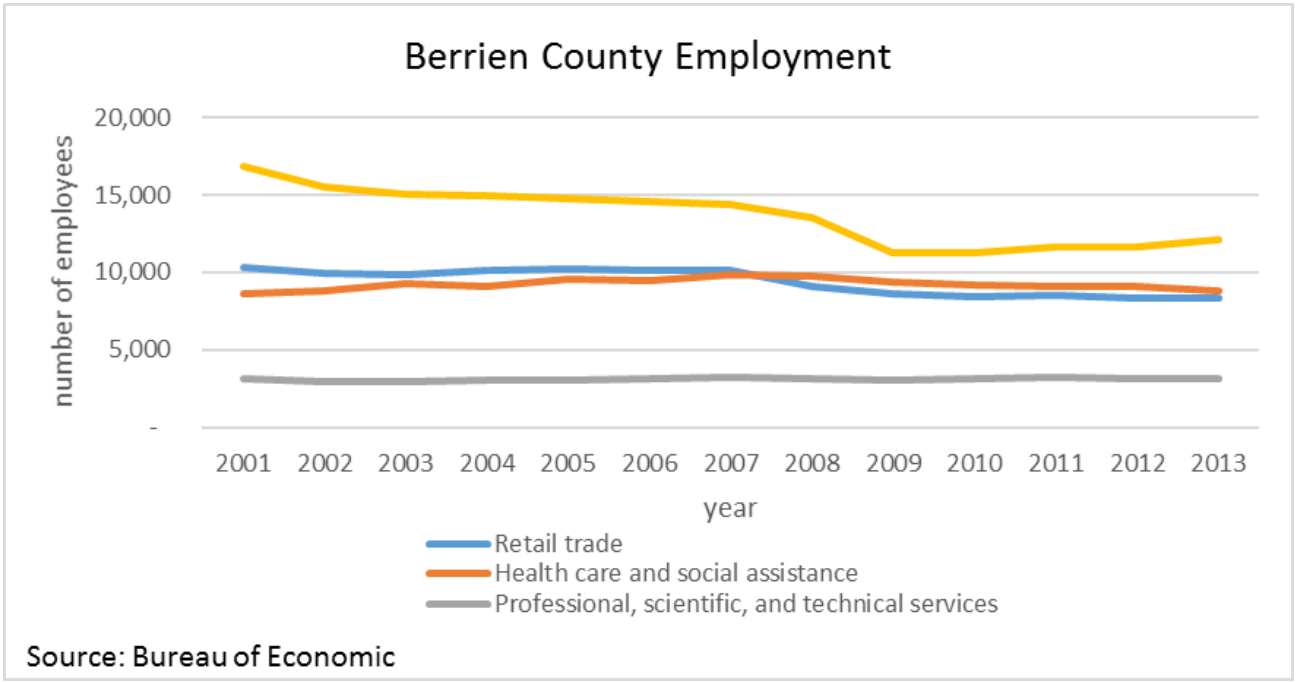
Source: Nelson, Arthur (2009). Reshaping America's built environment. Metropolitan Research Center, University of Utah

Employment

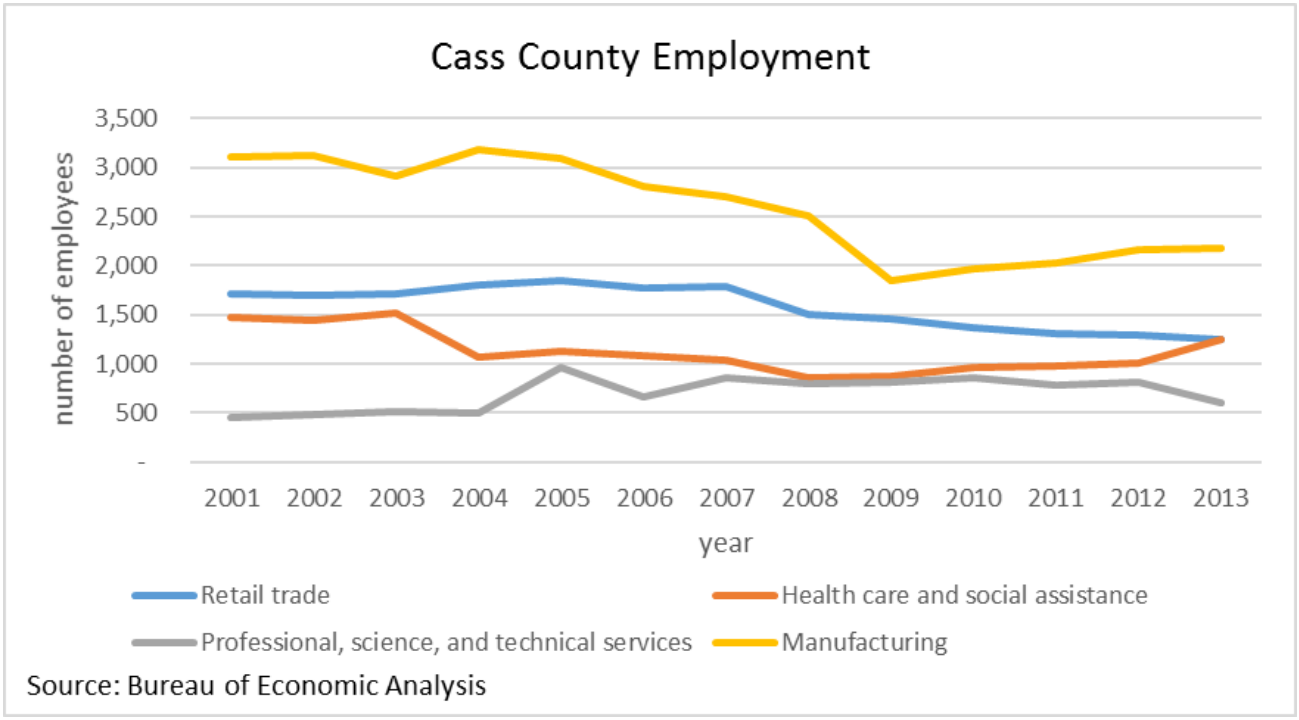
For transportation planning purposes, it is helpful to anticipate large changes in the employer/employment market.

For example, a strong retail market requires a somewhat different capacity in a transportation network than that of a strong manufacturing economy. All-season roads are likely of greater importance on a continuing basis to manufacturers than retailers are.

Employment trends in retail trade, professional, science, and technical services, health care and social assistance, and manufacturing from 2001 through 2013 are seen in tables to the left.



Source: Bureau of Economic



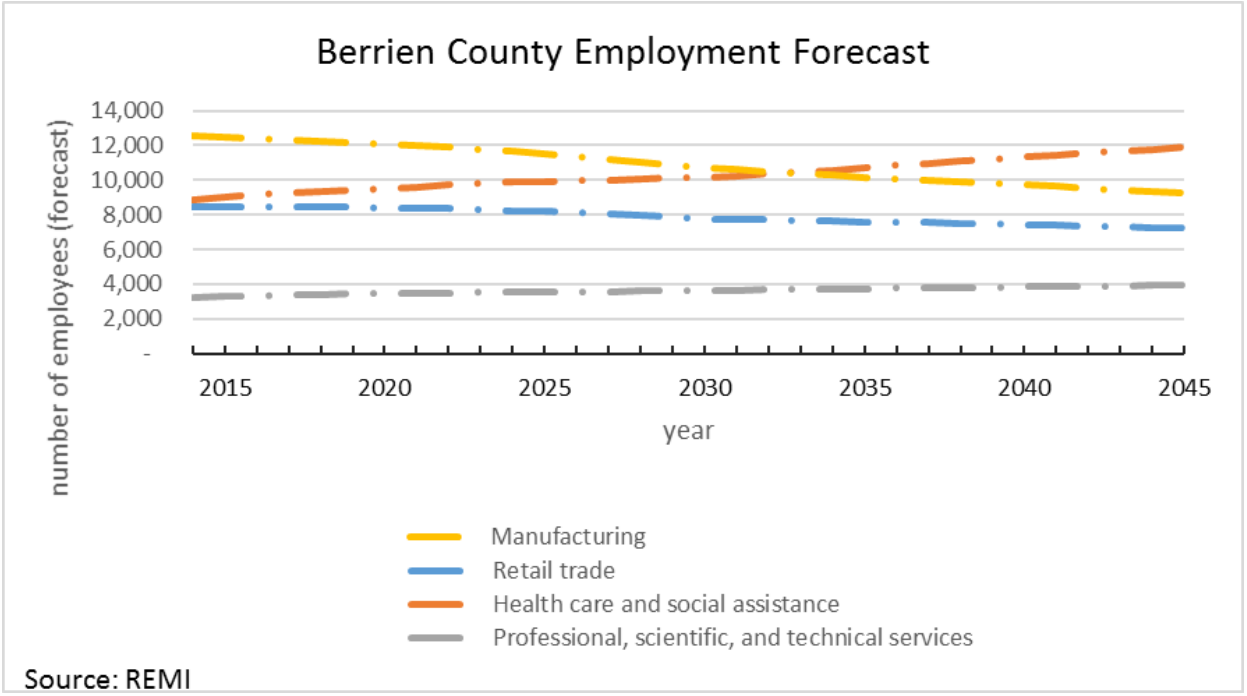
Source: Bureau of Economic Analysis

Employment Forecast

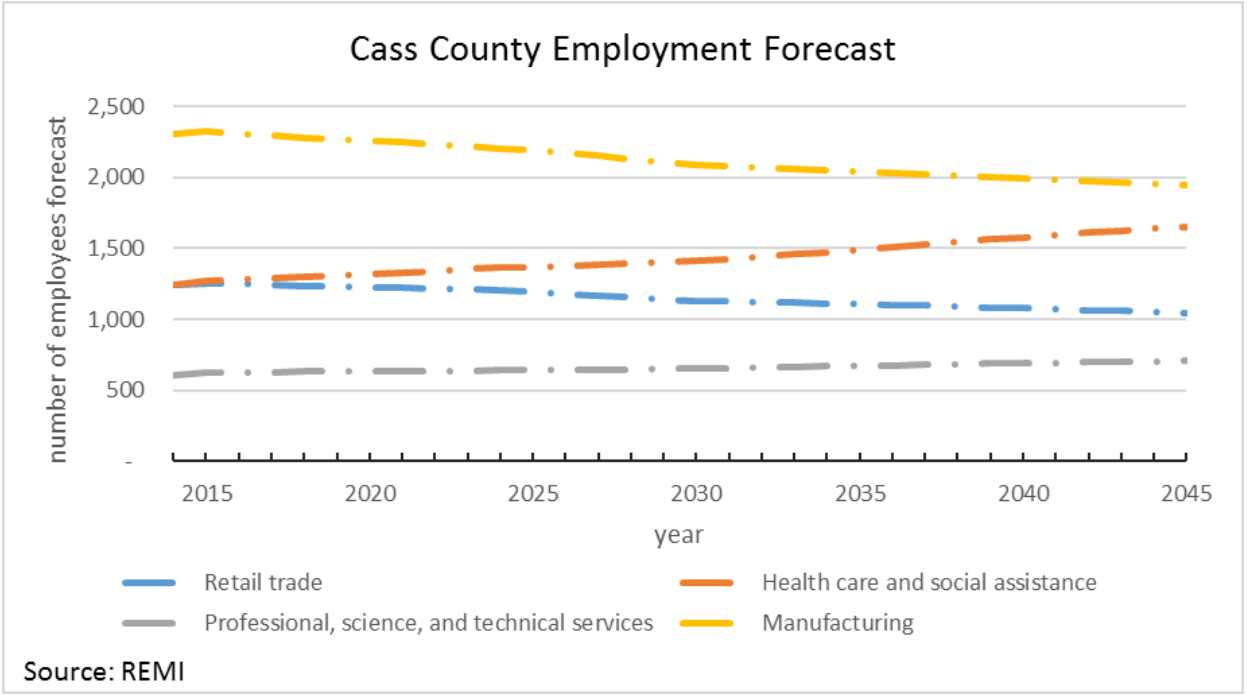
In Berrien County, employment in health care and social assistance will overtake manufacturing in the 2030s.

In Cass County, health care and social assistance employment shows a steady rise with the manufacturing sector in decline.

Overall in both counties, employment in professional, science, and technical services and health care and social assistance is expected to increase while retail trade and manufacturing employment is projected to decrease.



Source: REMI



Source: REMI

Commuting to Work

According to the American Community Survey 97.3% of workers who live in the NATS planning area commuted by personal vehicle. Of those, 88.6% drove alone while 8.7% carpooled. Only about 2.4% of the workers within the NATS area commute using active transportation such as walking, biking or taking transit. This rate is about half of the state average rate.

	Drove Alone	Carpool	Other	Bus	Bike	Walk
City of Buchanan	86.4%	12.9%	0.0%	0.6%	0.0%	0.0%
City of Niles	84.9%	8.5%	1.1%	0.8%	1.0%	3.8%
Bertrand Township	85.4%	10.8%	0.0%	1.2%	0.4%	2.2%
Buchanan Township	88.6%	10.3%	0.0%	0.0%	0.0%	1.1%
Howard Township	90.9%	6.8%	0.5%	1.0%	0.0%	0.9%
Mason Township	88.6%	8.8%	0.0%	2.2%	0.0%	0.3%
Milton Township	94.5%	3.9%	0.0%	0.6%	1.0%	0.0%
Niles Township	89.8%	8.2%	0.1%	0.7%	0.0%	1.2%
Ontwa Township	89.0%	9.4%	0.3%	0.3%	0.2%	0.8%
NATS Total	88.6%	8.7%	0.3%	0.7%	0.3%	1.4%
Michigan	85.7%	9.2%	0.9%	1.5%	0.5%	2.3%

Highest rate of pedestrian and bicycle commuters

City of Niles 4.8%

Highest rates of commuting by automobile

Buchanan Twp. 99%

Reliance on automobiles for trips to and from work increases as the distance from high-density employment areas increases.

Average Commute Time 2010-2015

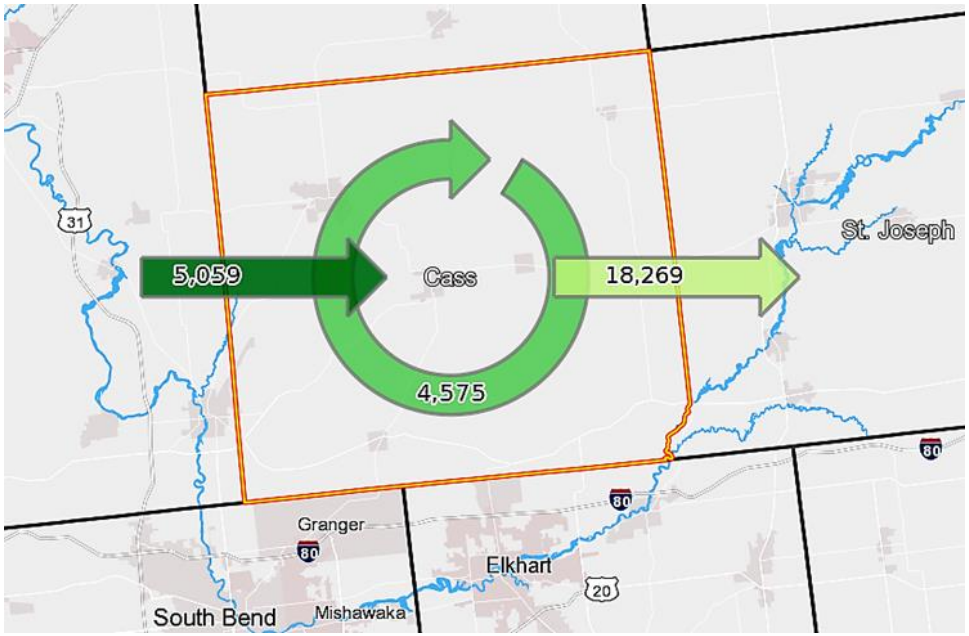
NATS Area
23 Minutes

Michigan
24 Minutes

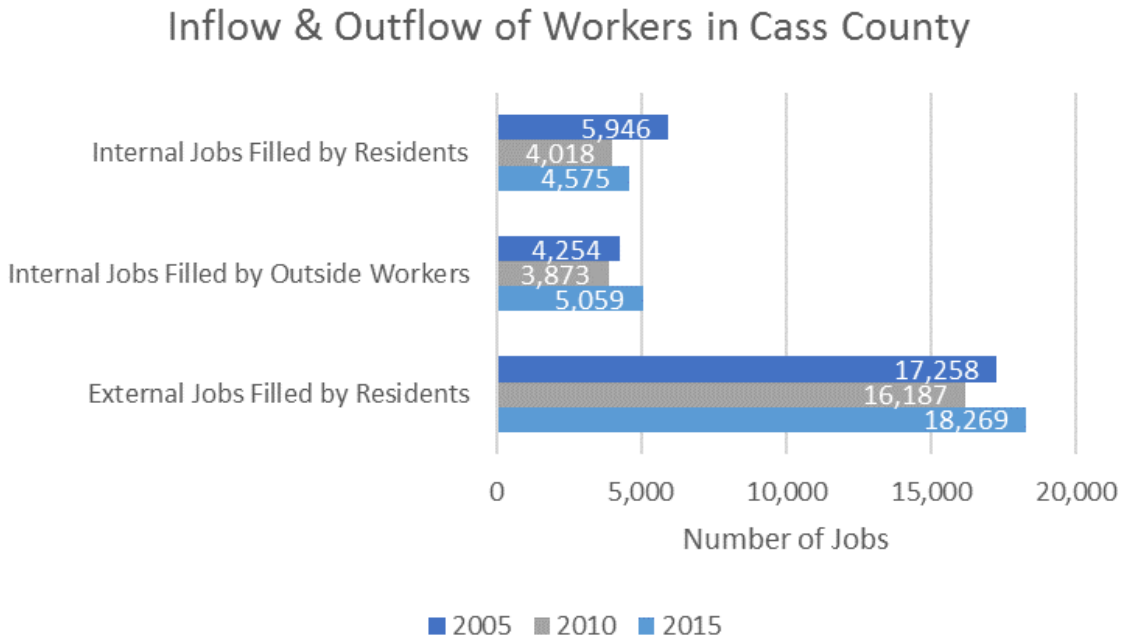
United States
26 Minutes

Commuting within Cass County

U.S. Census Bureau's Longitudinal Employer-Household Dynamics Origin-Destination Employment data measures the inflow and outflow of Cass County's workers and employed residents. Today, 80% of commuters who reside in Cass County work outside of the county. From 2005 to 2015, there has been a 6% increase in the number of jobs filled by residents within the county. By contrast, there has been a 19% increase in internal jobs being filled by workers living outside the county.



2015 U.S. Census Bureau's Longitudinal Employer-Household Dynamics Origin-Destination Employment data.



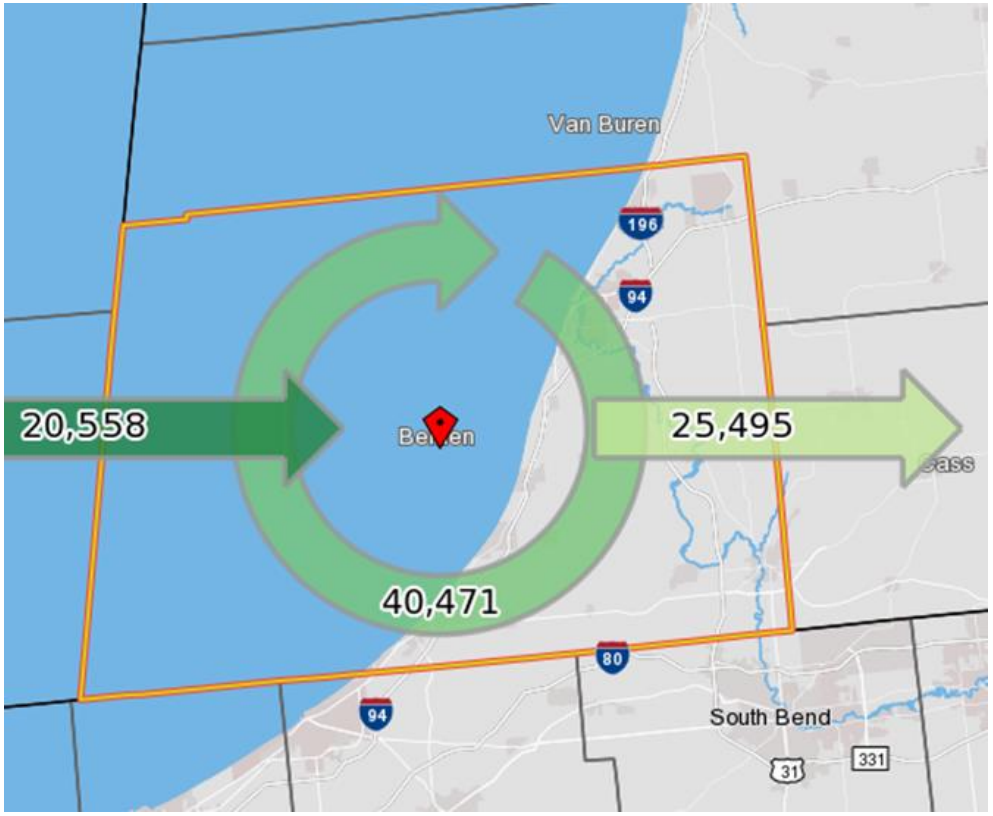
4,575 commuters LIVE and WORK in Cass County.

5,059 commuters ENTER Cass County every day for work.

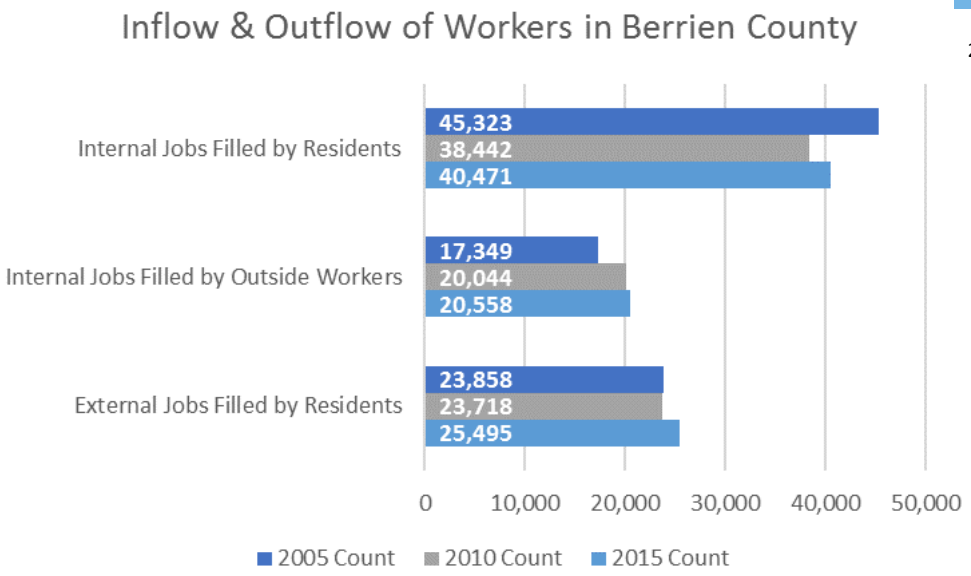
18,269 commuters LIVE in Cass County and WORK outside the County.

Commuting within Berrien County

U.S. Census Bureau's Longitudinal Employer-Household Dynamics Origin-Destination Employment data measures the inflow and outflow of Berrien County's workers and employed residents. Today, 37 percent of commuters who reside in Berrien County work outside of the County. From 2005 to 2015, there has been a 12 percent increase in the number of jobs filled by residents within the County.



2015 U.S. Census Bureau's Longitudinal Employer-Household Dynamics Origin-Destination Employment data



40,471 commuters LIVE and WORK in Berrien County.

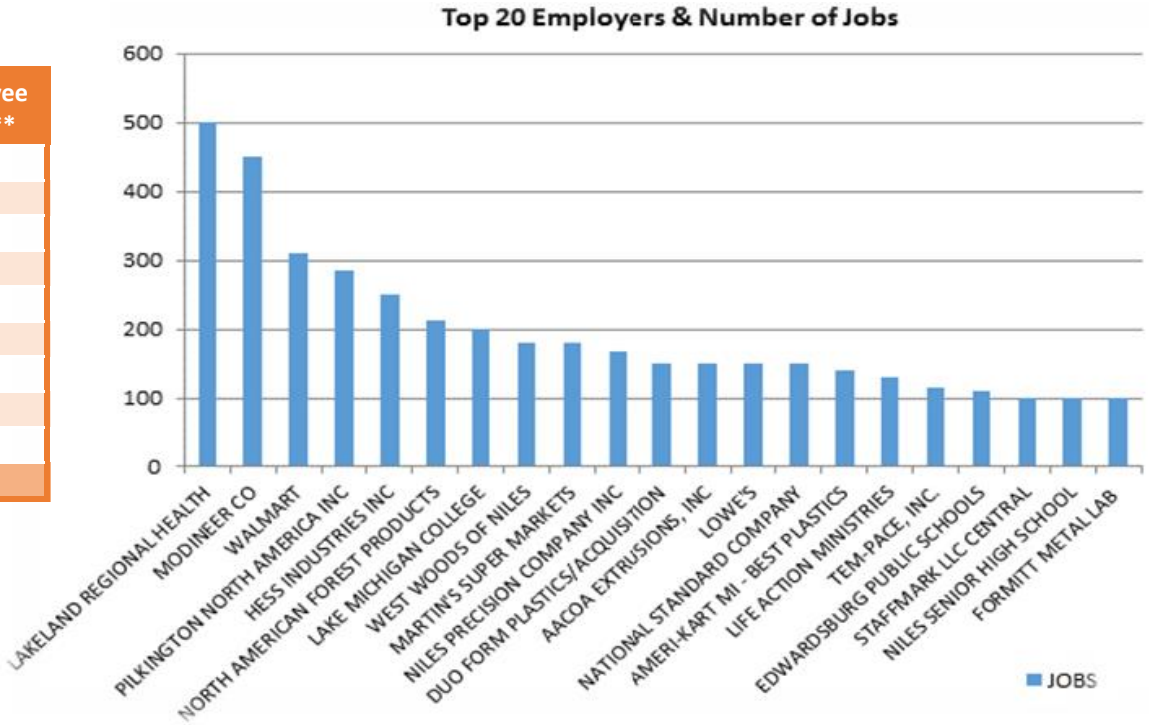
20,558 commuters ENTER Berrien County every day for work.

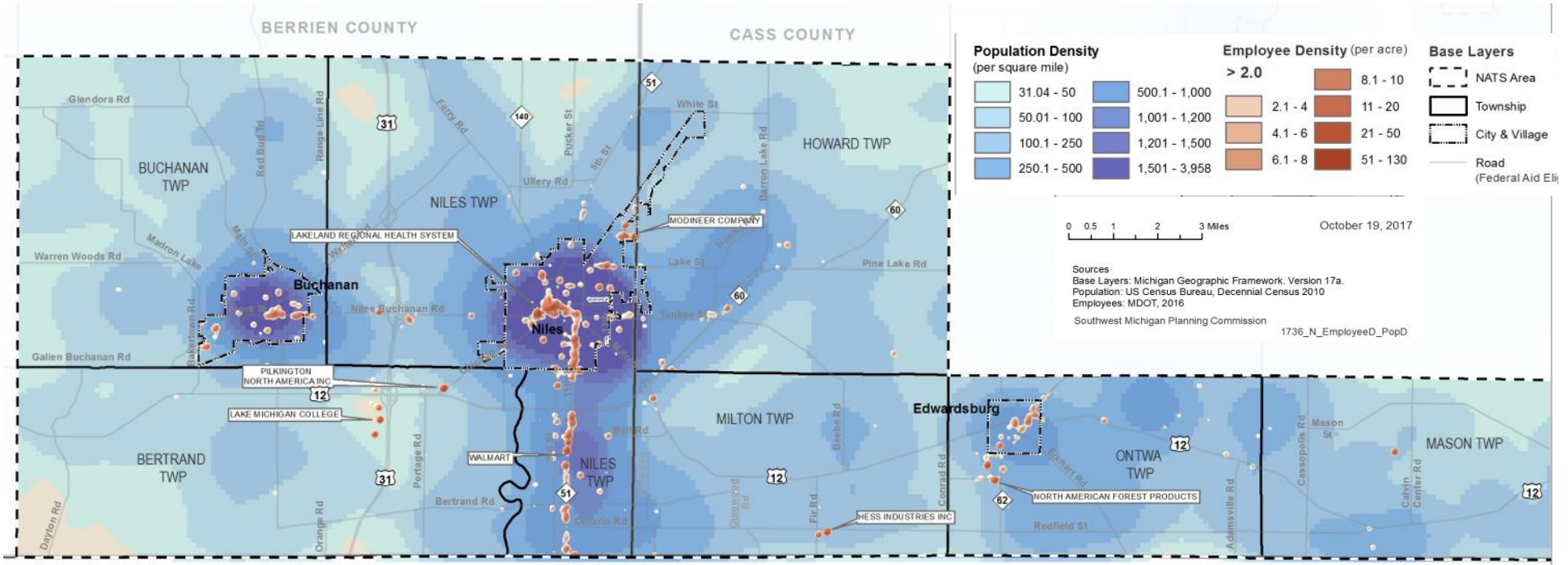
25,495 commuters LIVE in Berrien County and WORK outside the County.

Employment & Population Density

	Employ-ees	Total Pop.	Pop. 15-64 years old	Employee Ratio**
City of Buchanan	1,579	4,382	2,952	0.53
City of Niles	4,227	11,358	7,252	0.58
Bertrand Twp	615	2,668	1,661	0.37
Buchanan Twp	233	3,457	2,025	0.12
Howard Twp	491	6,359	4,136	0.12
Mason Twp	250	3,113	1,947	0.13
Milton Twp	252	4,301	2,854	0.09
Niles Ch. Twp	2,662	13,900	8,784	0.30
Ontwa Twp	1,672	6,866	4,407	0.38
NATS Totals	11,981	56,404	36,018	0.33

**Number of employees compared to working age population. A value of 1 means equal number of jobs to working age population. A value below one means more residents than jobs.





Employment Density & Median Household Income

Median household income serves as an important indicator of transportation options available for the residents of the region. Lower household incomes usually correlates with lower vehicle ownership and thus a greater reliance on other modes of transportation such as public transit to reach employment opportunities.

Median Household Income—2015

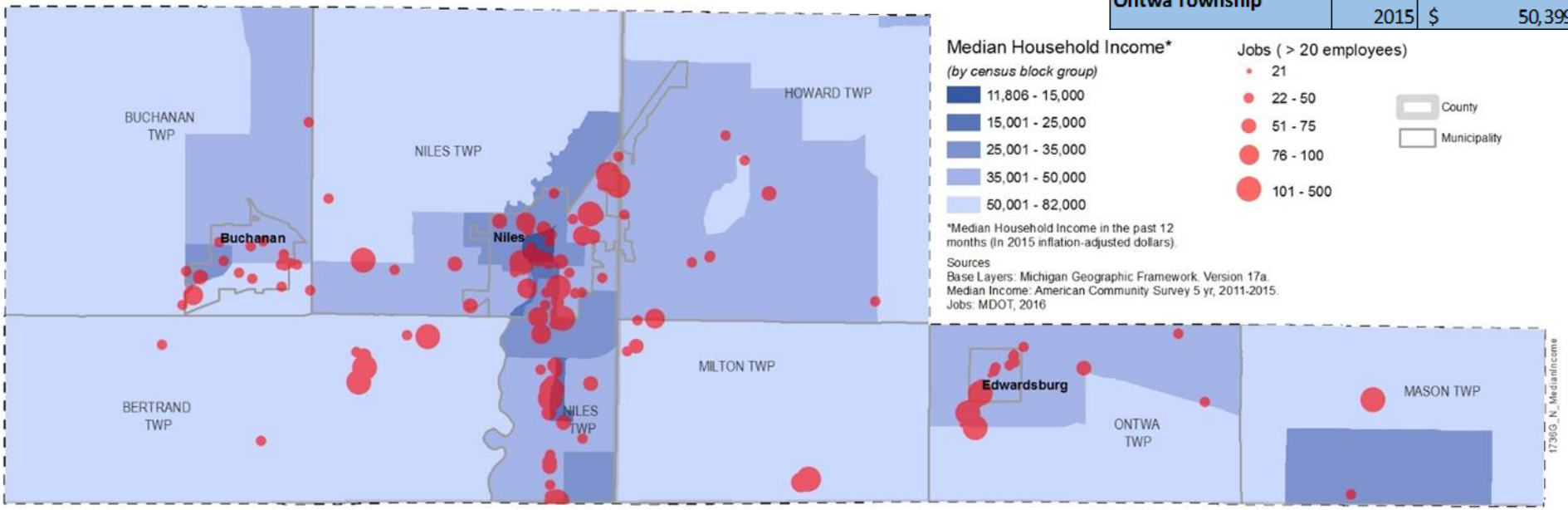
Highest—Bertrand Township City, $65,147

Lowest—Village of Edwardsburg, $30,333

Michigan: $49,576 United States: 53,889

Sources: American Community Survey

Jurisdiction	Year	Median Household Income
Cities		
City of Buchanan	2010	$ 32,691
	2015	$ 41,339
City of Niles	2010	$ 31,757
	2015	$ 33,651
Villages		
Village of Edwardsburg	2010	$ 33,387
	2015	$ 30,333
Townships		
Bertrand Township	2010	$ 66,087
	2015	$ 65,147
Buchanan Township	2010	$ 56,926
	2015	$ 61,685
Howard Township	2010	$ 52,344
	2015	$ 49,512
Mason Township	2010	$ 42,960
	2015	$ 47,474
Milton Township	2010	$ 69,856
	2015	$ 53,474
Niles Charter Township	2010	$ 43,035
	2015	$ 43,334
Ontwa Township	2010	$ 49,883
	2015	$ 50,399



Potential Future Impacts

COMMUTER TRAVEL PREFERENCES

Younger generations are increasingly looking for more transportation options, especially for their trips to work. Frequent transit routes and bicycling facilities are in higher demand.

Choosing to live closer to where you work provides opportunities to walk. As the desire to walk more increases, the demand for better sidewalk conditions also increases.

E-COMMERCE

For many decades, consumers traveled to retail stores to purchase goods. As online retail companies grow their services, a new pattern of e-commerce is emerging. Instead of delivering a large quantity of goods by truck to stores, internet purchases create a demand for more distribution centers nationally, and the use of many smaller delivery vehicles traveling directly to the home of each customer.

CLIMATE CHANGE

Environmental changes could challenge the resiliency of the transportation network. Roadways, bridges, and other transportation infrastructure are susceptible to environmental impacts including a higher frequency of flash flooding and unpredictability of pavement freeze-thaw cycles, which could lead to uncertainty of material lifecycles.

These impacts have the potential to effect daily regional transportation operations.

AUTONOMOUS VEHICLES

Fully autonomous vehicles are currently rare and primarily still in prototype stages. In order to operate in the real world, they will require significant infrastructure support, like consistent roadway paint and signage, as well as sophisticated on-board communication software. Autonomous vehicles have the potential to significantly disrupt transportation networks in the future, occurring faster in some regions of the country than in others.

GUIDING PRINCIPLES & STRATEGIES

Economic Opportunity

Supports growth, innovation, job creation and productivity.

Environment

Protects and preserves our natural resources, including land, water and air.

System Preservation

Maintains existing facilities in good and reliable condition.

Choice

Offers multi-modal transportation options that are affordable and accessible.

Safety & Security

Enhances the safety and security of all users.

Health

Invites and enhances healthy and active lifestyles.

Equity

Provides access and opportunity for all people and all neighborhoods.

Resiliency & Reliability

Improves the ability to prepare, plan for, absorb, and recover from actual or potential adverse events.

Economic Opportunity

Supports growth, innovation, job creation and productivity

An efficient, reliable, and accessible transportation network is an essential component for fostering economic opportunity – one that connects suppliers with producers; businesses with workers and customers; and people with employment centers, education, and services.

A modern transportation system is indispensable for our region's future prosperity. To sustain our economy and quality of life, residents must be able to travel quickly and easily around our region so they can choose from a wide variety of jobs, and communities in which to live. Businesses must be able to count on timely delivery of their goods.

Proximity

Proximity to major markets of Chicago, Indianapolis, Detroit (90 miles to Chicago, 165 miles to Indianapolis, 180 miles to Detroit)

- 3 Class 1 & 2 short rail providers, deep freight ports in St. Joseph MI, Burns Harbor, IN and Chicago IL.
- Convergence of U.S. 12, U.S. 31, M-60, M-51, and M-140, making connection to Interstate 80/90 and I-94 quick and easy.
- 44 million people are within in a five-hour radius.
- 40 million people can be reached overnight via over-the-road transport. (UPS)

Labor Force and Talent

Proximity greatly impacts the quality of the labor shed. The NATS planning area is positioned to pull labor not only from within the planning area, but also South Bend, Elkhart, Mishawaka and Michigan City, Mishawaka, and Kalamazoo.

Distribution and Logistics Cluster

Michigan's Great Southwest's proximity to major thoroughfares and strategic positioning between Chicago, Indianapolis and Detroit, make it a natural fit for focusing on the targeted industry of logistics and warehousing. The Southwest Michigan Warehouse & Distribution Center in Niles, Michigan is a multi-client food grade distribution center with a transload and rail service via Norfolk Southern Rail. FedEx and UPS have dedicated terminals at the South Bend Regional Airport.

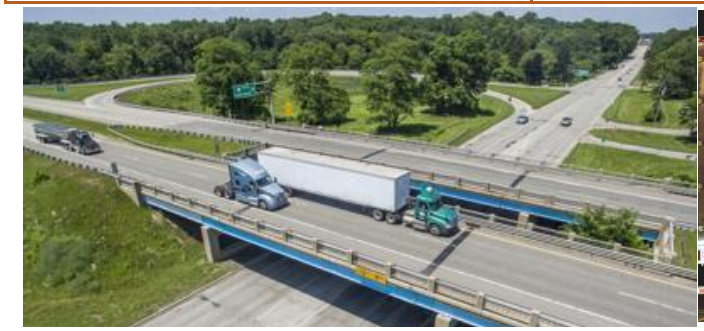
The efficiency of Michigan's transportation system, particularly its highways, is critical to the health of the state's economy. Businesses rely on an efficient and dependable transportation system to move products and services. A key component in business efficiency and success is the level and ease of access to customers, markets, materials and workers.

TRIP National Transportation Research Group

Strategies to Enhance Economic Opportunity

- Encourage the use of intelligent transportation technologies to improve corridor efficiency.
- Encourage integrated corridor management by engaging critical stake-holder groups that include: MDOT, local road agencies, public transit, freight haulers, emergency management , law enforcement.)
- Complete US 31 to a achieve free flow freeway traffic movement between US 31 and I-94 & I-196

Performance Measure	Description	Base Data - 2017		State Target 2021	Data Source
		SWMPC *	State		
Percentage of the person-miles traveled on the Interstate that are reliable.	The percentage of miles traveled by a person on the Interstate that are reliable.	NA	85%	75%	INRIX/ NPMRDS
Percentage of the person-miles traveled on the non-Interstate NHS that are reliable.	The percentage of miles traveled by a person on the non-Interstate NHS that are reliable.	94.3%	86.1%	70%	INRIX/ NPMRDS
Truck Travel Time Reliability (TTTR) Index	The sum of maximum TTTR for each reporting segment, divided by the total Interstate system miles	1.11	1.38	1.75	INRIX/ NPMRDS



Environment

Protects and preserves our natural resources, including land, water and air.

Air Quality

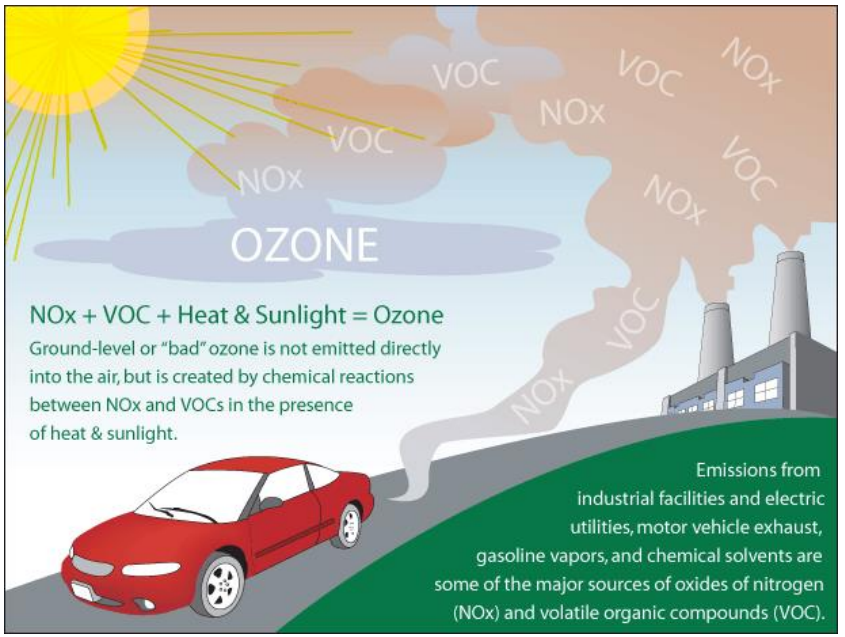
The Air Quality Clean Air Act requires the United States Environmental Protection Agency to set limits on how much of a particular pollutant can be in the air anywhere in the United States. National Ambient Air Quality Standards are the pollutant limits set by the Environmental Protection Agency; they define the allowable concentration of pollution in the air for six different pollutants:

- Carbon Monoxide
- Lead
- Nitrogen Oxides
- Particulate Matter
- Ozone
- Sulfur Dioxide

The Clean Air Act specifies how areas within the country are designated as either "attainment" or "nonattainment" for an air quality standard and provides the Environmental Protection Agency the authority to define the boundaries of nonattainment areas. On August 3rd 2018 Berrien County was designated in nonattainment status for the 8-Hour Ozone 2015 National Ambient Air Quality Standard (NAAQS) and therefore is subject to air quality conformity requirements. In addition, Berrien and Cass county must also still separately show conformity for the 1997 Ozone standards.

For areas designated as nonattainment for one or more National Ambient Air Quality Standards, the Clean Air Act defines a specific timetable to attain the standard and requires that nonattainment areas demonstrate reasonable and steady progress in reducing air pollution emissions until such time that an area can demonstrate attainment. Each state must develop and submit a State Implementation Plan that addresses each pollutant for which it fails to meet the National Ambient Air Quality Standards. Individual state air quality agencies are responsible for defining the overall regional plan to reduce air pollution emissions to levels that will enable attainment and maintenance of the National Ambient Air Quality Standards.

This strategy is articulated through the State Implementation Plan. Regions, which do not meet air quality standards, are required to develop transportation plans in conformance with the State Implementation Plan (SIP), including more frequent updates to plans such the Long Range Transportation Plan.



As a result of nonattainment status all transportation projects were reviewed to ensure they will not worsen the violation.

The Berrien County and the Cass Country Air Quality Conformity Analysis' can be found at: www.swmpc.org/iawg.asp

Transportation and Land Cover

Looking at both the land use and land cover provides a comprehensive picture of the area. Land use, referring to **how** people are using the land, while land cover is defined by **what** is on the surface of the land, whether vegetation, urban infrastructure, water, bare soil or other. For example, a land use of residential may have the land cover of developed or if vacant, the land cover of forest.

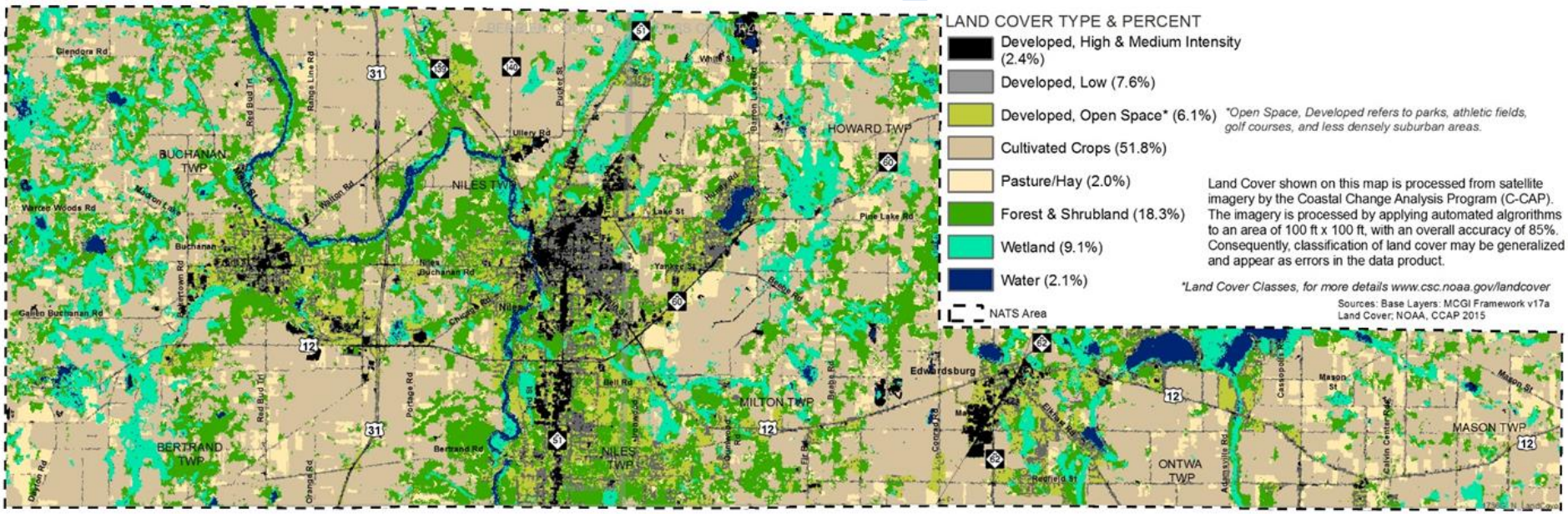
In the NATS area, an invaluable natural resource is the water, shown on the map as a network of rivers, streams, and open water. The system network of water also include the wetlands which are found along these waterbodies including the St Joseph River running north through the Niles and a cluster of large lakes in Ontwa Township. Forest and areas of open space surrounds the cities, Buchanan and Niles. Open space, refers to places that are developed, yet the landscape remains relatively natural, such as a golf course or park. Farmland dominates the NATS area at 52% of the land cover.

The highest intensity of development are within the city and village limits with a distinct strip up M-51 from the Indiana border following the railroad tracks north of the City of Niles, and a large industrial park in Edwardsburg. Other pockets of development follow US-12 between Buchanan and Niles.

Overall, the major land cover in the NATS area is crops with clusters of development in the cities, village and along the transportation system.

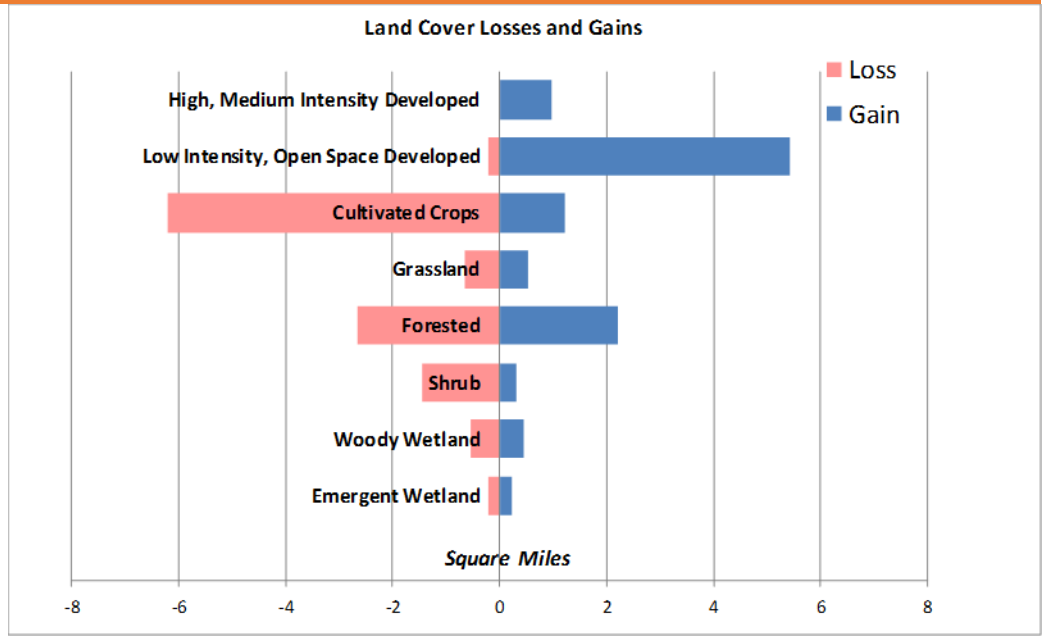
LAND COVER – Developed, Wetlands, Crops
PHYSICAL AND BIOLOGICAL FEATURES

LAND USE – Residential, Commercial, Agriculture
HOW THE LAND IS USED



Land Cover Change 1975-2016

Overall, in the NATS area there has not been major changes in land cover especially in terms of number of square miles. Although, when considering land cover as a proportional change, high to medium density has grown the most, at 28%. Low density combined with Open Space grew by 22%, which occurred with the conversion a loss of Crop Land. There was a large loss of Shrub, at 26%, yet this is a natural event of Shrub changing to Forest.



Source: NOAA's Coastal Change Analysis Program (C-CAP) 1975 to 2016 Regional Land Cover Change Data

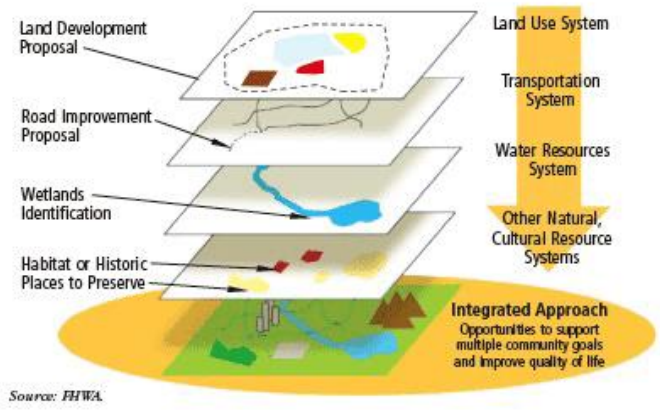
**Land Cover Classes, for more details www.csc.noaa.gov/landcover*

Land Cover	1975	Loss	Gain	2015	Net Change	Percent Change
High, Medium Intensity Developed	3.43	-0.01	0.98	4.40	0.97	28.3%
Low Intensity, Open Space Developed	23.92	-0.22	5.44	29.14	5.22	21.8%
Cultivated Crops	115.47	-6.21	1.23	110.49	-4.98	-4.3%
Grassland	4.47	-0.66	0.54	4.35	-0.12	-2.6%
Forested	36.38	-2.65	2.20	35.94	-0.44	-1.2%
Shrub	4.35	-1.45	0.32	3.21	-1.14	-26.1%
Woody Wetland	17.91	-0.55	0.45	17.81	-0.10	-0.6%
Emergent Wetland	2.80	-0.21	0.22	2.81	0.01	0.4%

Trend: A common trend in the region is the loss of farmland (crops). This trend also occurred in the NATS area for 5 square miles. Cultivated Crops transformed into three other land covers, Low Intensity Density, Open Space and Forest.

How we use our land impacts the type of design of transportation infrastructure and feasibility of travel modes. While it is important to recognize differences in local and regional land use and economic development objectives, coordinating land use with transportation is an essential step in addressing many environmental concerns.

Planning and Environment Linkages



Strategies to Protect or Preserve the Environment

- Avoid impacts to environmentally sensitive features, such as woodlands and wetlands, early in the planning process when planning for and designing and building new infrastructure.
- Integrate land use and economic development goals with transportation planning. Encourage and support land use plans and policies to enhance overall transportation efficiency, including compact and mixed use development.
- Establish communication and an informational process with municipalities to emphasize the land use-transportation connection.
- Promote ridesharing through the Go Rideshare program to reduce single occupancy trips.
- Program CMAQ projects utilizing cost-effective clean air strategies that implement the transportation and motor vehicle provisions of the State Implementation Plan (SIP)

Performance Measure	Description	Baseline Data	Target	Data Source
Total nitrogen oxides (NOx) emission reduction (Berrien County)	The amount of NOx emitted through mobile sources. (Tons per day)	5.29	Decrease	FHWA/MDOT Emission Forms
Total volatile organic compounds (VOC) emission reduction (Berrien County)	The amount of VOC emitted through mobile source (Tons per day)	3.26	Decrease	FHWA/MDOT Emission Forms
Percent of Single Occupancy Vehicles	The percentage change in single occupancy vehicles	85%	Decrease	American Community Survey (ACS)

Maintains existing facilities in good and reliable condition.

Maintenance and modernization of highways, bridges and transit infrastructure is a central focus at the federal and state level. Going forward, the state of good repair will be a local priority as well.

Asset Management

Systematic way of maintaining, upgrading, and operating physical assets cost effectively.

State and local agencies have made strides toward building effective asset management systems:

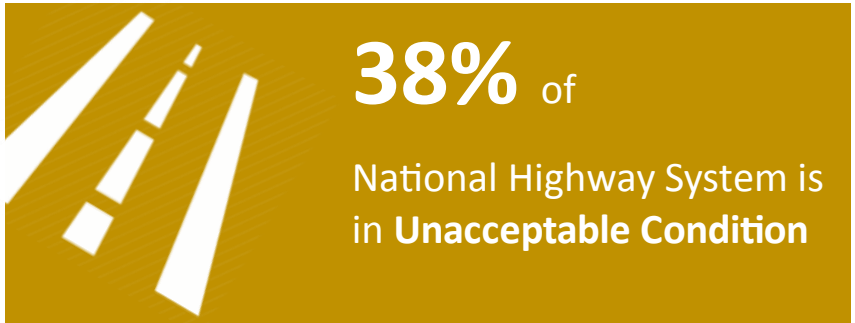
⇒ State of Michigan piloted Regional Infrastructure Pilot that will standardize the way data is collected across all infrastructure types and jurisdictions.

⇒ Transportation Asset Management Council piloted a culvert assessment program to assess condition within municipalities and counties.

⇒ Niles Dial a Ride public transit is actively assessing and building an inventory of assets including vehicles .

⇒ Some local communities have invested in a pavement management system to help them decide the type and timing of pavement management.

NATS Planning Area



38% of National Highway System is in **Unacceptable Condition**

6% of Locally controlled bridges are in **Poor condition**

69% of Locally controlled federal aid roads **are in Poor Condition**

43% of Transit vehicles have **Exceeded Their Useful Life**

Strategies to Ensure System Preservation

- Effectively manage and maximize existing transportation assets by prioritizing preservation treatments, rehabilitation and replacement of aging infrastructure.
- Focus investments on roadways with the highest traffic volumes.
- Ensure investments are adequate to improve bridge and pavement conditions,
- Ensure public transit assets are in a state of good repair.

Performance Measure	Description	Base Data - 2017		State Target	Data Source
		NATS	State		
Pavement Condition of the Interstate System	Percentage of pavement in good condition	NA	56.8%	47.8%	International Roughness Index
	Percentage of pavement in poor condition	NA	5.2%	10.0%	
Pavement Condition of the Non-interstate National Highway System	Percentage of pavement in good condition	20.4%	49.7%	43.7%	International Roughness Index
	Percentage of pavement in poor condition	53.1%	18.6%	24.9%	
National Highway System (NHS) Bridge Condition	Percentage of deck area in good condition	6.7%	32.7%`	26.2%	National Bridge Inventory
	Percentage of deck area in poor condition	0%	9.8%	7.0%	

Performance Measure	Description	Asset	Base Data - 2018	Target 2019-2020	Data Source
Rolling stock in a state of good repair	Percent of rolling stock transit vehicles that have exceeded useful life	CU – Cutaway Buses –6	43%	26%	PTMS
Non-revenue vehicles in a state of good repair	Percent of non-revenue vehicles that have exceeded useful life	Truck with snow plow	100%	100%	PTMS
Facilities in a state of good repair	Percent of facilities within an asset class rated 3 or below on the FTA TERM scale	Administration/ Maintenance Building	1% rated 3.0 on FTA TERM	0%	PTMS

Develop a transportation system that expands transportation options and connectivity.

CHOICE

Transportation that meets the diverse needs of individuals as they move through their lives.

It takes me **where** I want to go.

It takes me **when** I want to go.

It is a good use of my **time**.

It is a good use of my **money**.

I can **trust** it.

It **respects** me.

It gives me **freedom** to change my plans.

Source *Jarrett Walker "*Human Transit: How Clearer Thinking About Public Transit Can Enrich Our Communities and Our Lives"

A variety of safe, affordable, dependable and user-friendly travel options enables people of all ages to stay active and engaged in their communities. A community that provides easy transportation access to its citizens is a community that works better. It is about connecting people to the jobs, schools, stores, doctors, and social activities they use every day. Without public transit, bike lanes, sidewalks, and walking paths that encourage outdoor exercise, many residents risk being cut off from opportunities to work, socialize, and maintain a daily routine.

The benefits of improved transportation choices are cross-generational, young people have more options to get to school and recreational activities, older residents stay independent, workers of all ages can commute to their jobs and the opportunity to connect to places outside of the region increases, when people have choices.

A One-Stop Shop for Transportation Options

In 2010 the Southwest Michigan Planning Commission created and housed a Mobility Management program until 2018 when the Twin Cities Transportation Authority took over the program. The goal of the program was to organize and foster a full range of transportation options for all users and to provide person-centered transportation plans for people with disabilities, low income people and seniors. The My Way There website is a product of the program and contains information on a full range of transportation options for Berrien, Cass and Van Buren Counties. Also through the program, one on one information was provided to people to solve their transportation hurdles and out-reach meetings at work sites was initiated to share transportation options in the area.

Mobility Management

Mobility management involves creating partnerships with transportation providers in a community or region to enhance travel options, and then developing the means to effectively communicate those options to the public through both traditional and state-of-the-art channels. It requires moving beyond the usual patterns of doing business. Through innovation and multi-agency activity, resources can be coordinated efficiently, customers can make better decisions, and customer service and satisfaction is enhanced.

Components of a good mobility management program:

- Multi-agency partnerships that can reduce costs through efficient and effective coordination; potential partners might include social service agencies, senior programs, non-emergency medical providers, and taxi companies.
- A customer-driven, market-based approach to transportation delivery that offers a variety of individualized travel options.
- Greater use of information technology systems in real time, which includes the development and implementation of one-stop travel information and trip planning systems.

Mobility management is an overarching approach to transportation that is focused on individual customer travel needs rather than a "one size fits all" solution. It improves awareness of transportation options and reduces customer confusion, expands travel options and access for consumers, and provides more cost-effective and efficient service delivery through improved coordination and partnerships.

Perspectives

Accessibility can be viewed from various perspectives, such as a particular person, group, mode, location or activity. It is therefore important to specify the perspective being considered when evaluating accessibility.

Accessibility Ratings by Different Groups - ***3 (most important) to 0 (unimportant)***

Groups	Walking	Biking	Driving	Transit	Taxi	Air Travel
Adult Commuters	2	1	3	2	1	1
Business Travelers	2	0	3	2	3	3
College Students	3	3	2	2	0	1
People with Disabilities	3	2	1	3	2	2
People with Low Income	3	2	1	3	2	0
Children	3	3	2	1	0	1
Tourists	3	2	3	2	2	3
Freight Delivery	0	1	3	0	0	2

Tourists at the Niles Hunter Ice Festival

Commuters in Edwardsburg

College students at Southwestern Michigan College—Niles Campus

Children in Buchanan

Transportation Modes and the Roles They Play

To be efficient and fair, a transportation system must be diverse or multimodal to serve diverse demands and allow travelers to choose the best option.

Mode	Non-Drivers	Low Income	Disabled	Seniors	Limitations	Most Appropriate Uses
Walking	Yes	Yes	Varies	Yes	Requires physical ability. Limited distance and carrying capacity. Can be difficult— if pavement is uneven, crossing times are too short or sidewalks are not continuous along a route.	Short trips by physically able people.
Wheelchair	Yes	Yes	Yes	Yes	Requires sidewalk or path. Limited distance and carrying capacity.	Short urban trips by people with physical disability.
Bicycle	Yes	Yes	Varies	Yes	Requires bicycle and physical ability. Limited distance and carrying capacity. Infrastructure needs to accommodate different types of bicycles.	Short to medium length trips by physically able people on suitable routes. Seasonal use.
Taxi	Yes	Limited	Yes	Yes	Relatively high cost per mile.	Infrequent trips, short and medium distance trips.
Fixed Rte. Transit	Yes	Yes	Yes	Yes	Destinations and time limited	Short to medium distance trips along busy corridors.
Dial A Ride / Demand Response Transit	Yes	Yes	Yes	Yes	Can require up to 24 hour reservation. Wait times can vary depending number of requests for service. Higher cost than fixed route service.	Short to medium distance trips, last mile of service to connect to fixed route. Service to lower density areas.
Paratransit	Yes	Yes	Yes	Yes	High cost and limited service area.	Travel for people who have a qualified disability and live along a fixed transit route.
Door thru Door	Yes	Limited	Yes	Yes	High cost service, not covered by most insurance.	Travel for people who require assistance at origin and destination.
Auto Driver	No	Limited	Varies	Yes	Requires driving ability and automobile/insurance. High fixed costs.	Travel by people who can drive and afford an automobile/insurance
Car Rental or CarShare/Uber	Yes	Limited	Varies	Yes	Requires convenient and affordable vehicle rental services. Requires enough drivers so service is responsive to requests. Requires use of smart phone. Both services require a credit card.	Occasional use by people who don't own or have a reliable automobile.
Carpooling	Yes	Yes	Limited	Yes	Requires one person to have a car and share the ride with people traveling to the same destination during the same time of day. Limited to drivers car reliability, person ability to connect to meeting spot.	Suitable for people commuting in the same direction at the same time of day, towards a predetermined destination, best for shift work.
Motorcycle	No	Limited	No	Limited	Requires riding ability and motorcycle. High fixed costs. Seasonal use.	Travel by people who can ride and afford a motorcycle.
Telecommute	Yes	Varies	Varies	Limited	Requires equipment, technology & skill	Alternative to some types of trips.
Intercity Bus	Yes	Yes	Varies	Yes	Single stop in city, requires connection to fixed route transit, taxi service, walking	Long distance trips between cities.
Amtrak	Yes	Limited	Yes	Yes	Single stop in city, lower frequency of service, requires connection to final destination by transit, light rail, taxi, walking or car share. Higher cost.	Long distance trips between cities.

Transportation Modes and the Roles They Play - NATS Current Conditions

A variety of safe, affordable, dependable and user-friendly travel options enables people of all ages to stay active and engaged in their communities.

Mode	State of Current Conditions	Available
Walking	Connected walking network is limited to the City of Niles and City of Buchanan. Walking after snowfall can be dangerous or impossible because of inadequate ice or snow removal. Outside the city limits, there is no connected walking network forcing people into streets.	24 hours/7days Seasonal
Wheelchair	Connected travel by wheelchair is limited to trips originating and terminating within the City of Niles and the City of Buchanan. Travel by wheelchair after snow is impossible because of inadequate or snow removal. Outside the city limits, there is no connected network forcing people into streets.	24 hours/7days Seasonal
Bicycle	Wide shoulders are available; however, there is very little connectivity for commuting by bike. Most bike lanes and shoulders are clear of snow when roadway is plowed. Chip seal preservation treatments can make bike lanes and wide shoulders dangerous for cyclists because of rough surface and loose stone.	24 hours/7days
Taxi	Taxi service is limited and can be unreliable. No handicap accessible service is available.	24 Hours/7 days
Fixed Route Transit	Niles DAR provides one flex route that serves several housing developments and shopping destinations. Access to stops is limited because of the absence of sidewalks and bike lines – especially in the townships	Mon.-Fri. 10am – 5pm
Dial A Ride/ Demand Response	Within the NATS planning area there are three demand response public transit providers. Niles DAR provides service to the City of Niles and Niles Township, Buchanan DAR provides service to the City of Buchanan and Buchanan Township. Cass County Public transit serves communities in Cass County, however service is limited to availability based on current contracts.	Mon.-Fri. 7am to 5pm Sat. 10am to 3pm
Door thru Door	Service is expensive – Trips can range from $75.00 up. Many times this service is needed by people who live alone and need assistance getting ready for non-emergency medical trips	By appointment
Auto Driver	Requires driving ability and automobile/insurance. High fixed costs.	24 Hours/7 days
Car Rental	Within NATS planning area there is one rental car agency. Enterprise can be accessed from the flex route. Rates can be higher than because of demand and lack of competition. Rentals require a credit card and require the driver to be 25 years of age.	Mon.-Fri. 7am-6pm Sat. 8am-noon
Car Share/Uber	Lyft and Uber operate in portions of Berrien County. Inbound trips from South Bend to Niles are available, however trips from Niles are not available.	24 hours/7 days
Intercity Bus	There is no intercity bus terminal in the NATS planning area. Terminals are located in Benton Harbor and South Bend.	Varies
Amtrak	The *Wolverine* and *Blue Water* trains make stops in Niles and provide service to destinations between Chicago and Detroit.	3x per day

Michigan has the highest cost of ownership for a car in the nation.

There's a $7,216 cost difference between owning a car in Michigan and New Hampshire, the least expensive, over three years.

Source: Go Banking Rates 2017 Survey

Higher-risk people drive even if they should, and want to use alternatives. Many traffic safety strategies, such as graduated licenses, special senior driving tests, anti-impaired and anti-distracted driving campaigns and laws are intended to reduce high risk driving. Their effectiveness depends, in part, on these groups having viable alternatives to driving.

For low-income residents, affordable and efficient transportation options are a stepping stone to economic opportunity.

Transportation options also expand the pool of lower-wage workers available to employers, many are limited in their ability to drive and so must rely on alternative modes, at least occasionally.

Strategies to Expand Transportation Options

- Increase last mile service transportation options to increase access to public transit for all users.
- Increase the number of wide shoulders or bike lanes to improve conditions for commuting by bike.
- Enhance access to activity centers (e.g. commercial areas, schools, parks and recreation, and employment centers) by ensuring transit service and safe, low-stress pedestrian routes and bike facilities are available.
- Utilize travel demand data collected by University of Michigan to evaluate travel conditions of lower wage workers and people with disabilities.

PERFORMANCE MEASURE	DEFINITION	DESIRED TREND	BASELINE	DATA
Jobs accessible by public transit within the NATS planning area.	Percentage of jobs accessible by public transit within the NATS planning area.	Increase	In Dev.	LEHD Data
Miles of suitable sidewalks/multiuse paths on federal aid eligible roads within the NATS planning area.	Miles of suitable sidewalks/multiuse paths on federal aid eligible roads within the NATS planning area.	Increase	48 Miles	Roadsoft
Miles of wide shoulders or bike lanes.	Miles of wide shoulders or bike lanes on federal aid eligible roads within the NATS planning area.	Increase	34 Miles	Roadsoft
Number of wheelchair accessible taxis or Uber/Lyft vehicles .	Number of wheelchair accessible taxis or Uber/Lyft vehicles available in the NATS planning area.	Increase	0 Vehicles	Roadsoft

Designs and maintains transportation network to enhance the safety and security of all users.

The safety of motorists, bicyclists, and pedestrians is a top priority in transportation planning. Motor vehicle collisions result in premature deaths, serious injuries, and are a cause of major economic losses and disruptions to the transportation system. Safety concerns can discourage people from utilizing active transportation such as bicycling, walking and transit.

Planning for transportation safety should be a comprehensive, system-wide, multi-modal process that integrates safety into surface transportation decision making.

Serious and Fatal Crashes – NATS Planning Area

Year	Total Crashes	Fatalities	Serious Injuries
2008	1,813	6	66
2009	1,540	6	34
2010	1,467	6	38
2011	1,307	14	34
2012	1,317	13	30
2013	1,372	9	21
2014	1,533	6	32
2015	1,451	10	26
2016	1,484	9	41
2017	1,512	12	42
Total	**14,796**	**91**	**364**

ECONOMIC COSTS

The U.S. Department of Transportation's most recent estimate of the annual economic cost of crashes was

$242 billion

Years of experience with safety projects and strategies have shown that benefits far outweigh the resources consumed.
The most critical safety benefit is in decreasing the number of fatal and serious injury crashes that occur each year.

The Michigan Strategic Highway Safety Plan (SHSP) provides a comprehensive framework for reducing traffic fatalities and serious injuries on public roads. The purpose of the SHSP is to identify Michigan's key safety needs and guide investment decisions to achieve significant reductions in traffic fatalities and serious injuries on public roads.

Michigan Strategic Highway Plan Emphasis Areas:

At Risk Road Users

Prior research and crash statistics illustrate that there are specific groups of road users who are overrepresented in traffic crashes, injuries, and fatalities. As such, understanding the contributing factors that lead to this overrepresentation allow for the identification of appropriate strategies and countermeasures to address these at-risk road users. The action teams that fall under this emphasis area are:

- Commercial Motor Vehicle Safety
- Motorcycle Safety
- Pedestrian and Bicycle Safety
- Senior Mobility and Safety
- Drivers Age 24 and Younger

High Risk Behaviors

Despite continuous efforts that have improved the safety of roadways, that safety is ultimately reliant upon road-user behavior. Research has shown that the vast majority of crashes are due to errors by these users. Fortunately, many of these errors are ultimately preventable and strategies to encourage the safe behavior of road users are integral to highway safety improvement efforts. At the statewide level, implementation strategies are guided by three action teams:

- Distracted Driving
- Impaired Driving
- Occupant Protection

Together we are Moving Michigan

TZD Toward Zero Deaths National Strategy on Highway Safety

Engineering Infrastructure

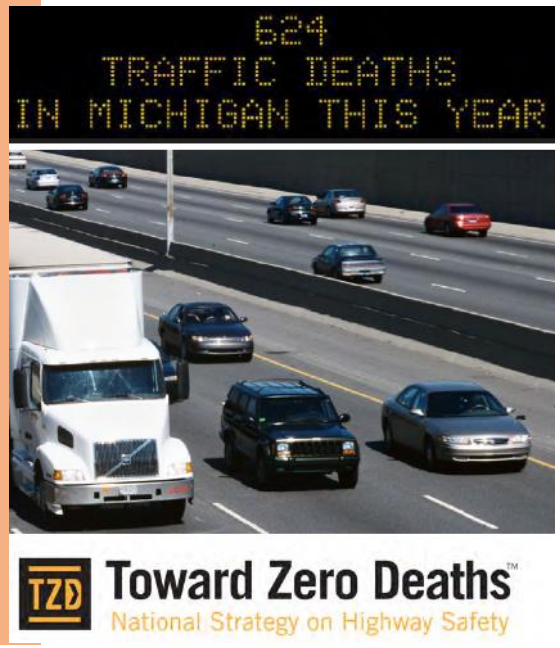
Geometric design elements, traffic control devices, and targeted policies and program countermeasures aimed at encouraging or discouraging specific behaviors among road users.

System Administration

Effective system administration is critical to improving traffic safety. To identify, diagnose, and treat safety concerns in an efficient manner, a well-integrated framework is required. This framework includes an ability to monitor system performance in near-real time, as well as close collaboration among a network of safety stakeholders from the engineering, education, enforcement, and EMS communities. Statewide efforts in this emphasis area are tasked to two action teams:

- Traffic Incident Management
- Traffic Records and Information Systems

The success of Michigan's Strategic Highway Safety Plan is dependent on all highway agencies working together to align and leverage resource to collectively address Michigan's safety challenges.



HIGH RISK DRIVER BEHAVIORS

Alcohol & Drug Use

Statewide alcohol-involved fatalities increased 28%, from 236 in 2014 to 303 in 2015. Drug-involved fatal crashes spiked 19%, from 150 in 2014 to 179 in 2015. Impaired driving crashes were most prevalent among young male drivers, including underage males as well as in crashes occurring during the weekend.

Michigan has responded to these issues through a combination of prevention, education, enforcement, and adjudication countermeasure programs.

Seatbelt Use

Research has found that lap/shoulder seat belts, when used, reduce the risk of fatal injury to front-seat passenger car occupants by 45% and the risk of moderate-to-critical injury by 50%. *(*National Center for Statistics and Analysis—2016)

Distracted Drivers

From 2016 to 2017, Michigan has experienced a 57% increase in distracted driving crashes and a 67% increase in fatalities from those accidents. Michigan law prohibits a driver from reading, manually typing, or sending a text message while driving. Although, other causes for distracted driving include talking on a phone, eating, grooming, reading, or changing the radio. (Michigan State Police Criminal Justice Information Center)

Snapshot of NATS Planning Area

32.5 % of Fatal Crashes Involved Drugs or Alcohol Use

Michigan Crash Facts NATS 2008-2017

No Seatbelt Was in Use in 40% of Fatal Crashes

Michigan Crash Facts NATS 2008-2017

Distracted Driving 113 Crashes

Michigan Crash Facts NATS 2008-2017

HIGH RISK ROAD USERS

Young Driver Behaviors

In Michigan, 25% of the crashes in the winter involve 16 to 24-year-old drivers. Over 10% of these crashes, involving a young driver, occurr in January. Among the most prevalent hazardous actions attributed to this age group are speeding, unable to stop in an assured distance, and failure to yield, which also can be attributed to inexperience or poor risk assessment.

Pedestrian and Bicyclist Behaviors

Pedestrians: Failing to yield and disregarding traffic controls for both motorists and pedestrians, account for over half of all pedestrian crashes. This was followed by the risk behaviors of pedestrians being in the roadway and closeness to a vehicle.

Bicyclists: The same failures, to yield and disregard traffic controls, for both the motorists and bicyclists are the highest reason for bicyclist accidents. For bicyclist accidents, other reasons for accidents are loss of control, turning error, and riding in the wrong direction.

Senior Behaviors

Numerous studies have found crashes at intersections are much more likely for senior drivers than crashes at intersections for younger drivers. Senior drivers have a particularly high rates of involvement in intersection crashes when they are turning, and more so when they are turning left. Typically senior drivers at fault in these situations, failed to yield the right-of-way, disregarded the traffic signal, or commit other traffic violation.

https://doi.org/10.1080/15389580600636724

Snapshot of NATS Planning Area

36% of **Fatal Crashes**

Involved a Driver

24 & Under

Michigan Crash Facts NATS 2008-2017

Pedestrians or Bicycles Were Involved in

9% of Fatal Crashes

Michigan Crash Facts NATS 2008-2017

Drivers 65 and older were involved in

25% of Fatal Crashes.

Michigan Crash Facts NATS 2008-2017

Pedestrian and Bicycle Crashes

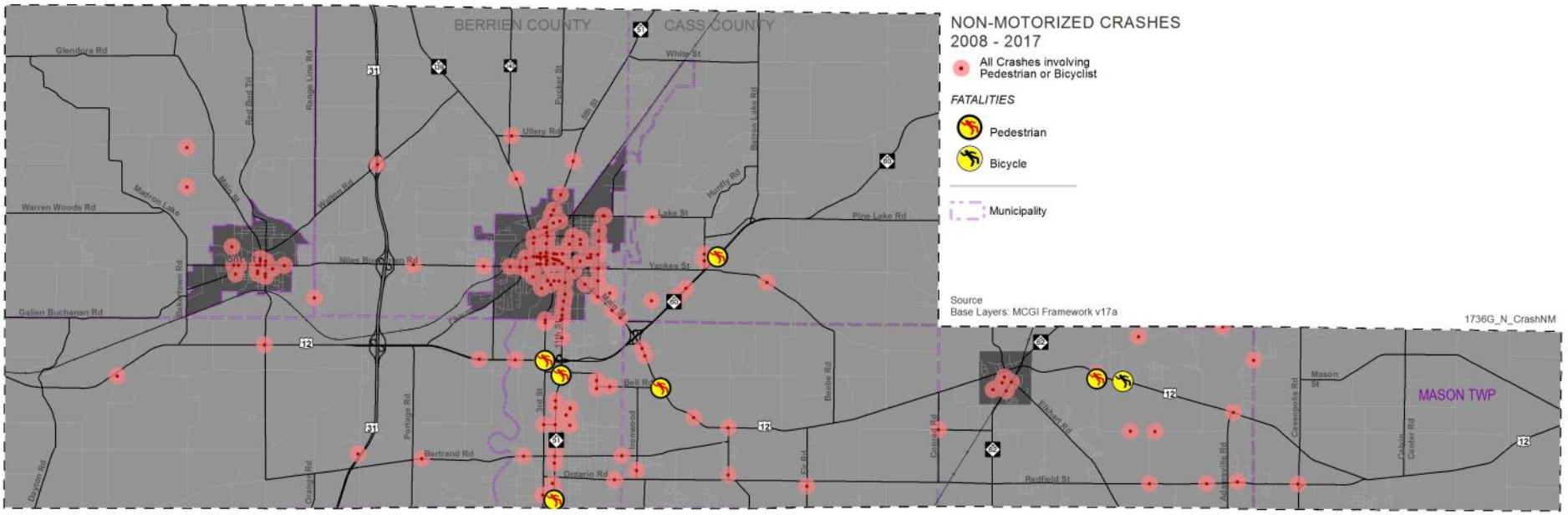
34% of Serious and Fatal Pedestrian and bicyclist injuries occurred on 11th Street.

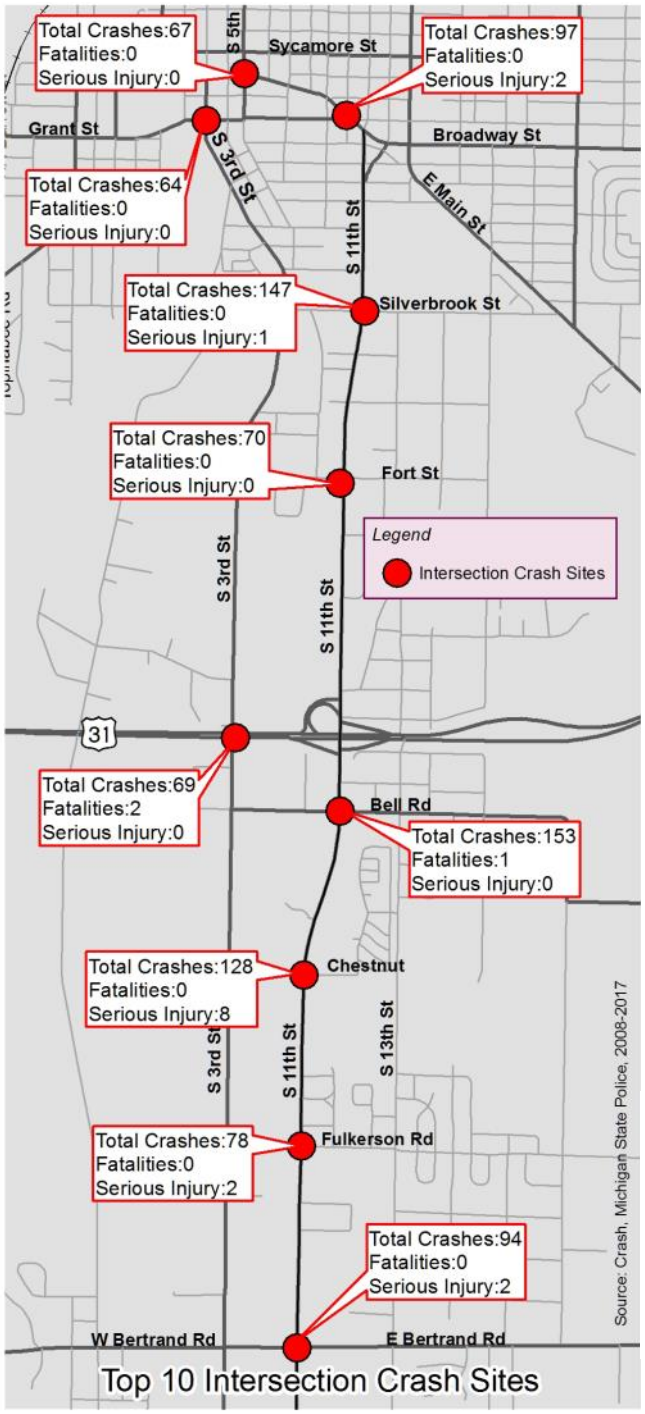
14% of crashes that involved a pedestrian or bicyclist resulted in a serious or fatal injury.

– 2008-2017 MI Crash Facts

Roads with the most Pedestrian or Bicycle crashes
2008-2017

Road Name	City/Twp.	Non-Motorized Crashes	Fatalities & Serious Injuries
Main Street	Niles	16	2
11th Street/M-51	Niles Twp	15	8
5th Street	Niles	9	2
3rd Street	Niles	6	2
Broad Street	Buchanan	6	0
BROADWAY	Niles	6	0
11th Street/M-51	Niles	5	0
US-12	Milton Twp	4	1
Sycamore Street	Niles	4	1
17th Street	Niles	4	0
3rd Street	Niles Twp	4	0
Main Street	Niles Twp	4	0
Broad Street	Niles	4	0
US-12	Ontwa Twp	3	1
US-12	Niles Twp	3	1
13th Street	Niles Twp	3	1





Intersection Crashes

Intersection related crashes represented 30% of all crashes (2008-2017). There were 5,061 intersection-related crashes between 2008-2017, representing 34% of all crashes. Such crashes resulted in 13 fatalities (14% of total fatalities) and 117 incapacitating injuries (32% of total incapacitating injuries).

The top 10 intersection crash sites all occur in the City of Niles, mainly on South 11th Avenue.

The identification and analysis of high-risk intersections statewide is a safety priority. At the local level we will use various software tools, including Safety Analyst and Roadsoft, to help identify the most problematic intersections.

Roadway Asset Management Roadsoft Software Suite

Improved Data Collection & Analysis → More Informed Decision Making → Better Targeted Safety Investment → Fewer Fatalities & Serious Injuries

11th/Bell Road: 153 crashes
1 Fatality

11th/Silverbrook: 147 crashes
1 serious injury

11th/Chestnut: 128 crashes
8 serious injury

Strategies to Improve Safety & Security

- Transportation partners will incorporate safety considerations for all modes and users throughout the processes of planning, funding, construction, and operation.
- Transportation partners will support the state's vision of moving toward zero traffic fatalities and serious injuries, which includes addressing the state emphasis areas.
- Transportation partners will use best practices to provide and improve facilities for safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system.
- Provide information on top collision trends such as distracted or impaired driving, and incidents involving bicycles and pedestrians.
- Provide recommendations for facilities based on FHWA, NACTO and AASHTO best practices and design principles that have proven to be safe and reliable.
- Assist the NATS Policy Committee in evaluating safety considerations during Transportation Improvement Program (TIP) call for projects.
- Conduct road safety audits (MDOT).
- Produce and distribute an annual report of crash data that includes vehicle, pedestrian and bicycle total crashes, total serious injury crashes, total fatal crashes.
- Broaden the use of currently accepted and proven countermeasures.
- Identify cost-effective strategies that reduce unintentional lane departure, as well as alert the driver should a departure event occur.

Performance Measure	Description	Base Data - 2017		State Target 2019	Data Source
		NATS	State		
Number of fatalities.	The number of fatalities due to a vehicular crash.	9.2	968.0	1,023.2	Michigan Crash Facts
Fatalities per 100 million vehicle miles traveled (VMT).	The rate of serious injuries based on the total miles driven in the area.	1.87	1.01	1.02	Michigan Crash Facts & HPMS
Number of serious injuries.	The number of serious injuries due to a vehicular crash.	32.4	5,186.8	5,406.8	Michigan Crash Facts
Serious injuries per 100 million vehicle miles traveled (VMT).	The rate of serious injuries based on the total miles driven in the area.	7.21	5.32	5.41	Michigan Crash Facts & HPMS
Non-motorized fatalities, serious injuries.	The number of pedestrians and bicyclists seriously injured or killed due to a vehicular crash.	2.6	741.8	759.8	Michigan Crash Facts

Health

To plan and promote transportation systems that protects the health and safety of all people, and enhance the quality of life in communities.

The Transportation system influences public health through five primary pathways:

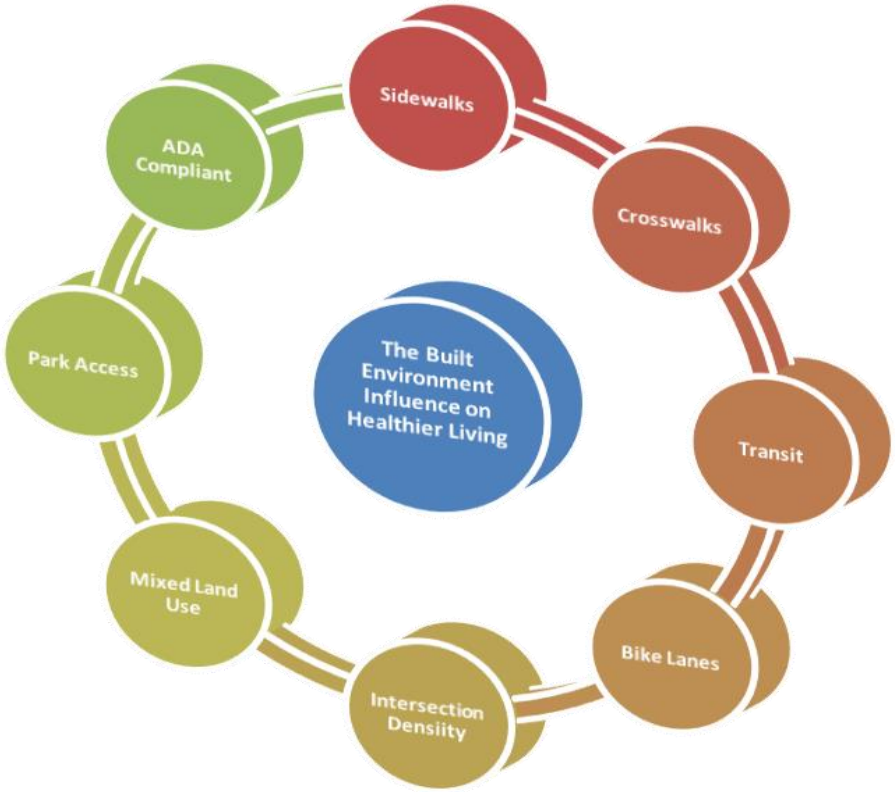
Active transportation — Transportation agencies and their partners can help people lead more active lifestyles by giving them options for getting to places they need to go without driving. They can also reduce the distance between destinations people travel to satisfy daily needs.

Safety — Motor vehicle crashes are one of the leading causes of death in the United States. By providing transportation options and improving roadway facilities, transportation agencies can reduce the incidence of motor vehicle crashes.

Cleaner air — Air pollution has been linked with heart disease and respiratory illnesses, including asthma. Improving transportation system efficiency and supporting cleaner vehicles and fuels can improve air quality.

Connectivity — Providing a well-connected, multi-modal transportation network increases people's ability to access destinations that can influence their health and well-being, such as jobs, health care services, and parks.

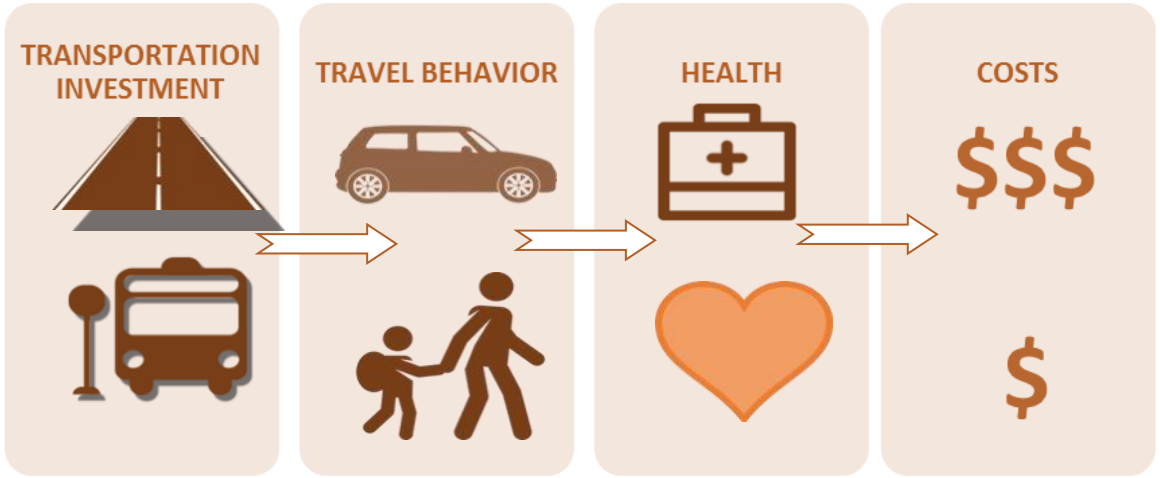
Equity — Negative health effects related to the transportation system often fall hardest on more vulnerable members of the community, such as low -income residents, communities of color, children, and older adults.

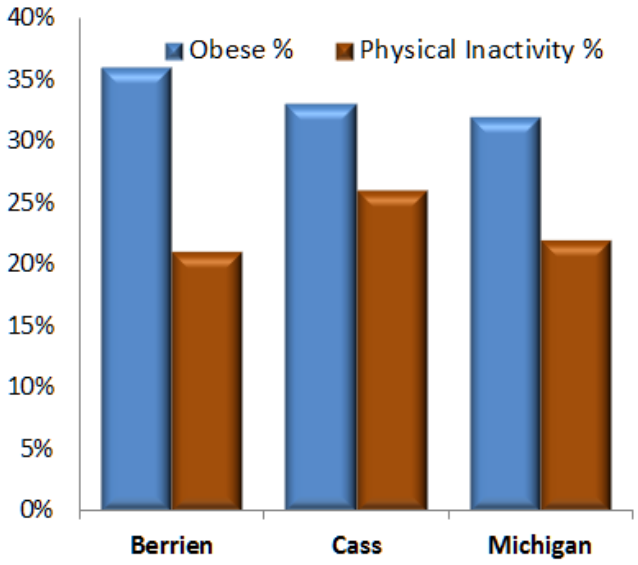


Walking and bicycling are key ways in which people can get sufficient physical activity as part of their daily lives. For example, in some communities almost one-third of transit users get their entire recommended amount of physical activity just by walking to and from transit stops, conversely, people who travel by car are more sedentary, which is associated with chronic disease and premature death.

The cost of our transportation system on health is often hidden while the impact of traffic crashes, air pollution, and physical inactivity alone add hundreds of billions of dollars in costs.

Source: The Hidden Health Costs of Transportation, APHA, 2010.





Source: County Health Rankings and Roadmaps, Robert Wood Johnson Foundation, 2018.

*Weight that is higher than what is considered as a healthy weight for a given height is described as overweight or obese. Body Mass Index (BMI) is a screening tool used to calculate this relationship. BMI > 30 is considered obese

Cass and Berrien ranks poorly compared to the other 83 counties in Michigan state in regards to the physical environment; Berrien County is 67 and Cass County at 82. The Physical Environment is a composite formula by combining air and water quality in addition to housing problems, driving alone to work and long commutes.

PHYSICAL ENVIRONMENT	**CASS COUNTY**	**BERRIEN COUNTY**	**MICHIGAN**
Severe Housing Problems	13%	14%	16%
Driving alone to work	83%	82%	83%
Long Commute - driving alone	36%	20%	33%

Source: County Health Rankings and Roadmaps, Robert Wood Johnson Foundation, 2018.

The lack of physical activity among residents may be attributed to results found in the NATS Bike Survey (2014). Over 50% of respondents found lack of bike lanes, feeling unsafe, and the poor conditions of roads as a barrier to commuting by bicycle.

What Works?

Collaborating with public health partners to achieve common goals can lead to new resources and project opportunities.

Metropolitan Area Transportation Planning for Healthy Communities. FHWA, 2012.

The SWMPC actively engages partners across the study area on topics related to health in transportation planning. The MPO planning process is now understood by partners as a place where important decisions are made that have long-term impacts on public health.

Transportation & Health Partnerships

The Healthy Berrien Consortium

The Healthy Berrien Consortium (HBC) is a network of key health care organizations and leaders formed to jointly undertake improving the health and well-being of Berrien County Residents. Organizations represented include YMCA of Southwest Michigan, Cass Family Clinic, Lakeland Health, Riverwood Center (mental health services), Berrien County Health Department, Intercare Community Health Network, United Way of Southwest Michigan, Area Agency on Aging, PACE of Southwest Michigan and the SWMPC. They have a long history of driving change through resource allocation into areas where the needs are the greatest. The SWMPC has been included because of the HBC's collective recognition that mobility is a major driver in the ability our residents to access health care and other important determinants to healthy lives.

Be Healthy Berrien

One of the most recent calls to action by the HBC was driven by alarming rates of obesity in Berrien County. Michigan is regularly ranked among the states with the highest rates of obesity with Berrien County well above the state's average. HBC recognized that focused action was necessary, in 2011 Be Healthy Berrien (BHB) was formed. The group is a collaborative between five organizations: the Berrien County Health Department, Lakeland Health, SWMPC, the United Way of Southwest Michigan, and the YMCA. BHB proceeded to develop a strategic plan and has since, systematically driven actions dictated by that plan. Those actions include advocacy for complete streets, concerted support for improved public transportation, and for targeted improvements to specific corridors that are vital to improved mobility.

Michigan's Great Southwest Strategic Leadership Council

An initiative has grown over the last several years to connect leaders from across Berrien County. The purpose is to seek out ways that collective action can drive positive change. Michigan's Great Southwest Strategic Leadership Council (MGSSLC) now has a membership list of over 150 leaders. Transportation issues fall within the Council as does a range of other health-related topics. On a monthly basis the SWMPC meets with leaders whose work intersects in public health. From the Council local funding was generated to match a Federal Transit Administration grant to produce a county-wide plan for transportation service improvement in Berrien County. The vital role that mobility plays in Berrien County has been significantly raised by this group.

Equity

Provides access and opportunity for all people and all neighborhoods.

Equity (also called justice and fairness) refers to the distribution of impacts (benefits and costs) and whether that distribution is considered fair and appropriate. Transportation planning decisions can have significant and diverse equity impacts:

- The quality of transportation available affects people's economic and social opportunities.
- Transport expenditures represent a major share of most household, business and government expenditures.
- Transport facilities require significant public resources (tax funding and road rights of way), the allocation of which can favor some people over others.
- Transport planning decisions can affect development location and type, and therefore accessibility, land values and local economic activity.
- Transport planning decisions can affect employment and economic development which have distributional impacts.

Source: Guidance For Incorporating Distributional Impacts in Transportation Planning
Todd Litman Victoria Transport Policy Institute

As someone without driving privileges, getting around to just get by, with dignity and a fulfilling lifestyle, is nearly impossible.

2018 NATS Transportation Survey

Challenges to Mobility & Access

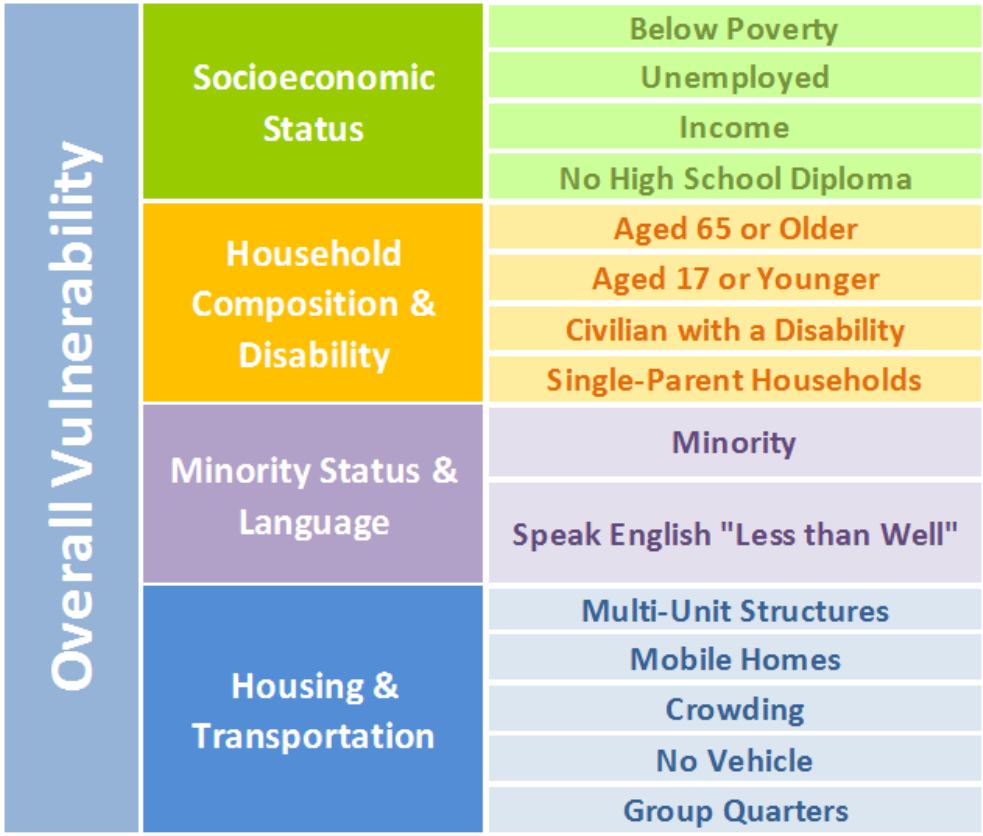
- 24% of Americans living in poverty do not own an automobile.
- Because low-income individuals are less likely to own a car, they are more likely to walk, wheel, or bike, even when conditions are not ideal.
- Low income and minority populations are less likely to live near or travel along roads with safe, accessible, and high-quality pedestrian and bicycle facilities.
- Low-income, minority, or immigrant individuals are more likely to have jobs that require them to commute outside of traditional '9 to 5' business hours, often in the dark and when or where transit services are not operating.
- Adults with disabilities are more than twice as likely as those without disabilities to have inadequate transportation (31% versus 13%).
- Children, older adults, and individuals with physical or cognitive disabilities may be unable to drive and are more reliant on non-motorized travel modes.
- As individuals age, they are increasingly likely to depend on public transit for their primary transportation.

2009 National Household Travel Survey

Social Vulnerability Index

The Social Vulnerability Index (SVI) was created for communities to identify populations at greater risks in the event of human-made or natural disasters. At the same time, the data directly relates to current conditions that make these same communities in need of transportation alternatives.
The merging of different social factors gives greater weight to the overall conditions that impact a person's ability to travel to jobs, medical services, educational resources, grocery stores and other places that offer means of survival.

Social Vulnerability Index (SVI) uses U.S. Census data to determine the social vulnerability of every Census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. The SVI ranks each tract on 14 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes. Maps of the four themes are shown in the next pages. Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. *For more information about the SVI, visit: http://svi.cdc.gov*



The transportation network exerts a profound influence on people's economic and social opportunities. At a broad level, transportation is necessary for individuals to access employment, education, housing, health care, recreation, and other daily activities. Individuals who are low-income, minority, elderly, limited English proficiency, youth, and persons with disabilities often face transportation challenges.

Social Vulnerability Index (SVI)

The index assigns a flag of one, to the top 10 percent, at the 90th percentile using the entire state's population.

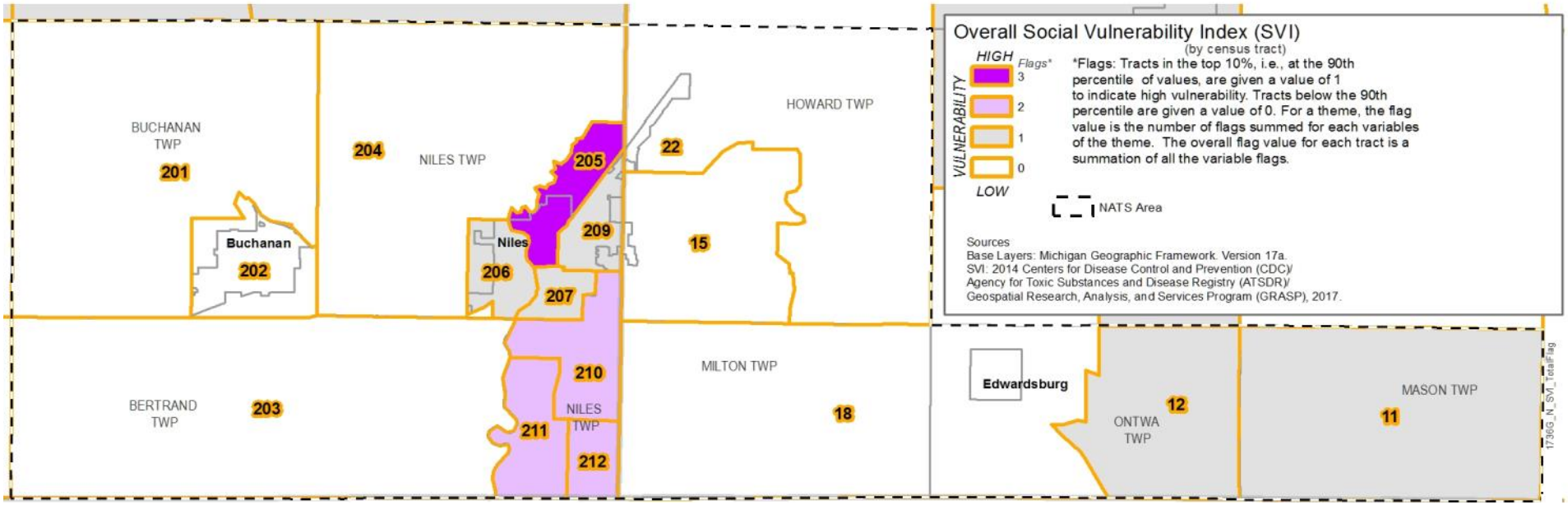
The table shows the specific variable that was flagged as 1, to rate an overall vulnerability score (per census tract).

The census tract number in the table can be used to find the location on the map.

Colors in table correspond the category of vulnerability

Green: Socioeconomic
Orange: Households & Disability
Purple: Minority & Language
Blue: Housing & Transportation

CENSUS TRACT #	11	12	15	18	22	201	202	203	204	205	206	207	209	211	212
BELOW POVERY (>53%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNEMPLOYED (>25%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INCOME (<$12,000)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO HIGH SCHOOL DIPLOMA (>24%)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
AGE 65 OVER (>22.5%)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
AGE 17 & UNDER (>28%)	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
DISABILITY (>22.5%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SINGLE PARENT (>20%)*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MINORITY (>90%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LESS ENGLISH (>3.2%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MULTI-UNIT (>24%)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
MOBILE HOME (>15%)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
CROWDING (>4%)*	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
NO VEHICLE (>24%)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
GROUP QUARTERS (>4.4%)*	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
TOTAL FLAGS	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**1**	**1**	**2**	**2**

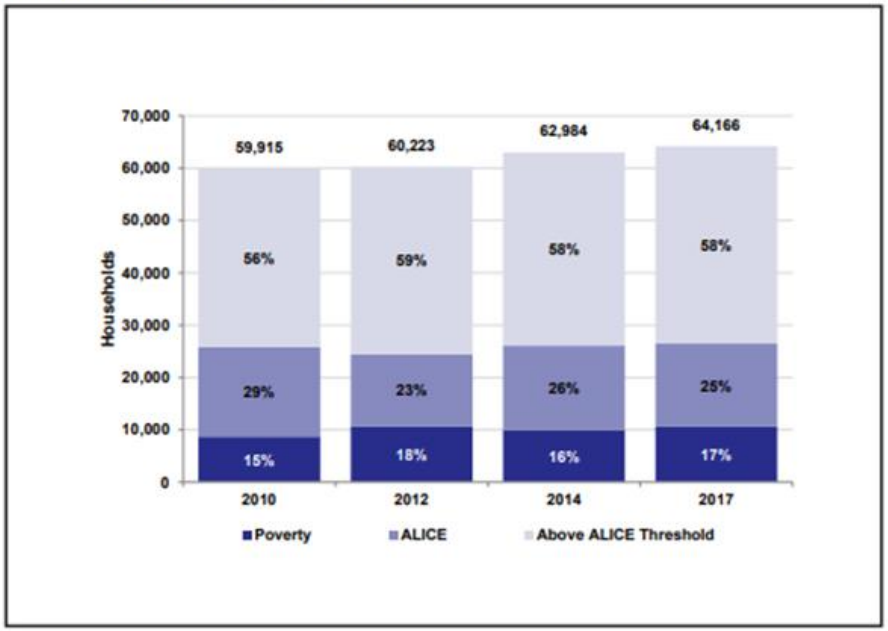


For the complete explanation of the methods used to assign flags, see SVI 2014 Documentation

Asset Limited, Income Constrained & Employed Populations

ALICE is an acronym for **Asset** Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level, but less than the basic cost of living for the county (the ALICE Threshold, or AT). Combined, the number of poverty and ALICE households equals the total population struggling to afford basic needs. The number of households below the ALICE Threshold changes over time; households move in and out of poverty and ALICE as circumstances improve or worsen. The Great Recession, from 2007 to 2010, caused hardship for many families. Conditions started to improve in 2010 and 2012 for some, but not for all.

Households by Income, 2010 to 2017



In the City of Niles

62% of Households are

Struggling to Afford Basic Needs.

Statewide 25% of households are struggling to afford basic needs.

Community	Total Households	% ALICE & Poverty
Bertrand Township	1108	29%
City of Buchanan	1879	54%
Buchanan Township	1397	35%
City of Niles	4611	62%
Niles Township	5562	43%
Howard Township	2635	40%
Mason Township	1057	42%
Milton Township	1409	24%
Ontwa Township	2584	38%

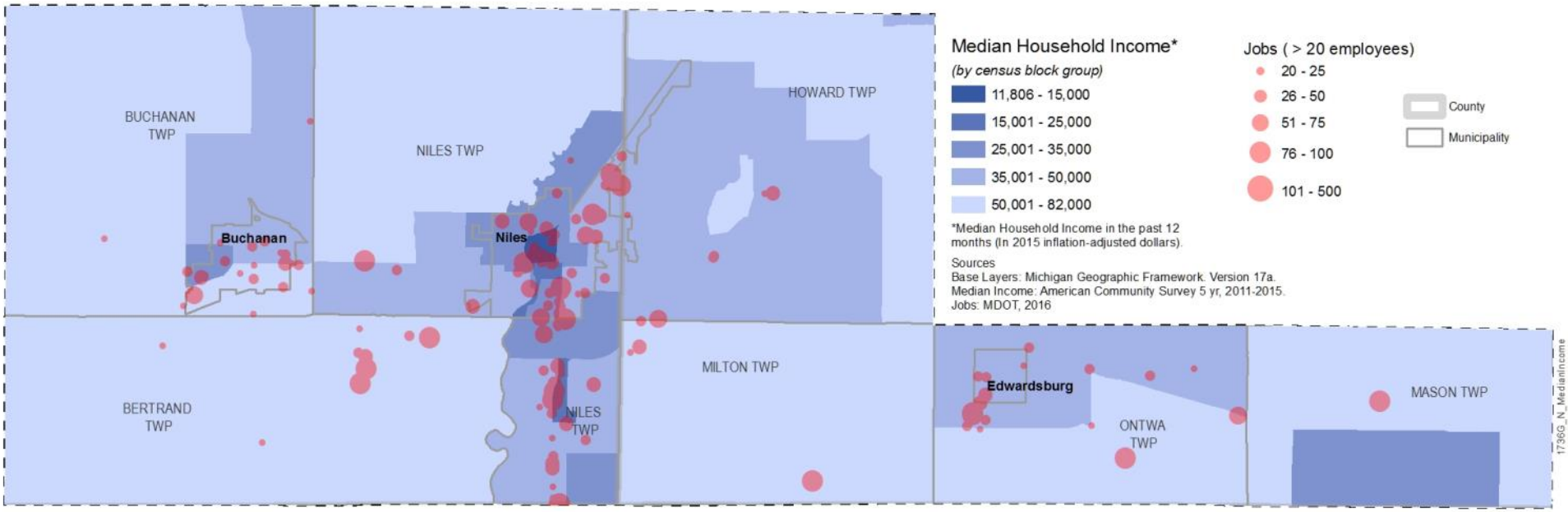
ALICE

Asset Limited, Income Constrained, Employed – households that earn more than the Federal Poverty Level of $12,060 for a single adult and $24,600 for a family of four, but less than the basic cost of living for the county.

Spatial Mismatch Between the Residential Location of Low Income Households and the Location of Jobs.

Disadvantaged workers often find themselves in a double bind. They may be qualified for many entry-level jobs, but have no way of reaching employment centers outside of their community; they may also be easily able to reach many jobs nearby, but lack the qualifications for them. These two statements describe the interconnected problems of spatial mismatch and skills mismatch.

- Access to job vacancies via transit varies greatly by industry and location within the NATS Planning Area. While transit access is generally good for travel within the communities of Niles and Buchanan, employment located outside of these areas have relatively poor access.
- In high-demand sectors, there are a significant number of occupations in which most job vacancies do not require postsecondary education and offer a livable median hourly wage. Examples include machinists in the manufacturing sector, nursing assistants in the healthcare sector and truck drivers in the transportation and warehousing sector. Several of these sectors are located outside of Niles and Buchanan which does not receive regular public transit service.



Resiliency & Reliability

Improve the ability to prepare and plan for, absorb, recover from, or more successfully adapt to actual or potential adverse events.

Berrien County communities identified winter weather and infrastructure failure as one of the top 5 hazards in the County.

Citizens are dependent on the public and private utility infrastructure to provide essential life supporting services such as electric power, water, sewage disposal and treatment, storm drainage, communications, and transportation for the movement of people and goods. When one or more of these independent yet interrelated systems fail for even a short period of time, due to disaster or other cause, it can have devastating consequences.

Berrien County Hazard Mitigation Plan—2012

During the planning process for the 2012 Berrien County Hazard Mitigation Plan municipalities identified and ranked the hazards to determine which hazards were of greatest concern. Of the 24 identified and ranked, winter weather and infrastructure failure were ranked in the top 5 hazards utilizing the following criteria:

- Likelihood of Occurrence
- Percent of Population Affected
- Potential for Causing Casualties
- Potentials for Negative Economic Effects

The plan also noted that communities need to continue to push for greater system reliability through mitigation efforts. Although the problem of infrastructure failure will never be completely eliminated, it can certainly be greatly diminished through proper planning, design, construction, and maintenance practices.

Resiliency & Reliability- *continued*

Cass County communities ranked SEVERE WEATHER and TRANSPORTATION ACCIDENTS in the top 5 hazards

Cass County Hazard Mitigation Plan—2018

Cass County ranked 24 hazards using a Hazard and Vulnerability Assessment Tool by collecting hazard information from Villages, Townships, City, schools, tribal and other community partners. The assessment tool relied on 3 criteria; occurrence, significant of impact and capabilities.

Ranked number 1 is Thunderstorm hazard which includes tornado, severe wind, hail and lighting. Direct and indirect impacts can be great, from direct physical destruction to the population, structures, crops and street closures. Indirect impacts may be long term and costly for reconstruction or repair of damaged homes, buildings, roadways, in addition to the economics in the region.

Another important aspect of the plan identifies Transportation Accidents, ranked number 4. The plan identifies Cass County's unique characteristics of close proximity to major cities of Detroit and Chicago which serves as a primary corridor for the transportation of goods by road and rail – goods that include hazardous materials. The geography also brings tourist. It is not difficult to recognize that the combination of large numbers of travelers, and large numbers transport vehicles, can be a lethal combination and is a valid cause for concern. The plan addresses this concern by the need to enhance preparedness and ability to respond effectively to those incidents that do occur with a number of mitigation alternatives. Many of the alternatives directly reference improving routing and road design, rail intersection design and assess problem roadway areas.

As part of the Long Range Transportation planning process MPOs are required to assess assets and other strategies that could reduce the vulnerability of existing transportation infrastructure to natural or other disasters.

Emergency Planning

Under the guidance of the Federal and State Department of Homeland Security and the Federal and State Emergency Management Agencies, The Berrien County and Cass County Sheriff Department serves as the Emergency Management Agency for the NATS planning area. In coordination with all government agencies, Berrien County Emergency Services is responsible for the Countywide Emergency Plan. (CEMP). The CEMP documents the county level emergency planning process that establishes policies and procedures needed to prepare for, respond to, recover from, and mitigate the impacts of all types of natural, technical and criminal/hostile disasters.

The transportation system has been identified as a key infrastructure for carrying out the emergency response activities in the county. Various federal, state and local government agencies provide day-to-day security for all five modes of transportation in the planning area.

Transportation System	Agency
Road Network	Michigan State Police, Berrien and Cass County Sheriff Department City/Township Police/Fire
Rail	Michigan State Police, Berrien and Cass County Sheriff Department City/Township Police/Fire
Public Transit	Michigan State Police, Berrien and Cass County Sheriff, Department City/Township Police/Fire

The definition of an emergency, in the "emergency management world", is summarized as an event that overwhelms or challenges the ability of those normal on-duty responders to control the impact of that emergency.

A car crash would likely be resolved effectively by law enforcement on-duty staff.

A 93-car pile up in the winter, involving hazardous materials leaks, would challenge the on-duty responders in that they would likely need to call for additional outside help.

Incident Management

The Statewide Transportation Operations Center (STOC) focuses on MDOT's goals of incident management, crash reduction, traveler information, and congestion reduction. STOC provides motorists with real-time travel information and partners with emergency responders to provide response services to traffic crashes, saving lives, time, and money.
STOC serves motorists in MDOT's Southwest Region which includes Berrien, Cass and Van Buren Counties. This center oversees a traffic monitoring system along, I-94 and I-196 The STOC operates 24 hours a day, 7 days a week, 365 days a year.

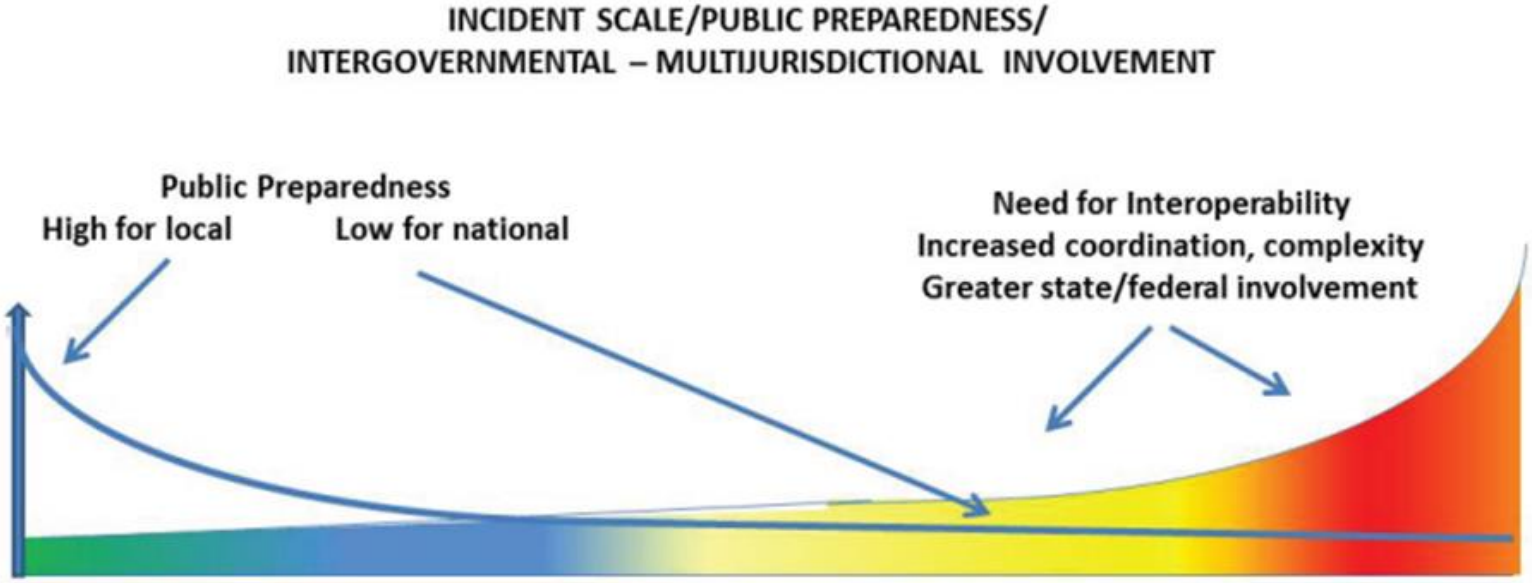
Transportation Incident Management Infrastructure in the NATS area includes:

Traffic Cameras - 8
Dynamic Message Signs - 1
Truck Parking Availability Signs - 2
Vehicle Detectors - 1

The Berrien County Emergency Management Division helps in coordinating the management of the incident, and our local emergency responders are responsible for executing the work that will resolve the incident. The Berrien County Emergency Management Division has incorporated the National Incident Management System (NIMS) as the system to be used in Berrien County. Cass County also has Emergency Management Office, coordinator.

Incident Management		
Agency	**Role**	**Local /State Agency/Business**
Law Enforcement	Often first responder on scene, LE personnel will secure the incident scene; provide initial emergency response if there are injuries; direct traffic around the incident; conduct accident investigation.	Michigan State Police Berrien and Cass County Sherriff City & Township Law Enforcement
Fire and Rescue	Protect the incident scene; provide emergency aid to injured motorists; suppress fires; address any initial hazardous materials release.	City & Township Law Enforcement. Several have reciprocal agreements in place to aid.
Emergency Medical Services	Treat injuries; prepare and transport more seriously injured motorists to hospital.	Ontwa Ambulance, LifeCare Ambulance, Pride Care Ambulance, SEPSA Ambulance
Towing & Recovery	Removal of damaged vehicles and debris; incident scene clean-up.	R & B Towing, Clark's Towing & Recovery, Milan Towing
Transportation (DOT)	Secure the incident scene; establish traffic control around incident; provide motorist assistance; incident clearance; restore traffic flow after incident cleared.	Michigan State Police

Incident Management



Classification	LOCAL	REGIONAL	STATE	NATIONAL
Examples	• Minor traffic incidents • Vehicle fires • Minor train/bus accidents • Accidents w/ injuries but no fatalities	• Train derailment • Major bus/rail transit accidents • Major truck accidents • Multi-vehicle crashes • Hazmat spills • Injuries & fatalities	• Train crashes • Airplane crashes • Hazmat incidents • Multi-vehicle accidents • Tunnel fires • Multiple injuries & fatalities • Port/airport incidents • Large building fire or explosion • Industrial incidents • Major tunnel/ bridge closure	• Terrorist attack/WMD • Floods, blizzards, tornadoes • Transportation infrastructure collapse • Extended power/ water outage • Riots • Mass casualties
Expected Duration	0-2 HOURS	2-24 HOURS	DAYS	WEEKS

Source: Graphic courtesy of John Contestabile, formerly of the Maryland Department of Transportation. Graphic used with permission; previously published in *CIO Leadership for Public Safety Communications—Emerging Trends and Practices* (Shark 2012).

Asset Management & Resiliency

Asset Management is not a complete answer to addressing the threats to physical transportation assets but it can serve as an important component of the Three R's, particularly in making assets robust and agencies' asset-repair practices resilient in times of crisis.

Redundancy can be defined as duplicative or excess capacity that can be used in times of emergency. Adding redundant highway capacity generally falls outside the practice of asset management. However, sound management of the assets on detour and emergency evacuation routes increases a highway system's redundancy.

Robustness can be defined as the capacity to cope with stress or uncertainty. asset management focuses upon optimizing the conditions of assets with available revenues. Well-maintained assets generally are better able to withstand the stresses of storm events and other disasters better than weakened and poorly maintained ones.

Resiliency has been defined as the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events. Enhanced resilience allows better anticipation of disasters, better planning to reduce disaster losses and faster recovery after an event.

"Where recurring severe damage and system failures occur, due to natural or technological hazard events, it makes sense to explore enhancing infrastructure design, construction, and operational codes and standards."
—2012 Berrien County Hazard Mitigation Plan

Each cell of the "honeycomb" represents some facet of resilience but is not, by itself, the whole. For example, while emergency management is an essential component of resilience, its conceptual framework is ill-suited for the kinds of actions necessary to mitigate or adapt to slow disruptors such as climate change. Some disruptions are known well in advance and can be planned for in great detail; others occur with no warning and require a great deal of resourcefulness to restore service. Resilience, much like safety, affects every major business function within a transportation agency, not just operations. Planning, design engineering, maintenance, and business management divisions all play significant roles.

Strategies to Improve Resiliency & Reliability

- Develop, promote and encourage effective working relationships among local and regional officials and other stakeholders responsible for various aspects of transportation infrastructure protection, emergency management, and system operations.
- Update inventories of assets and their condition and life cycle to assist in identifying which assets are at risk for given types of events such as winter weather, power failures and large rain events.
- Identify and update assets that are vulnerable to extreme weather events and prioritize future investments through the use of a lifeline network that defines critical facilities, corridors, systems, or routes that must remain functional during a crisis or be restored most rapidly.
- Research and provide MPO members information about new studies, forecasts or environmental risks that could affect the future condition of transportation assets.
- Encourage sound inspection and maintenance practice regimes for transportation-related infrastructure that includes but is not limited to bridges, culverts, underdrains, catch basins, transit facilities and buses.

FUTURE TRANSPORTATION FUNDING

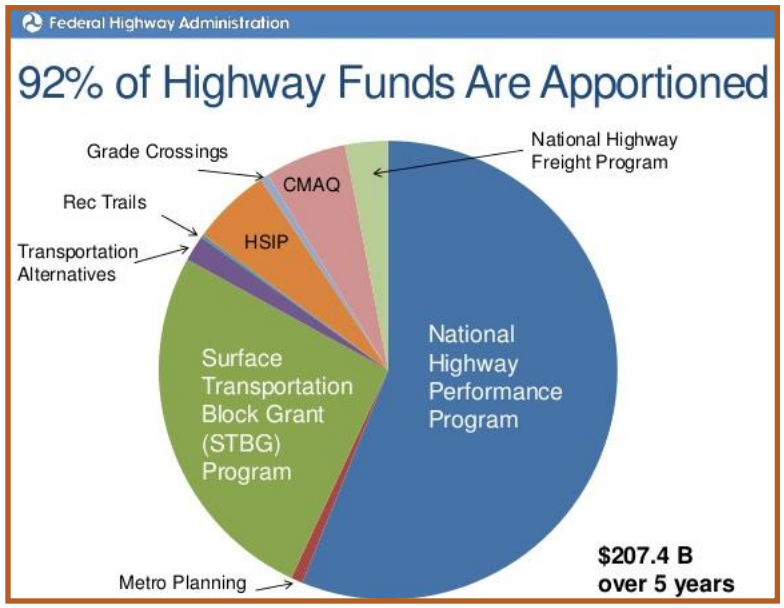
Future Transportation Funding

Financial Planning Overview

A sound financial plan, which demonstrates how the unified vision for the regional transportation system can be achieved is a critical element of Principles in Motion 2045. While this Long Range Transportation Plan is not a programming document, FHWA regulations require that the Plan be "fiscally constrained." This means that the Plan should include strategies and projects which we reasonably believe can be funded. To accomplish this, an analysis of fiscal constraint was undertaken for the life of the Plan (2018-2045). This means comparing the estimates for future revenue against any known projects. This ensures that there is adequate funding in place.

Following are brief descriptions of the primary funding sources used to forecast future funding targets. While there are many additional State and Federal funding sources available, this list includes only those that the NATS urbanized area has been successful in obtaining through either direct apportionment or through competitive grant processes.

Fiscal constraint is a required component of long-range planning. Transportation expenditures included in this Plan do not exceed revenue estimates during the life of the Plan. Simply put, this Plan includes only those transportation improvements that can be realistically completed based on anticipated revenues.



Federal Funding Programs in the FAST Act

National Highway Performance Program (NHPP): Funding for resurfacing, restoring, and rehabilitating, the National Highway System. The NHPP is a primary funding category that MDOT uses for projects, especially for the interstate. Currently, MDOT controls how the NHPP is distributed to MPOs in the state, and they only assign the funds to MPOs with a population over 200,000.

Surface Transportation Block Grant (STBG): Funding for improvement to roads and bridges on the federal-aid system, transit capital projects, bicycle and pedestrian facilities, and enhancement projects. STBG funds are given to MDOT, who then appropriates the funds to NATS. STBG funds are programed by the NATS Policy Committee using a competitive grant process.

Transportation Alternatives Program (TAP): Funding for enhancement activities that have a direct relationship to surface transportation facilities, including: facilities for bicycles and pedestrians (including safety and educational activities), landscaping and other scenic beautification, historic preservation, and the preservation of abandoned railway corridors for bicycle and pedestrian uses. TAP funds are awarded through a statewide competitive grant process.

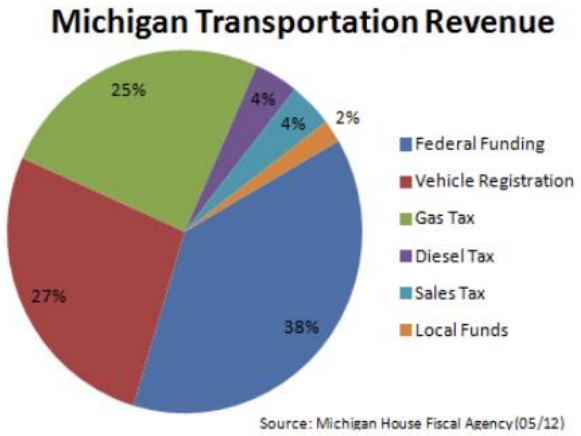
Local Bridge Program: Federal funding for locally controlled bridges that is apportioned to multi-county regions by MDOT. Projects are chosen by a competitive process by a multi-county bridge committee.

Congestion Mitigation and Air Quality Improvement Program (CMAQ): Flexible funding for transportation projects and programs tasked with helping to meet the requirements of the Clean Air Act. These projects can include those that reduce congestion and improve air quality. CMAQ funds are formula funds that are provided at a countywide level, with projects chosen by the road agencies in those counties.

Highway Safety Improvement Program (HSIP): Funding for projects that achieve a significant reduction in traffic fatalities and serious injuries on all public roads, (includes non-federal aid roads). Projects are chosen by a data driven statewide competitive grant process.

State & Local Transportation Revenue Funding Sources

- Historically, approximately two-thirds of the state transportation funding comes from state restricted revenue, with approximately one-third from federal sources.
- Federal transportation revenue is collected from gasoline and diesel fuel sales taxes.
- State transportation revenue is collected from a variety of sources including fuel, sales and income tax, and vehicle registration fees.
- The revenue that is collected is credited to the Michigan Transportation Fund (MTF) which is constitutionally restricted for use on the transportation system by Michigan Public Act 51 of 1951.
- The State of Michigan allocates up to 10% of the MTF to the Comprehensive Transportation Fund (CTF) which was established to fund public transit improvements.
- 90% of the MTF funding is distributed to county road agencies, cities, and villages using a formula that includes population and roadway miles in each jurisdiction.
- County and city MTF allocations have generally accounted for over half of locally available transportation revenues.
- Local funding sources for transportation improvements include:
  - ⇒ General fund dollars
  - ⇒ Property tax millage
  - ⇒ Obligation bonds
  - ⇒ Contributions from other units of government
  - ⇒ Tax increment financing and special assessments
  - ⇒ Interest on accumulated MTF funding
  - ⇒ Public-private partnerships



Increase in State Road Funding

In 2015, Michigan passed a road funding package that redirected certain income tax revenue that had previously been credited to the state general fund to the MTF.

2018 - 2019 **$150 million**

2020 Forward **$600 million**

State and Federal Funds for Locally Controlled Roads

Program	Description	2019-2025 Funding	2026-2035 Funding	2036-2045 Funding	2019-2045 Funding
Federal Surface Transportation Block Grant	Funding allocated to NATS for improvement to roads and bridges on the federal-aid system, transit capital projects, bicycle and pedestrian facilities, and enhancement projects.	$4,146,957	$7,099,978	$8,990,719	$20,237,654
Federal Congestion Mitigation Air Quality for Berrien County	Flexible funding for transportation projects and programs tasked with helping to meet the requirements of the Clean Air Act within Berrien County.	$5,046,231	$9,072,798	$11,488,905	$25,607,933
Federal Congestion Mitigation Air Quality for Cass County	Flexible funding for transportation projects and programs tasked with helping to meet the requirements of the Clean Air Act within Cass County.	$908,712	$1,207,366	$1,528,890	$3,644,908
Michigan Transportation Fund	Funds from the gas tax and registration fees that is distributed to county road agencies, cities and villages using a formula that includes population and roadway miles in each jurisdiction.	$154,817,739	$289,915,812	$365,275,597	$810,009,147

STBG and CMAQ are estimated to grow by 2.0% annually between 2019 and 2028, followed by a 2.4% annual growth rate between 2028 and 2045. The State funding (Act 51) is estimated to grow by 3.7% annually between 2019 and 2028 followed by a 2.3% annual growth rate between 2029 and 2045.

The amount of MTF funds represents the full amount each road agency is estimated to receive. The Berrien County Department and Cass County Road Commission can use their funding in any township in the county. Therefore The MTF funds are not restricted to the NATS area.

CMAQ funds are allocated and programed on a countywide basis. These funds represent the maximum amount of CMAQ funding that could be programed in the NATS Area. CMAQ is allocated because of Berrien and Cass County's air quality designations. Because Berrien County is in non-attainment, Berrien is receiving a greater portion of CMAQ funds while Cass, which is in maintenance, is receiving less. If the air quality designations change, so will the amount of CMAQ funding.

State and Federal Funds for MDOT Controlled Roads

Program	Description	2019-2025 Funding	2026-2035 Funding	2036-2045 Funding	2018-2045 Funding
Preservation	Repairs to the trunkline system	$77,125,867	$82,196,180	$117,136,654	$244,188,643

MDOT's revenue estimates include funding for preservation of the state controlled roadway system. The funds represent the full amount available for preservation activities which has a broad definition that includes anything that does not expand or create a new roadway.

MDOT has a pavement preservation formula that allocates funding to its seven regions. The formula weighs four overall factors: pavement condition, eligible lane miles for pavement reconstruction and repair work, usage (average daily traffic volumes), and regional cost.

These factors form the basis for how pavement preservation funds are distributed to each region. The formula is updated annually with current pavement condition, traffic, cost and eligible lane miles. Revenue for operations and maintenance are not included in these figures.

Activities Covered by the Preservation Budget

- **Rehabilitation and Reconstruction**
- **Capital Preventive Maintenance**
- **Freeway Lighting**
- **Freeway Resurfacing Program**
- **Non-Freeway Resurfacing Program**

Sources for Funding Local Roads

To ensure federal projects will have adequate local match it is necessary to estimate future local funding. The state funding inflation rate of 3.7 percent for the first 10 years is being applied. For the next 20 years of the plan an annual inflation rate of 2.3 percent is applied.

The Michigan Transportation Fund (MTF) is the funding road agencies receive from the state gas tax and vehicle registration fees. This represents the majority of funding for most road agencies. Unlike federal funding which typically has a restriction on where it can be used, MTF funds are able to be used on a broad variety of transportation projects. While STBG is restricted to roads designated as federal aid eligible, it is local funding, mainly through the MTF that funds repairs on the local (non-federal aid) streets. Local funds are also used to endue operation and maintenance of the road system including agency salaries other overhead costs. To use federal funds, a local match is required. The STBG will fund 81.85 percent of a project with the remaining 18.15 percent required from the local match.

MTF funds are distributed based on the formula prescribed in Michigan Public Act 51, and consequentially the funds are also referred to as Act 51 funding. Act 51 allocates funds based on population and the umber of road miles within a jurisdiction Cities and villages maintain their own roads and directly receive Act 51 funds. Township roads are maintained by the county road department therefore Act 51 does not allocate funds for any single township specifically. The Berrien County Road Department and Cass County Road Department receive funds which can be used on public roads in any township with the County.

2017 Act 51 Distributions

Agency	Funding
City of Buchanan	$420,009
City of Niles	$989,719
Village of Edwardsburg	$93,125
Berrien County Road department	$11,069,508
Cass County Road Commission	$5,821,927

Michigan Transportation Fund Allocation (Act 51)

	2019-2025	2026-2035	2036-2045
Annual Growth Rate	3.7%	2.7%	2.3%
Funding (in Millions of $)	$159	$290	$365

State and Local 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. These activities are vital to the smooth functioning of the highways.

Federal transportation funds cannot be used for operations and maintenance of the highway system. However, federal regulations require an estimate of the amount of state and local funding that will be spent operating and maintaining the federal-aid eligible highway system over the period of the long range plan.

Operations and Maintenance Activities

- Snow and ice removal
- Pothole patching
- Rubbish removal
- Maintaining the right-of way
- Maintaining traffic signs and signals
- Clearing highway storm drains
- Electrical bills for street lights and traffic signals,
- Personnel and direct administrative costs necessary to implement these projects

Operations and Maintenance Cost (millions of dollars)			
Horizon Year	**2019-2025**	**2026-2035**	**2036-2045**
Annual Growth Rate	$3.7 M	2.7%	2.3%
MDOT Roads	$22.2 M	$41.5 M	$52.3 M
Locally Controlled Federal Aid Roads	$62.0 M	$11.2 M	$146.4.8 M
Total	**84.2 M**	**$157.7 M**	**$198.7 M**

OPERATIONS & MAINTENANCE REVENUE FORECAST

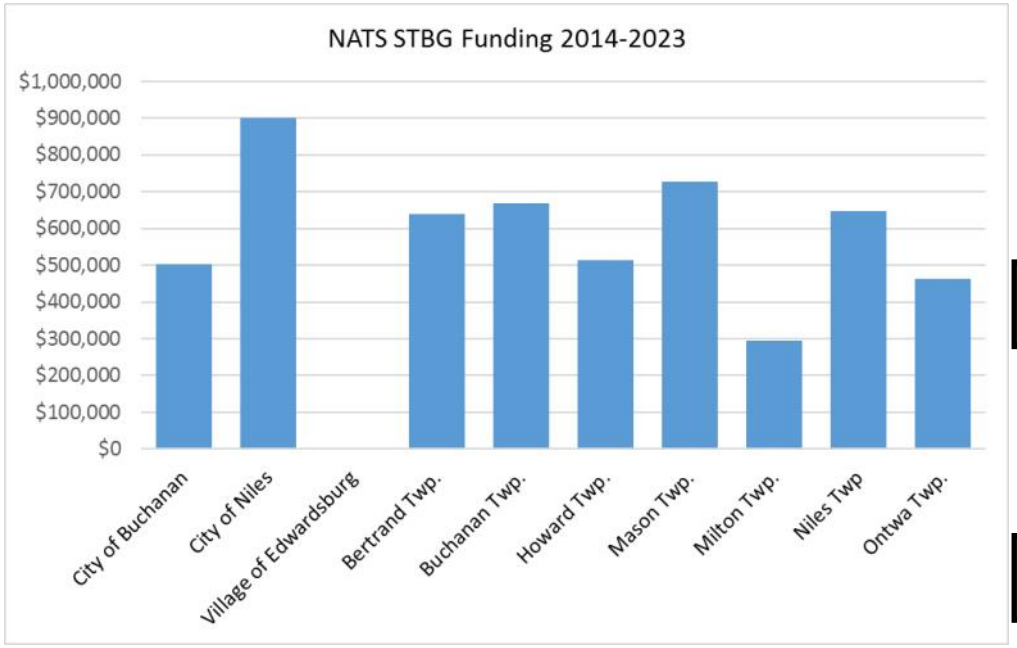
MDOT has supplied forecasted operations and maintenance costs for the entire MDOT trunkline system from 2018 through 2045. In 2018, MDOT expects to spend $315.5 million for O&M, which will cover all 31,360 lane miles of trunkline in Michigan. This equates to an average cost of $11,971 per lane mile. Based on this cost per mile, in 2019 MDOT is expected to spend approximately $2.8 million on maintenance in the NATS area. Based on values from the Transportation Asset Management Council the cost per lane mile for locally controlled road maintenance is $6,500 per lane mile. Based on this figure it is estimated that local agencies will spend approximately $7.9 million on O&M in 2019.

Funding Allocation Process for Local Surface Transportation Block Grant Funds (STBG)

NATS entities and other stakeholders work cooperatively through committees which includes officials from each community, to make decisions regarding which transportation projects will receive funding.

Road agencies submit project requests to the NATS staff for review. These projects are based partially on the agencies' local knowledge and partially on issues identified in the Long Range Plan. Projects are reviewed and scored based on criteria that includes how the project will contribute to meet performance targets.

It is then up to the Technical Advisory Committee to discuss the projects and scores to make final recommendations before the projects are selected by the Policy Committee.



Public Input

PROJECT IDENTIFICATION: SWMPC staff issue a call for projects, and NATS member communities choose projects to submit.

PROJECT SUBMISSION: Local road agency engineers submit project applications to SWMPC staff based upon the community's desires and needs

QUALIFICATION: SWMPC staff verify that project application meets federal guidelines.

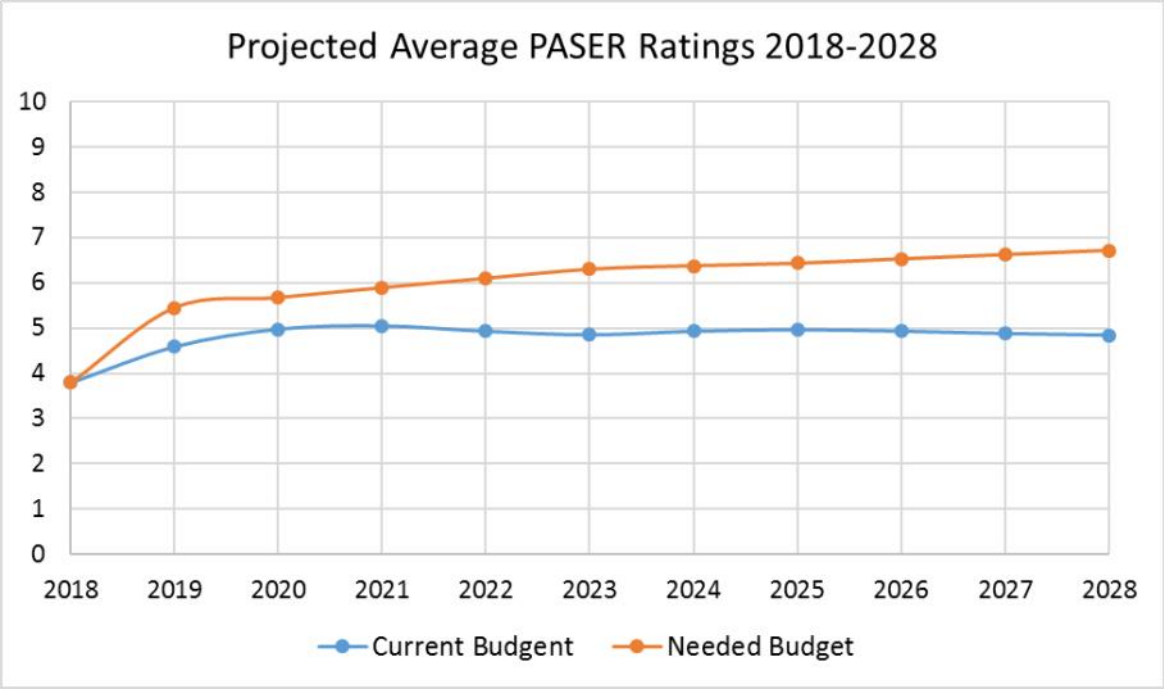
PROJECT SCORING: SWMPC staff score applications based on criteria approved by the NATS TAC and Policy Committee.

Public Input

RECOMMENDATION: TAC reviews staff scoring and makes funding recommendations to NATS Policy Committee.

Public Input

SELECTION: The NATS Policy Committee reviews NATS Technical Advisory Committee recommendations and chooses which projects to fund.



Assumptions: Actual annual budget increase of 2% and a 2% inflation on construction costs cancels out. Costs estimated based on the average costs for treatments by the Berrien County Road Department.

Local Federal Aid Roads

Will remain unchanged (poor) with the current annual budget of approximately

$700,000

We need to invest an additional

$1.2 Million

annually within our MPO for the next ten years to bring our locally controlled federal aid roads back to 80% good or fair.

Demonstration of Fiscal Constraint

Fiscal constraint is a required component of long-range planning. Transportation expenditures included in this Plan do not exceed revenue estimates during the life of the Plan. Simply put, this Plan includes only those transportation improvements that can be realistically completed based on anticipated revenues.

Based on the results of the travel demand model, no significant congestion on local roads was identified, and local agencies agree that preservation of the existing roadway system is the top priority. Therefore local road agencies decided not to program any specific projects in the long range transportation plan outside of the timeframe of the 2017-2020 or 2020-2023 Transportation Improvement Program (TIP). State and federal revenue allocated to local agencies in 2024-2045 is being allocated to system preservation. The general use of the funds has been identified but specific locations will be determined based on future needs.

MDOT's budget is divided into two major categories, preservation and capacity. The preservation budget is the annual amount the MDOT region is allocated to maintain and repair trunkline roads. This budget includes numerous state and federal sources. MDOT programs projects based on need and then allocates the applicable fund source to the project. Only the total amount of MDOT funding is estimated. There is no estimates of specific federal or state amounts. The Capacity budget is awarded for new roads or widening existing roads. There are no plans for capacity increase on MDOT roads in the NATS area and therefore there is no capacity budget in this Long range Plan

Details about transit funding can be found in the Passenger Transportation section (page 121).

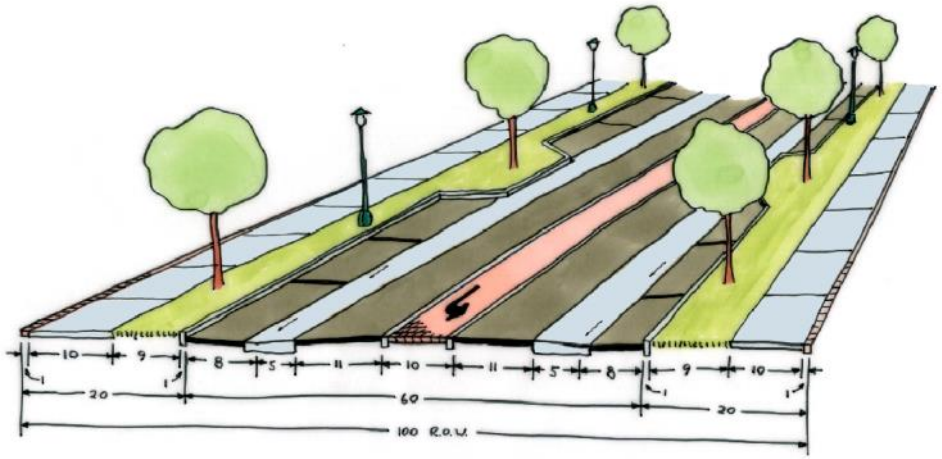
Funding Category	Revenue	Expenditures	Balance
2019-2025			
STBG	$4,146,957	$4,146,957	$0
Berrien CMAQ	$5,046,231	$5,046,231	$0
Cass CMAQ	$908,712	$908,712	$0
MTF (Act 51)	$154,817,739	$154,817,739	$0
MDOT Preservation	$77,125,867	$77,125,867	$0
5307	$1,645,092	$1,645,092	$0
5339	$212,259	$212,259	$0
CTF	$249,685	$249,685	$0
2018-2025 Total	$244,152,542	$244,152,542	$0
2026-2035			
STBG	$7,099,978	$7,099,978	$0
Berrien CMAQ	$9,072,798	$9,072,798	$0
Cass CMAQ	$1,027,366	$1,027,366	$0
MTF (Act 51)	$289,915,812	$289,915,812	$0
MDOT Preservation	$82,196,180	$82,196,180	$0
5307	$3,569,883	$3,569,883	$0
5339	$460,627	$460,627	$0
CTF	$541,822	$541,822	$0
2026-2035 Total	$393,884,466	$393,884,466	$0
2036-2045			
STBG	$8,990,719	$8,990,719	$0
Berrien CMAQ	$11,488,905	$11,488,905	$0
Cass CMAQ	$1,528,890	$1,528,890	$0
MTF (Act 51)	$365,275,597	$365,275,597	
MDOT Preservation	$117,136,654	$117,136,654	$0
5307	$5,332,662	$3,569,883	$0
5339	$688,051	$460,627	$0
CTF	$809,370	$541,822	$0
2036-2045 Total	$511,250,848	$511,250,848	$0
2018-2045 Plan Total	**$1,149,287,856**	**$1,149,287,856**	**$0**

ROAD & BRIDGE NETWORK

ROAD & BRIDGE NETWORK

Within the NATS planning area there are 692 miles of public roads. Road agencies in NATS, include cities, villages, Berrien County Road Department, and Cass County Road Commission are responsible for the maintenance of 585 miles of theses roads. The other 107 miles are owned and maintained by MDOT, including US-12, US-31, and routes M-51, M-60, M-62, M-140, and Business M-60. One hundred thirty-six miles of road are part of the federal aid highway system, which enables these roads to use federal surface transportation block grant funds for maintenance.

The network includes a variety of road types that serve various trip purposes. Local non-federal aid eligible roads are mainly designed to serve as residential streets or to provide access to individual properties. The federal aid network is the backbone for cross-jurisdictional and region wide trips. Within this category is the National Highway System (NHS) which are important regional roads and a vital network to the movement of people and goods across the state and nation.



NATS Planning Area Road Network:

107 Miles
MDOT Federal Aid Eligible Roads

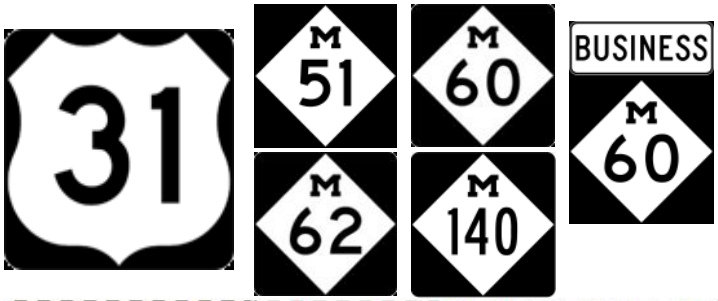
136 Miles
Locally Controlled
Federal Aid Eligible Roads

449 Miles
Locally Controlled
Non-Federal Aid Eligible Roads

692 Miles Total

National Functional Classification

The National Functional Classification (NFC) is the system by which the FHWA classifies roads into categories according to the function, speed, and amount of traffic the facility carries. NFC is used to determine design standards of roads and is a consideration in determining eligibility for federal aid funding. NFC classification is determined though cooperation between the road agency, MPO, MDOT, and FHWA. There are seven NFC categories, they are grouped into four major categories.

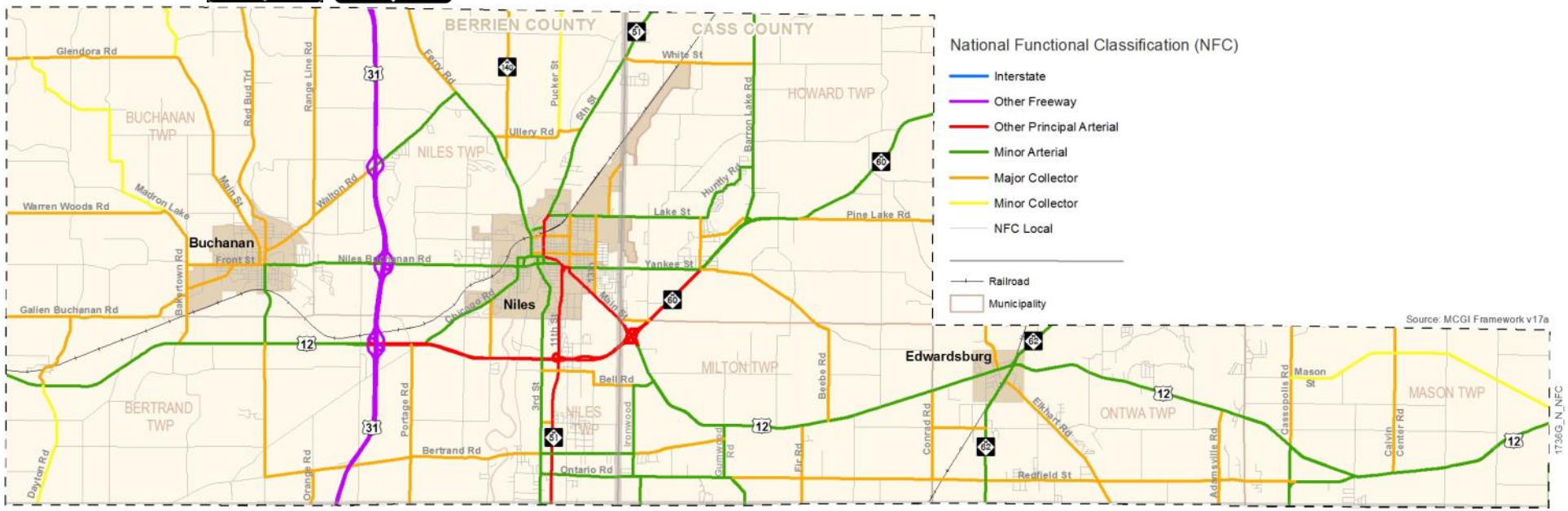


Principal Arterials (NFC 1-3)

Interstate: High speed divided highways that cover multiple states. While funded by the federal government, they are maintained by state DOTs. NATS does not have any Interstates.

Other Freeways & Expressways (OF&E): All other high-speed, limited access divided highways, which are not designated as an interstate which includes 26 miles of US-31 and in NATS. In Michigan, all OF&E routes are maintained by MDOT.

Other Principal Arterial (OPA): These routes are typically designed for high volumes of through traffic as well as commercial traffic. Unlike freeways, OPA's often have direct access to adjacent properties. There are 26 miles of OPA in NATS, specifically US-12 from US-31 to M-60, M-60 from US-12 to Business M-60 (Yankee Street), M-51 from the state line to Lake Street, and one block of Business M-60 (Ash Street) from M-51 to Main Street in Niles (all MDOT controlled), plus the locally controlled Main Street in Niles from Business M-60 to US-12.



National Functional Classification - cont.

Minor Arterial (NFC 4): A major thoroughfare, typically used for shorter trip distances and carry less traffic than principal arterials.

Collectors (NFC 5-6):

⇒ **Major Collector:** These routes funnel traffic from local and minor collector routes to the arterials. These may directly serve schools, business districts, and important public functions.

⇒ **Minor Collector:** Carries more through traffic than a local road but not as heavy as a major collector.

- ◊ ***Urban minor collectors*** were created recently by the 2010 Highway Performance Monitoring System (HPMS) re-assessment and have federal-aid eligibility—NATS: 2 mi.
- ◊ ***Rural minor collectors*** are not federal-aid highways but do have limited STBG federal-aid eligibility—NATS: 17 mi.

Local Roads (NFC 7): Predominately traveled by those accessing their property, rural roads and residential neighborhood roads. This is the majority of public roads.

National Highway System (NHS)

The NHS is a category for the most vital roads for the nation's economy, defense, and mobility. The NHS includes all Principle Arterials (NFC 1-3). In addition, the NHS can include roads that are connectors to major transportation hubs (ports, airports) and roads used to reach military bases and any other road considered necessary for national defense.

NHS = NFC 1-3

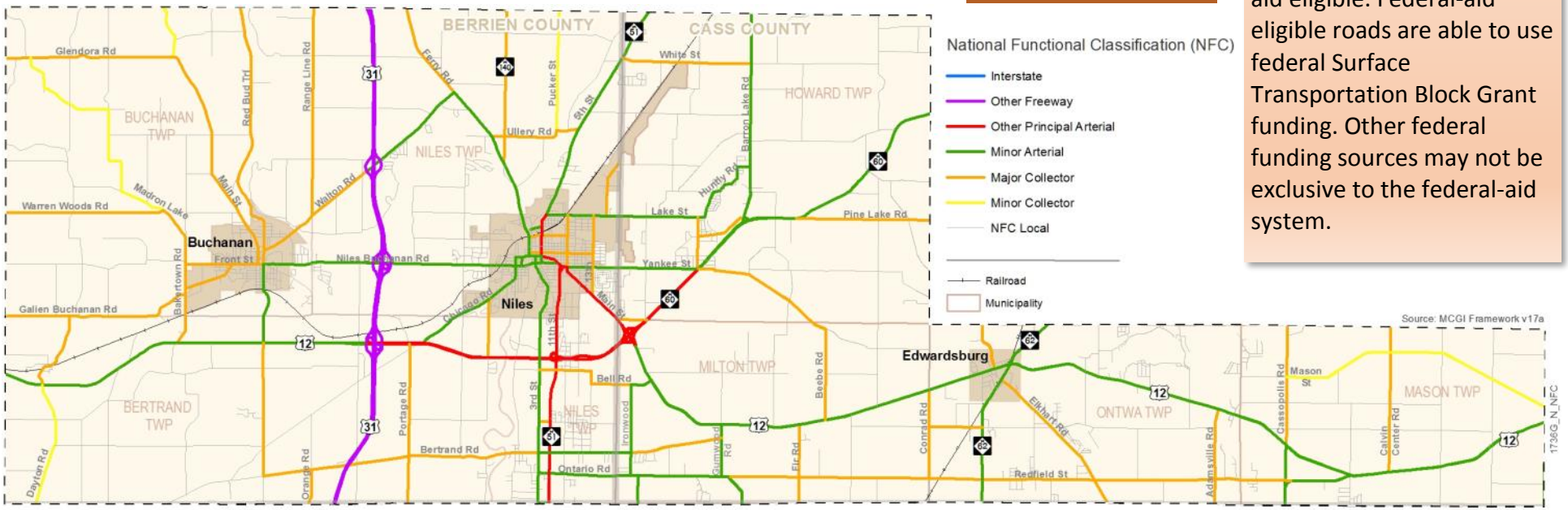
NATS NHS

51.5

miles

Federal-Aid Eligible Road Funding

All NFC categories, other than local roads and rural minor collectors are federal-aid eligible. Federal-aid eligible roads are able to use federal Surface Transportation Block Grant funding. Other federal funding sources may not be exclusive to the federal-aid system.



Vehicle Miles Traveled

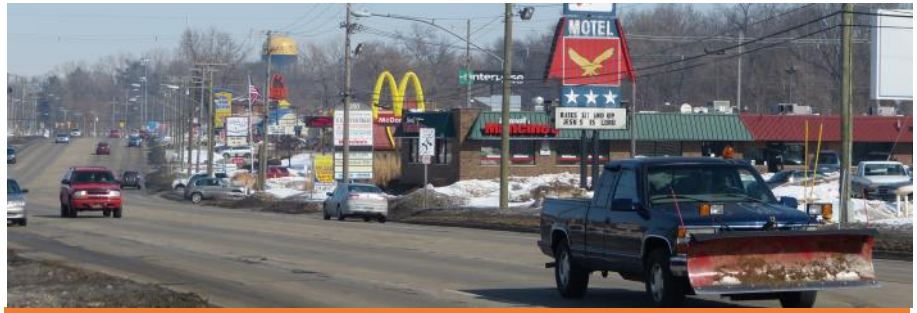
Vehicle Miles Traveled (VMT) measures the amount of travel for all vehicles in a geographic region over a given period of time. VMT is calculated by adding up all the miles driven by all the cars and trucks on all the roadways in a region. VMT is calculated based on traffic counts and travel models through the Highway Performance Monitoring System (HPMS). Currently, traffic on local roads is based solely on estimates because HPMS currently doesn't collect traffic counts on non-federal aid eligible roads.

VMT helps us understand trends in vehicle use and congestion change over time.

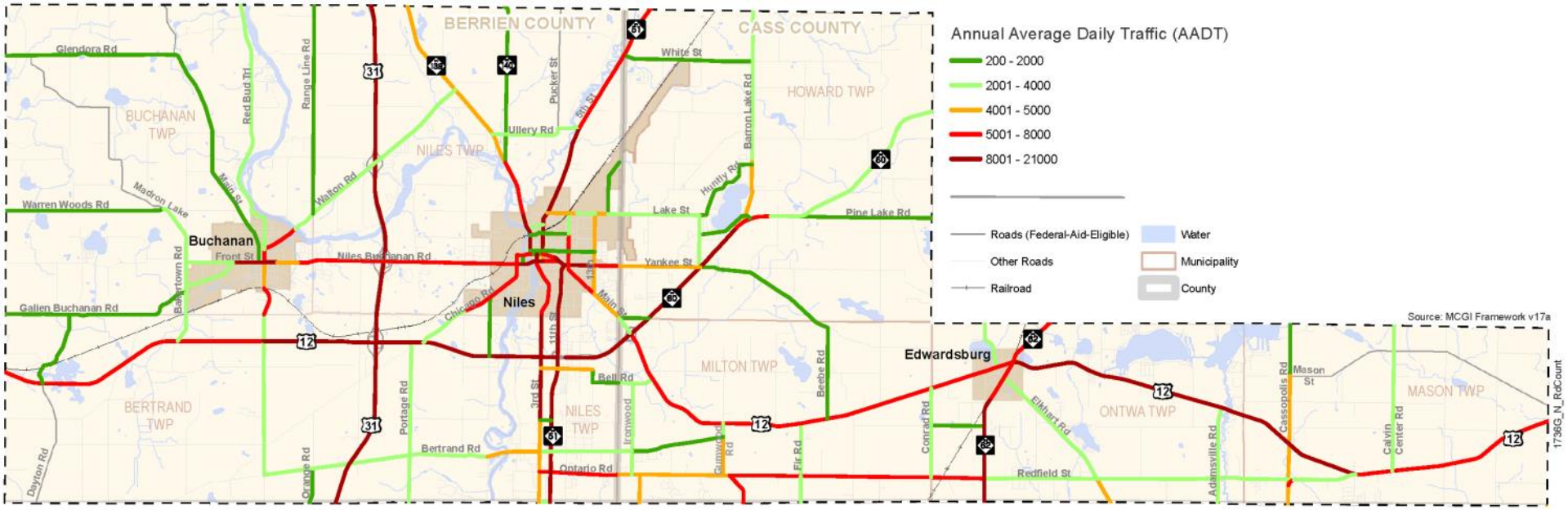
VMT is also used to calculate the environmental effect of the transportation system, such as deriving greenhouse gas emission estimates.

Annual average daily traffic (AADT) is the total volume of vehicle traffic on a highway or road for a year divided by 365 days. AADT is a useful and simple measurement of how busy a road is.

NATS 2017	Annual VMT	Average AADT
Other Freeways & Expressways (US-31)	63,042	2,425
Other Principal Arterials	79,270	3,049
Minor Arterial	204,237	2,295
Major Collector	89,919	890
Minor Collector	3,876	204
Local	58,451	135
Total	498, 795	720



M-51 on the southside of Niles is the busiest road in the NATS planning area, followed by sections of US-12 and US-31.

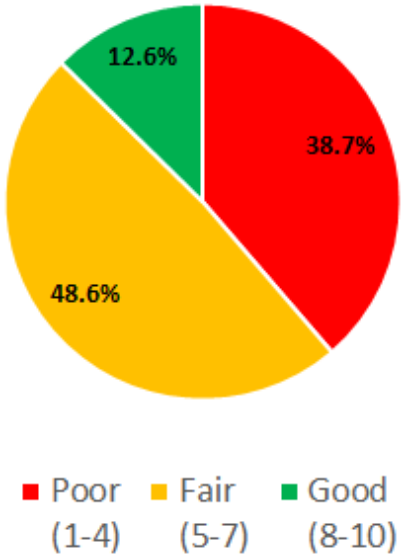


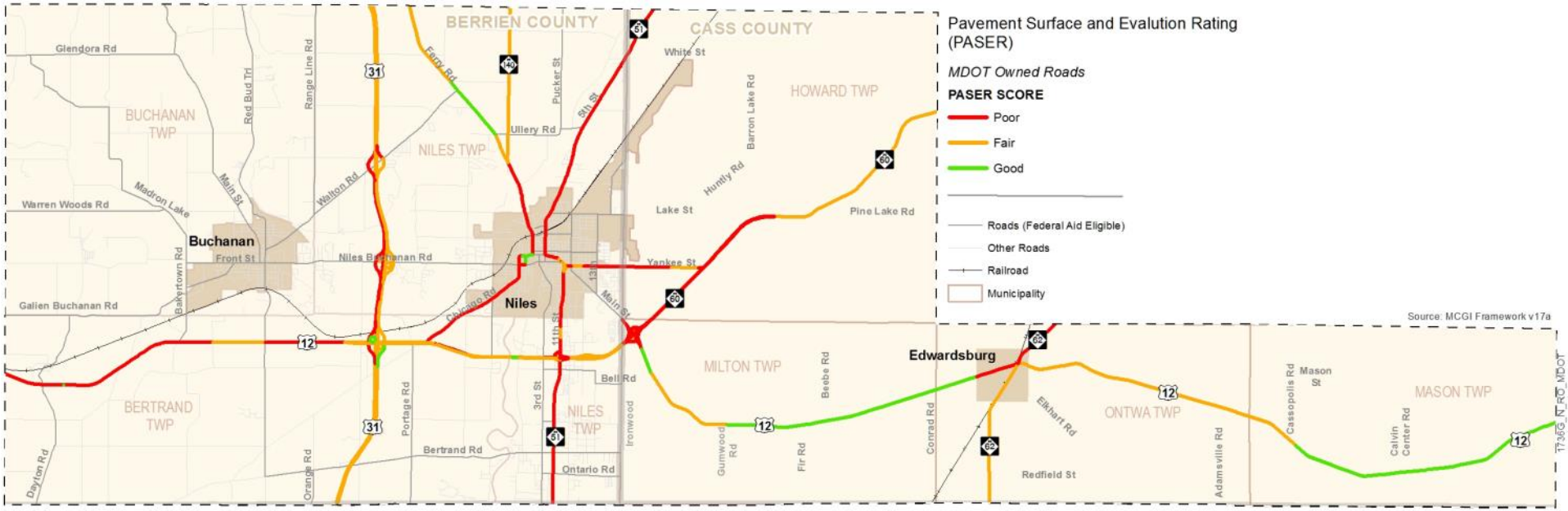
Pavement Condition— MDOT Controlled Road

Pavement condition is collected using the Pavement Surface Evaluation and Rating system (PASER) which gives a score from 1 to 10, with 10 being a new or newly reconstructed road and 1 being a complete failure. Yearly, a PASER score is gathered for federal-aid routes by a team comprised of SWMPC staff, a Berrien County Road Department engineer, and an MDOT member.

MDOT owns approximately 107 miles of road in NATS area, 13 miles were rated in good condition, 52 miles were rated fair and 42 miles were rated poor.

MDOT Pavement Conditions (PASER)



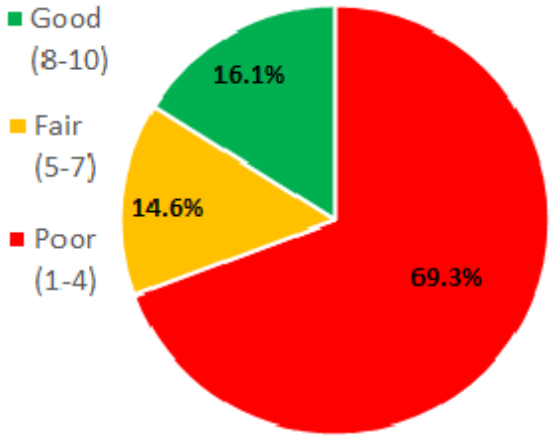


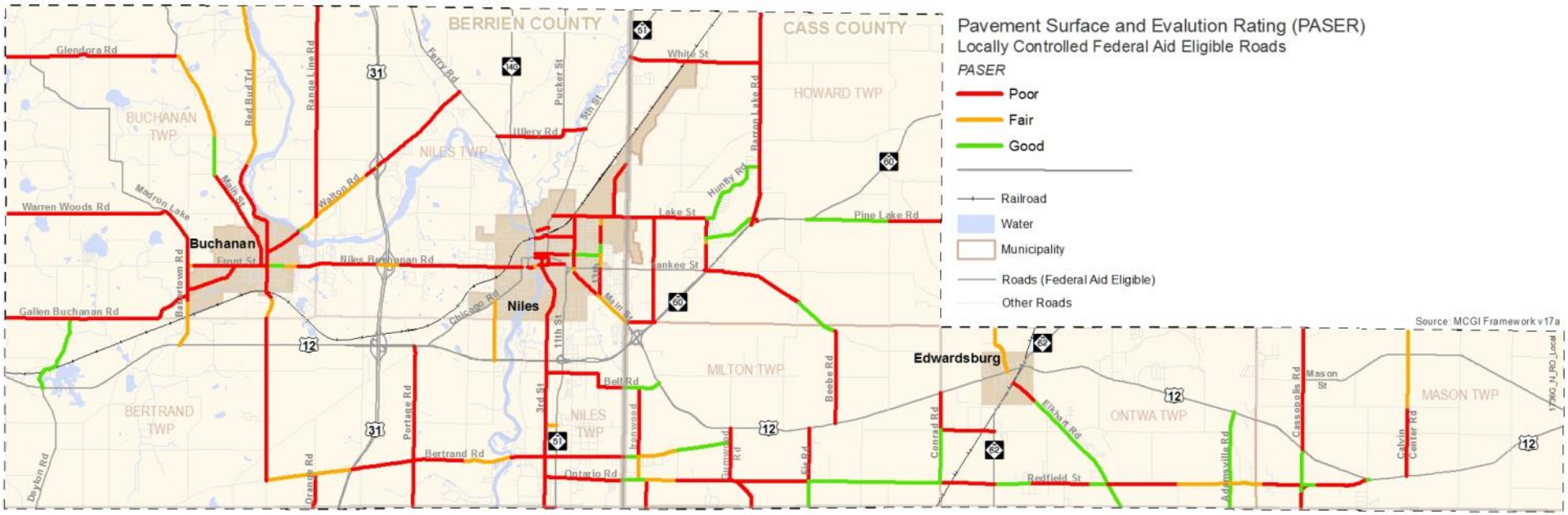
Pavement Condition—Locally Controlled Federal Aid Roads

While MDOT roads are generally in fair or good condition, locally owned roads are in far worse condition. There are 136 miles of locally controlled federal-aid eligible roads in the NATS area. Of these roads, 94 miles are rated poor, 20 miles are rated fair, and only 22 are rated in good condition. About 38 miles, 28% of the local roads, have a PASER of 4 (Poor). This means, while some roads are in the poor category, most have not reached a point where a complete reconstruction is the only option.

Maintaining roads in good or fair condition if far cheaper than reconstruction or resurfacing to bring roads in poor condition up to a good condition. A long term strategy of routine maintenance will be required. But currently the more expensive fixes to prevent poor roads from completely failing is required. With current funding levels, improving road conditions from poor to good or fair is an extremely challenging task.

Locally Controlled Federal Aid Roads Pavement Conditions (PASER)





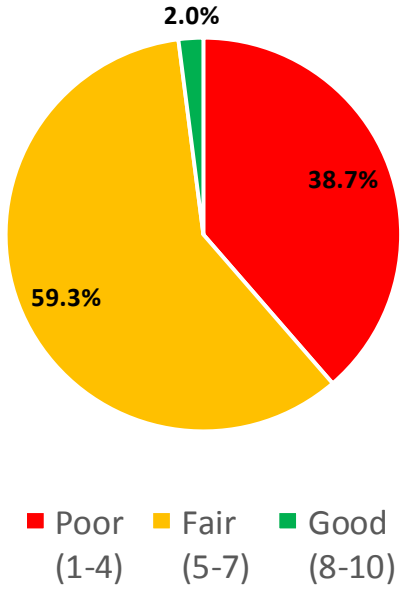
Pavement Condition—National Highway System

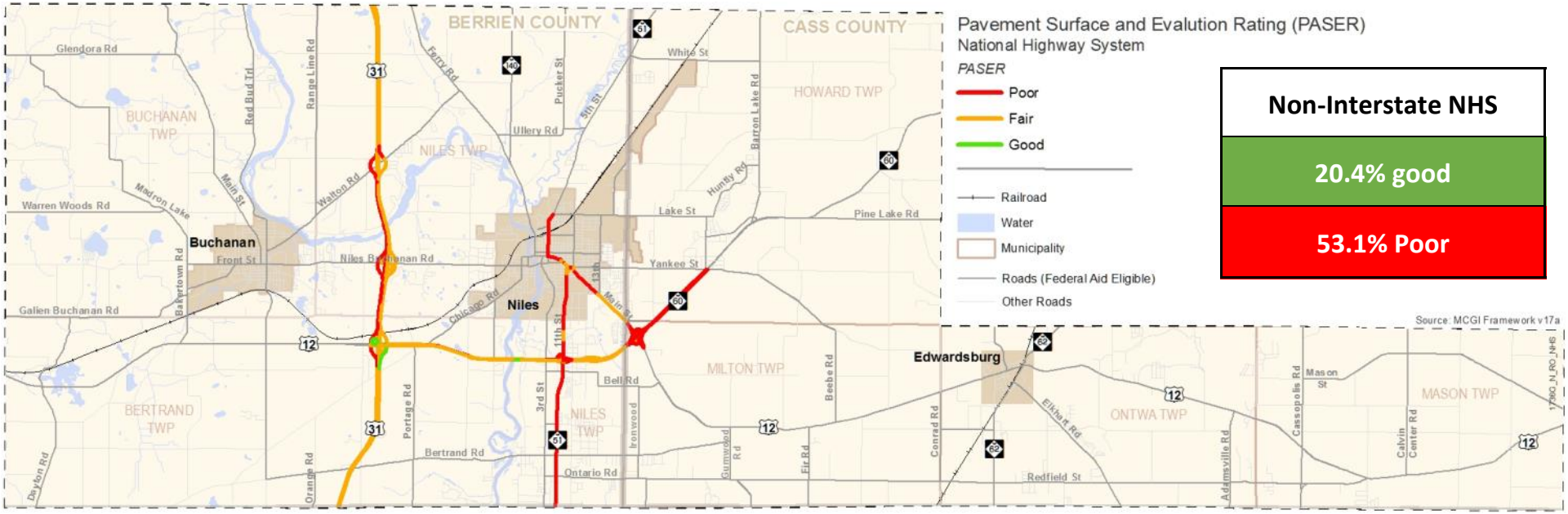
Due to the importance of the National Highways system to the nation's economy and defense, there are more stringent requirements for maintaining this network.

The vast majority of the NHS is owned by MDOT. Of the 51.5 miles of NHS, 50 are owned by MDOT and 1.5 miles are owned by local road agencies: Main Street in Niles from Business M-60 (Oak Street) to US-12.

A specific performance measure was established to track the pavement condition of the Interstate and non-Interstate NHS routes. Because NATS does not have any Interstates, only the non-Interstate measure is shown.

NHS Pavement Conditions (PASER)





Bridge Condition

Within the NATS area there are a total of 50 bridges. MDOT owns 29 of these bridges and 21 are owned locally. A majority of the large bridges are MDOT owned. Every overpass on a limited access divided highway counts as a bridge. The NATS planning area has four bridges rated "poor" (see next page regarding bridge inspections).

Berrien County Road Department (BCRD) owns three bridges. In 2016 BCRD submitted an application to MDOT for federal and state Critical Bridge funds for 2020 funding (see table below).

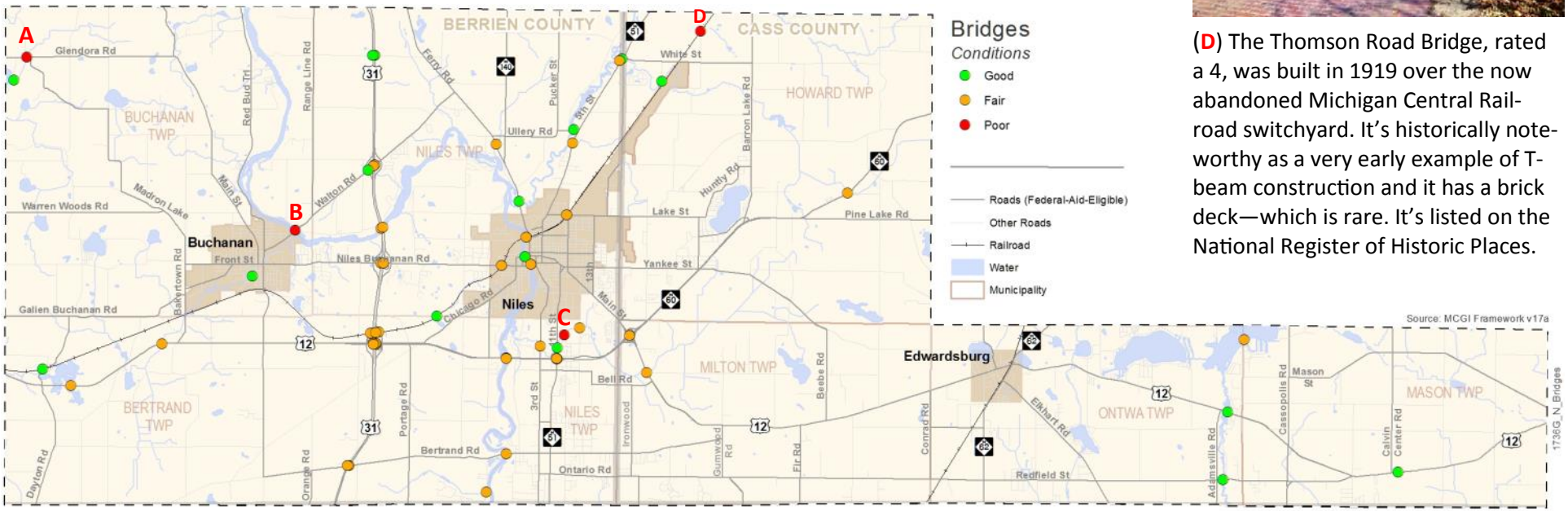
NATS AREA
50 BRIDGES

- 31 Over Water
- 9 Over Railroad
- 3 Over Highway
- 7 Other Roads

Bridges—Jurisdiction	MDOT	Local	Total
City of Buchanan	0	1	1
City of Niles	1	3	4
Village of Edwardsburg	0	0	0
Bertrand Township	15	3	18
Buchanan Township	0	3	3
Niles Township	8	7	15
Howard Township	1	2	3
Mason Township	1	0	1
Milton Township	2	0	2
Ontwa Township	1	2	3
Berrien Cnty Road Dept. **Total**	0	13	13
Cass Cnty Road Dept. **Total**	0	4	4
NATS TOTAL	**29**	**21**	**50**

NATS Planning Area Bridges Rated "Poor"

Map	Rating	Bridge	Over	Location	Owner	Length	Proposed Work	2016 Est.
A	4	Glendora Road	E. Branch Galien River	Weesaw Township	BCRD	23'	Replacement	$740,000
B	3	Walton Road	St. Joseph River	Buchanan City-Twp	BCRD	528'	Replacement	$2,130,000
C	3	Ferndale Blvd	Brandywine Creek	Niles Township	BCRD	23'	Replacement	$740,000
D	4	Thomson Road	Abandoned railyard	Howard Township	CCRC	171'	Unknown	Unknown



(D) The Thomson Road Bridge, rated a 4, was built in 1919 over the now abandoned Michigan Central Railroad switchyard. It's historically noteworthy as a very early example of T-beam construction and it has a brick deck—which is rare. It's listed on the National Register of Historic Places.

Bridge Conditions

Inspectors rate Michigan's bridges using the National Bridge Inventory (NBI) 0 to 9 rating scale where they rate each of a bridge's primary elements: deck, superstructure, substructure, and culvert. The lowest rated element is used for the overall bridge rating.

The ratings are divided into the following categories:

7-9 Good Condition: This indicates a completely new bridge or has only minor problems

5-6 Fair Condition: All structural elements are sound but may have minor corrosion, cracking or chipping.

0-4 Poor Condition: Previously known as structurally deficient. There is advanced corrosion, deterioration, cracking or chipping. This does not necessary mean the bridge is unsafe. Within the poor category a value of 2-3 is serious or critical. A value of 0-1 means the bridge is closed (it is in imminent danger of failure).

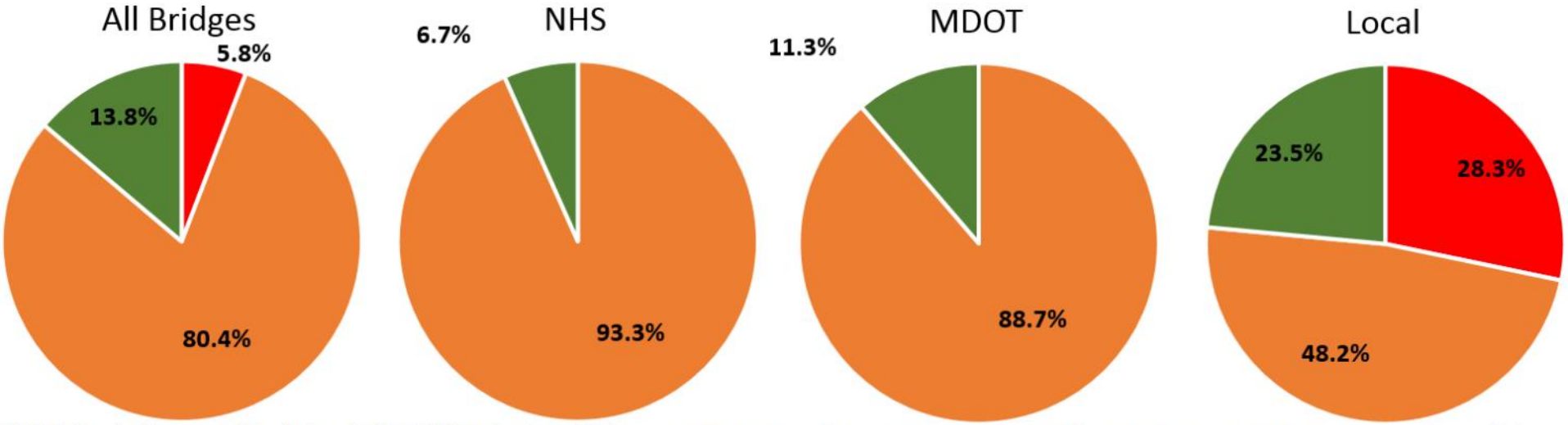
As of 2017, two bridges in the NATS planning area have a rating of a 3: Walton Road over the St. Joseph River and Ferndale Boulevard over Brandywine Creek.

No bridge in the NATS planning area was rated lower than a 3.

NATS NHS Bridges:	
6.7% Good	**93.3% Fair**
Based on deck area	

Almost half of the bridges in the NATS area are under 100 feet long (24 of 50). Of this number, nineteen bridges are under 50 feet long.

Approximately one-quarter (13) bridges in the NATS area are between 100 and 200 feet long. An additional eleven bridges are between 200 and 550 feet long. The two longest bridges in the NATS area are both spans of US-31 crossing the St. Joseph River (each over 1,300 feet long).



NBI Rating for Percent of Deck Area in NATS Planning Area Bridges. Source: Michigan Transportation Asset Management Council (TAMC)

ROAD & BRIDGE NETWORK—Travel Demand Model

Travel Demand Forecasting

Travel demand forecasting models (TDMs) are a major analysis tool for the development of long-range transportation plans. These mathematical models are designed to calculate the number of trips, connect their origins and destinations, forecast the mode of travel, and identify the roadways or transit routes most likely to be used in completing a trip. Models are used to determine where future transportation problems are likely to occur, as indicated by modeled roadway congestion. Once identified, the model can test the ability of roadway and transit system improvements to address those problems.

Because of the interaction of traffic between Niles, Michigan and South Bend, Indiana, it was decided that the travel patterns of the area could be better modeled if a regional model was built. The travel demand model used for the Niles Area Transportation Study (NATS) 2045 Metropolitan Transportation Plan (MTP) is a regional model that includes the areas of Niles, Buchanan, South Bend and Elkhart.

Through coordination and cooperation, both the Niles Area Transportation Study and Michiana Area Council of Governments were able to enhance and expand their models by creating one travel demand model for the entire urbanized area. By joining these models, the organizations of the Niles Area Transportation Study (NATS), MACOG, and MDOT are able to work together to more accurately capture the travel patterns across the Michigan/Indiana boarder and increase the overall sensitivity of the model. By approaching the model as a partnership, NATS, MACOG, and MDOT were able to strengthen coordination among agencies, promote the use of regional approaches to planning and decision-making and emphasize the importance of regional perspective. The NATS/MACOG regional model allows for better analysis of the region and supports a collaborative effort to address issues facing the region, across jurisdictional boundaries.

Gumwood at Redfield—route to/from Mishawaka; new subdivisions are being built along this area.

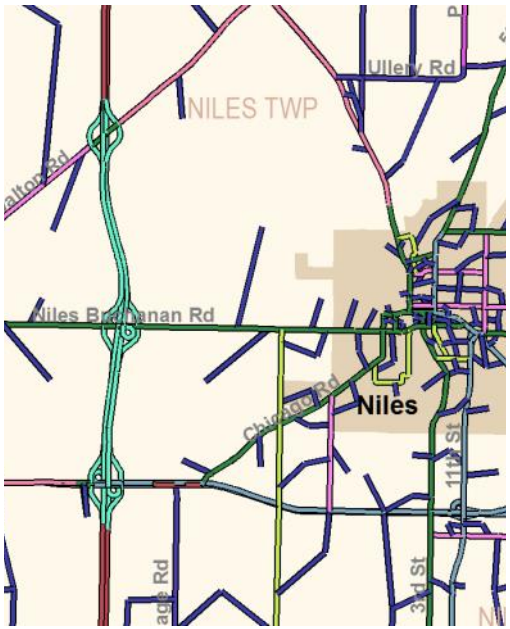
The NATS/MACOG travel demand model contains some unique modeling features...

- Sensitivity to fuel prices
- More realistic representation of special populations (seniors, low income, students)
- Sensitivity to urban design (mixed uses, development density, grid vs. cul-de-sac style street networks)
- Ability to represent shifts in the timing of travel (due to congestion, aging population, etc.)
- Consistency with tours and trip-chaining behavior
- More accurate commuting patterns from destination choice models
- Improved representation of speeds and delays from traffic signals, stop signs, etc.

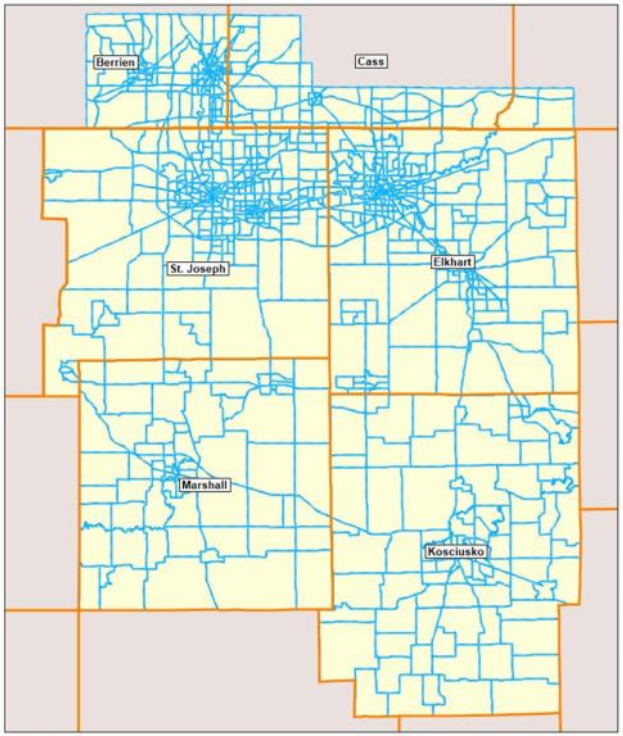
Components of the Model

Road Network

Within the TransCAD software, a traffic network is built to represent the existing road system. The NATS Model network is based on the Michigan Geographic Framework and includes most roads within the study area classified as a minor collector or higher by the national functional classification system. Other roads are added to provide continuity and/or allow interchange between these facilities.



Transportation system information or network attributes required for each link include facility type, area type, lane width, number of through lanes, parking availability, national functional classification and traffic counts (based on availability). The network attributes were provided by MDOT staff and reviewed by the MPO and Technical Advisory and Policy Committees. Link capacities and free flow speeds are determined based on network attributes such as national functional classification, facility type, and area type. These features of the road network are used in the traffic assignment process and in determining traffic conditions.



Traffic Analysis Zone (TAZ)

The Traffic Analysis Zone (TAZ) is the primary geographical unit of analysis of the travel demand model and it represents the origins and destinations of the travel activity within the model area. TAZ's are determined based upon several criteria including similarity of land use, compatibility with jurisdictional boundaries, presence of physical boundaries, and compatibility with the road system. Streets and natural features such as rivers are generally utilized as zone boundary edges. TAZ's vary in size depending on population, employment, and road network density.

Components of the Model

Socio Economic Data

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 the households, vehicles, and employment located in a given TAZ. These characteristics are generally referred to as socioeconomic data (SE-Data).

The collection and verification of the SE-Data was a collaborative effort between SWMPC, MPO Committee members, and MDOT. Household, population, and employment data from the 2010 U.S. Census, the 2015 American Community Survey, Claritas and Hoovers employment data-bases was presented to the MPO and Technical Advisory and Policy Committees. They were asked to provide detailed information about new development and where employers or population had been lost. The revised data was included in the travel demand model.

Population Synthesis

The Niles/MACOG TDM generates a disaggregate synthetic population of households based on the demographic information associated with the traffic analysis zones. For each zone, individual households are created. Each household has a total number of persons, workers, students, and a binary variable indicating whether any of the household members is over the age of 65. Each household also has an income variable that indicates whether the household belongs to the lower (under $35,000/year), middle ($35,000 - $75,000/year) or upper (over $75,000/year) income category, each of which comprises approximately a third of the households in the region. The number of vehicles available to each household is modeled separately, after the population synthesis, based on these variables and other variables describing the zone in which the household is located.

Components of the Model

Tour and Stop Generation

The new travel demand model generates tours and stops rather than trips. The number of tours and stops of each type is estimated using multiple regression models applied to the disaggregated synthetic population of households. First, the number of tours, of each type, is estimated for each household. Then, for each stop type, the ratio of stops per tour is modeled and the total number of stops produced by multiplying this ratio by the number of tours.

	Workers	Non-Workers	Students	Seniors	Vehicles	Income	Gas Price	Accessibility
Work Tours	+			-	+	+		
Work Stops	+			-	+	+		-
Other Stops	+	-	+	-	+	+		
School Tours			+			+		-
School Stops			+			+		-
Other Stops			+			+		-
Other Tours	+	+		+	+		-	
Short Maintenance Stops	+	+		+	+	+	-	
Long Maintenance Stops	+	+	-	+	+		-	
Discretionary Stops	+	+	+	+	+	+	-	
Key	+	Variable (column) increases tour/stop rate (row)			-	Variable (column) decreases tour/stop rate (row)		

Source: MACOG Travel Model: Model Development and Validation Report

This model offers a more realistic representation of special populations.

Tour Base Mode Choice

In the new model, as in activity-based models, the mode of travel is developed in two stages: tour mode choice and trip mode choice. After tours are generated, they are assigned a primary mode by tour mode choice models. Then, after the spatial distribution of stops creates trips, individual trips are assigned a mode based on the primary mode of the tour in trip mode choice models.

The MACOG model makes use of four primary tour modes:

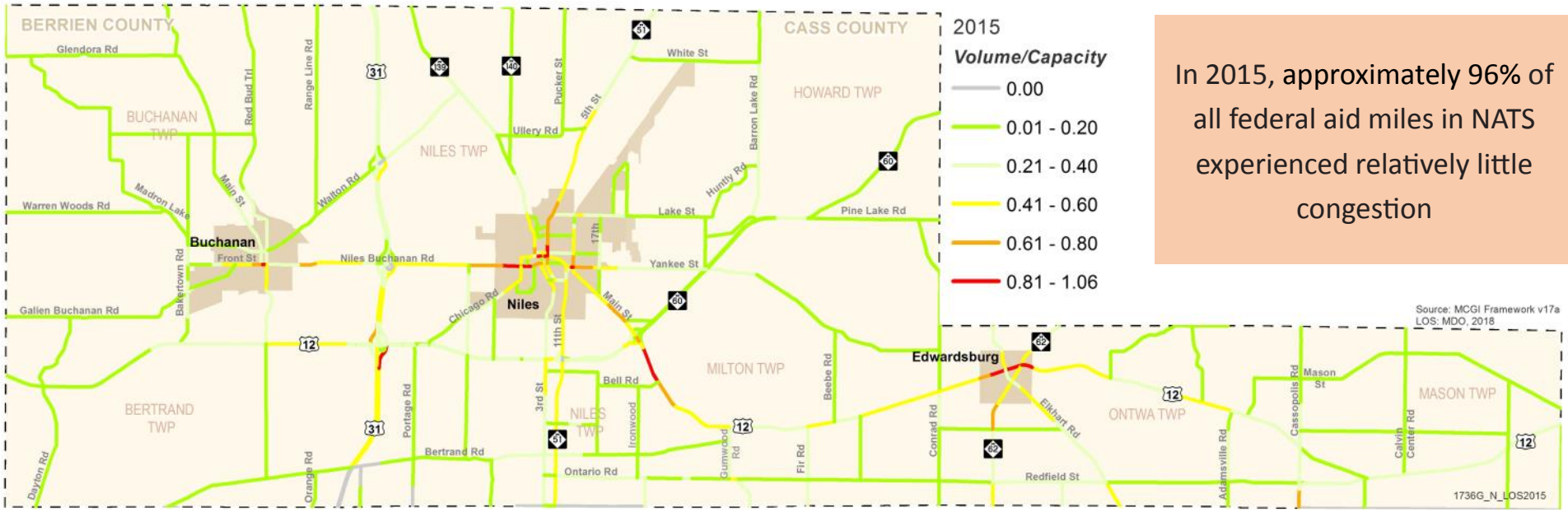
- Private Automobile
- Public Transit
- Walk/Bike
- School Bus

2015 Daily Congestion Model

The Base Year scenario shows existing conditions of the area-wide transportation system as it was in 2015. There is little traffic congestion in the majority of NATS road network. Highlighted are the roads that have higher volume/capacity ratios in the table below.

2015 Model Congested Road Segments

Jurisdiction	Route Name	From	To	Length	Volume	V/C ratio
Niles	Oak Street	12th Street	13th Street	0.36 miles	13166	0.79
Niles	Main Street (US 12)	Berrien/Cass County Line	Bell Rd	1.15 miles	16809	0.78
Niles	Grant/Broadway	W of Lincoln	3rd Street	0.78 miles	12579	0.84
Niles	Main Street	Front Street	5th Street	0.24 miles	10795	0.80
Niles	5th Street	Wayne Street	Broadway	0.6 miles	14264	0.78
Buchanan	Front Street	Main Street	Red Bud Trail	0.1 miles	10215	0.91
Edwardsburg	Main Street (US 12)	Section Street	M 62	0.65 miles	14755	0.87



In 2015, approximately 96% of all federal aid miles in NATS experienced relatively little congestion

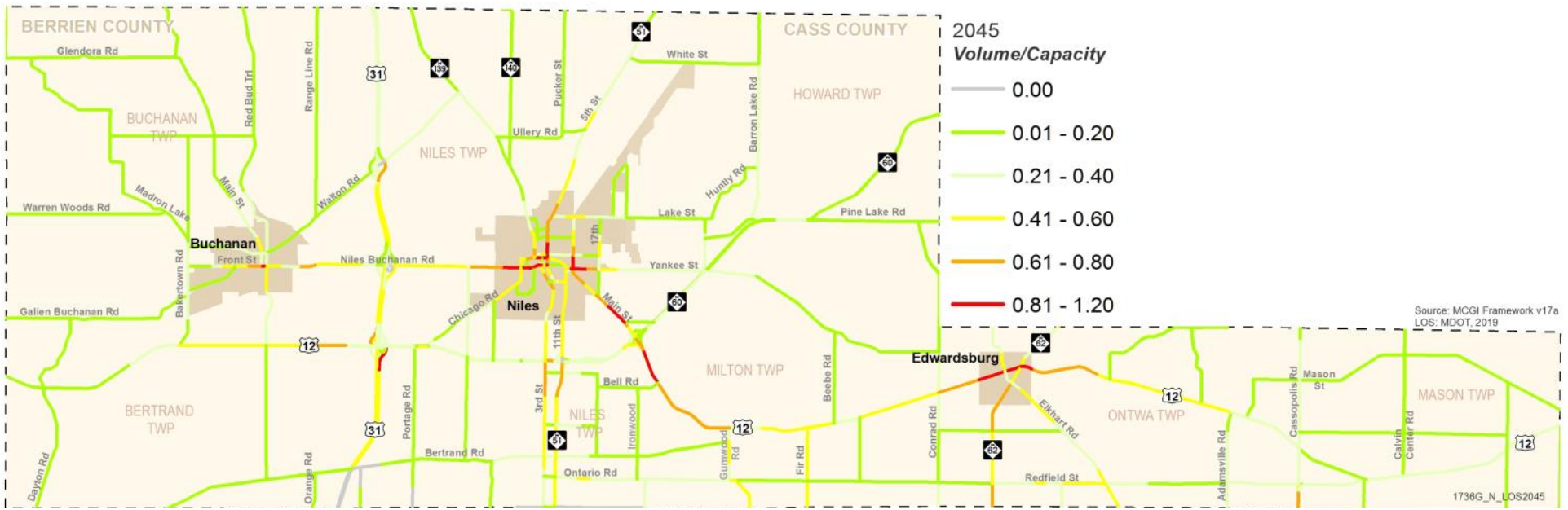
2045 Daily Congestion Model

By 2045, Main Street (US-12) in Niles from the Berrien/Cass county line to Bell Road remains close to capacity. The model predicts a segment of US-12 that runs through Edwardsburg will increase to capacity by 2045. Main Street in downtown Niles, from Front Street to 5th Street, will increase by 15%. Fifth Street from Wayne to Broadway is projected to increase by about 9 percent. Congestion on Oak Street will increase to capacity. Congestion on Grant Street from west of Lincoln to 3rd Street will increase slightly. The model also shows a small segment of Front Street in downtown Buchanan that will near capacity by the year 2045. Also of note, though not listed as congested or deficient currently, is Gumwood Drive which will increase by 21 percent from 2015 to 2045. *Details of these roads can be seen in the maps in the next two pages.*

2045 Model Congested Links

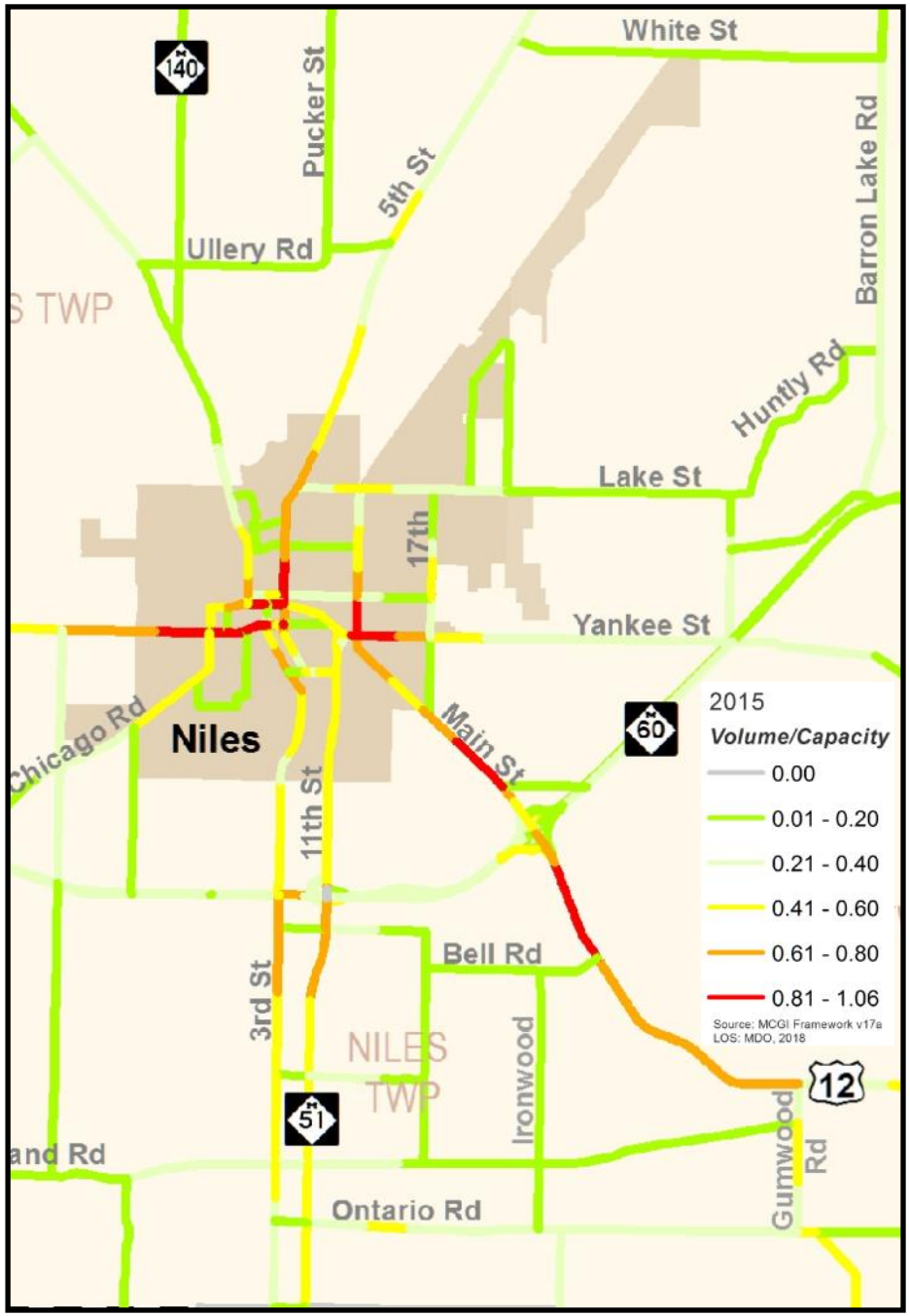
Jurisdiction	Route Name	From	To	Length	Volume	V/C ratio
Niles	Oak Street	12th Street	15th Street	0.36 miles	15,457	0.93
Niles	Main St. (US 12)	Berrien/Cass County Line	Bell Rd	1.15 miles	19,995	0.93
Niles	Grant/Broadway	W of Lincoln	3rd Street	0.78 miles	13,830	0.92
Niles	Main Street	Front Street	5th Street	0.24 miles	12,356	0.92
Niles	5th Street	Wayne Street	Broadway	0.6 miles	15,983	0.85
Buchanan	Front Street	Main Street	Red Bud Trail	0.1 miles	10,981	0.98
Edwardsburg	Main St. (US 12)	Section Street	M 62	0.65 miles	17,048	1.00

With the completion of the travel demand model, deficiencies in the roadway network were identified based on the volume to capacity ratios of the links. This means that if a V/C ratio approaches 1.0, then the efficiency of the roadway to handle traffic becomes compromised and congestion occurs.

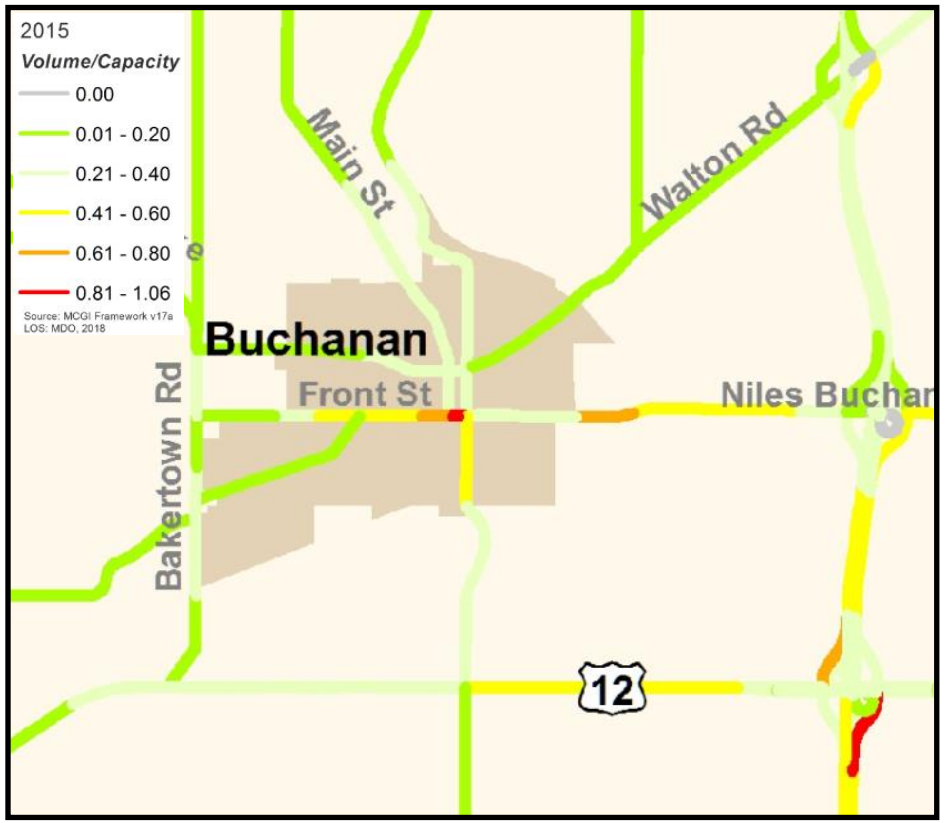


2015 Daily Congestion Model Map—Niles

2045 Daily Congestion Model Map—Niles

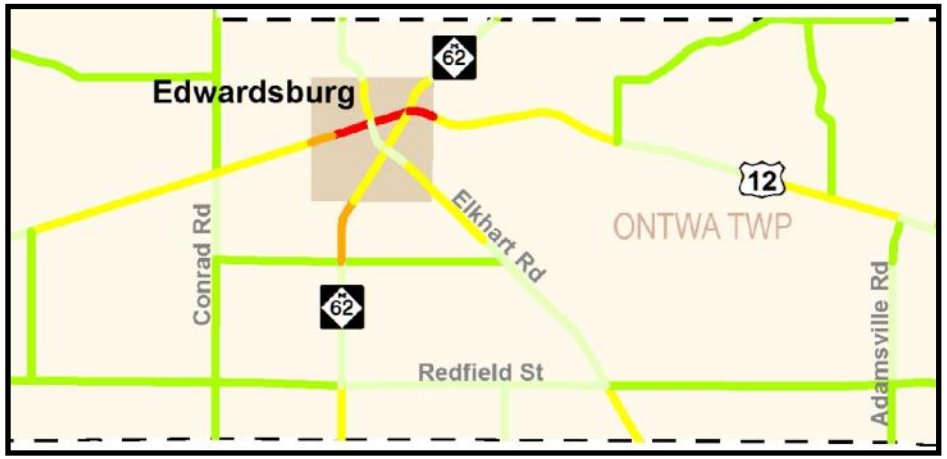


2015 Daily Congestion Model Map Inset—Buchanan



2045 Daily Congestion Model Map Inset—Buchanan

2015 Daily Congestion Model Map Inset—Edwardsburg



2045 Daily Congestion Model Map Inset—Edwardsburg

STRATEGIES:

IMPROVING THE ROAD AND BRIDGE NETWORK

Strategy	Guiding Principles Met
Preserve and maintain existing road & bridge network	✓ ✓ ✓ ✓

Keep records on the condition for pavements, culverts, and bridges.
Use PASER condition as a tool to help select projects.
Encourage use of local asset management plans to identify the most appropriate treatment strategies.
Monitor the effectiveness of fixes to ensure investments meet expected useful life.
Encourage the use of preventative maintenance to extend pavement lifespan.

Implement Complete Streets Projects	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

Ensure all projects in the NATS area to consider the needs of all users.
Provide educational and planning assistance to local governments on implementing Complete Streets principles.
Consider reallocation of extra space in the right of way for other modes.

Analyze safety issues and potential solutions	✓ ✓ ✓ ✓

Distribute NATS safety reports which show trends in collisions, common crash causes, and high crash locations.
Provide education on and raise awareness of safety issues for all users.
Incorporate safety considerations for all modes and users throughout the processes of planning, funding, construction, and operation.
Provide recommendations for safety countermeasures based on FHWA, NACTO and AASHTO best practices and design principles.

Resiliency & Reliability	✓ ✓ ✓ ✓ ✓

Maintain inventories of assets, condition, and life cycle to assist in identifying which assets are at risk for failure.
Encourage sound inspection and maintenance practice regimes for transportation related infrastructure that includes but is not limited to bridges, culverts, underdrains, catch basins, transit facilities and buses.
Consider potential hazards in project design, selection, and construction.
Ensure redundancy in transportation networks to ensure critical services can be delivered during road closures.

NON-MOTORIZED NETWORK

NON-MOTORIZED NETWORK

Walking, both by itself and in conjunction with transit, provides a means to access important goods, services, and activities. This accessibility is particularly important for those who may have limited transportation options: youth, the elderly, people with disabilities, and people with low incomes.

Currently connected accommodations for pedestrians and cyclists is limited to the City of Niles, City of Buchanan and the Village of Edwardsburg. Sidewalks are almost completely lacking in townships, with the only accommodations existing are a some roads which contain wider shoulders.

72% Federal Aid Eligible Roads

Have No Accommodations for Pedestrians or Cyclists

21 miles

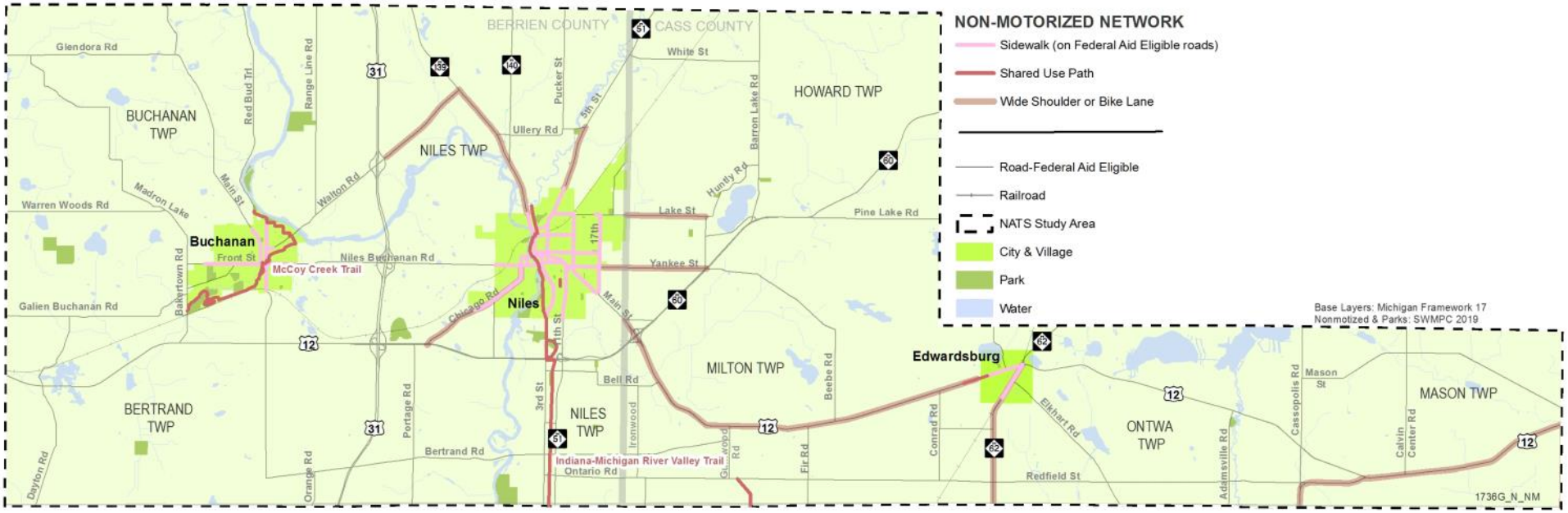
Federal Aid Roads with Sidewalks

28 miles

Federal Aid Roads with Wide Shoulders

13 miles

Non-motorized Trails



Considering the Needs of All Users

Part of the NATS mandate is to consider the needs of all users; this includes walking, or bicycling by people of all ages and ability levels, including people with disabilities.

NATS considers walking and cycling priorities because they produce a variety of benefits including improved health, attraction of new residents who desire walkable communities, and a decrease in vehicle miles traveled. Yet despite its benefits few residents in the NATS area walk other than for recreation, likely because conditions for walking and cycling are overall poor. The majority of employment, shopping, and other tasks are difficult to accomplish without a car. Yet despite sometimes challenging conditions, there are residents who must walk or bike because they lack all other means of travel. Furthermore, those who use transit must begin and end their journey on foot or bicycle.

United States Department of Transportation Policy Statement on Bicycle & Pedestrian Accommodations (2010)

"Because of the numerous individual and community benefits that walking and bicycling provide—including health, safety, environmental, transportation and quality of life—transportation agencies are encouraged to go beyond the minimum standards to provide safe and convenient facilities for these modes."

WALK

89% rarely/never commute by walking to work or school.

BIKE

66% rarely commute by bike to work or school.

2014 NATS Transportation Survey

Maintaining Pedestrian and Bicycle Facilities

Poorly maintained roads have been cited as a major concern for motorists, but well maintained facilities are just as important a need for pedestrians and bicyclists.

- Bicyclists are especially vulnerable to poor pavement condition because bicycles are more likely to have an accident if they encounter obstacles like large cracks or potholes.
- Bicyclists will sometimes have to avoid dangers which means they may have to leave the shoulders and enter the automobile travel lanes or stop abruptly. This can be unpredictable for drivers and lead to crashes.

Any break in the pedestrian network or disrepair can potentially eliminate walking or transit option or force the choice to drive.

The top responses from residents on how to improve walking and cycling in NATS Planning Area:

- Build more sidewalks and bike lanes
- Improve road crossing
- Provide Better lighting
- Fix the existing sidewalks

2014 NATS Transportation Survey

"I am tired of walking to the school bus stop, when people don't know how to shovel their sidewalks — I am walking on the road in the dark to go to school"

2014 NATS Transportation Survey

Common challenges to pedestrian travel after a snowfall

- Street and parking lot plowing that pushes the snow onto sidewalks or blocks crosswalks.
- Clogged or obstructed drains that create puddles at curb ramps
- Long stretches of snow or ice covering sidewalks

Commuting Patterns

Today, travel by automobile within the NATS area is the dominant mode of travel. Still, the dominance of driving alone is not uniform throughout the study area. The City of Niles and Niles Township contain higher concentrations of residents who tend to use a mode other than the personal automobile for their daily commute.

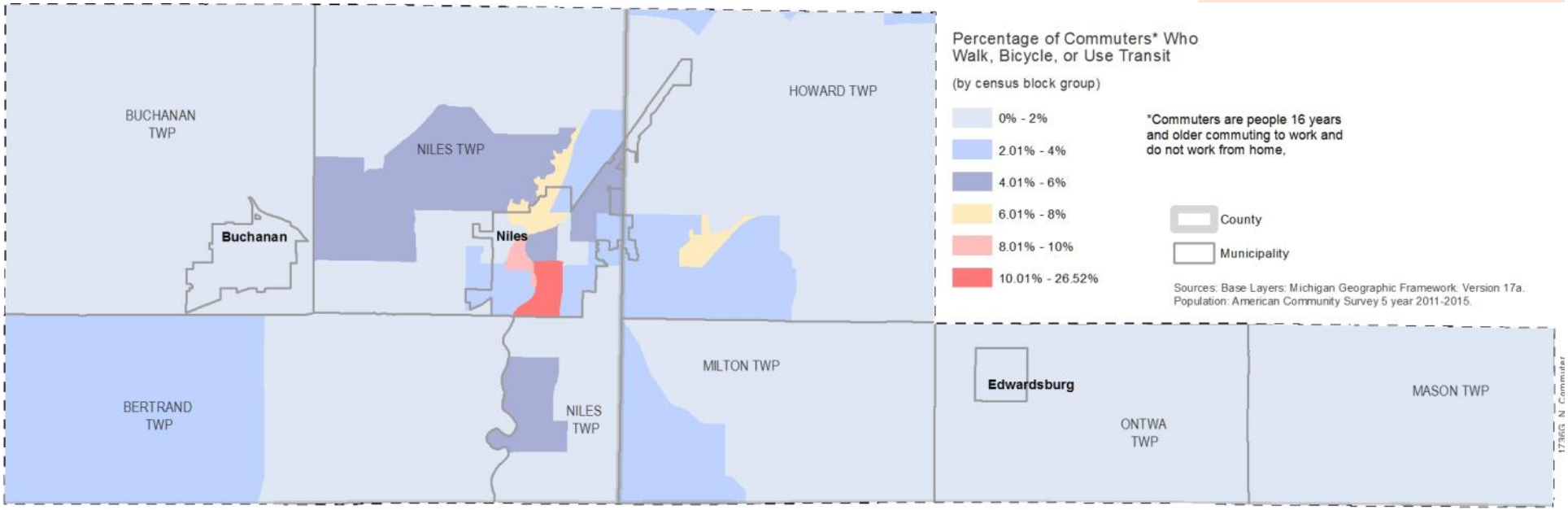
A particular challenge in the region is the population is continuing to disperse from incorporated cities and villages into townships. In many cases, this shift in population, increases the distance that residents have to travel to access vital resources such as food, healthcare, and employment.

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.

Only 2.5% of Commuters

Walk, bike or use transit within the NATS Planning Area

Source: U.S. Census Bureau, 2015, 5-year American Community Survey



Regional Non-motorized Connections

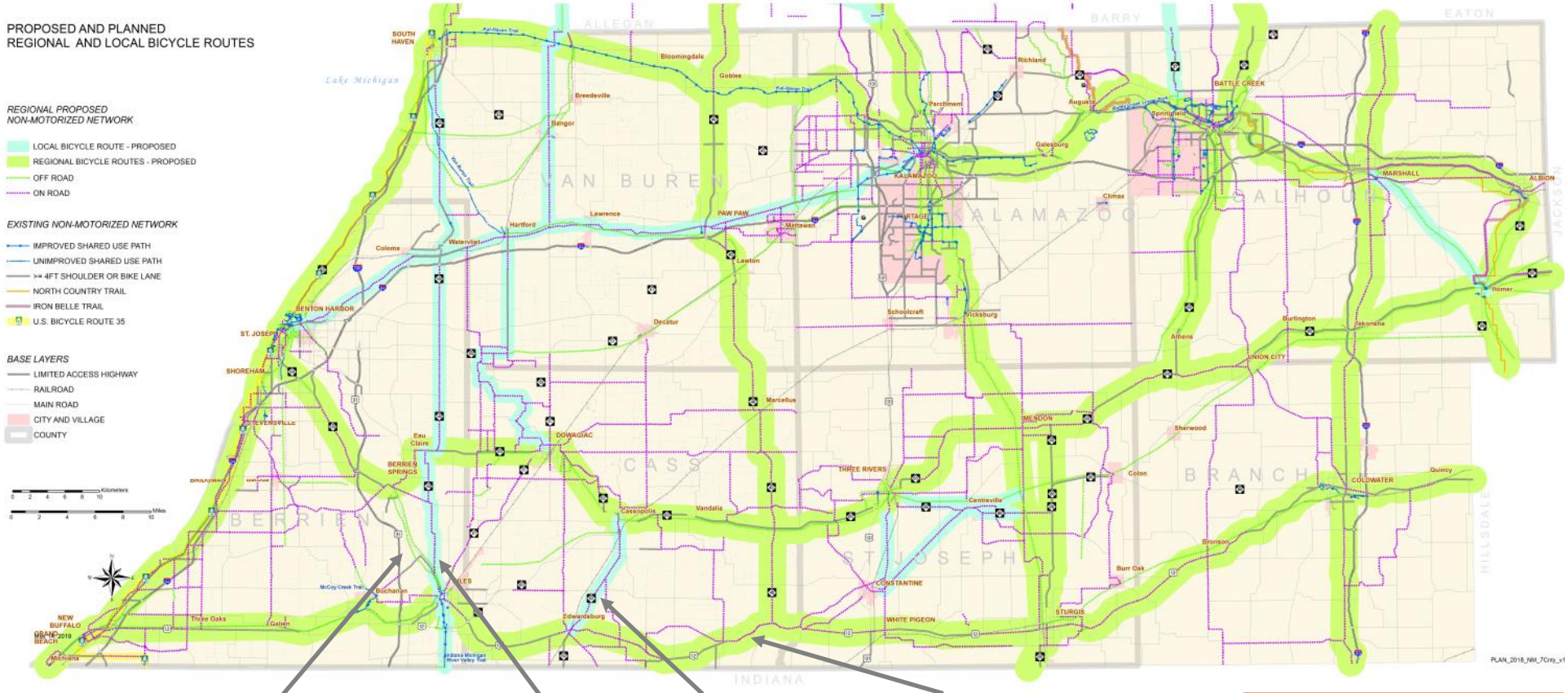
The Indiana Michigan River valley Trail is a partially built 34 mile trail which will provide a non-motorized connection between Niles and the South Bend /Mishawaka area. Indiana The trail will be completed by the Fall of 2019.

The trail functions as both a recreational asset as well as for people taking trips for work or other business. The trail will make commuting by bike from the city of Niles and Niles Township to South Bend and Mishawaka possible. It will also provide a connection for the residents in the area to destinations within the City of Niles.

The trail connect to:

- 4 universities and several schools
- 4 downtowns: Niles, Roseland, South Bend and Mishawaka
- 16 parks
- 2 YMCAs
- 5 hospitals or major medical facilities
- Several historical and cultural attractions
- Businesses offering eating, lodging, and shopping

NON-MOTORIZED NETWORK—Proposed Local and Regional Bike Routes



Interurban Rail Line— Expansion of the Indiana-Michigan River Valley Trail from Niles to Berrien Springs via the Interurban Rail Line corridor.

M-140 - This proposed on road corridor would follow M-140 north connecting Niles to Eau Claire. It would also connect to the Indiana Michigan shared path in Niles to South Bend.

M-62 - This proposed on road corridor would follow M-62 north connecting Edwardsburg to Cassopolis.

US-12 - This proposed on road corridor would follow the US-12 Heritage Route as it starts in New Buffalo in Berrien County and connects through to Branch County in Coldwater.

- Collect data of the existing and proposed network
- Identify opportunities to enhance non-motorized transportation
- Help prioritize non-motorized investment
- Continue to foster cooperative planning across municipal/ county boundaries
- Synchronization of Plans – understand what exists and what is planned to better coordinate efforts

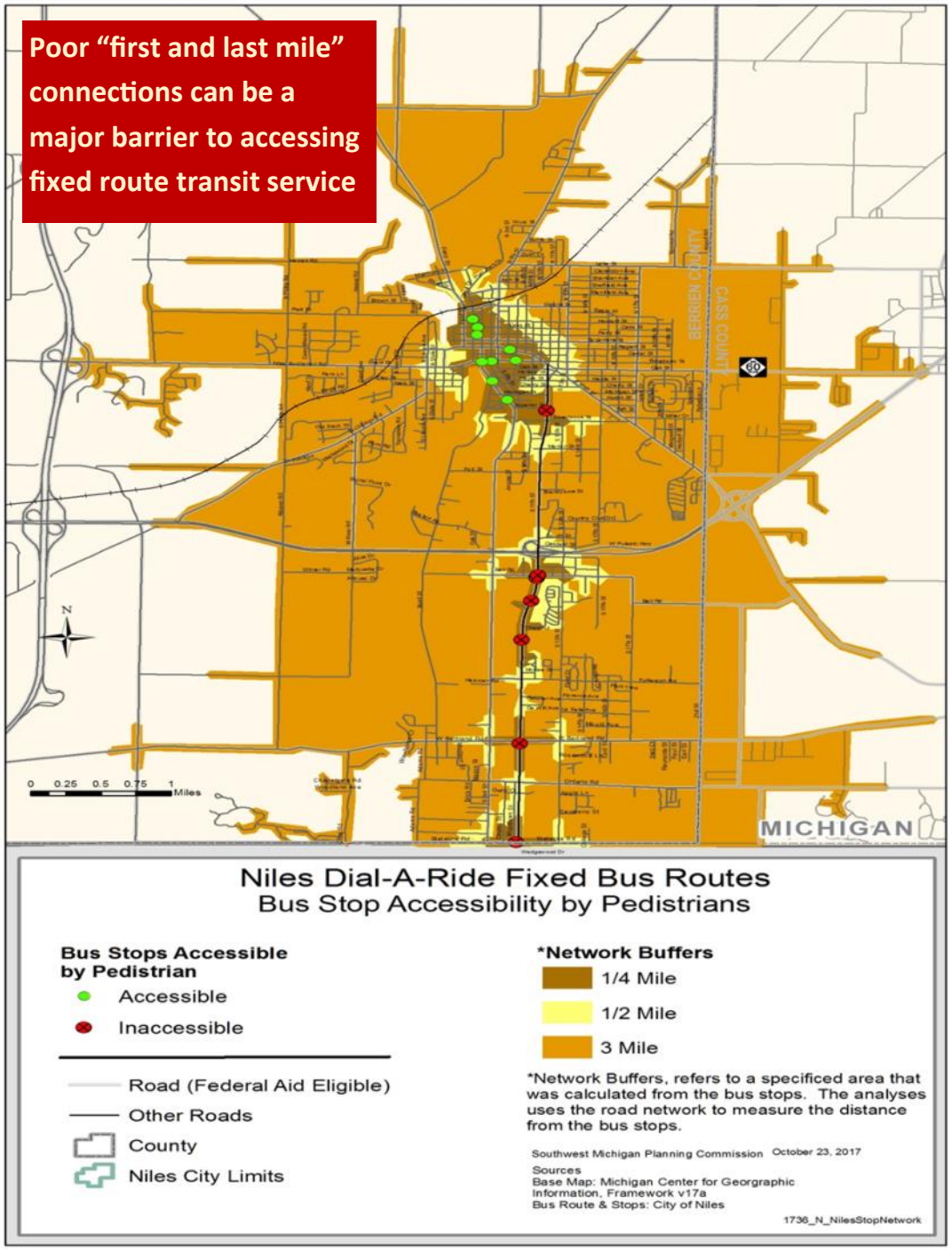
The Michigan Department of Transportation (MDOT) has worked to develop the Southwest Regional Non-motorized Plan. This plan serves as a tool, not only for MDOT staff, but also for the vast number of stakeholders, agencies, and organizations in the Region.

WALK. BIKE. RIDE.

The quality of the transit trip does not start and stop at the vehicle door. By working to improve the quality, safety, and convenience of the walking environment near transit stops, the entire transit experience is improved, which can encourage more people to utilize fixed route public transit.

Currently within the NATS area the majority of people do not access public transit by foot, rather they rely on demand response/curb to curb service. Among the reasons is that access to the fixed route is difficult. Improvements to walkability could increase the passengers of the fixed route bus service.

Within the City of Niles there is extensive sidewalk infrastructure throughout the neighborhoods and business district that provide pedestrian access to the fixed route transit stops within the city. Because the stops are located along the roadway, this means vehicles do not have to pull off the road for passenger boarding. This is not the case for stops located along 11th Street in Niles Charter Township and the City of Niles, where the infrastructure was primarily designed to service the automobile. Because of the lack of pedestrian infrastructure stops along the fixed route stops are primarily located at the front doors of businesses which are a set back from 11th Street. This adds additional time to routes because buses are required to pull off the road way and many times must make left hand turns to re-enter the linear route. Pedestrian connectivity from residential areas along the corridor are very limited because there is very little direct access on public property to stops. Access to stops require people cross at intersections with no crosswalks and travel across great expanses of parking lots.



STRATEGIES:

IMPROVING BICYCLE AND PEDESTRIAN TRANSPORTATION

Strategy	Guiding Principles Met

Build Connected Networks

- Develop networks for non-motorized facilities along appropriate roadways.
- Improve integration of bicycle and pedestrian transportation with transit.
- Prioritize enhancement of pedestrian & bicycle travel in areas with a high potential for trips that can be accomplished by walking & biking.
- Research and improve links between shared use paths and on-road facilities and address key gaps in transportation trail systems.

Improve Safety

- Improve education and training of the public regarding safe driving, walking, and biking.
- Use best practices to analyze bicycle and pedestrian crashes and identify effective countermeasures.
- Ensure maintenance of non-motorized facilities to provide safe access for pedestrians and cyclists.

Plan and Design for Everyone

- Ensure design of non-motorized facilities is appropriate for the conditions by following best practices in ASHTO, NACTO, and FHWA design guides.
- Ensure facilities that work for users with different abilities, comfort levels, and experience.
- Ensure that road features, like rumble strips and chip seal, safely accommodate bicycle use.
- Leverage funding opportunities to improve bicycle and pedestrian networks.
- Adhere to the NATS Complete Streets Policy in project selection.

Promote Walking and Biking

- Promote current facilities where people can bike and walk
- Promote the bicycle amenities and services offered through local website, social media, etc.

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—Local Agency Projects

Fiscal Year	Project Name	Responsible Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Cost	Federal Fund Source	Performance Measures			
									Pavement	Bridge	Safety	Reliability
2019	Main St	Berrien CRD	City limits to 400 feet North of Reed Rd	Rehabilitation	2" HMA overlay	$152,993	$195,286	STBG	X			
2019	Bertrand Rd	Berrien CRD	Portage Rd to Copp	Rehabilitation	2" HMA overlay	$191,000	$408,000	STBG	X			
2019	Redfield St.	Cass CRC	Fir Rd to Brush Rd	Safety	Tree Removal	$21,870	$24,300	HRRR			X	
2019	Cassopolis Road	Cass CRC	Mason St. to Lost Rd.	Rehabilitation	Resurface	$75,200	$94,000	Rural-STBG	X			
2019	Redfield St	Cass CRC	Gumwood Rd. to Fir Rd.	Preventive Maintenance	HMA resurfacing and aggregate shoulders	$115,200	$144,000	Rural-STBG	X			
2019	Redfield St	Cass CRC	Conrad Road to M-62	Resurface	Mill and replace HMA	$174,341	$213,000	STBG	X			
2020	Main St—ACC	Berrien CRD	City limits to 400 feet North of Reed	Rehabilitation	2" HMA overlay	$37,732	$37,732	STBG	X			
2020	3rd St	Berrien CRD	US-12 to Fulkerson Road	Rehabilitation	2" HMA overlay	$231,800	$283,201	STBG	X			
2020	Conrad Rd.	Cass CRC	Conrad Rd & May St. US-12 to Brizandine Rd.	Preventive Maintenance	Resurface	$115,200	$155,250	Rural-STBG	X			
2020	Lake St	Cass CRC	Airport Road to Huntly	Rehabilitation	Mill and Fill	$220,995	$270,000	STBG	X			
2020	Mason St – ACC	Cass CRC	Cassopolis Rd. to Calvin Center Rd.	Rehabilitation	HMA overlay, shoulders, signage, pavement markings	$28,081	$28,081	STBG	X			
2020	Lake St.	Niles	Lake St. over Amtrak RR	Bridge CPM	Miscellaneous Bridge Capital Preventative Maintenance	$555,200	$694,000	Local Bridge		X		

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—Local Agency Projects

Fiscal Year	Project Name	Responsible Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Cost	Federal Fund Source	Performance Measures			
									Pavement	Bridge	Safety	Reliability
2021	Portage Rd	Berrien CRD	Briar Rd. to US - 12	Preventive Maintenance	HMA overlay with 3 ft. paved shoulders	$300,750	$480,000	STBG	X			
2021	Barron Lake Rd	Cass CRC	M 60 to Cook St.	Preventive Maintenance	HMA overlay, shoulders, signage, pavement markings	$279,250	$399,250	STBG	X			
2022	Barron Lake Rd	Cass CRC	Cook St. to Pokagon Hwy.	Preventive Maintenance	Mill and one course non-structural overlay	$185,000	$470,000	Rural–STBG	X			
2022	Mason St	Cass CRC	Calvin Center Rd. to Tharp Lake Rd.	Rehabilitation	Crush and Shape resurfacing	$234,619	$329,000	STBG	X			
2022	N 13th St	Niles	Sycamore St. to Lake St.	Preventive Maintenance	Mill 2" and resurface with HMA.	$357,381	$436,629	STBG	X			
2023	E Bertrand Rd	Berrien CRD	M-51 East to County Line	Preventive Maintenance	HMA overlay with 3 ft. paved shoulders	$304,000	$540,000	STBG	X			
2023	W Front St.	Buchanan	Front and Oak St. Intersection	Safety	Replace Traffic Signal	$287,341	$369,189	CMAQ			X	
2023	West Front Street	Buchanan	Red Bud Trl. to Oak St.	Reconstruction	Reconstruction	$300,000	$560,747	STBG	X			
2023	Calvin Center Rd.	Cass CRC	US-12 to Grange St.	Preventive Maintenance	Mill and one course non-structural overlay	$198,400	$248,000	Rural–STBG	X			
2024-2025	System Preservation	Local Agencies	Various	Repair federal aid road network		$1,334,015	$1,629,829	STBG				
2019-2025	Air Quality	Local Agencies	Outside NATS	Improve Air Quality		$5,667,602	$7,084,503	CMAQ				

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—Local Agency Projects

Fiscal Year	Project Name	Responsible Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Cost	Federal Fund Source	Performance Measures				NHS
									Pavement	Bridge	Safety	Reliability	
2026-2035	System Preservation	Local Agencies	Various	Repair federal aid road network		$7,7099,987	$8,874,972	STBG	x				
2026-2035	Air Quality	Local Agencies	Various	Non-motorized facilities , traffic flow improvements, and transit vehicle replacements		$10,100,164	$12,625,205	CMAQ			x	x	
2036-2045	System Preservation	Local Agencies	Various	Repair federal aid road network		$8,990,719	$11,238,399	STBG	x				
2036-2045	Air Quality	Local Agencies	Various	Non-motorized facilities , traffic flow improvements, and transit vehicle replacements		$13,017,795	$16,272,244	CMAQ			x	x	

STBG Funding Summary 2019-2025

Total estimated STBG allocation:	$4,4146,957
Total STBG expended:	$4,4146,957
Balance:	$0

CMAQ Funding Summary 2026-2035

CMAQ allocation :	$5,954,943
Total CMAQ Expended:	$5,954,943
Remaining Balance:	$0

STBG Funding Summary 2036-2045

Total estimated STBG allocation:	$7,7099,987
Total STBG expended:	$7,7099,987
Balance:	$0

CMAQ Funding Summary 2026-2035

CMAQ allocation :	$10,100,164
Total CMAQ Expended:	$10,100,164
Remaining Balance:	$0

STBG Funding Summary 2036-2045

Total estimated STBG allocation:	$8.990,719
Total STBG expended:	$8.990,719
Balance:	$0

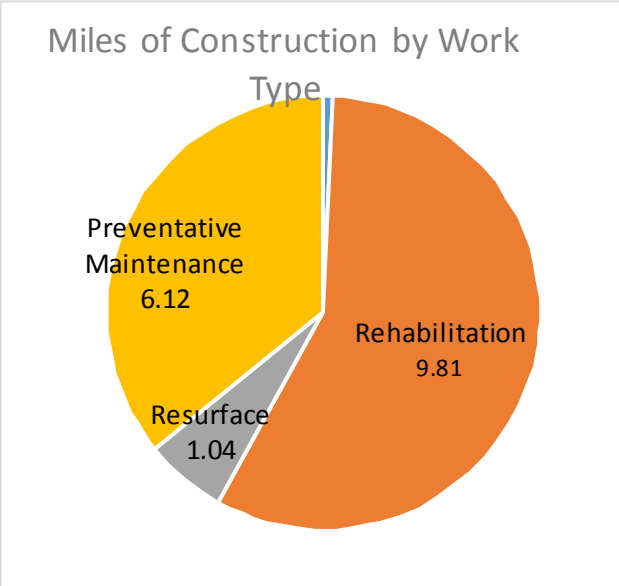
CMAQ Funding Summary 2026-2035

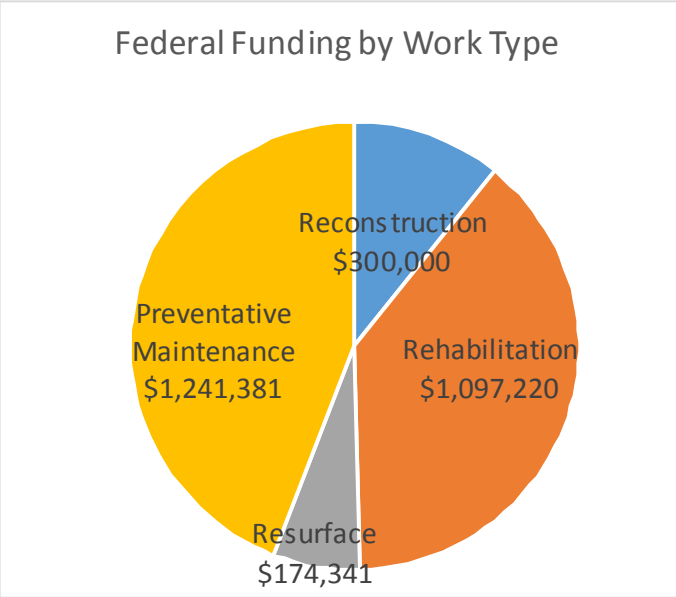
CMAQ allocation :	$13,017,795
Total CMAQ Expended:	$13,017,795
Remaining Balance:	$0

Based on the results of the travel demand model, no significant congestion on local roads was identified, and local agencies agree that preservation of the existing roads system is the top priority. Therefore for the years of 2021-2045 federal funds are being allocated to system preservation and air quality only. System preservation includes preventative maintenance, resurfacing , or reconstruction of roads to bring the road to good condition. Exact locations and road treatments will be determined based on the future road conditions, local agency asset management plans, and how the project meets the goals laid out in this Long Range Plan. System preservation can include safety improvements as warranted. It can also include improvements to bicycle or pedestrian facilities that meet the goal of the Non-motorized section . It will not include any capacity increases.

Summary of Outcomes from STBG Funded Local Road Projects 2019-2023

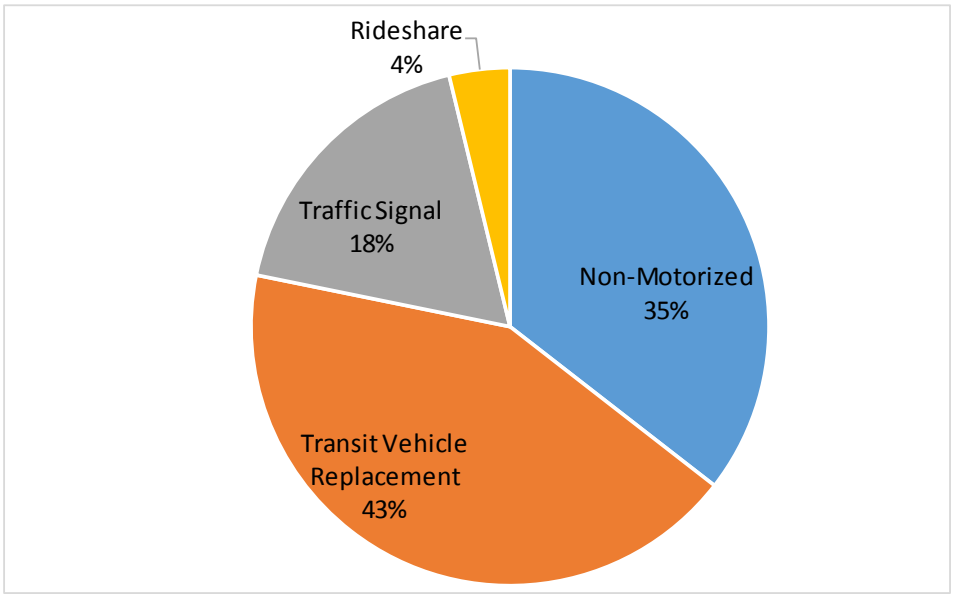
STBG Funded Local Road Projects		
Primary Work Type	Miles	Federal Funding
Reconstruction	0.11	$300,000
Rehabilitation	9.81	$1,097,220
Resurface	1.04	$174,341
Preventative Maintenance	6.12	$1,241,381
Total	17.07	$2,812,942





Summary of Outcomes From CMAQ Funded Local Projects 2019-2023

Description	CMAQ Funding
Non-Motorized	$1,462,451
Transit Vehicle Replacement	$1,757,614
Traffic Signal	$741,858
Rideshare	$156,000
Total	$4,117,923



Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Federal Cost	Total Cost	Performance Measures				NHS
								Pavement	Bridge	Safety	reliability	
2019	E Kilgore Rd	Various Locations	Safety	Installation of detection for actuation	PE	$22,500	$25,000			X	X	
2019	E Kilgore Rd	M-51 at Fulkerson, bell, and Bertrand, US-12 at 3rd	Safety	Dilemma zone detection at signalized intersections	PE	$28,800	$32,000			X		
2019	E Kilgore Rd	M-51 at Fulkerson, bell, and Bertrand, US-12 at 3rd	Safety	Dilemma zone detection at signalized intersections	CON	$225,843	$250,937			X		
2019	I-94 W	Parts of Berrien and Cass Counties	Safety	Pavement marking retroreflectivity readings and condition assessment	CON	$1,260	$1,400			X		x
2019	Longitudinal pavement markings	Parts of Berrien and Cass Counties	Safety	Application of longitudinal pavement markings	PE	$608	$675			X	x	
2019	Longitudinal pavement markings	Parts of Berrien and Cass Counties	Safety	Application of longitudinal pavement markings	CON	$240,395	$267,105			x	x	
2019	M-60 E	Various Locations	Safety	Traffic Signal Modernizations; connected vehicle installations.	ROW	$0	$0			x		
2019	M-62	M-62 at May Street	Minor Widening	Offset Right Turn Lane	PE	$53,100	$59,000				x	
2019	M-66	M51 (ELEVENTH) @ BELL RD	Safety	Signal modernizations and signal phasings	PE	$60,000	$60,000			x	x	
2019	M-66	M51 (ELEVENTH) @ BELL RD	Safety	Signal modernizations and signal phasings	CON	$230,000	$230,000			x	x	
2019	Signage	Signing Update	Safety	Cantilevers Replacement Project	PE	$25,000	$25,000			x		

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—MDOT Projects

Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Federal Cost	Total Cost	Performance Measures				NHS
								Pavement	Bridge	Safety	reliability	
2019	Special pavement markings	Parts of Berrien and Cass Counties	Safety	Application of special pavement markings	PE	$1,080	$1,200			x		
2019	Special pavement markings	Parts of Berrien and Cass Counties	Safety	Application of special pavement markings	CON	$136,841	$152,045			x		
2019	US-12	over St. Joseph River	Bridge CPM	Epoxy Ovly, Full Pt, Steel Beam Repairs, Pin & Hanger Repl	CON	$2,376,106	$2,903,000			x	x	
2019	US-12	US-12 west and east of Edwardsburg and M-62	Preventive Maintenance	Crack seal pre-treatment with chip sealing	CON	$1,032,453	$1,259,089			x	x	
2019	US-31	over US-12	Bridge Rehabilitation	Shallow Overlay, Full Paint, Pin and Hangers	CON	$2,737,473	$3,344,500			x	x	
2020	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	PE	$639	$710			x		
2020	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$232,596	$258,440			x		
2020	M-139	M-139 from Niles to Berrien Springs	Preventive Maintenance	Overband Crack Fill	CON	$80,524	$98,200	x		x		
2020	M-40	Signing Update	Safety	Non-freeway signing	PE	$50,000	$50,000			x		
2020	M-51	Main Street to North City Limits of Niles	Preventive Maintenance	Mill and One Course Hot Mix Asphalt Overlay	CON	$642,199	$784,605			x		

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—MDOT Projects

Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Federal Cost	Total Cost	Performance Measures				NHS
								Pavement	Bridge	Safety	reliability	
2020	M-60 E	Various Locations	Safety	Traffic Signal Modernizations; connected vehicle installations.	CON	$856,160	$856,160			x		
2020	Pavement Marking Retro Readings	Entire NATS Area	Safety	Application of pavement retroreflectivity	CON	$1,534	$1,704			x		
2020	Signage	Signing Update, Signing Updates	Safety	Cantilevers Replacement Project	CON	$230,000	$230,000		x	x	x	
2020	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	PE	$639	$710			x		
2020	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	CON	$57,510	$63,900			x		
2021	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	PE	$1,278	$1,420			x		
2021	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$265,824	$295,360			x		
2021	M-62	M-62 at May Street	Minor Widening	Offset Right Turn Lane	CON	$406,800	$452,000			x	x	
2021	Retroreflectivity Readings	Entire NATS Area	Safety	Application of pavement retroreflectivity	CON	$1,406	$1,562			x		
2021	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	PE	$1,278	$1,420			x		

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—MDOT Projects

Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Federal Cost	Total Cost	Performance Measures				NHS
								Pavement	Bridge	Safety	reliability	
2021	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	CON	$46,008	$51,120			x		
2021	US-12	Dayton Lake Road to Mayflower Road	Rehabilitation	Mill & Two Course HMA Overlay	CON	$7,673,673	$9,375,288	x		x	x	
2022	E Kilgore Rd	Various Locations	Safety	Installation of detection for actuation	CON	$138,214	$153,571			x		
2022	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	PE	$1,278	$1,420			x		
2022	Longitudinal Pavement Marking	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$272,214	$302,460			x		
2022	Retroreflectivity Readings	Entire NATS Area	Safety	Application of pavement retroreflectivity	CON	$1,406	$1,562			x		
2022	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	PE	$1,278	$1,420			x		
2022	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	CON	$58,788	$65,320			x		
2023	Longitudinal Pavement Mrkgs	Entire NATS Area	Safety	Application of longitudinal pavement markings	PE	$1,278	$1,420			x		
2023	Longitudinal Pavement Mrkgs	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$272,214	$302,460			x		
2023	M-40	Signing Upgrade, Signing Update	Safety	Non-freeway signing	CON	$177,000	$177,000			x		

FISCALLY CONSTRAINED ROAD & BRIDGE PROJECTS—MDOT Projects

Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Federal Cost	Total Cost	Performance Measures				NHS
								Pavement	Bridge	Safety	reliability	
2023	M-51	Chestnut Lane to M-60BR	Reconstruction	Interchange reconstruction and asphalt resurfacing	CON	$21,281,000	$26,000,000	X		X	X	
2023	Retroreflectivity Readings	Entire NATS Area	Safety	Application of pavement restore reflectivity	CON	$1,406	$1,562			X		
2023	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	PE	$1,278	$1,420			X		
2023	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	CON	$71,568	$79,520			X		
2023	US-12 E	US-12 and Niles Buchanan Road	New Facilities	Construct new carpool lot.	CON	$107,224	$131,000					X
2023	US-31	US-12 (Exit 3) to Matthew Road	Rehabilitation	Hot Mix Asphalt Overlay	CON	$23,245,400	$28,400,000	X		X		X
2024	Longitudinal Pavement Markings	Entire NATS Area	Safety	Application of longitudinal pavement markings	PE	$1,278	$1,420			X		
2024	Longitudinal Pavement Markings	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$272,214	$302,460			X		
2024	Retroreflectivity Readings	Entire NATS Area	Safety	Application of longitudinal pavement markings	CON	$1,406	$1,562			X		
2024	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	PE	$1,278	$1,420			X		
2024	Special Pavement Markings	Entire NATS Area	Safety	Special pavement marking application	CON	$58,788	$65,320			X		

Fiscal Year	Project Name	Limits	Primary Work Type	Project Description	Phase	Total Cost	Performance Measures				NHS
							Pavement	Bridge	Safety	reliability	
2026-2035	System Preservation	Various	System Preservation		PE, ROW, & CON	$82,196,180	x	x	x		X
2036-2045	System Preservation	Various	System Preservation		PE, ROW, & CON	$117,136,654	x	x	x		x

Work Type	Miles	Expenditures
Bridge Preventative Maintenance	NA	$2,903,000
Bridge Rehabilitation	NA	$3,344,500
Widening (CMAQ)	NA	$511,000
Road Preventative Maintenance	58	$2,141,894
Road Rehabilitation	13	$37,775,288
Road Reconstruction	3.5	$26,000,000
Carpool lots	NA	$131,000
Safety	NA	$4,319,185

MDOT Funding Summary 2019-2025

Total estimated MDOT Revenue: $77,125,867
Total MDOT funds expended : $77,125,867
Remaining Balance: $0

MDOT Funding Summary 2036-2045

Total estimated MDOT revenue: $82,196,180
Total MDOT funds expended: $82,196,180
Remaining Balance: $0

MDOT Funding Summary 2036-2045

Total estimated MDOT revenue: $117,136,654
Total MDOT funds expended: $117,136,654
Remaining Balance: $0

MDOT programs projects in their five year plan. MDOT has not programed specific projects past 2024. After 2024 MDOT will continue to mainly spend funding on preservation projects. This includes reconstruction, resurfacing, preventative maintenance, safety improvements and other associated roadway upgrades. The preservation budget cannot be used for capacity increases.

PASSENGER TRANSPORTATION

Passenger Rail

While the private vehicle is the predominant mode of travel to destinations across county and state boundaries, passenger rail options are available to residents in the NATS area. Amtrak provides passenger rail service with 3 State of Michigan government supported service lines. All three lines have a western terminus in Chicago where passengers can change trains to get to any passenger rail station in the United States. The historic Niles Amtrak Station serves the *Wolverine* and *Blue Water* lines.

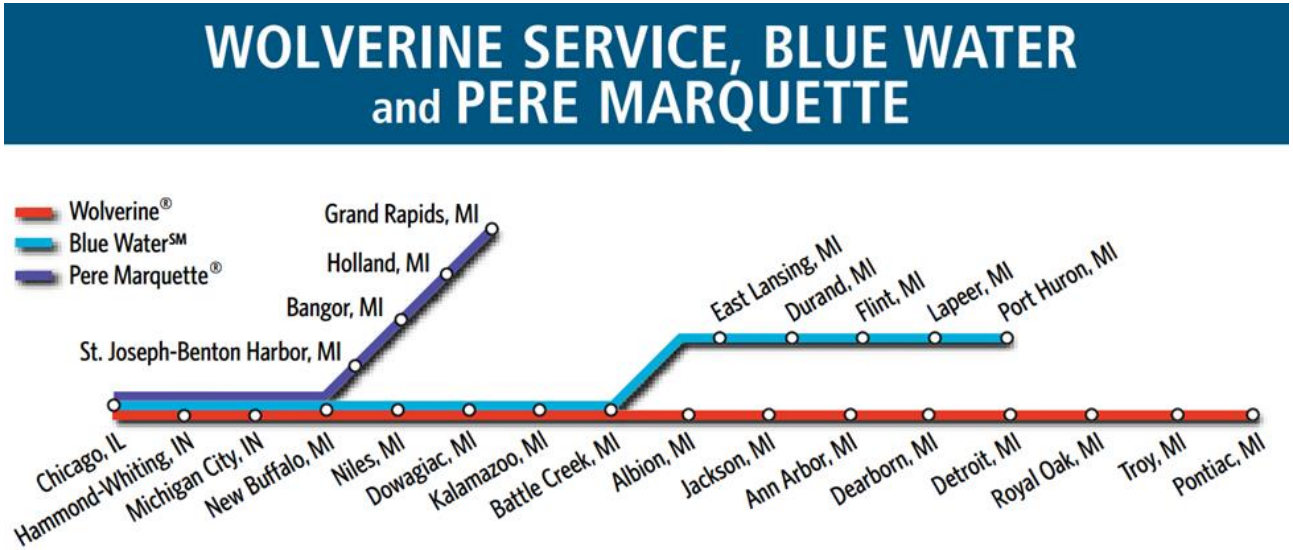
Wolverine. Amtrak's *Wolverine* service has multiple train runs serving each way, including west-to-east stops in Chicago; Hammond-Whiting, IN; Michigan City, IN; and Michigan stops in New Buffalo, Niles, Dowagiac, Kalamazoo, and five stops before Detroit, plus three stops to get to Pontiac.

Blue Water. Amtrak's *Blue Water* service has the same stops between Chicago and Battle Creek as the *Wolverine* service (see right). Beyond Battle Creek, the *Blue Water* also services East Lansing, Durand, Flint, Lapeer, and Port Huron.

Pere Marquette. Amtrak's *Pere Marquette* service provides daily service between Chicago and Grand Rapids, with stops in Saint Joseph-Benton Harbor, Bangor, and Holland. The service has one trip daily trip.

Commuter Rail

The closest interurban commuter rail service for the Niles area is the South Shore Line, an electrically powered line operated by the Northern Indiana Commuter Transportation District, between Millennium Station in downtown Chicago and the South Bend Airport. The closest station is in Michigan City, IN. Residents and visitors can use this option as part of their travel plans to points west as far as downtown Chicago, connecting to Chicago's transit system: Chicago Transit Authority, Metra, and Pace.



Amtrak Performance

The *Wolverine* and *Blue Water* services run on Amtrak and MDOT owned tracks. Because of that, sections have been upgraded in track and signal improvements which allow for parts of the route to be upgraded to high-speed service (110 mph).

Amtrak Ridership

Over the last six years annual ridership on Michigan's *Wolverine* and *Blue Water* services have fluctuated as the cost for gas, demand for travel and other variables have fluctuated (see table, top right). But during that same period the *Pere Marquette* has seen drops in ridership, except 2017, but it is too early to know if this is a change in pattern or if some of the factors that increased ridership on the *Wolverine* also affected the *Pere Marquette.*

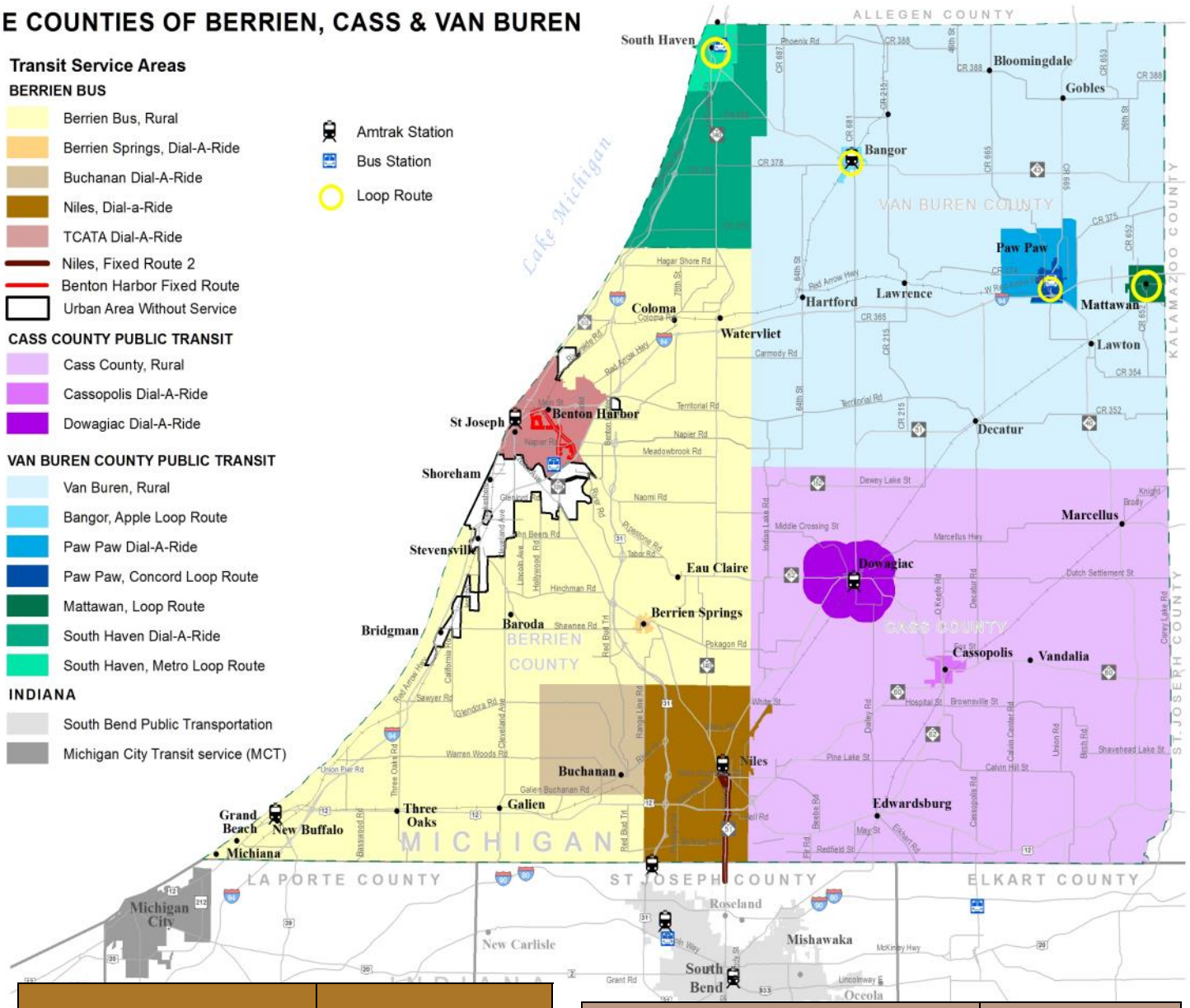
Annual Ridership (Year)	*Wolverine* (Detroit-Chicago)	*Pere Marquette* (G.R.-Chi.)	*Blue Water* (P. Huron-Chicago)	Ridership Grand Total
2012	495,643	109,501	187,991	793,135
2013	498,288	102,932	194,776	795,996
2014	486,463	102,626	188,374	777,463
2015	458,710	91,011	179,716	729,437
2016	401,585	90,922	186,189	678,696
2017	474,751	94,276	186,156	755,183

TRANSIT SERVICE AREAS IN THE COUNTIES OF BERRIEN, CASS & VAN BUREN

The NATS study area receives services from four public transit providers. Two of which, Niles DART and Buchanan DART, provide service within the study area. Because of this, these two providers will be examined in greater detail.

The two other providers; Cass County Public Transit, is the designated rural provider for Cass County and Berrien Bus provide service within the designated rural areas of the Berrien and Cass County. Both of these rural providers serve as the "spine" by bringing people in from the rural areas to the urbanized activity centers of Niles, Buchanan, Benton Harbor, St. Joseph and Dowagiac.

An additional system, Transpo, connects people to the South Bend, Indiana region. Transpo is the urban transit provider in the South Bend, Indiana urbanized area. The map on the following page provides an overview that includes the four different providers in the study area.



Niles Dial a Ride Service Area	2015 Population
City of Niles	11,358
Niles Township	13,900
Bertrand Township	668

Buchanan Dial a Ride Service Area	2015 Population
City of Buchanan	4,382
Buchanan Township	3,457

Trip Generators

Within and surrounding the NATS MPO study area are five activity centers that include: Niles, St. Joseph, Benton Harbor, Dowagiac in Cass County, and the South Bend-Mishawaka area in Indiana.

These five activity centers offer health care facilities, schools, colleges, larger retail stores, recreational attractions, government offices, and human service agencies. Many of the destinations within the activity centers also serve as employment centers for many people.

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

Trip Generator	City	County	Type	Transit Serving Destination From Niles and Buchanan Area
Lakeland Hospital	City of St. Joseph	Berrien	Medical	Berrien Bus
Lakeland Health Services	Royalton Township	Berrien	Medical	Berrien Bus
Lakeland Hospital (pictured above, right)	Niles	Berrien	Medical	Niles Dial a Ride
Lakeland Dialysis Niles	Niles Township	Berrien	Medical	Niles Dial A Ride
Four Winds Casino	New Buffalo	Berrien	Employment	Berrien Bus
Lake Michigan College	Benton Township	Berrien	Education	Berrien Bus
11th Street Corridor	Niles	Berrien	Shopping	Niles Dial A Ride
Lakeland Rehabilitation Services	Niles Township	Berrien	Medical	Niles Dial A Ride
Lake Michigan College	Niles	Berrien	Education	Niles Dial A Ride
Borgess Hospital Dowagiac	Dowagiac	Cass	Medical	Cass County Public Transit
Southwest Michigan College	Dowagiac Township	Cass	Education	Cass County Public Transit
Grape Road Corridor	Mishawaka	St. Joseph	Shopping	TRANSPO
St. Joseph Regional Health Center	Mishawaka	St. Joseph	Medical	TRANSPO
The South Bend Clinic	South Bend	St. Joseph	Medical	TRANSPO
Memorial Hospital	South Bend	St. Joseph	Medical	TRANSPO

Niles Dial A Ride—By The Numbers

Niles Dial a Ride Service Area Population: 25,926

Annual Riders: 35,882

Average Expense per Passenger: $10.07 *13% of Total Expense*

Annual Passenger Fare Received: $67,414

Annual Millage Received, 18% of Total Expense: $92,027

18% of Total Expense

Average Passenger Boarding Per Hour: 4

Total Miles Traveled: 122,595

Total Hours Operated: 9,296

Number of Vehicles : 6

2017 MDOT PTMS & 2015 ACS Data

Niles Dial a Ride Governance and Administration

DART is organized under the State of Michigan Home Rule Act which authorizes cities to form transit systems. The City Council of Niles serves as the DART Board. The Board is supported by a Local Advisory Council that meets on a quarterly basis to provide feedback and recommendations about DART services. A Community Development Director oversees the entire management staff and reports to the City Council. The Transportation Coordinator acts as the executive director of the transit system and reports directly to the Community Development Director and is responsible for all administrative duties performed by the system.

Facilities

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

Deviated Fixed Route Service

Niles Dial-A-Ride operates an hourly deviated fixed-route service that is available Monday through Friday from 10:00am to 5:00pm. (See Appendix 1.1) The route stops at 23 origins and destinations that include; major retail, apartment and senior living facilities and also connects with Transpo at the state line to provide a connection to South Bend. Bus shelters are available at many of the stops and the stops are signed.

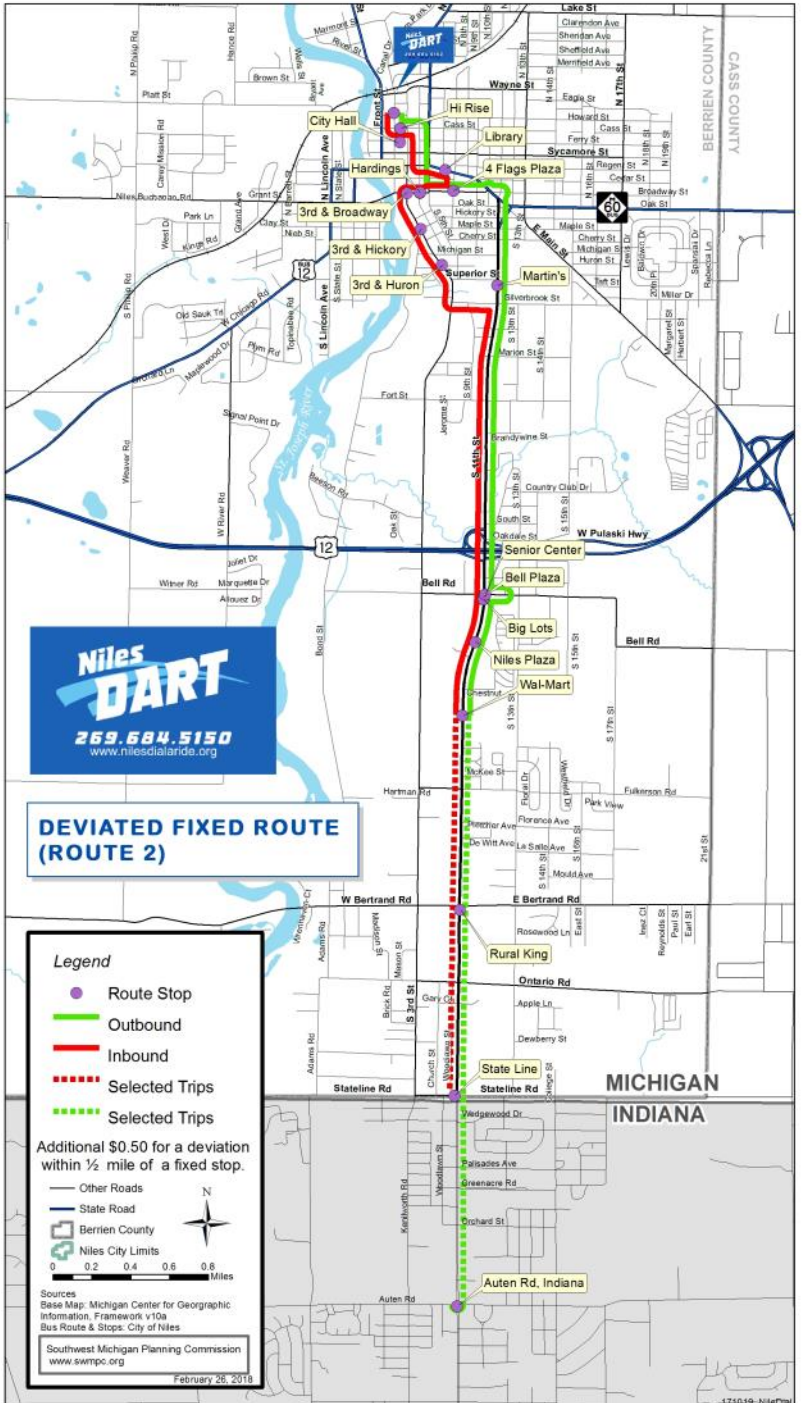
Demand Response Service

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

It is Niles policy to make sure that the needs of Priority 1 and 2 are fully administered before addressing the needs of Priority 3 and 4 call requests.

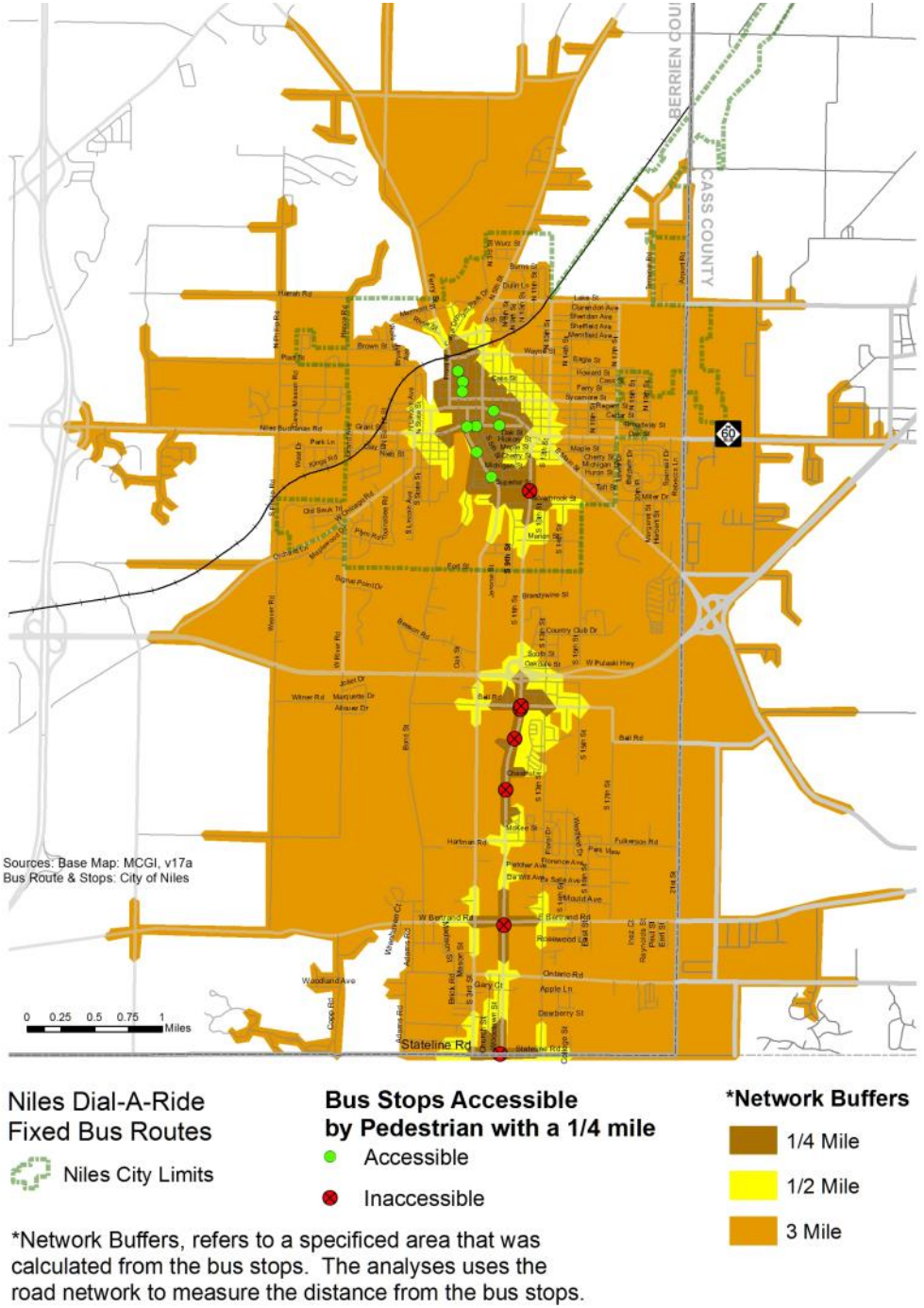
Service Priority	Description
Priority 1 – Recurring /Subscription Trips	Rides reserved for the same passenger, same time, same origin
Priority 2 – 24 Hour Advance Request	Rides reserved 24 hours in advance
Priority 3 – 1 Hour Advance Request	Rides reserved at least one hour in advance
Priority 4 – Immediate Request	Rides reserved less than one hour in advance

The transportation facility located in downtown Niles offers a waiting area where passengers can connect to other public transit providers including Buchanan Dial a Ride, Cass County Public Transit and Berrien Bus.



Niles Dial a Ride deviated flex route services 23 origins and destinations within the City of Niles and Niles Township. Many of the stops in the City of Niles are accessible by sidewalk allowing people to safely walk to the bus stop. Within Niles Township the majority of stops require buses to pull off the route onto public property to pick up passengers. This lack of pedestrian infrastructure increases the length and time of route.

Poor "first and last mile" connections can be a barrier to accessing fixed route transit service along 11th Street Niles Township.

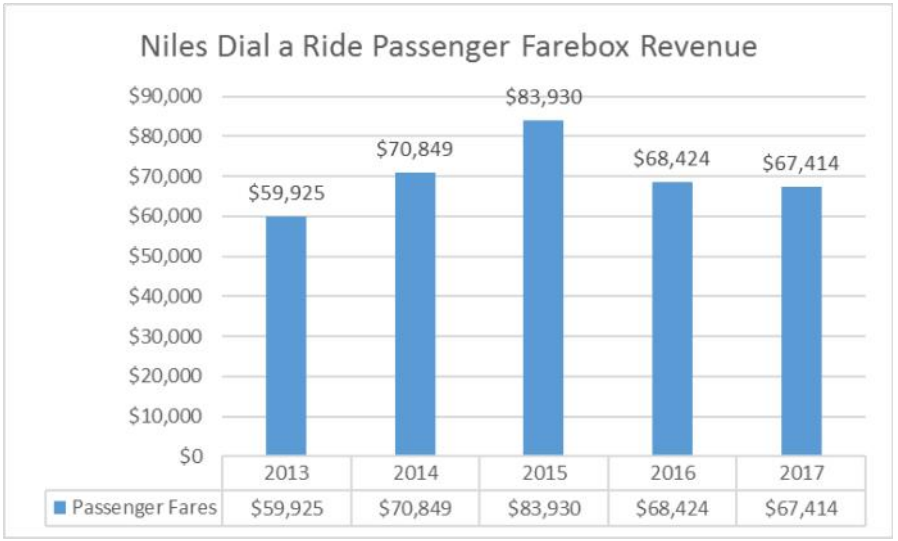


FTA Funding for Pedestrian Improvements

All pedestrian improvements located within 1/2 mile and all bicycle improvements located within 3 miles of a public transportation stop or station shall have a de facto physical and functional relationship to public transportation.

Niles Fare Structure

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



Niles Dial a Ride Fare Structure

Service Type	Geographic Location	Fare
Demand Response	Within the City of Niles	$3.00/$1.50 Reduced Fare
Demand Response	Niles and Bertrand Township	$4.00/$2.00 Reduced Fare
Deviated Fixed Route	Within the City of Niles	$2.00/$1.00 Reduced Fare (Add $.50 to deviate off route)

DART's other fare media includes: $10.00 Punch Card and $1.00 Tokens (for use by human service agency clients).

Niles Township and Bertrand Township do not contribute any local operating revenue to the Niles Dial a Ride system, because of this there is a $1.00 increase added to the fare structure for passenger trips into or out of those townships.

Niles Dial a Ride State of Good Repair

With an estimated 40% of buses and 25% of U.S. rail transit assets considered to be in marginal or poor condition, helping transit agencies maintain bus and rail systems in a state of good repair remains an FTA priority. Niles Dial a Ride has a wide variety of capital assets to maintain, including, but not limited to, busses and facilities. The agency must rehabilitate and replace their existing physical assets to keep them in a state of good repair (SGR) and provide a consistent level of service to their passengers. Absent adequate investment in existing assets, a transit agency may find its equipment becoming increasingly unreliable and difficult to maintain, and in extreme cases may suffer reductions in system reliability resulting in degraded transit service. Transit asset management provides a set of tools and approaches for helping transit agencies manage their physical assets and achieve SGR.

In 2016 FTA published the final rule that requires public transit agencies to establish targets for three asset categories and report annually on progress towards targets.

$210,000

Investment needed to bring Niles Dial a Ride fleet up to 100% State of Good Repair

Asset Category	Assets	Current Condition	2019 Target
Rolling Stock Revenue Vehicles	CU – Cutaway Buses - 6	43% exceed ULB	29% exceed ULB
Equipment Non-revenue Vehicles	Service Truck - 1	100% exceed ULB	100% exceed ULB
Facilities	Administration/Maintenance Building	1 rated 3.5 on TERM scale.	0% rated below a 3.0 on the FTA TERM Scale

Buchanan Dial A Ride By The Numbers

Niles Dial a Ride Service Area Population: 7,839

Annual Riders: 8,756

Average Expense per Passenger: $27.97

Annual Passenger Fare Received: $18,436 *13% of Total Expense*

Annual Millage Received: $80,083 *18% of Total Expense*

Average Passenger Boarding Per Hour: 2

Total Miles Traveled: 37,209

Total Hours Operated: 3,168

Number of Vehicles: 2

2017 MDOT PTMS & 2015 ACS Data

Dial a Ride Service

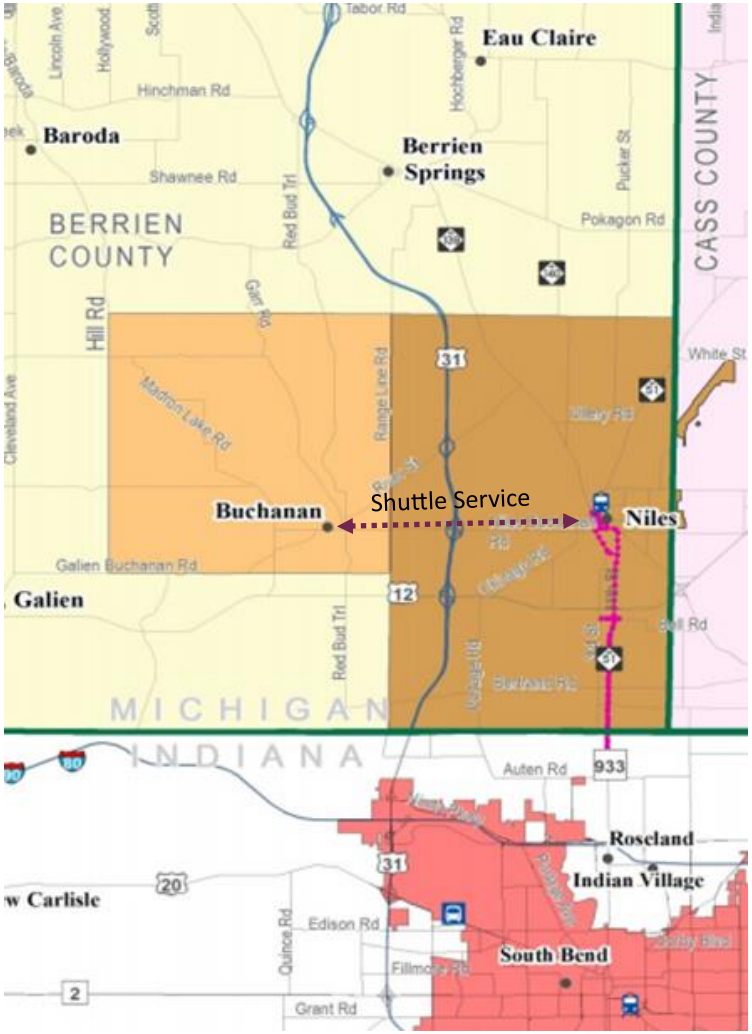
Buchanan Dial-A-Ride is a same day curb-to-curb shared ride transportation service that provides service to residents of the City of Buchanan and Buchanan Township. The service operates from 7:00 AM to 5:30 PM Monday through Friday and 9:00 AM to 3:00 PM on Saturdays. Customers must schedule trips at least one hour before the desired departure time.

Connecting to Berrien Bus

Buchanan Dial- A-Ride provides connections to Berrien Bus at designated locations that allow customers to transfer and access locations outside of Buchanan. This is possible because the systems share the same facility, dispatchers and brokered management firm (Transportation Management).

Shuttle Service

Regular shuttle service to Niles is available six days a week with twenty four hour notice. The shuttle will deviate off the route to pick up passengers with advanced reservations between communities on the shuttle route.



Monday—Friday				
Buchanan to Niles	7:00 am	11:30 am	2:00 pm	4:30 pm
Niles to Buchanan	7:30 am	12:00 pm	2:30 pm	4:45 pm
Saturday				
Buchanan to Niles	11:00 am	2:00 pm	3:00 pm	
Niles to Buchanan	9:00 am	11:30 am	2:30 pm	

Buchanan DAR Fare Structure

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

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

Governance

Buchanan Dial A Ride is organized under Public Act 279 and is overseen by five elected officials who serve on the Buchanan City Commission. The Buchanan City Commission is supported by a Local Advisory Council that meets on a quarterly basis to provide feedback and recommendations regarding the provision of transit services. In 2014, the Buchanan City Commission entered into an operational contract with Berrien County who contracts with Transportation Management (TMI) for transit services.

67%

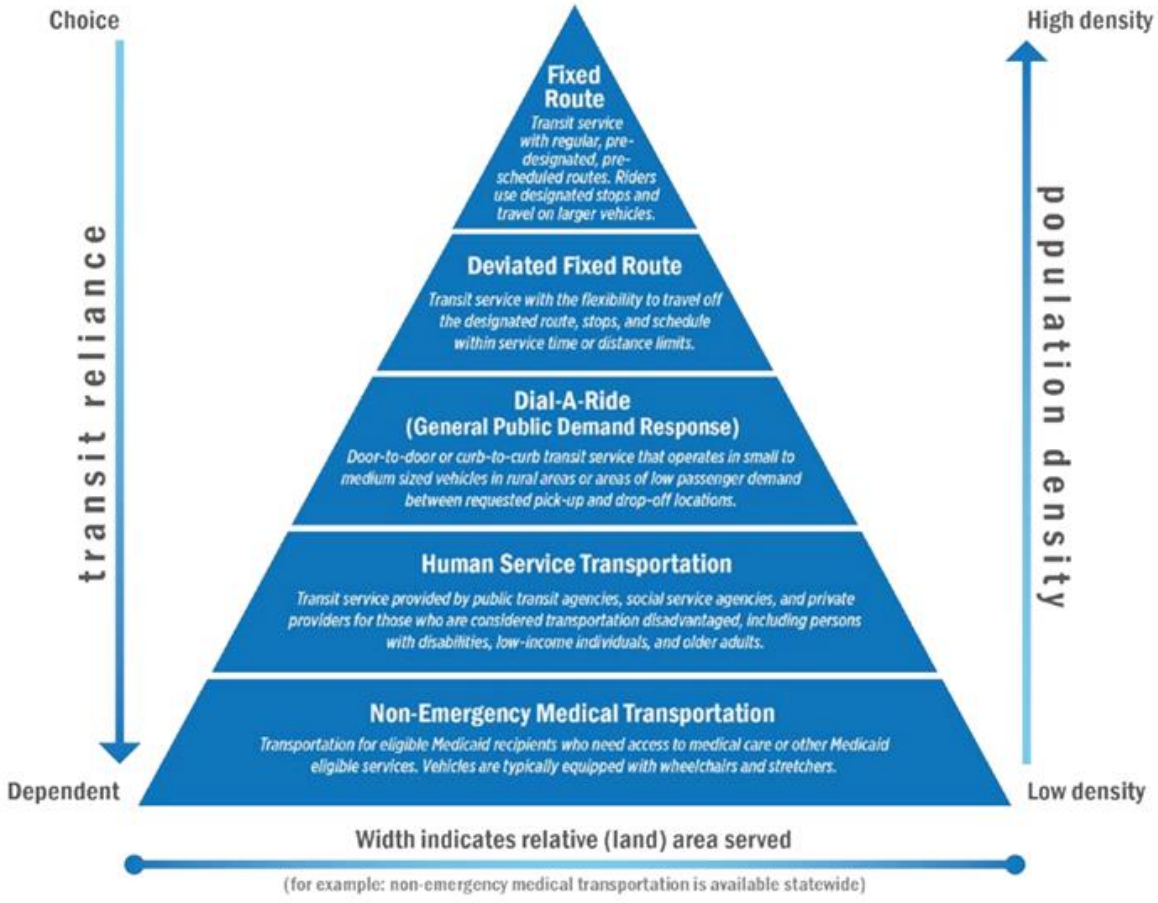
Sixty-seven percent of Buchanan DAR trips are taken by passengers qualify for a reduced fare because of a disability or are over the age of 60.

Facilities

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

Transit Importance

Ultimately, transportation connects people to jobs, activities, and basic services like medical appointments and shopping. Every community has people who cannot reach jobs and basic services on their own. For the most part, these individuals use transportation services provided by other federal and state programs and medical service programs, like Medicaid. These services are typically mandated by the federal government and are available statewide, but they are limited to trips, to and from specific appointments and activities.



National experience tells us that density and demographics also help determine the type of transit service that will work best in a particular region. There are a wide variety of transit services with different strengths and weaknesses. Each type of service is designed to address a community's transit

Key Issues, Trends & Opportunities

- Seniors and low income individuals rely more on public transportation, putting more pressure on transit systems to meet this growing demand.
- Health and human services are increasingly focused on serving people in their communities and encouraging people to stay in their homes. Implementing these programs requires a corresponding investment in transportation; this can be coordinated with public transportation services to reduce duplication of service and effort.
- Residents living in the NATS planning area need to travel across municipal and county boundaries to get to work but also for other reasons, such as shopping, school, and to access health care.
- The four public transit agencies in Berrien county are largely organized around municipal and county boundaries. As a result, they are not always able to take people where they want and need to go.

Public Transit Planning Initiatives

There is a need for additional transit coverage and regional north/south linkages within the region and beyond. There are areas that have no services and others where the service coverage, hours, and capacity are limited. Basic transportation to medical and social services for those unable to drive is critical to maintaining people in their communities, and improved services are needed to provide access to employment.

Countywide Service—Consolidation Plan

Existing Service

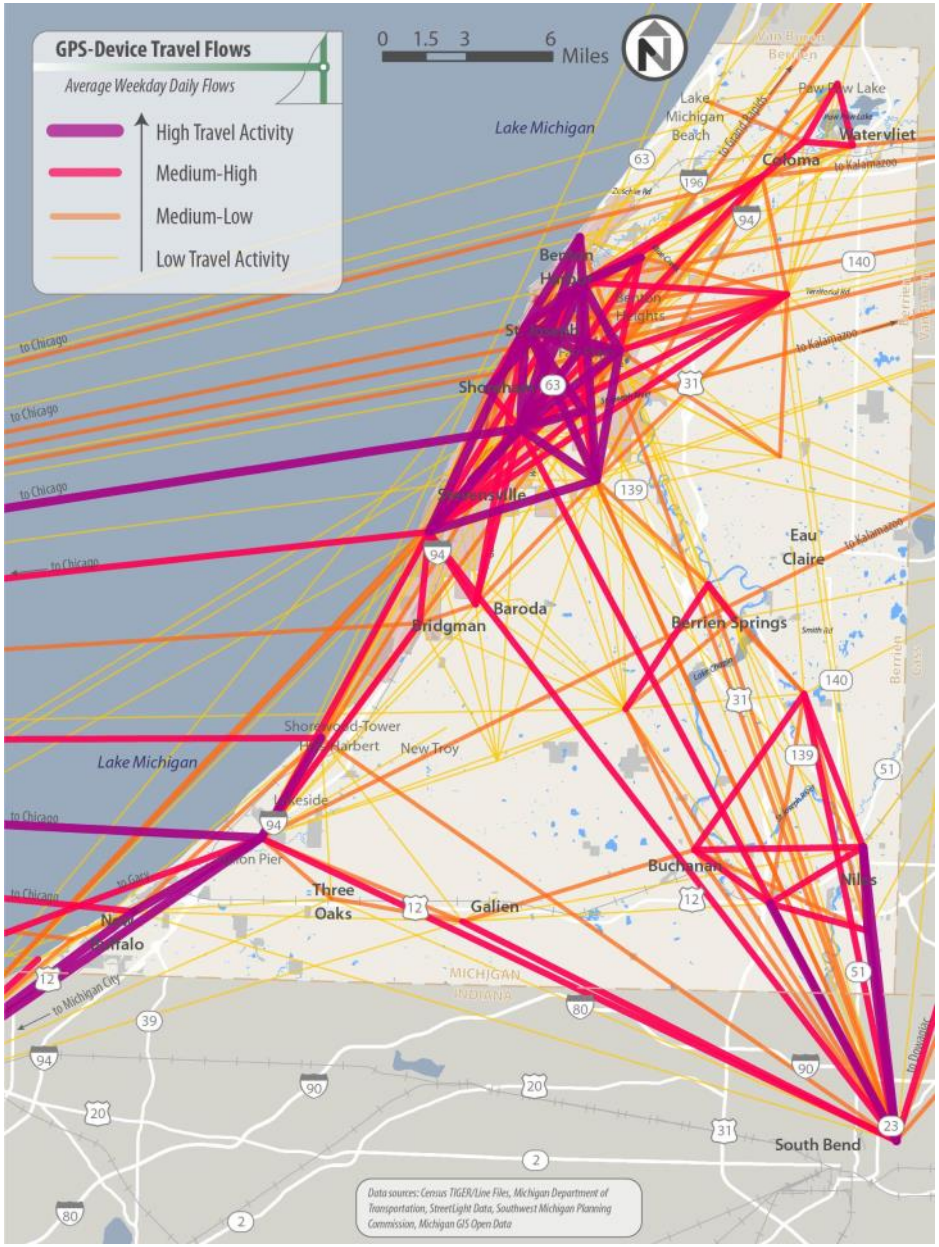
- 91,000 residents (58%)
- 40,000 jobs (66%)

The existing public transportation services in Berrien County are not adequately meeting the needs of residents and businesses. Previous studies, outreach conducted for this project, and analysis of data and peer regions all indicated that the services currently provided by the four transit agencies in the County are too complicated, unaffordable for many, and do not sufficiently connect important destinations or operate during the hours needed. Much of Berrien County is effectively not served at all by public transportation. The two largest urban areas – St. Joseph/Benton Harbor and Niles - are not directly connected to each other by transit. There is currently no transit service provided on Sunday by any agency in Berrien County.

In 2017, a countywide public transit service planning effort began for improved transit in Berrien County. Goals of the plan were as follows:

- Make transit more convenient than it is today
- Connect people to more places than they can reach today
- Make transit easier to use than it is today
- Ensure the financial and long-term sustainability of all transit systems

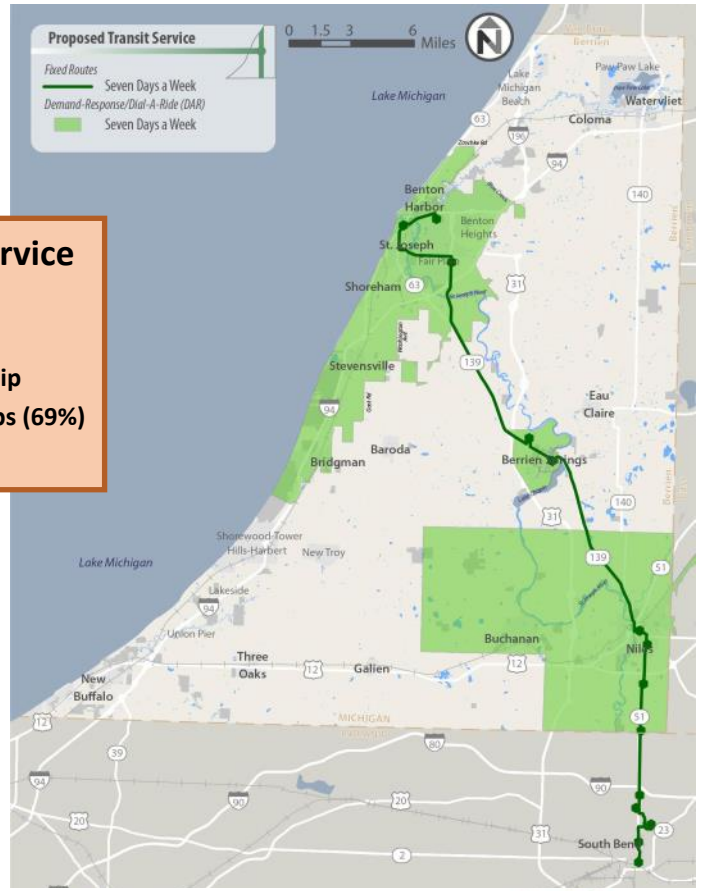
In 2018 the Connect Berrien Transit Service Integration Plan was released and it proposes a true countywide public transportation system that would not only use resources more efficiently, but would also offer a simpler and more useful public transit countywide.

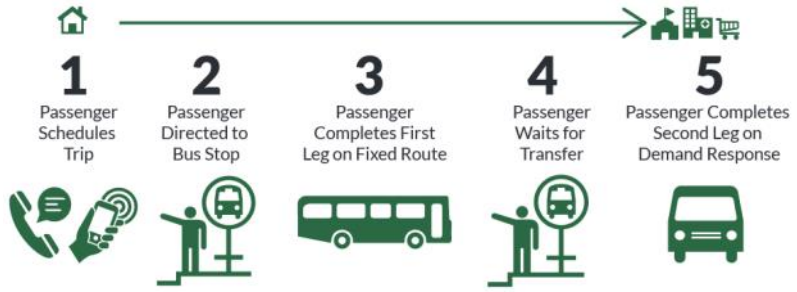


Proposed Countywide Service

- **157,000 residents (100%)**
- **61,000 jobs (100%)**
- **Projected 50% increase in ridership**
- **99,000 residents (63%) 42,000 jobs (69%) get service seven days per week**

The proposed countywide system would use scheduled fixed route service for longer trips between urban areas within and bordering Berrien County. A demand response system would handle shorter trips either point-to-point or as feeder service to the fixed route network.





Public Transportation Safety

On, July 19, 2018 FTA announced the publication of the Public Transportation Agency Safety Plan (PTASP) final rule, which requires certain operators of public transportation systems to develop and certify an agency safety plan rooted in Safety Management System (SMS) principles and methods. Transit operators subject to the rule must have an agency safety plan in place no later than July 20, 2020. Transit operators are required to review, update, and certify their plans annually.

Applicability

The PTASP rule applies to public transportation system operators who are recipients or sub-recipients of financial assistance under the Urbanized Area Formula Funding program (49 U.S.C. § 5307). All transit providers that receive Urbanized Area Formula funds must implement a safety plan. The state of Michigan Passenger Transportation Division will draft and certify safety plans on behalf of bus operators with 100 or fewer vehicles in peak revenue service, unless the operator opts to draft and certify its own plan.

SAFETY PERFORMANCE MEASURES

FATALITIES (total number of reportable fatalities and rate per total vehicle revenue miles by mode) Reducing the number of fatalities is a top priority for the entire Department of Transportation. As an industry, those involved must try to understand the factors in each fatality in order to prevent further occurrences.

INJURIES (total number of reportable injuries and rate per total vehicle revenue miles by mode) Many transit agencies have never had a fatality, and continued safe operation is exactly what is desired. However, injuries occur much more frequently, and are due to a wide variety of circumstances. Analyzing the factors that relate to injuries is a significant step in developing actions to prevent them.

SAFETY EVENTS (total number of reportable events and rate per total vehicle revenue miles by mode) The safety events measure captures all reported safety events that occur during transit operations and the performance of regular supervisory or maintenance activities. A reduction in safety events will support efforts to reduce fatalities and injuries, as well as damages to transit assets.

SYSTEM RELIABILITY (mean distance between major mechanical failures by mode) The system reliability measure expresses the relationship between safety and asset condition. The rate of vehicle failures in service, defined as mean distance between major mechanical failures, is measured as revenue miles operated divided by the number of major mechanical failures. This is a measure of how well a fleet of transit vehicles is maintained and operated. FTA recognizes the diversity of the transit industry, and that agencies have varied equipment types, with varied rates of performance, so this measure allows agencies to develop safety performance targets that are specific to their own fleet type, age, operating characteristics, and mode of operation.

FISCALLY CONSTRAINED PUBLIC TRANSIT PROJECTS

Summary of Anticipated Federal & State Funding for Niles Dial A Ride

State funds are combined with federal and local dollars, including farebox revenue and local mileages, to support operation and maintenance of the Niles Dial A Ride. The state's annual investment strategy for the Local Transit Program is largely determined by detailed requirements set forth in Act 51 of 1951 for annual distribution/use of CTF revenues and the eligible uses of federal formula apportionments and competitive grant awards.

MDOT Passenger Division provided the forecast below to illustrate future state and federal dollars available for future projects and programs. A 10-year historic average of funding was established and then a 2.95% growth rate was applied for each fiscal year covered by this Plan.

Program	Description	2018-2025 Funding	2026-2035 Funding	2036-2045 Funding	2018-2045 Funding
Urban Area Transportation Program 5307	The Federal Transit Administration Urban Area Program is intended to provide planning, capital, and operation assistance to public transportation providers in urbanized areas. Funds are administered by the transit agency (Niles DAR) in coordination with the NATS MPO.	$1,948,268	$3,569,883	$4,774,386	$10,292,537
Bus and Bus Facilities Program - 5339	The FTA program is intended to provide funding for the acquisition and rehabilitation of vehicles and the construction of transit-related facilities for customer service, administration, or fleet maintenance. Funds are administered by the transit agency (Niles DAR) in	$323,490	$592,743	$792,738	$1,708,971
Comprehensive Transportation Fund	The programs in this category provide funding for operating and capital support, training, and special projects to local bus operators that service the general public. Assistance also is provided to support transportation services focused on the needs of senior citizens and persons with disabilities, as well as the transportation-to-work needs of low income individuals.	$1,411,634	$2,272,681	$2,630,910	$6,315,225

Local Funding for Niles Dial A Ride

Michigan has a long list of counties and communities that provide a dedicated source of local funding for public transit. The only dedicated funding source for the Niles Dial A Ride (DAR) comes from a millage in the City of Niles. The millage and passenger fares are the only reliable sources of annual revenue that provides support to transit operations and capital match costs for Niles DAR. Until there is an additional form of reliable local revenue there will be limited opportunities to expand transit service within the NATS urbanized area.

Local Funding Source	Description	2018-2025	2026-2035	2036-2045	2018-2045
Transit Millage	The City of Niles levies **.05 mills** on all real and tangible personal property in the City of Niles for the exclusive purpose of financing Niles DAR.	$839,577	$1,538,387	$2,057,449	$4,435,413
Passenger Fares	All income received directly from passengers, paid either in cash or through pre-paid tickets, passes, etc. It also includes revenue from contracts with human service agencies.	$502,835	$921,363	$1,232,237	$2,656,435

Local Revenue Projections

Because local funding amounts can vary from year-to-year, the base funding amount was derived by using a ten-year average of reported Niles DAR passenger fares and millage revenues collected between 2009-2018, adjusted for inflation. The same annual growth rate used for federal and state funds, 2.95%, was applied to the millage and fares for the years 2019 -2045.

Data Source: MDOT Public Transportation Management System.

Niles Dial a Ride Projects

Fiscal Year	Agency	Project Name	Project Description	Federal Cost	Total Cost	Federal Fund Source	Performance Measures: Transit Asset Management
2019	Niles DAR	Transit Operating	Operating	$159,000	$391,000	5307	
2019	Niles DAR	Transit Capital	Preventative Maintenance	$132,000	$165,000	5307	X
2019	Niles DAR	Transit Capital	Bus replacement, Equipment, and Facilities	$72,690	$90,863	5339	X
2020	Niles DAR	Transit Capital	Maintenance Equipment	$119,340	$149,175	5307	X
2020	Niles DAR	Transit Operating	Regular operating expenses	$133,080	$431,640	5307	
2020	Niles DAR	Transit Capital	One cutaway bus	$60,800	$76,000	5339	X
2021	Niles DAR	Transit Capital	Maintenance Equipment	$119,340	$149,175	5307	X
2021	Niles DAR	Transit Operating	Operating expenses	$133,080	$431,640	5307	
2021	Niles DAR	Transit Capital	On-board AEDs, service truck, and snow plow	$50,000	$62,500	5339	X
2022	Niles DAR	Transit Capital	Maintenance Equipment	$119,340	$149,175	5307	X
2022	Niles DAR	Transit Operating	Operating expenses	$133,080	$431,640	5307	
2022	Niles DAR	Transit Capital	One medium duty bus	$79,200	$99,000	5339	X
2023	Niles DAR	Transit Capital	Maintenance Equipment	$119,340	$149,175	5307	X
2023	Niles DAR	Transit Operating	Operating expenses	$133,080	$431,640	5307	
2023	Niles DAR	Transit Capital	One cutaway bus	$60,800	$76,000	5339	X

5307 funding Summary

Total estimated 5307 allocation for 2019-2023: $1,300,680

Total 5307 programed for 2019 –2025: $1,300,680

Remaining Balance: $0

5339 funding Summary

Total estimated 5339 allocation for 2019-2023: $323,490

Summary of Anticipated Federal & State Funding for Buchanan Dial A Ride

State funds are combined with federal and local dollars, including farebox revenue and local millages, to support operation and maintenance of the Buchanan Dial A Ride. The state's annual investment strategy for the Local Transit Program is largely determined by detailed requirements set forth in Act 51 of 1951 for annual distribution/use of CTF revenues and the eligible uses of federal formula apportionments and competitive grant awards.

MDOT Passenger Division provided the forecast below to illustrate future state and federal dollars available for future projects and programs. A 10-year historic average of funding was established and then a 2.95% inflation rate was applied for each fiscal year covered by this Plan.

Program	Description	2018-2025 Funding	2026-2035 Funding	2036-2045 Funding	2018-2045 Funding
Rural Area Transportation Program 5311	The Federal Transit Administration Urban Area Program is intended to provide planning, capital, and operation assistance to public transportation providers in urbanized areas. Funds are administered by the transit agency (Buchanan DAR) in coordination with the NATS MPO.	$188,433	$345,273	$461,771	$3,539,170
Bus and Bus Facilities Program - 5339	The FTA program is intended to provide funding for the acquisition and rehabilitation of vehicles and the construction of transit-related facilities for customer service, administration, or fleet maintenance. Funds are administered by the transit agency (Buchanan DAR) in coordination with the NATS MPO	$234,080	$428,9134	$573,633	$1,236,627
Comprehensive Transportation Fund	The programs in this category provide funding for operating and capital support, training, and special projects to local bus operators that service the general public. Assistance also is provided to support transportation services focused on the needs of senior citizens and persons with disabilities, as well as the transportation-to-work needs of low income individuals.	$627,915	$1,150,552	$1,538,756	$3,317,223

Local Funding for Buchanan Dial A Ride

Michigan has a long list of counties and communities that provide a dedicated source of local funding for public transit. The only dedicated funding source for the Buchanan Dial A Ride (DAR) comes from a millage in the City of Buchanan. The millage and passenger fares are the only reliable sources of annual revenue that provides support to transit operations and capital match costs for Buchanan DAR. Until there is an additional form of reliable local revenue there will be limited opportunities to expand transit service within the NATS urbanized area.

Local Funding Source	Description	2018-2025	2026-2035	2036-2045	2018-2045
Transit Millage	The City of Buchanan levies **1.0 mills** on all real and tangible personal property in the City of Benton Harbor for the exclusive purpose of financing Buchanan DAR .	$689,690	$1,263,745	$1,690,141	$3,643,576
Passenger Fares	All income received directly from passengers, paid either in cash or through pre-paid tickets, passes, etc. It also includes revenue from contracts with human service agencies.	$114,535	$209,866	$280,676	$605,076

Local Revenue Projections

Because local funding amounts can vary from year-to-year the base funding amount was derived by using a five-year average of reported Buchanan DAR passenger fares and millage revenues collected between 2013-2017. A 2% annual growth rate was applied to years 2019-2045.

Data Source: MDOT Public Transportation Management System.

Buchanan Dial a Ride Projects

Fiscal Year	Agency	Project Name	Project Description	Federal Cost	Total Cost	Federal Fund Source	Performance Measures: Transit Asset Management
2019	Buchanan DAR	Transit Operating	Operating	$24,415	$48,830	5311	X
2019	Buchanan DAR	Transit Capital	Bus support Equipment	$7,600	$9,500	5339	X
2020	Buchanan DAR	Transit Operating	Transit Operating	$24,219	$204,299	5311	
2020	Buchanan DAR	Transit Capital	Radios	$7,600	$9,500	5339	
2021	Buchanan DAR	Transit Operating	Transit Operating	$27,595	$218,424	5311	
2022	Buchanan DAR	Transit Operating	Transit Operating	$30,906	$232,826	5311	
2023	Buchanan DAR	Transit Operating	Transit Operating	$34,615	$249,533	5311	
2023	Buchanan DAR	Transit Capital	Bus Purchases	$218,880	$273,600	5339	X

5311 funding Summary

Total estimated 5307 allocation for 2019-2025: $141,750

Total 5307 programed for 2019 –2025: $141,750

Remaining Balance: $0

5339 funding Summary

Total estimated 5339 allocation for 2019-2025: $234,080

STRATEGIES:

IMPROVING PASSENGER TRANSPORTATION

Strategy	Guiding Principles Met
Improve Transit Facilities and Equipment	✓ ✓ ✓ ✓ ✓
Support fixed route stops with bicycle infrastructure and end-of-trip facilities, such as bicycle parking and on-board bicycle racks.	
Investments are made in alignment with TAM plans with the intent of keeping the state's public transit vehicles and facilities in a state of good repair and meeting TAM targets.	
Extend/Create New Transportation Services	✓ ✓ ✓ ✓ ✓
Increase service hours to support service sector employment trips.	
Improve connections with nearby destinations in South Bend and Cass County	
Increase connections to intercity bus in South Bend and Benton Harbor.	
Safety	✓ ✓ ✓ ✓
Ensure safety and security training is available for transit staff.	
Monitor operations to identify any safety risk mitigations that may be ineffective, inappropriate, or were not implemented as intended.	
Communicate safety and safety performance information throughout the organization.	
Funding	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
Foster public-private partnerships with municipalities and transit systems within Berrien County to actively increase opportunities for additional local funding sources.	

FREIGHT TRANSPORTATION

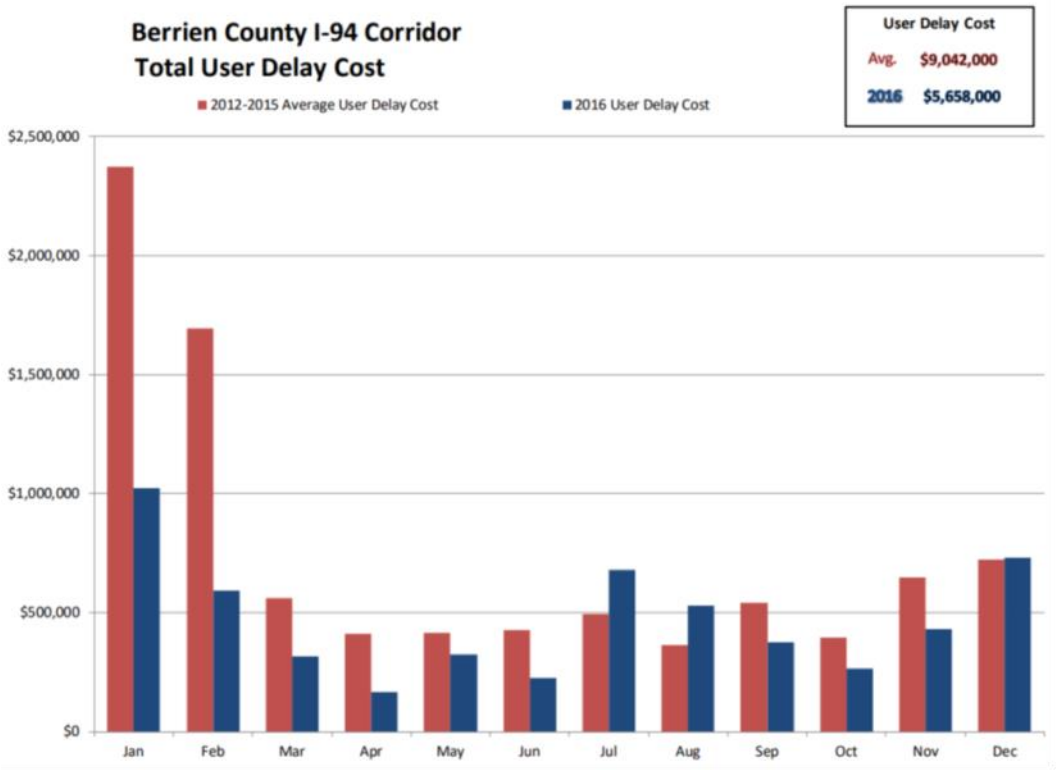
What is Freight?

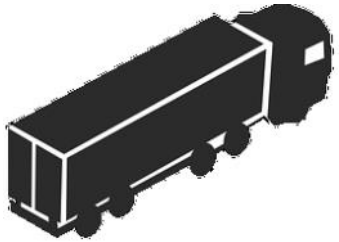
"Any good, product, or raw material carried by a commercial means of transportation – including air, highway, rail, water, and pipeline"

– Michigan Freight Plan

Corridors of Significance

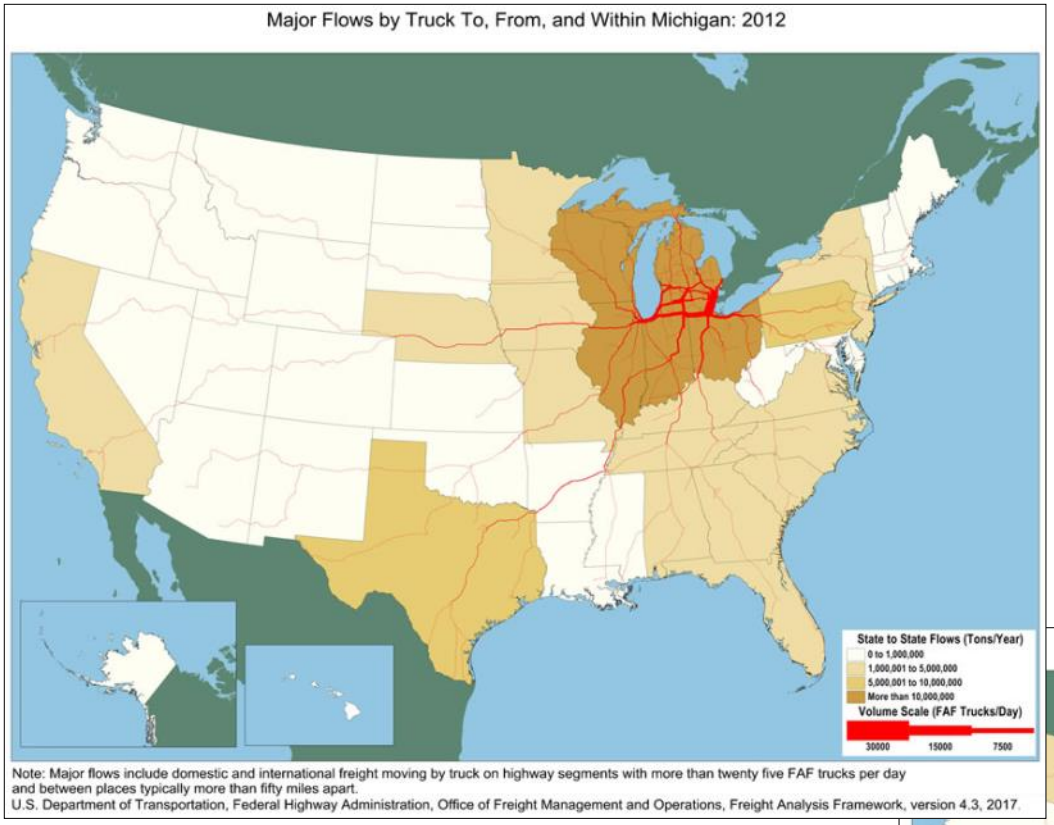
The most significant corridors for freight in the NATS area include US-31 (which grants access to I-94 in Michigan and the I-80/I-90 Toll Road in Indiana), CN railroad tracks through Edwardsburg, and Amtrak railroad tracks through Niles and Buchanan. Hazardous liquid pipelines have commercial access points at the terminals on South 3rd Street in Niles Township. Gas transmission pipeline systems transport natural gas through the area, but there are not any commercial access points, so they are not covered in this Plan. Regionally the area is served by the commercial port at Benton Harbor-Saint Joseph. Air freight at Jerry Tyler Memorial Airport is covered in the next section—Aviation.





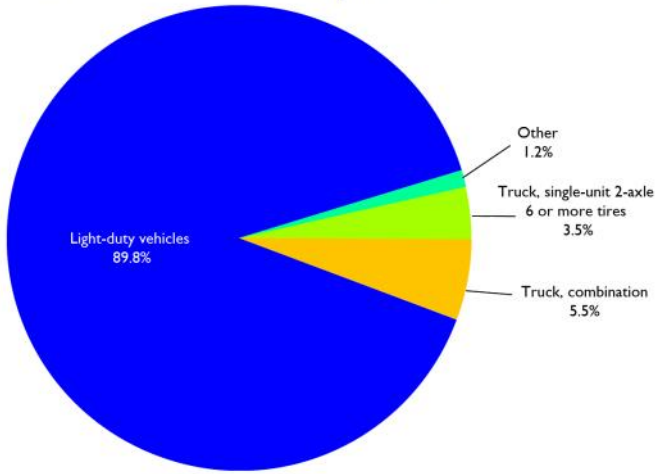
Interstate Congestion & Reliability

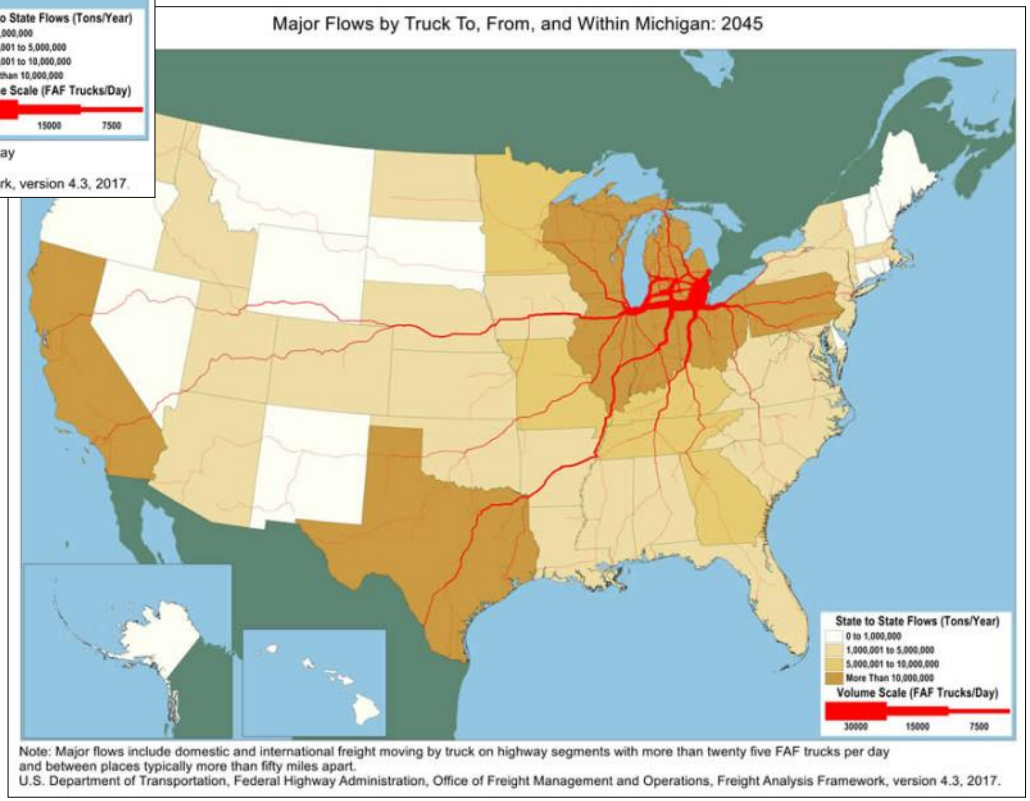
The MDOT 2016 Freeway Congestion & Reliability Report states that the in 2016 the user delay cost for the I-94 corridor in Berrien County was $5,658,000. This is an improvement on the 2012 to 2015 four-year average of $9,042,000. The graph below, from that report, shows how that user delay cost is broken out by month.



Note: Major flows include domestic and international freight moving by truck on highway segments with more than twenty five FAF trucks per day and between places typically more than fifty miles apart.
U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 4.3, 2017.

Share of Highway Vehicle-Miles Traveled (VMT) by Vehicle Type
Source: USDOT Bureau of Transportation Statistics





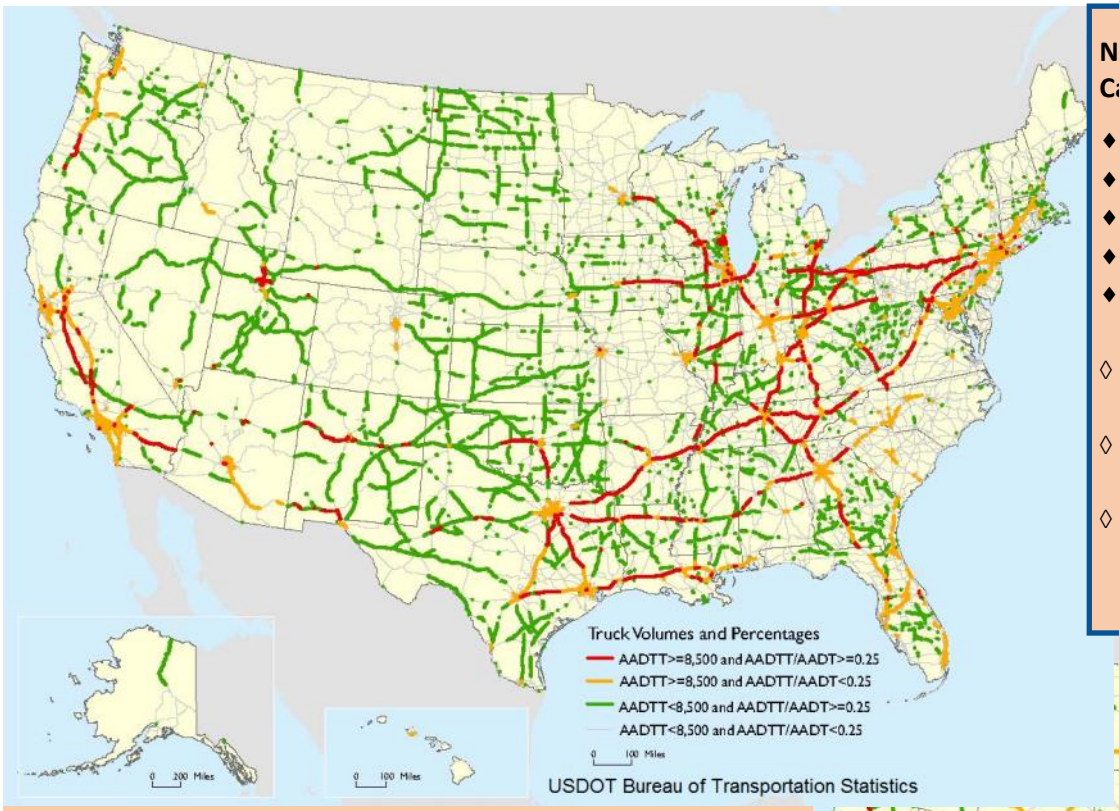
Note: Major flows include domestic and international freight moving by truck on highway segments with more than twenty five FAF trucks per day and between places typically more than fifty miles apart.
U.S. Department of Transportation, Federal Highway Administration, Office of Freight Management and Operations, Freight Analysis Framework, version 4.3, 2017.

Freight Vehicle-Miles Traveled

Long-haul freight truck traffic on the National Highway System between 2012 and 2045 is projected to increase dramatically by—

Bureau of Transportation Statistics

58%



NATS is located along USMCA (new NAFTA) trade routes linking Canada, the U.S., and Mexico, which provides access to:

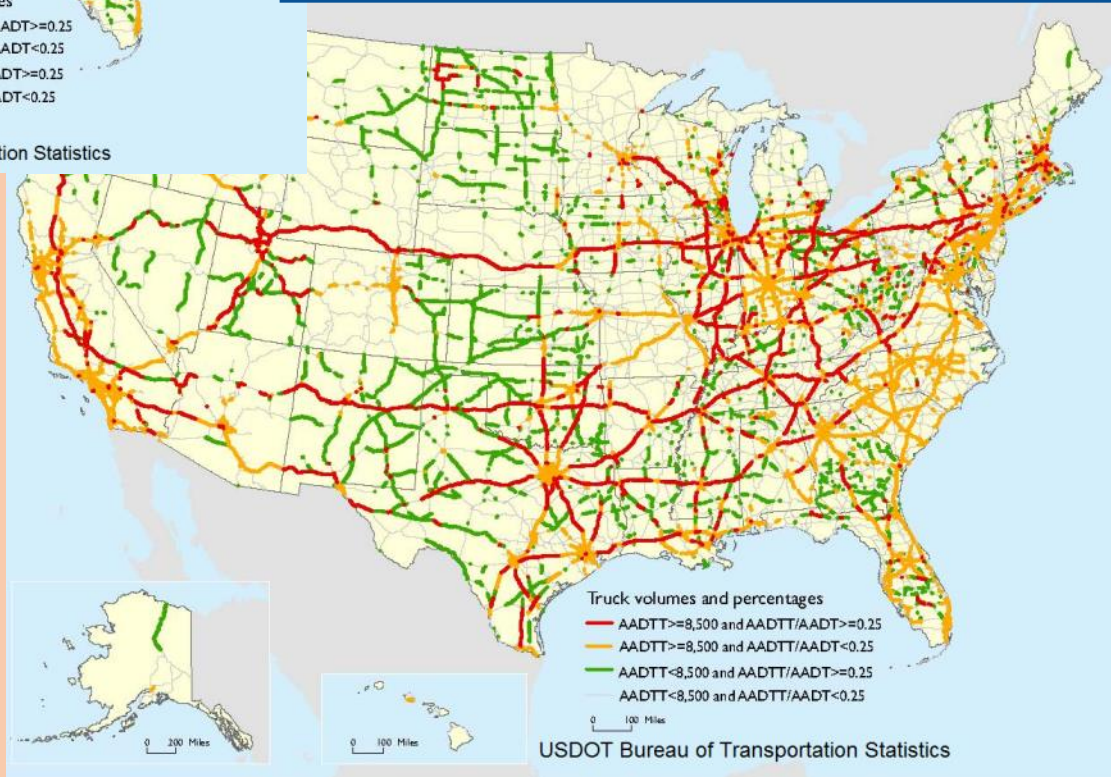
- ♦ 54% of the nation's manufacturers
- ♦ 48% of all national retail sales
- ♦ 54% of the nation's business payroll
- ♦ 65% of Canada's Gross National Product
- ♦ 37% of the U.S. population can be reached in one day by truck

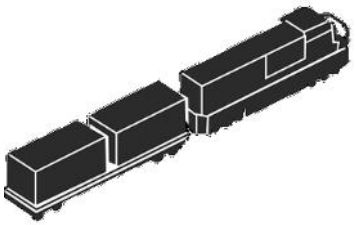
- ◊ More than 78% of the U.S. population can be reached within two days by roadway
- ◊ More than 100 million people live within overnight delivery capability
- ◊ More than 105 million people live within a 500-mile radius and 221 million people live within 1,000 miles radius of the region's center

Bureau of Transportation Statistics

Freight goods depend heavily on the Interstate System for delivery. Although only one-fourth of the miles traveled by all traffic is on the Interstate System, about one-half of combination-truck vehicle miles of travel are on interstate highways.

The number of National Highway System miles carrying large volumes and high percentages of trucks is projected to increase dramatically by 2045. Segments with more than 8,500 trucks per day and where at least every fourth vehicle is a truck are estimated to grow from 5,560 miles in 2012 to 13,480 in 2045, an increase of more than **140%**.

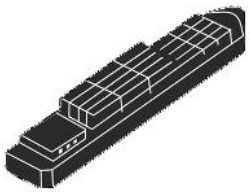




Freight Rail

Canadian National Railway (CN) runs freight rail service through Edwardsburg. The Amtrak line that runs through Buchanan and Niles is also used for freight (see map, right). Rail offers an economical and environmentally conscientious means to move freight. The table below shows inbound and outbound rail movements in Berrien County for 2014 (source: MDOT Office of Rail (IHS Transearch database). Berrien County figures include the CSX line through the Twin Cities area as well. Pass through tonnages, such as for coal, are not shown here.

2014 Rail Movements — Berrien County		
Product	**Inbound Tons**	**Outbound Tons**
Rubber/Plastic Scrap		21,600
Primary Metal Products	8,800	
Fiber, Paper, or Pulpboard	12,080	



Twin Cities Harbor

The Twin Cities Harbor is a regional deep draft commercial harbor with over 5,300 feet of structures including piers and revetments and over 1.5 miles of maintained channel. The U.S. Army Corps of Engineers (USACE) Fact Sheet for the Twin Cities Harbor reported that 282,000 tons of material were shipped and received at the Twin Cities Harbor in 2016, and 413,000 tons in 2015. These figures are both higher and lower than the ten-year average between 2007 and 2016 of 341,000 tons.

Commercial Harbor Importance

The USACE Fact Sheet identifies the transportation importance of the Harbor:

- ◊ Regionally significant receiving port on the Great Lakes
- ◊ Commodities received include limestone, sand, gravel, armor stone, cement, slag, salt, and petroleum products
- ◊ Project serves as an important Harbor of Refuge
- ◊ Harbor is home to the U.S. Coast Guard Station Saint Joseph

Harbor Freight Stakeholders

- **Dock 63:** In 2015, they handled $4.7M in road salt and $1.5M in limestone.
- **LaFarge North America:** Employs five people and supplies cement to over 30 ready-mix plants within southwestern Michigan and Indiana.
- **Central Dock Company:** In 2017, citing difficult economic viability, the owner approached Cornerstone Alliance for assistance in selling the property, potentially for mixed-use development.

Twin Cities Harbor Dredging

The Twin Cities Harbor is usually dredged by the USACE. Until January 2017, Berrien County had been taking responsibility for locally coordinating this work. The City of Benton Harbor, City of St. Joseph, and St. Joseph Charter Township have been meeting to build a multi-jurisdictional framework to address harbor dredging and other issues.

Harbor Study

In 2015, a multi-jurisdictional group prepared *Twin Cities Harbor A Study of Potential in Benton Harbor & St. Joseph MI* to explore several issues facing the harbor. Infographics related to harbor freight are on the following pages, but the whole study is online:

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

Bulk commodities that pass through the harbor:

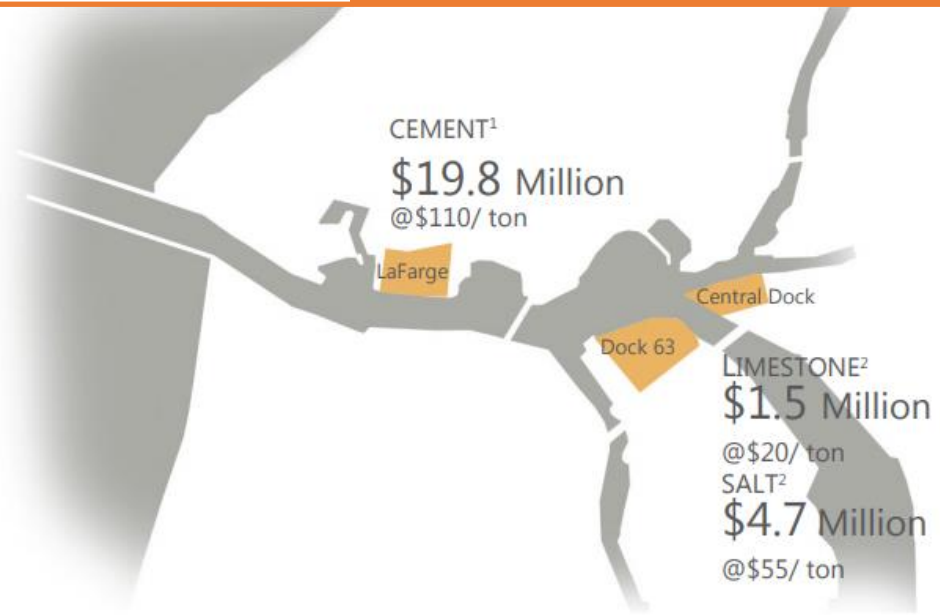
- **$840M** annually in business **revenue**
- **5,057** direct, indirect, & induced **jobs**
- **$251M** per year in personal **income**

Source: USACE Fact Sheet for the Twin Cities Harbor

Loss of between 4 and 5 feet of channel depth:

Results in increased transportation costs of between $1.6M and $3.9M

Source: USACE Fact Sheet for the Twin Cities Harbor



ESTIMATED

$2.5 Million Saved by Shipping in 2015

2015 Freight[3]

Projections: 340,000 tons

340 Jobs

2004 - 2009 2010 - 2014

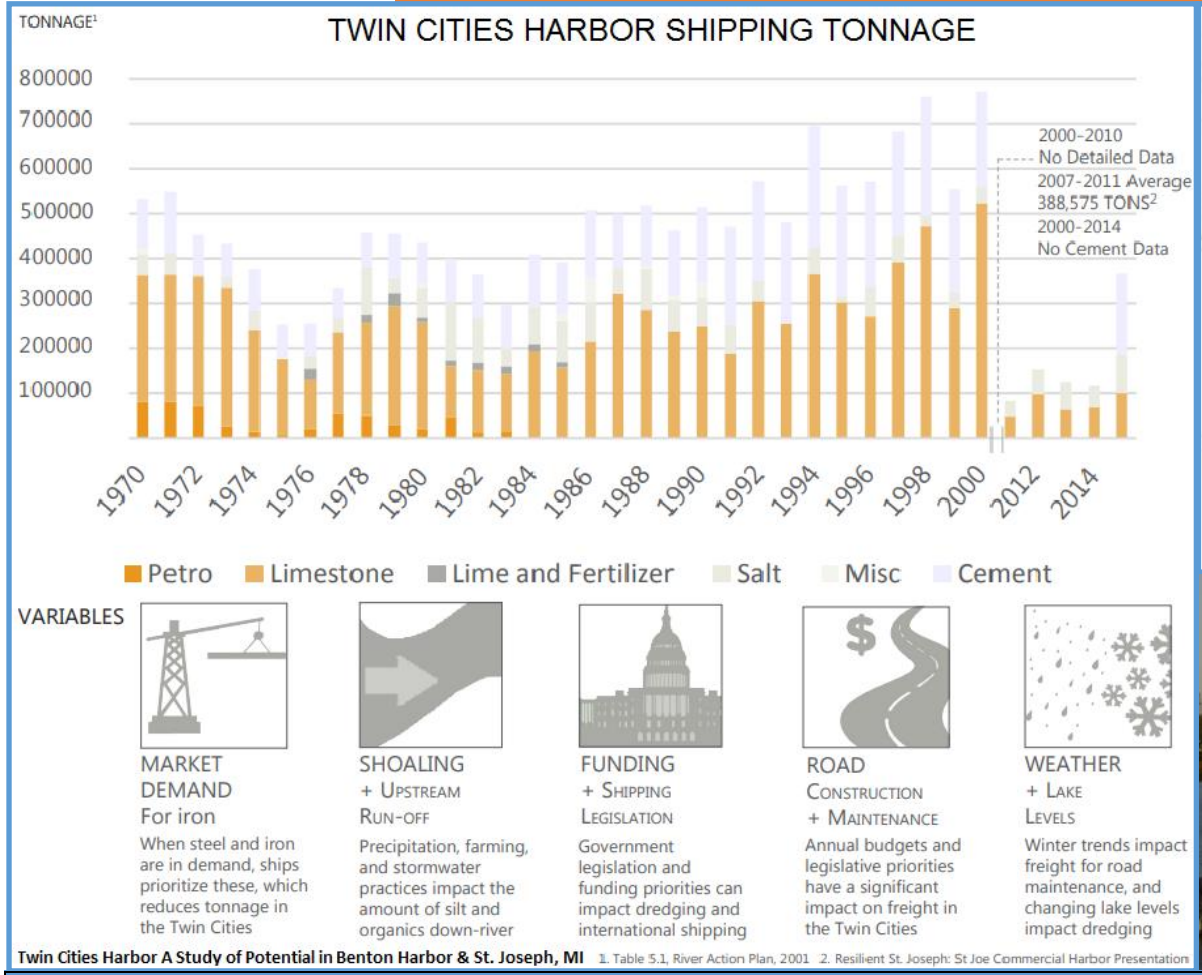
Changing variables have led to a decline in the number of annual ships.[4]

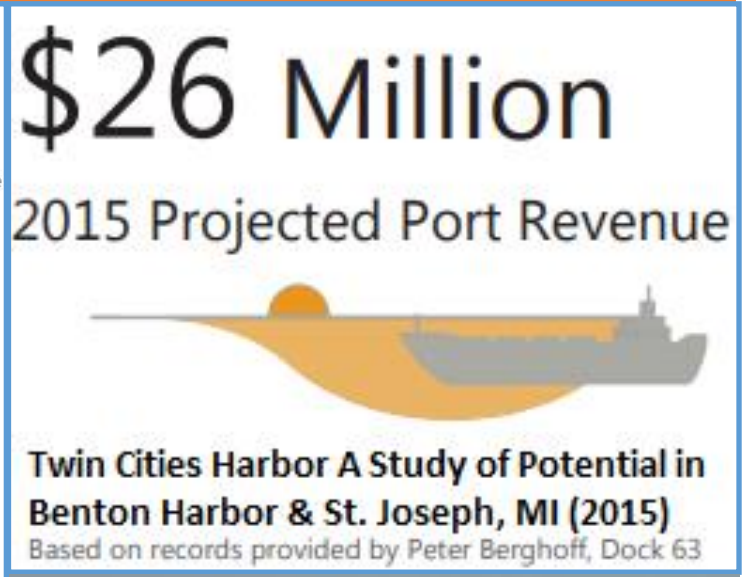
84% SUPPORT Commercial Shipping

The 2015 Resilient St. Joseph master planning process revealed overwhelming support for maintaining commercial shipping in the Twin Cities harbor.[6]

Twin Cities Harbor A Study of Potential in Benton Harbor & St. Joseph, MI (2015)

1. 2015 Projection based on records provided by Lafarge via phone
2. 2015 projection based on records provided by Peter Berghoff, Dock 63
3. Based on records provided by Peter Berghoff, Dock 63
4. Resilient St. Joseph: Port Presentation, January 22, 2015
5. Based on 2015 tonnage and trucking cost projections in the River Action Plan
6. www.resilientmichigan.org/downloads/compiled_results.pdf



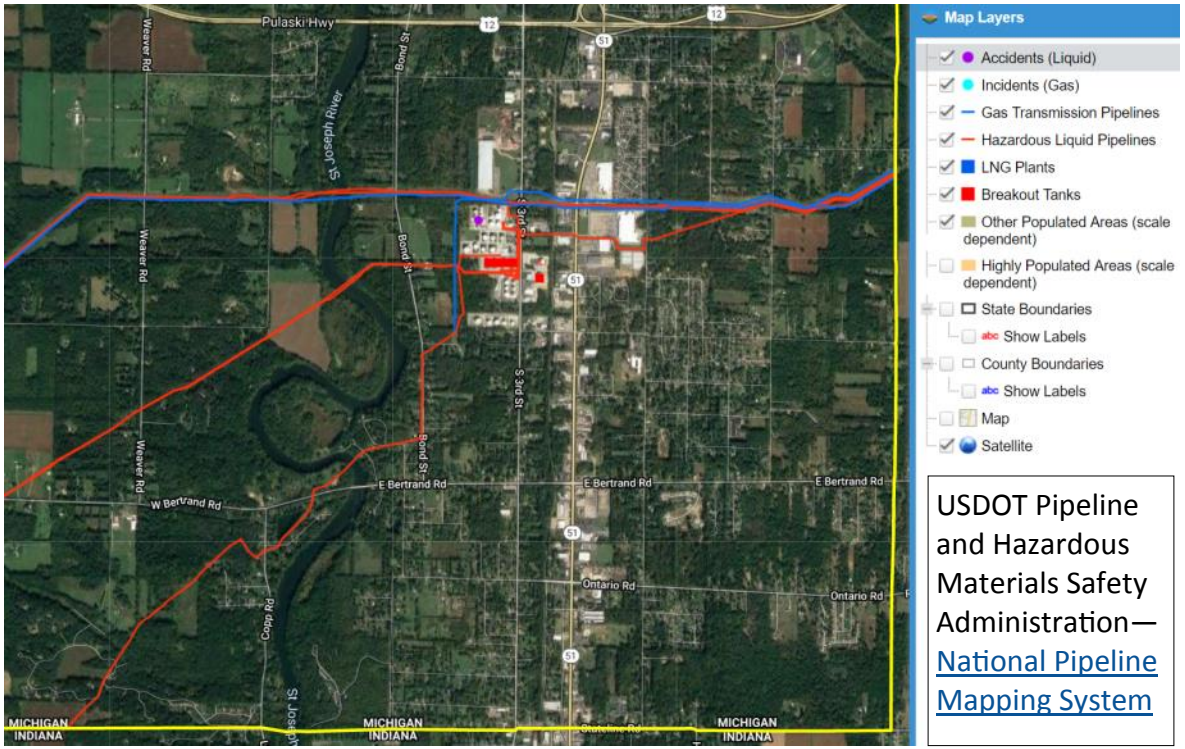


U.S. Army Corps of Engineers Fiscal Year (FY) 2017, 2018, and 2019
St. Joseph Harbor, MI - Project Requirements and President's Budget ($1,000)

Work Package	FY17 Require-ment	FY17 Appropria-tion	FY18 Require-ment	FY18 President's Budget	FY19 Require-ment	FY19 President's Budget
Maintenance Dredging of Outer Harbor – Primary Work Package	750	750	765	765	600	600
Maintenance Dredging of Inner Harbor	0	0	0	0	900	900
Maintenance Dredging – Backlog Work Package	225	0	225	0	0	0
TOTAL	**975**	**750**	**990**	**765**	**1,500**	**1,500**

Pipelines

Hazardous liquid pipelines (red on the map below) have commercial access points at the terminals on South 3rd Street in Niles Township (pictured below), including Buckeye Terminals, CITGO Petroleum Corp., and Marathon Petroleum Corp. Pipeline systems are part of the critical infrastructure needed to supply fuel.



USDOT Pipeline and Hazardous Materials Safety Administration—[National Pipeline Mapping System]

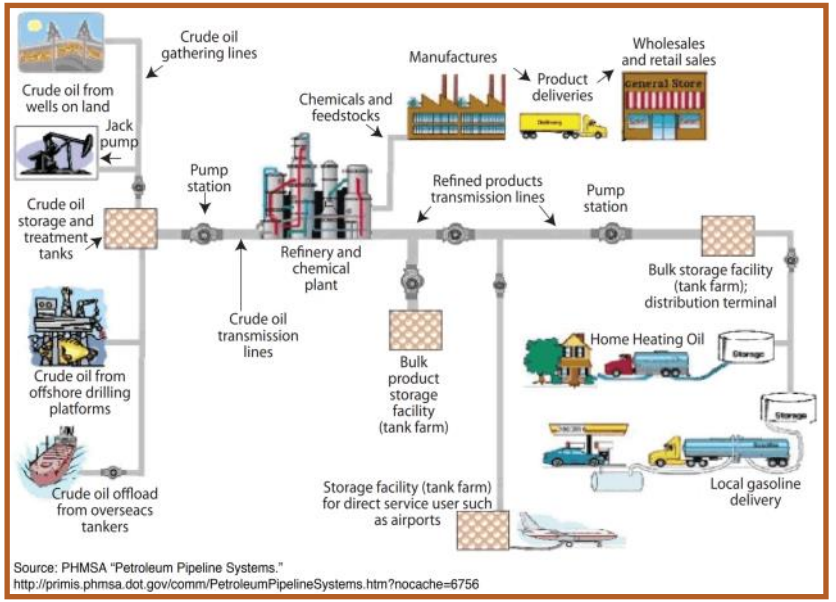
Natural Gas — Gas transmission pipeline systems transport natural gas through the area (blue on map), but there are not any commercial access points, so they are not covered in this Plan.

What Do Hazardous Liquid Pipelines Carry?

Hazardous liquid pipelines, as defined in federal regulations, carry:

- **Crude oil**
- **Refined petroleum products**, including gasoline, diesel, jet fuel, and home heating oil
- **Highly Volatile Liquids** such as propane, butane, ethylene, condensates
- **Supercritical Carbon dioxide**
- **Anhydrous Ammonia**

Pipeline Safety Trust



State Freight Priorities

The 2040 Michigan Transportation Plan goals particular for freight are tightly connected with national freight priorities, including:

- ***System Improvement:*** Modernize and enhance the transportation system to improve mobility and accessibility.
- ***Efficient and Effective Operations:*** Improve the efficiency and effectiveness of the transportation system and transportation services, and expand MDOT's coordination and collaboration with partners.
- ***Safety and Security:*** Continue to improve transportation safety and ensure the security of the transportation system.
- ***Stewardship:*** Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.

National Freight Priorities

The Fixing America's Surface Transportation (FAST) Act of 2015 governs surface transportation federal spending, thus setting national priorities. The Michigan Freight Plan summarized national freight goals (**emphasis added**):

- Improve the contribution of the freight transportation system to **economic efficiency**, **productivity**, and **competitiveness**;
- **Reduce congestion** on the freight transportation system;
- Improve the **safety**, **security**, and **resilience** of the freight transportation system;
- Improve the **state of good repair** of the freight transportation system;
- Use **advanced technology**, **performance management**, **innovation**, **competition** and **accountability** in operating and maintaining the freight transportation system;
- **Reduce adverse environmental and community impacts** of the freight transportation system;
- Improve the flexibility to support **multi-state corridor planning** and the creation of multi-state organizations to increase the ability of states to address multimodal freight connectivity; and
- Improve the **short- and long-distance movement of goods** that travel across rural areas between population centers, between rural areas and population centers, and from the nation's ports, airports, and gateways to the National Multimodal Freight Network.

Strategies for Improving Freight Transportation

Freight Committee. As shown in this section, freight is very important the area. A freight committee could be established to bring together freight stakeholders (air, highway, rail, marine, and pipeline) to review, analyze, and make recommendations on how best to assist the Twin Cities area with any freight issues the committee identifies.

Twin Cities Harbor. The City of Benton Harbor, City of St. Joseph, St. Joseph Charter Township, and other stakeholders could organize a multijurisdictional body that could focus on harbor related issues, including dredging and other issues identified by those communities for the new multijurisdictional body to work on.

Regional Prosperity Initiative – Region 8. Support the Southwest Michigan Regional Prosperity Initiative Committee pursuing its strategies for its Goal #3; "Create, improve, and maintain services and infrastructure," Objective 3; "advance the effective and efficient transportation of goods."

AVIATION

Air Freight

In Michigan there are 226 airports that are open for public use and serve the general aviation market, which is a critical element of the air transportation network.

The Jerry Tyler Memorial Airport is a Tier 2 airport that serves the population center of the greater Niles area. The airport is owned and operated by the City of Niles. The City serves as the fixed base operator and rents facilities at the airport to provide general aviation fuel and jet fuel.

The airport is part of the National Plan of Integrated Airport Systems (NPIAS) and is eligible to receive federal grants under the Airport Improvement Program. This program funds development projects that will bring the NPIAS airports up to current design standards and add capacity to congested airports.

Businesses rely on the airport to facilitate quick and efficient travel of personnel and delivery of materials for just-in-time manufacturing. The latest economic impact estimate conducted (2017) by Michigan Department of Transportation showed the airport's contribution to the local economy to be **$18,374 million**.

Jerry Tyler Memorial Airport Features

Operates: Year Round

Primary Runway Length: 4,100 ft.

Primary Runway Width: 74 ft.

2015	Federal	State	Local	Total
Capital Expenditures	$166,667	$8,333	$8,334	$166,667

Activity Data

Total Operations:	6,500
Total Aircraft:	32
Total Passengers:	16,250

Infrastructure

Michigan's system airports are classified using a two-step methodology including airport tiers (1, 2 and 3) and their associated ARCs (ranging from A-I to C-II), known as a MASP ARC. The MASP ARC is an indicator of the type of activity that occurs at an airport, and the role the airport plays in meeting system goals. The MASP ARC helps align the facility goals appropriate to each airport, including:

⇒ Primary Runway System

⇒ Lighting and Visual Aids

⇒ Approach Protection

⇒ Basic Pilot and Aircraft Services

⇒ All-Weather Access

⇒ Year-Round Access

⇒ Landside Access

Airport Report Card

NILES

Airport Name: Jerry Tyler Memorial Airport
FAA Identifier: 3TR
2017 MASP Tier: 2
Current FAA Airport Reference Code (ARC): B-II
2017 MASP Airport Reference Code (ARC): B-II

Facility Goal	Airport Development Item	Currently Has	2017 MASP ARC B-II Development Goals	Met?
Primary Runway System	Length (feet)	4,100	4,300	No
	Width (feet)	75	75	Yes
	Surface Type	Paved	Paved	Yes
	Primary Taxiway System	Direct Connector	Full Parallel if >20,000 ops	Yes
Lighting and Visual Aids	Runway Lighting System	MIRL	MIRL	Yes
	PAPI	Yes	Yes	Yes
	REIL	Yes	Yes	Yes
	MALSR	No	No	Yes
	Rotating Beacon	Yes	Yes	Yes
	Lighted Wind Indicator	Yes	Yes	Yes
	Segmented Circle	Yes	Yes	Yes
Approach Protection	Approach Protection Plan	Yes	Yes	Yes
Basic Pilot and Aircraft Services	Restrooms (24 hours)	Yes	Yes	Yes
	Fuel	Yes	Yes	Yes
	Aircraft Parking	Yes	Yes	Yes
	Aircraft Maintenance	Yes	Yes	Yes
	Available Staff	No	Yes	No
All-Weather Access	Instrument Approach	Non-Precision	Non-Precision	Yes
	Weather Reporting (AWOS/ASOS)	No	Yes	No
	Weather Briefing Access	Yes	Yes	Yes
Year-Round Access	Open Year-Round	Yes	Yes	Yes
	Snow Removal	Yes	Yes	Yes
Landside Access	Public/Private Transportation	Yes	Yes	Yes

Notes:
For A-I airports with paved runways, the standard width is 60 feet.
Runway length goal shown is subject to FAA/AERO justification determination.
A VASI in lieu of a PAPI is acceptable. VASI/PAPI/REIL on one runway end is acceptable.
An Airport Zoning Ordinance is considered an acceptable Approach Protection Plan.
Aircraft parking consists of either a hangar, tie-down, or parking area.
Weather briefing access may be provided by a Weather Briefing System, computer, internet access, or cell phone coverage.

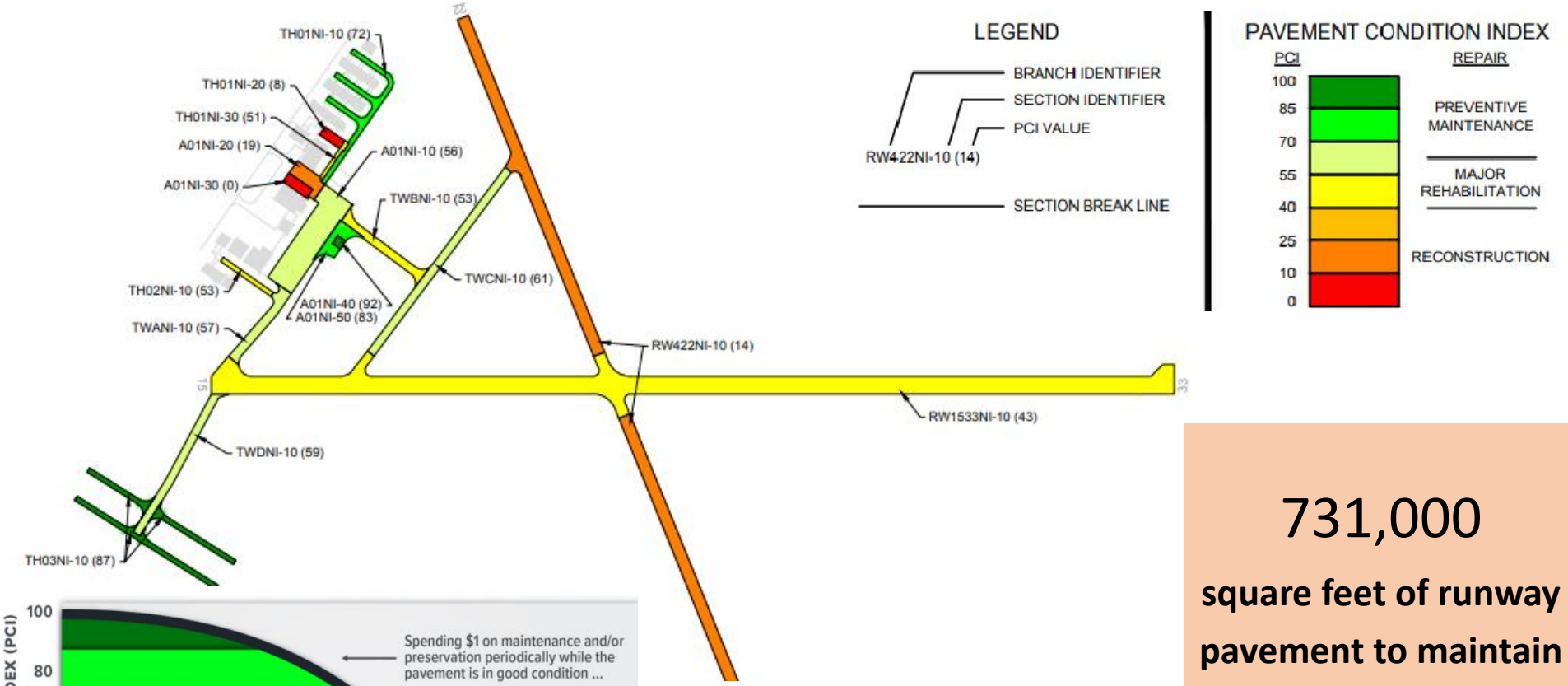
Additional Airport Notes:

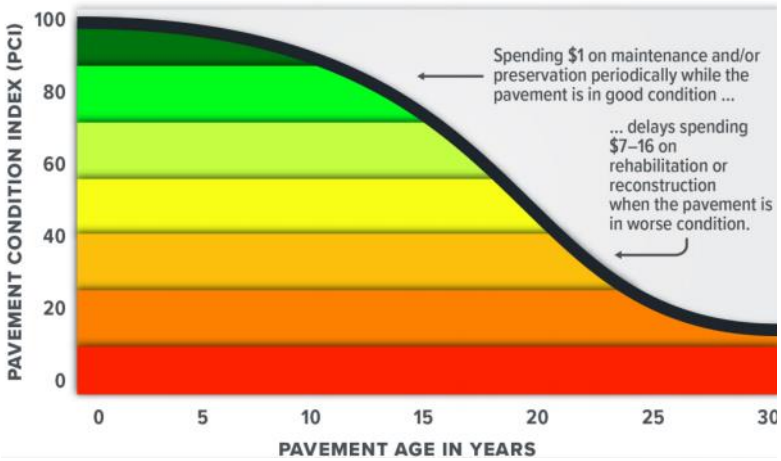
Pavement Condition Index (PCI)		Existing PCI	Minimum PCI Goal	PCI Performance
Based on FAA Aircraft Approach Category (AAC): **'B'**	Runway	49	55	Below goal
	Taxiway	59	45	Meeting goal

Source: ASM/Facility Information Worksheets/MDOT Airport Directory/FAA Form 5010/MDOT APMS/FAA Digital-Chart Supplement (d-CS)

Network-Level Pavement Condition Index (PCI)

During a PCI inspection, the types, severities, and amounts of distress present at a pavement's surface are quantified. This information is then used to develop a composite index that represents the overall condition of the pavement in numerical terms, ranging from 0 (failed) to 100 (excellent). The PCI number is a measure of the overall condition and is indicative of the level of work that will be required to maintain or repair a pavement.





731,000

square feet of runway pavement to maintain

The table below summarizes the overall area-weighted PCI's for the Jerry Tyler Memorial Airport assuming no work is competed at this airport. The 2017 PCI is from actual inspections, while the 2018-2027 for forecasted values.

2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
43	42	40	38	36	35	33	31	29	27	25

Main Street Bridge (M-139) in Niles during the Flood of February 2018 (Photograph courtesy of Matt Dunlap).

ENVIRONMENTAL REVIEW

Transportation and the Environment

It is broadly recognized the transportation networks can directly affect the natural environment and community resources of an area. Similarly, these same features can impact the maintenance and construction of transportation system. SWMPC's role in this relationship is summarized as; the transportation planning process provide for actions and strategies that 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. The mission of these objectives is to streamline transportation projects, by way of discussing potential impacts and providing basic guidelines for protecting these features early in the planning process. This also includes sharing the information in consultation with applicable federal, state, and tribal land management, wildlife, and regulatory agencies.

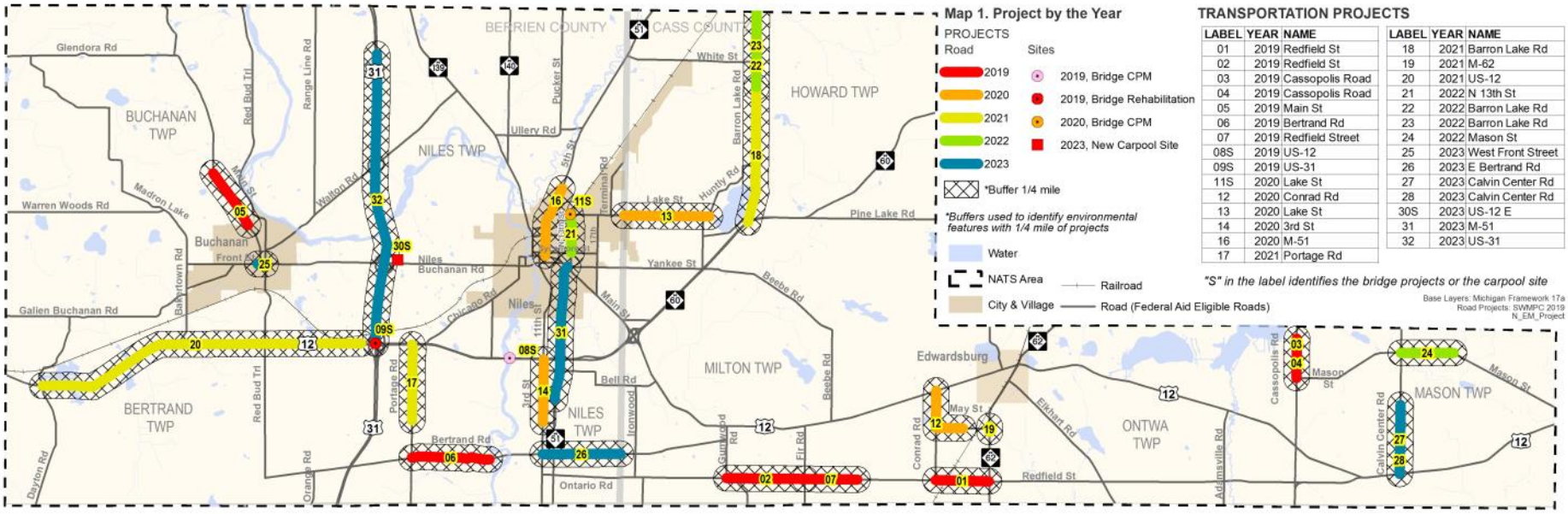
To fulfill this mission a process was completed and outlined as;

- Identify environmentally sensitive natural resources and significant community resources
- Analyze possible impacts on these environmental resources by examining the transportation projects using Geographical Information Systems (GIS)
- Presentation of GIS results: discussion, table, and maps
- Discussion of guidelines to review for threatened and endangered species
- Consultation list of relevant agencies
- Inclusion of overall guidelines for planning, design, construction and maintenance of transportation projects that represent good planning practice

Identification of Sensitive Environmental Features and GIS Methodology

ENVIRONMENTAL FEATURES & SIGNIFICANT COMMUNITY RESOURCES - ANALYZED IN GIS		
FEATURE	**DATA SOURCE**	**DESCRIPTION**
GROUND WATER	Wellhead Protections Areas	A wellhead protection area is a surface and subsurface land area regulated to prevent contamination of a well or well-field supplying a public water system.
SURFACE WATER	Michigan Geographic Framework	The framework serves as the digital base map for State of Michigan government.
FLOOD AREAS	Federal Emergency Management Administration (FEMA)	Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk and type of flooding. These zones are depicted on the published Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM).
FARMLAND	Crop Land Data Layer - 2018	Crop specific land cover data layer with a ground resolution of 30 meters. Crops were reclassified into broader categories.
COMMUNITY RESOURCES	Various Sources	Hospitals, Medical Centers, Schools, and Parks
HISTORICAL MARKERS	Michigan Department of Natural Resources	A marker is determined by historic significance at the local, state or national level, and in the case of historic resources, integrity.
WETLANDS	Michigan Department of Environmental Quaility	Data represents the extent, approximate location and type of wetlands and deepwater habitats. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979).

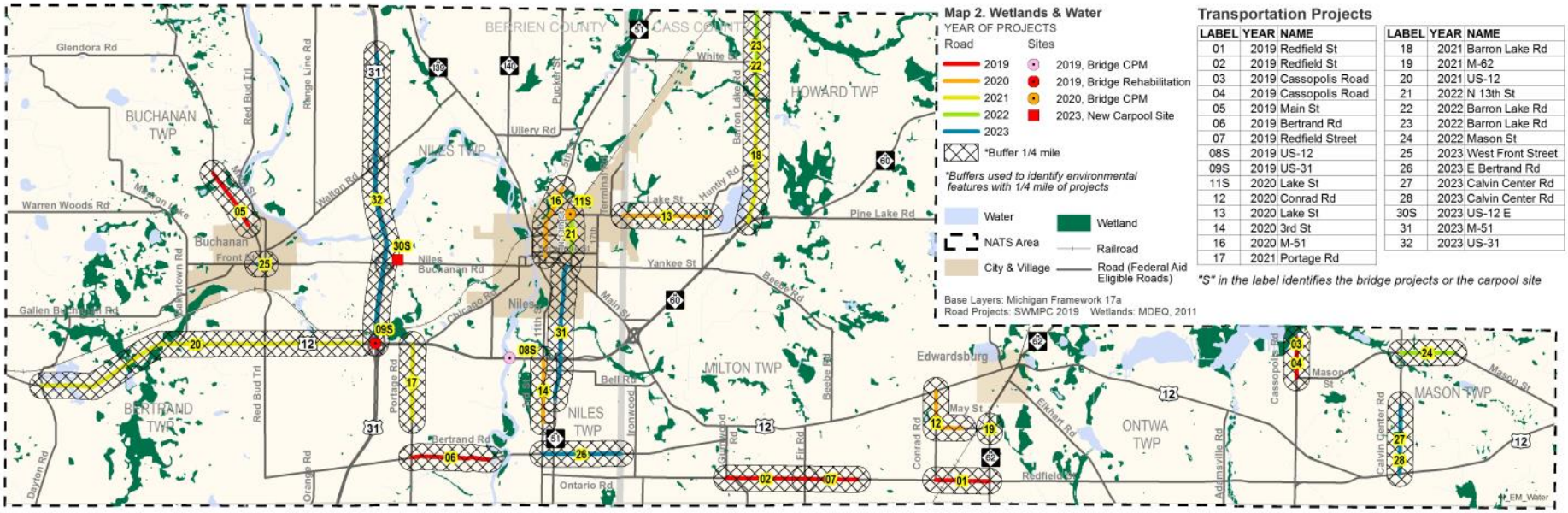
The list above was compiled with an awareness of invaluable natural resources and the community resources in NATS, in addition to available data. A Geographic Information System (GIS) was used to analyze each transportation project in comparison to the features listed by creating a 1\4 mile buffer around each project and a 250 foot buffer around each work site, which includes bridge, signal or roadside facility. Features that fall within the buffer were identified and listed in the Results Table 1 & 2, along with a discussion of the findings and selected maps.



TRANSPORTATION PROJECTS

LABEL	YEAR	NAME
01	2019	Redfield St
02	2019	Redfield St
03	2019	Cassopolis Road
04	2019	Cassopolis Road
05	2019	Main St
06	2019	Bertrand Rd
07	2019	Redfield Street
08S	2019	US-12
09S	2019	US-31
11S	2020	Lake St
12	2020	Conrad Rd
13	2020	Lake St
14	2020	3rd St
16	2020	M-51
17	2021	Portage Rd

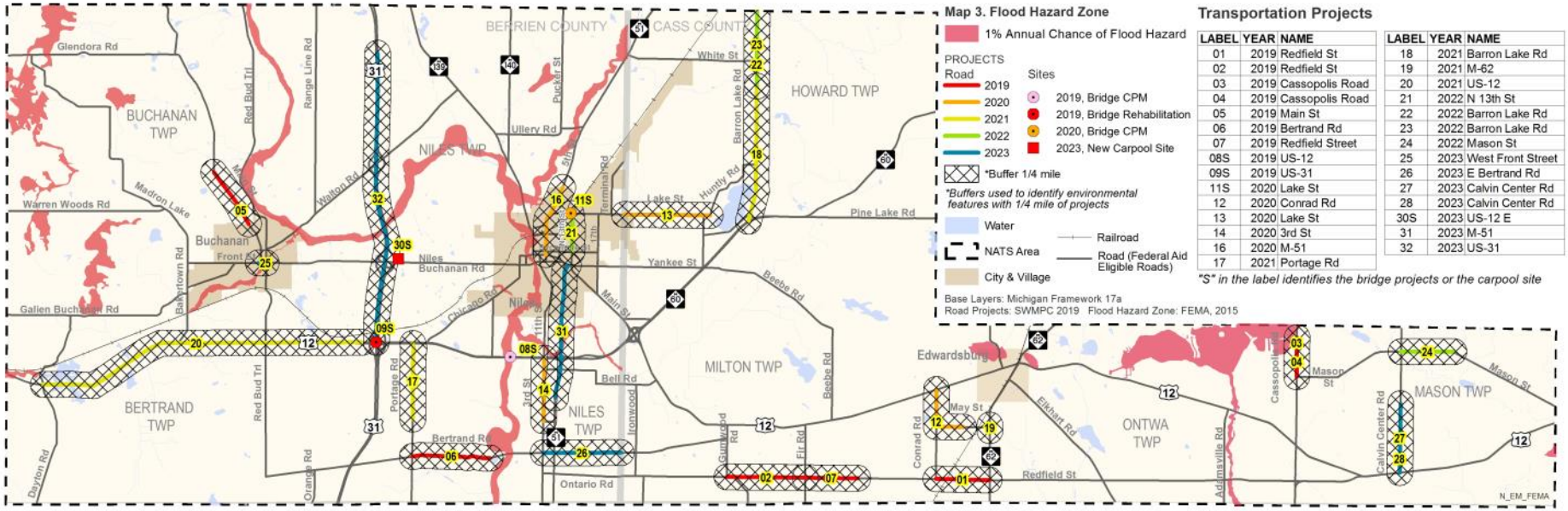
LABEL	YEAR	NAME
18	2021	Barron Lake Rd
19	2021	M-62
20	2021	US-12
21	2022	N 13th St
22	2022	Barron Lake Rd
23	2022	Barron Lake Rd
24	2022	Mason St
25	2023	West Front Street
26	2023	E Bertrand Rd
27	2023	Calvin Center Rd
28	2023	Calvin Center Rd
30S	2023	US-12 E
31	2023	M-51
32	2023	US-31



Transportation Projects

LABEL	YEAR	NAME
01	2019	Redfield St
02	2019	Redfield St
03	2019	Cassopolis Road
04	2019	Cassopolis Road
05	2019	Main St
06	2019	Bertrand Rd
07	2019	Redfield Street
08S	2019	US-12
09S	2019	US-31
11S	2020	Lake St
12	2020	Conrad Rd
13	2020	Lake St
14	2020	3rd St
16	2020	M-51
17	2021	Portage Rd

LABEL	YEAR	NAME
18	2021	Barron Lake Rd
19	2021	M-62
20	2021	US-12
21	2022	N 13th St
22	2022	Barron Lake Rd
23	2022	Barron Lake Rd
24	2022	Mason St
25	2023	West Front Street
26	2023	E Bertrand Rd
27	2023	Calvin Center Rd
28	2023	Calvin Center Rd
30S	2023	US-12 E
31	2023	M-51
32	2023	US-31



Transportation Projects

LABEL	YEAR	NAME
01	2019	Redfield St
02	2019	Redfield St
03	2019	Cassopolis Road
04	2019	Cassopolis Road
05	2019	Main St
06	2019	Bertrand Rd
07	2019	Redfield Street
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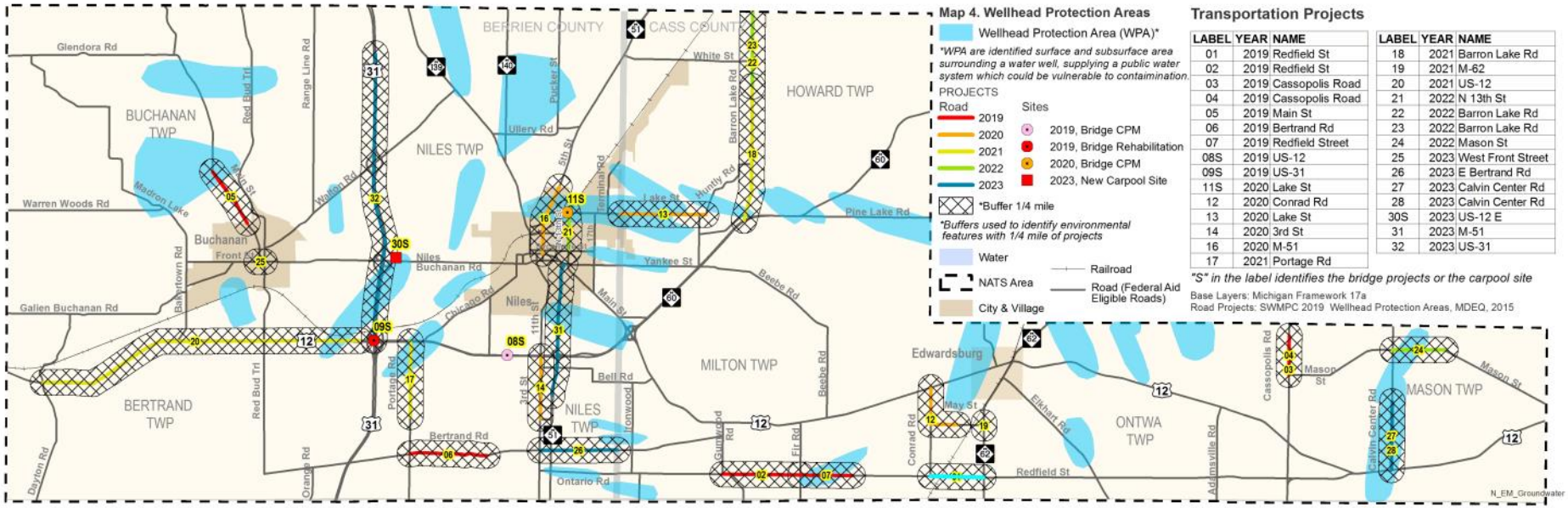
09S	2019	US-31
11S	2020	Lake St
12	2020	Conrad Rd
13	2020	Lake St
14	2020	3rd St
16	2020	M-51
17	2021	Portage Rd

LABEL	YEAR	NAME
18	2021	Barron Lake Rd
19	2021	M-62
20	2021	US-12
21	2022	N 13th St
22	2022	Barron Lake Rd
23	2022	Barron Lake Rd
24	2022	Mason St
25	2023	West Front Street
26	2023	E Bertrand Rd
27	2023	Calvin Center Rd
28	2023	Calvin Center Rd
30S	2023	US-12 E
31	2023	M-51
32	2023	US-31

"S" in the label identifies the bridge projects or the carpool site



Transportation Projects

LABEL	YEAR	NAME
01	2019	Redfield St
02	2019	Redfield St
03	2019	Cassopolis Road
04	2019	Cassopolis Road
05	2019	Main St
06	2019	Bertrand Rd
07	2019	Redfield Street
08S	2019	US-12
09S	2019	US-31
11S	2020	Lake St
12	2020	Conrad Rd
13	2020	Lake St
14	2020	3rd St
16	2020	M-51
17	2021	Portage Rd

LABEL	YEAR	NAME
18	2021	Barron Lake Rd
19	2021	M-62
20	2021	US-12
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22	2022	Barron Lake Rd
23	2022	Barron Lake Rd
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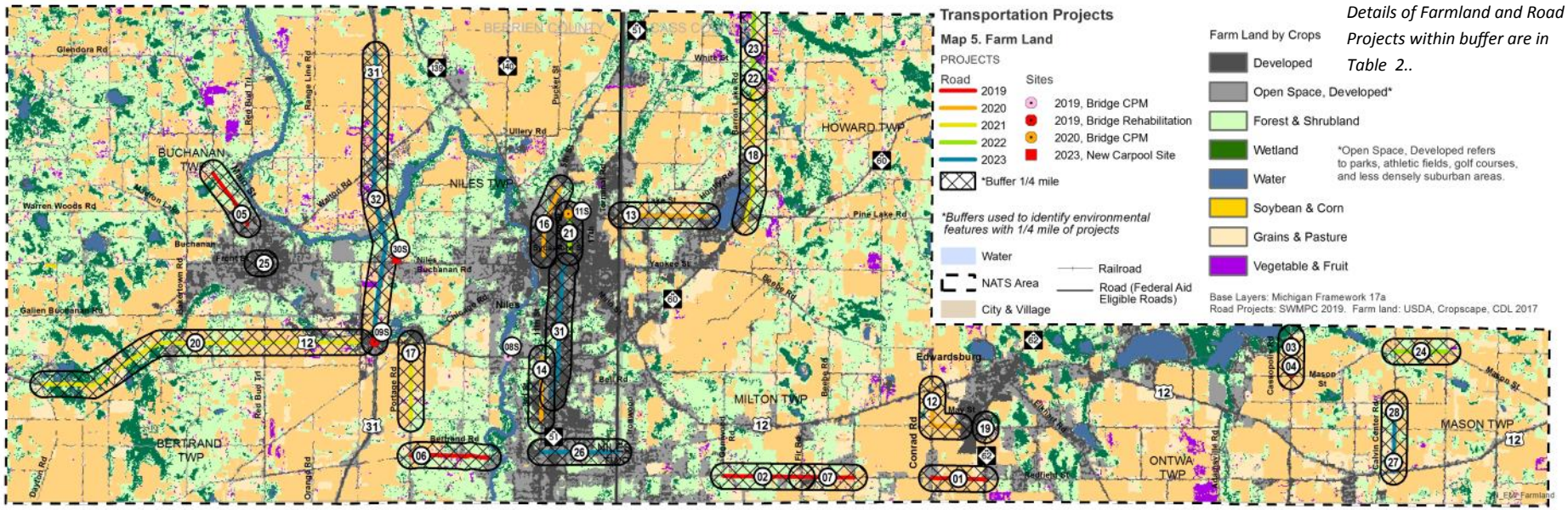
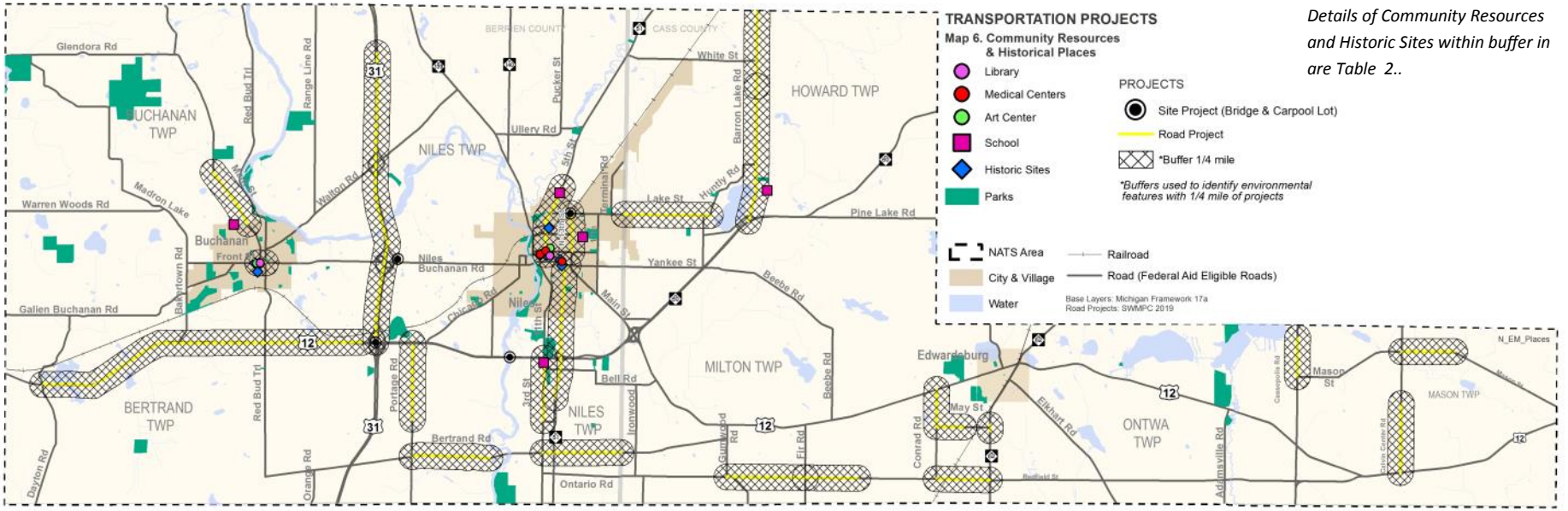
27	2023	Calvin Center Rd
28	2023	Calvin Center Rd
30S	2023	US-12 E
31	2023	M-51
32	2023	US-31

"S" in the label identifies the bridge projects or the carpool site



Details of Farmland and Road Projects within buffer are in Table 2..



Details of Community Resources and Historic Sites within buffer in are Table 2..

TABLE 1. **Projects - Roads, Bridges and Carpool Lot**

MAP LABEL	YEAR	NAME	CLASS	AGENCY
01	D	Redfield St	Preventive Maintenance	Cass County
02	2019	Redfield St	Preventive Maintenance	Cass County
03	2019	Cassopolis Road	Rehabilitation	Cass County
04	2019	Cassopolis Road	Rehabilitation	Cass County
05	2019	Main St	Rehabilitation	Berrien County
06	2019	Bertrand Rd	Rehabilitation	Berrien County
07	2019	Redfield Street	Traffic Safety	Cass County
08S	2019	US-12	Preventive Maintenance—Bridge	MDOT
09S	2019	US-31	Rehabilitation—Bridge	MDOT
11S	2020	Lake St	Preventive Maintenance—Bridge	Niles
12	2020	Conrad Rd	Preventive Maintenance	Cass County
13	2020	Lake St	Rehabilitation	Cass County
14	2020	3rd St	Rehabilitation	Berrien County
16	2020	M-51	Preventive Maintenance	MDOT
17	2021	Portage Rd	Preventive Maintenance	Berrien County
18	2021	Barron Lake Rd	Preventive Maintenance	Cass County
19	2021	M-62	Reconstruction	MDOT
20	2021	US-12	Rehabilitation	MDOT
21	2022	N 13th St	Preventive Maintenance	Niles
22	2022	Barron Lake Rd	Preventive Maintenance	Cass County
23	2022	Barron Lake Rd	Preventive Maintenance	Cass County
24	2022	Mason St	Rehabilitation	Cass County
25	2023	West Front Street	Reconstruction	Buchanan
26	2023	E Bertrand Rd	Preventive Maintenance	Berrien County
27	2023	Calvin Center Rd	Preventive Maintenance	Cass County
28	2023	Calvin Center Rd	Preventive Maintenance	Cass County
30S	2023	US-12 E	New Carpool Lot	MDOT
31	2023	M-51	Reconstruction	MDOT
32	2023	US-31	Rehabilitation	MDOT

TABLE 2. **RESULTS – Road Projects**

MAP LABEL #	LOCATION	TYPE	YEAR	AGENCY	COMMUNITY RESOURCES	FARM LAND	FLOOD RISK	GROUND WATER	HISTORICAL SITES	SURFACE WATER	WETLANDS
1	Redfield St	Perventive Maintanence	2019	Cass Cnty		X					
2	Redfield St	Perventive Maintanence	2019	Cass Cnty		X		X			X
3	Cassopolis Road	Rehabilitation	2019	Cass Cnty		X	X				X
4	Cassopolis Road	Rehabilitation	2019	Cass Cnty		X	X				X
5	Main St	Rehabilitation	2019	Berrien Cnty	X	X		X		X	X
6	Bertrand Rd	Rehabilitation	2019	Berrien Cnty		X	X			X	X
7	Redfield Street	Traffic Safety	2019	Cass Cnty		X		X			X
12	Conrad Rd	Perventive Maintanence	2020	Cass Cnty		X				X	X
13	Lake St	Rehabilitation	2020	Cass Cnty		X		X		X	X
14	3rd St	Rehabilitation	2020	Berrien Cnty	X		X			X	
16	M-51	Perventive Maintanence	2020	MDOT	X		X	X	X		X
17	Portage Rd	Perventive Maintanence	2021	Berrien Cnty		X		X		X	X
18	Barron Lake Rd	Perventive Maintanence	2021	Cass Cnty	X	X		X		X	X
19	M-62	Reconstruction	2021	MDOT		X					X
20	US-12	Rehabilitation	2021	MDOT		X	X	X		X	X
21	N 13th St	Perventive Maintanence	2022	Niles	X			X			
22	Barron Lake Rd	Perventive Maintanence	2022	Cass Cnty		X					X
23	Barron Lake Rd	Perventive Maintanence	2022	Cass Cnty		X					X
24	Mason St	Rehabilitation	2022	Cass Cnty		X		X		X	X
25	West Front Street	Reconstruction	2023	Buchanan	X		X		X	X	X
26	E Bertrand Rd	Perventive Maintanence	2023	Berrien Cnty	X			X			
27	Calvin Center Rd	Perventive Maintanence	2023	Cass Cnty		X		X			X
28	Calvin Center Rd	Perventive Maintanence	2023	Cass Cnty		X		X			X
31	M-51	Reconstruction	2023	MDOT	X		X	X	X	X	X
32	US-31	Rehabilitation	2023	MDOT		X	X	X		X	X

Environmental Review Results and Discussion

The goal of the environmental review process is to eliminate or minimize environmental impacts from the planned projects in the MPO's transportation plan. This applies primarily to the "improve and expand" type projects. Though there are no improve and expand projects listed in the plan, there still will be a need to adhere to overall sound guidelines for planning, design, construction and maintenance of transportation projects. However, addressing this issue in the transportation plan is not intended to be project specific. The owners of any future project are still required to meet all of the necessary requirements of the National Environmental Policy Act (NEPA) process.

Project impacts on environmentally sensitive resources analyzed the likelihood of possible impacts from planned road projects, using Geographic Information Systems (GIS), projects were mapped and buffered, representing a likely area of influence. Next, the specified project buffers were intersected with environmentally sensitive resources. Where a project buffer and an environmentally sensitive resource intersect, impacts are considered possible and are listed in the Results Table 1 & 2, followed by selected maps. It should be noted that no additional analysis of possible impacts was conducted. Simply because a project buffer intersects a wetland, for example, does not mean the wetland would be impacted. Nor does the absence of intersection mean the wetland is definitely not impacted. This screening analysis is simply designed to focus attention on possible areas of concern that should be evaluated in more detail at the project level.

SUMMARY OF RESULTS – Bridges and Car Pool Lot (All projects shown in Map 1)

FEATURES	RESULTS - Sites that fall within 250 ft. Buffer Zone
MAP 2. Surface Water	Bridge work on US-12 is on the St Joseph River
MAP 2. Wetland	None
MAP 3. Flood Risk	Bridge work on US-12 is on the St Joseph River
MAP 4. Groundwater	Lake Street and US-12 are in the Wellhead Protection Areas
MAP 5. Farmland	None
MAP 6. Community Resources	None
MAP 6. Historical Sites	None

There were very few of the site projects that are within the 250 foot buffer zone of an environmental feature. None of the projects were found to be in near wetland, farmland, community resources, or historic sites. Site projects in the buffer zone can be see in Map 2, 3, and 4. It should be noted that the 250 foot buffer around the sites are not seen because of the scale of maps.

SUMMARY OF RESULTS – Road Projects

FEATURES	RESULTS - FEATURES WITHIN BUFFER ZONE
MAP 2. Surface Water	Approximately half of the projects are within the buffer zone of lakes, rivers, drains and streams. 1 project (US-31) crosses the St. Joseph River while the project on Bertrand Road, the St Joseph River is within the buffer. Baron Lake Road project is near Barron Lake and the west end of the project on US-12 is near Dayton Lake.
MAP 2. Wetland	29 of the 32 project are near wetlands although some of these wetlands are very small. Very large wetlands are near the projects: US-12, Main Street and Cassopolis Road.
MAP 3. Flood Risk	9 projects are within the high risk flood zone.
MAP 4. Groundwater	Approximately half of the road projects coincide in Wellhead Protection Areas.
MAP 5. Farmland	6 of the 32 projects are in agricultural areas.
MAP 6. Community Resources	The projects in the cities of Niles and Buchanan have many community resources within the buffer including libraries and parks.
MAP 6. Historical Sites	Projects in the cities of Niles and Buchanan are within the buffer zone for historical district.

Looking at the road projects overall, the environmental features that are within the buffered zone of the road projects are the water infrastructure; lakes, rivers, streams and wetlands. This is linked to the number of projects crossing or within areas that are at high risk of flooding which are low areas relative to the landscape. Any of the wetlands around a project area need special consideration through sound project management for their importance in providing flood water storage, sediment retention and wildlife habitat. See full results of the GIS analyses in Table X along with the relevant maps.

GUIDELINES: Review of the Threatened and Endangered Species Act

Federal listing as threatened or endangered by U.S. Fish and Wildlife Service

The species listed below as federal threatened or endangered for Berrien County are compiled from Information for Planning and Consulting (IPAC).

Species	Status	Habitat
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.
Northern Long-eared Bat (*Myotis septentrionalis*)	**Threatened**	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during spring and summer.
Copper belly Water Snake (*Nerodia erythrogaster neglecta*)	**Threatened**	Lives in shallow wetlands along edges of large wetland complexes also wooded and permanently wet areas such as oxbows, sloughs, brushy ditches and floodplain woods.
Eastern Massasauga (*Sistrurus catenatus*)	**Threatened**	Hibernates below frost line in small burrows, tree roots or rock crevasses - Close proximity and in a variety of wetlands
Mitcherll's Satyr Butterfly (*Neonympha mitchellii mitchellii*)	**Endangered**	Fens; wetlands characterized by calcareous soils which are fed by carbonate-rich water from seeps and springs
Eastern Prairie Fringed Orchid (*Platanthera leucophae*)	**Threatened**	Found in a wide variety of habitats, from mesic praires to wetlands such as sedge meadows, marsh edges, even bogs.

Development of naturalized areas has the potential to impact threatened and endangered species. Under Part 365 of Public Act 451 people are not allowed to take or harm any endangered or threatened fish, plants, or wildlife. Rules that apply are administered by Michigan Department of Natural Resources: Michigan: Part 365 of the Natural Resources and Environmental Protection Act, Act 451 of the Michigan Public Acts of 1994 and the U.S. Fish & Wildlife Service Endangered Species Act of 1973.

Data sources are not readily available for threatened species, endangered species, or migratory birds. However, it is the recognition of habitat that is of importance. Cass and Berrien County in NATS are home to many unique natural communities. NATS has 20 unique natural communities identified by the Michigan Natural Features Inventory (MNFI) who maintains a database of occurrences of exemplary natural communities, rare plants, and rare animals found in Michigan. By definition, a unique natural community, does not fall under state and federal regulations, however many of these natural communities are wetlands that are protected by regulations.

GUIDELINES: Review of the Threatened and Endangered Species Act

TOOLS: "Local Agency Threatened and Endangered Species Review Process, October 2017 (DEADLINK)"

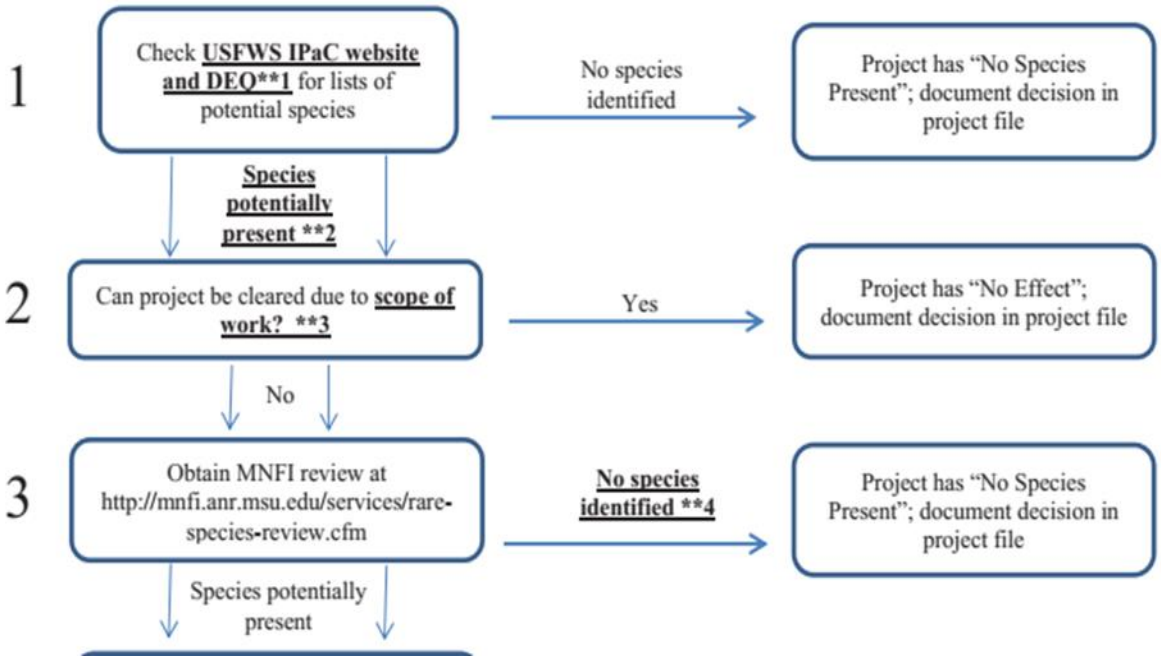
To navigate the process of review for threatened or endangered species the Michigan Department of Transportation (MDOT) have prepared guidelines for transportation agencies.

WHAT'S IN THE REPORT?:

- ⇒ Identify threatened and endangered species in your area through an online search
- ⇒ Guidelines for tree removal and bridge work in bat habitat
- ⇒ Fact sheet about the Eastern Mississauga Rattlesnake that must be read by contractors
- ⇒ Guidelines for "activity specific" best management practices
- ⇒ List of exempt work types that will not need further investigation

As an example, below are the first 3 steps (of a 13 step process) from the report

MUST-READ



Local agencies must follow this process for all projects that utilize federal or state funding

https://www.michigan.gov/documents/mdot/Local_Agency_Threatened_and_Endangered_Species_Review_Process_011818_611752_7.pdf

Overall Guidelines for Planning, Design, Construction and Maintenance of Transportation Projects

Source: Integrating Environmental Issues in the Transportation Planning Process: Guidelines for Road and Transit Agencies, January 2007. SEMCOG

Regardless of the type of project or the resources that may be impacted, the following guidelines should be considered during the planning, design, construction, and maintenance of transportation projects. They represent good planning practice and will help ensure a blending of sound construction techniques with desired environmental protection goals.

Planning and Design Guidelines

Employ context sensitive solutions (CSS) principles from the earliest point possible in project development. CSS is an approach to transportation design that considers the total context within which a transportation improvement will exist. It is a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. Essential to CSS is involvement of the public, community officials, and others affected by the project early and often.

Identify the area of potential impact related to the transportation project, including the immediate project area, anticipated borrow/fill areas, haul roads, prep sites, and other contractor areas, as well as other related project development areas.

Conduct an inventory to determine if any environmentally sensitive resources could be impacted by the project. (Note: Data conducive to the regional analysis defined in this report were not available for endangered/threatened species, archeological sites, and contaminated sites. However, additional information on how to obtain these data can be found under the “More Information” section below.)

Determine if a County Hazard Mitigation Plan exists and if impacted resources are addressed in the plan; if so, coordinate with hazard mitigation planners and remain consistent with the plan. (A County Hazard Mitigation Plan is required for a county to be eligible for federal Hazard Mitigation Grant funds. The Michigan State Police Management and Homeland Security Division is working to establish a plan in every Michigan county. The plans are designed to protect communities from hazards and to plan to reduce future hazards, including to the natural environment.)

Conduct a pre-construction meeting with local community officials, contractors, and subcontractors to discuss environmental protection. Communicate agreed-upon preservation goals to everyone working on the project. Discuss with the local community any special requirements (e.g., ordinances, site plan review).

If possible, avoid impacts to environmental resources by limiting the project scope or redesigning the project (e.g., alignment, design speed, retaining walls, cross-section narrowing, etc.).

Where impacts cannot be avoided, mitigate them as much as possible. Where required, coordinate the evaluation of possible impacts, exploration of alternatives, and development of mitigation strategies with appropriate federal, state, and local authorities.

Integrate storm water management into the design of the site. If appropriate, utilize low-impact development practices that infiltrate storm water into the ground (e.g., swales, rain gardens, native plantings).

Construction and Maintenance Guidelines (Part 1)

Insert special requirements addressing sensitivity of environmental resources into plans, specifications, and estimates provided to construction contractors. Note the kinds of activities that are not allowed in sensitive areas (e.g., stockpiling, clearing, construction equipment, etc.)

Confine construction and staging areas to the smallest necessary and clearly mark area boundaries. Confine all construction activity and storage of materials to designated areas.

Use the least obtrusive construction techniques and materials.

Install construction flagging or fencing around environmental resources to prevent encroachment.

Minimize and, where possible, avoid site disturbance. As appropriate:

- Protect existing vegetation and sensitive habitat;
- Implement erosion and sediment control;
- Protect water quality;
- Protect cultural resources;
- Minimize noise and vibrations; and
- Provide for solid waste disposal and worksite sanitation.

Sequence construction activities to minimize land disturbance at all times, but especially during the rainy or winter season for natural resource protection and during the high-use season for resources open to the public.

When utilizing heavy equipment, pay close attention to the potential of uncovering archeological remains.

Before site disturbance occurs, implement erosion control best management practices to capture sediments and control runoff.

- Minimize the extent and duration of exposed bare ground to prevent erosion;
- Establish permanent vegetative cover immediately after grading is complete.
- Do not stockpile materials within sensitive areas.
- Employ erosion control techniques.
- Prevent tracking of sediment onto paved surfaces.

Construction and Maintenance Guidelines (part 2)

Incorporate storm water management into the construction phase.

- Prevent the direct runoff of water containing sediment into waterways. All runoff from the work area should drain through sedimentation control devices prior to entering a water body.
- During and after construction activities, sweep the streets to reduce sediment entering the storm drainage system.
- Block or add best management practices to storm drains in areas where construction debris, sediment, or runoff could pollute waterways.

Do not dispose of spoil material in or near natural or cultural resources.

Properly handle, store, and dispose of hazardous materials (e.g., paint, solvents, epoxy) and utilize less hazardous materials when possible. Implement spill control and clean up practices for leaks and spills of fuel, oil, or hazardous materials. Utilize dry cleanup methods (e.g., absorbents) if possible. Never allow a spill to enter the storm drain system or waterways.

Keep equipment in good working condition and free of leaks. Avoid equipment maintenance or fueling near sensitive areas. If mobile fueling is required, keep a spill kit on the fueling truck.

Avoid hosing down construction equipment at the site, unless the water is contained and does not get into the storm drain system or waterways.

Identify and implement salt management techniques to reduce the impacts of salt on area waterways.

Utilize integrated pest management techniques if using pesticides during maintenance operations.

Conduct on-site monitoring during and immediately after construction to ensure environmental resources are protected as planned.

Source: Integrating Environmental Issues in the Transportation Planning Process: Guidelines for Road and Transit Agencies, January 2007. SEMCOG

Sources

AASHTO Center for Environmental Excellence. Environmental Stewardship Practices, Procedures, and Policies for Highway Construction and Maintenance. www.environment.transportation.org/environmental_issues/construct_maint_prac/compendium/manual/.

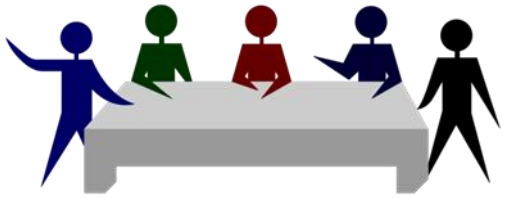
Michigan Department of Natural Resources Endangered Species Assessment

Michigan Office of the State Archeologist: Michigan Historical Center, Department of History, Arts and Libraries

Michigan Department of Environmental Quality, Remediation and Redevelopment Division

Environmental Consultation

As part of the guidelines directed in CFR 450.324(f)(10), the MPO must develop a discussion in consultation with applicable federal, state, and tribal land management, wildlife, and regulatory agencies. This process is meant to improve the depth of the analyses, by including professionals in varying disciplines to be considered in the project development, also to consider the needs of consulted agencies and to eliminate or minimize conflicts with other agencies' programs.



A list of contacts was compiled to include local, regional, state and federal organizations that have expertise in the environmental issues and regulations. Agencies were contacted via email using the following process:

- A letter explaining the transportation planning consultation and their role in the process
- A draft of the 2045 LRP which includes maps of proposed projects on how they can provide their input

AGENCY NAME	AREA OF EXPERTISE
Abonmarche	Environmental
Andrews University- Architecture Program	Landscape Design
Cass County Conservation District	Conservation
Cass County Drain Commissioners	Environmental
Cass County Parks Department	Conservation
Cass County Road Commission	Road Design
City of Buchanan	Road Design
City of Niles	Aviation/Road Design
Department of the Interior- Fish and Wild-life Service	Environmental-Federal
Friends of the St. Joseph River	Conservation
Lakeland Hospital	Health
MDOT Air Quality	Air Quality-State

AGENCY NAME	AREA OF EXPERTISE
MDOT Non-Motorized Transportation	State Transportation
Michigan Department of Agriculture & Rural Development (MDARD)	Agriculture-State
Michigan Department of Environmental Quality (MDEQ)	Environmental-State
Michigan Department of Natural Resources	Environmental-State
Niles Historical Center	Historic Preservation
	Tribal Planning
Southwest Michigan Land Conservancy	Conservation
State Historic Preservation Office	Historical
Two Rivers Coalition	Conservation
Van Buren/Cass District Health Department	Health
Wightman and Associates	Environmental

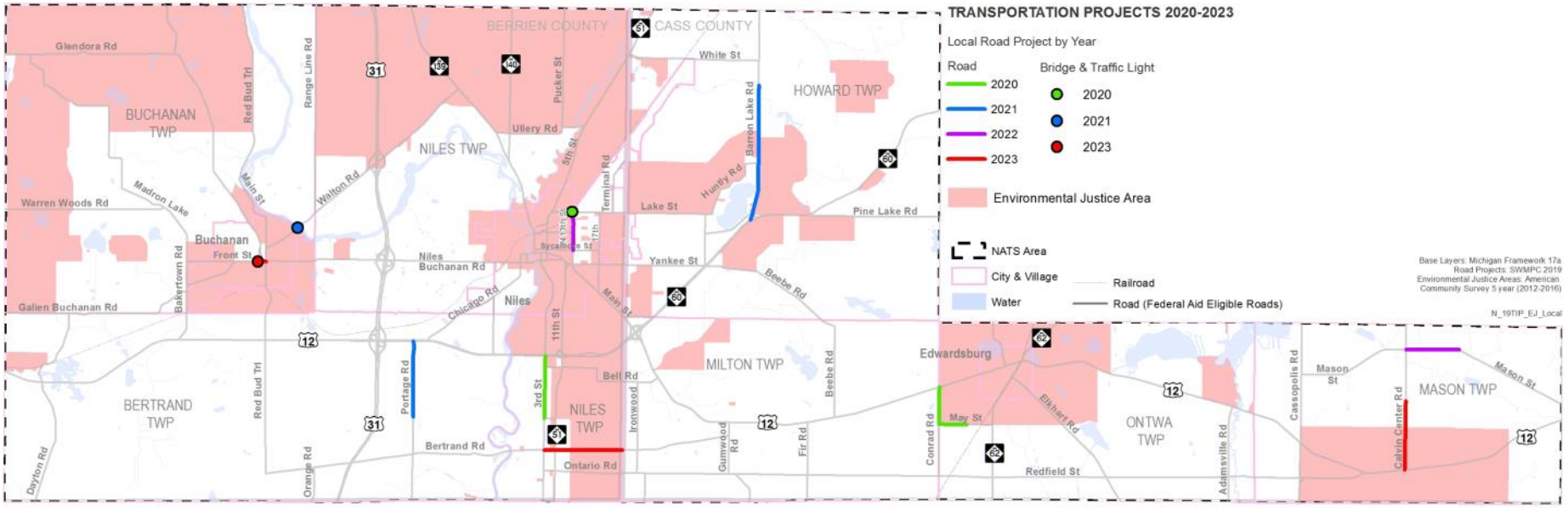
Federal Executive Order 12898 sets out requirements for transportation and Environmental Justice. The intent is to demonstrate that minority and low-income communities will not be disproportionately affected in an adverse manner under the transportation plan. Environmental justice requirements also address public involvement, and these requirements are satisfied under SWMPC's Public Participation Plan and the steps taken for the LRTP public involvement effort.

Environmental Justice is a concept intended to avoid the use of federal funds for projects, programs, or other activities that generate disproportionate or discriminatory adverse impacts on minority or low income populations. This effort is consistent with Title VI of the 1964 Civil Rights Act, and is promoted by the U.S. Department of Transportation (USDOT) as an integral part of the long-range transportation planning process. The environmental justice assessment incorporated in the NATS Long Range Plan update is based on three basic principles, derived from guidance issued by the USDOT:

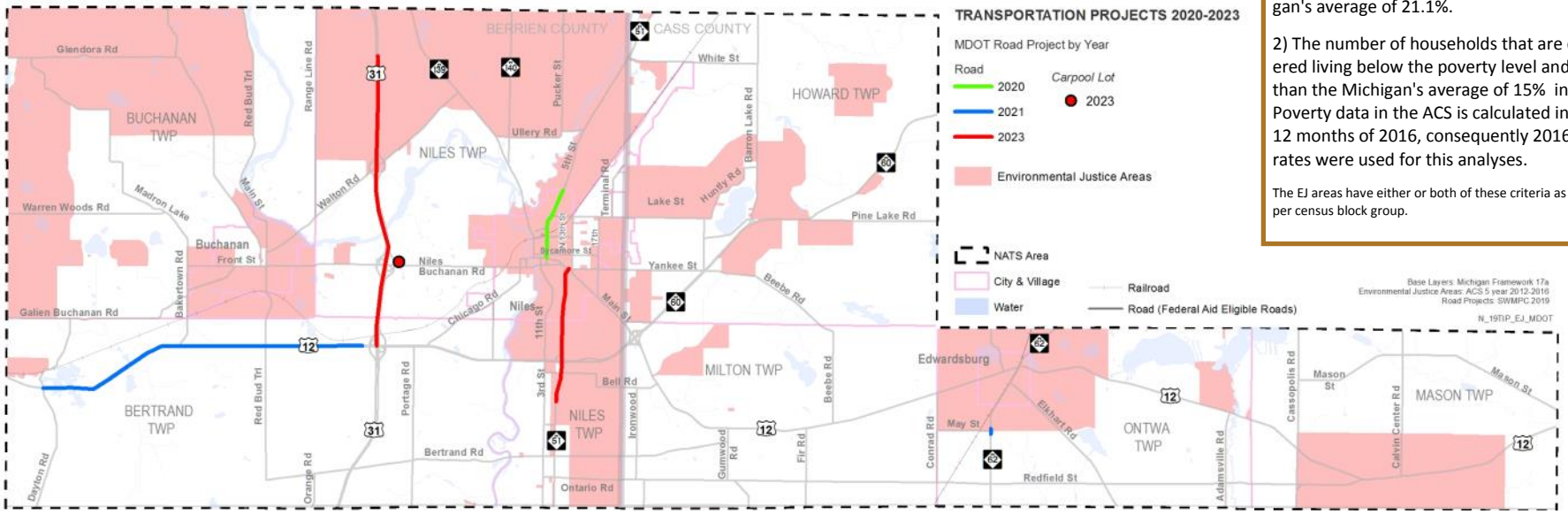
- The planning process should minimize, mitigate, or avoid environmental impacts (including economic, social, and human health impacts) that affect minority and low-income populations with disproportionate severity.
- • The benefits intended to result from the transportation planning process should not be delayed, reduced, or denied to minority and low income populations.
- • Any community potentially affected by outcomes of the transportation planning process should be provided with the opportunity for complete and equitable participation in decision-making. As part of this NATS Long Range Plan , SWMPC staff identified the geographic distribution of low-income and minority populations in order to assess the effects of various transportation investments in the plan.

The maps on the following pages illustrate projects that are either regionally significant or federally funded and are currently programmed to be built in the NATS planning area between now and 2045. See Appendix

Locally Controlled Projects



MDOT Projects



Environmental Justice (EJ) areas are selected by two criteria:

1) The minority population that is above Michigan's average of 21.1%.

2) The number of households that are considered living below the poverty level and is greater than the Michigan's average of 15% in 2016. Poverty data in the ACS is calculated in the past 12 months of 2016, consequently 2016 poverty rates were used for this analyses.

The EJ areas have either or both of these criteria as a percentage per census block group.

SUPPORTING DOCUMENTS

NATS Policy Committee Membership	
Local Government	
Bertrand Township	Butch Payton
Buchanan Township	Lynn Ferris
City of Buchanan	Don Ryman
City of Buchanan Dial-A-Ride	Kim O'Haver
City of Niles	Georgia Boggs
City of Niles	Mary McAfee
City of Niles	Serita Mason
City of Niles Dial-A-Ride Transit	Kelly Getman-Dissette
Howard Township	Bill Kasprzak
Mason Township	Doug Fetters
Milton Township	Susan Flowers
Niles Charter Township	Richard Cooper (Policy Chair)
Ontwa Township	Dawn Bolock
Village of Edwardsburg	Dennis Peak
County	
Berrien County Board of Commissioners	Michael Majerek
Berrien County Board of Commissioners	(vacant)
Berrien County Planning Commission	Eric Lester, M.D.
Berrien County Road Department	(vacant)
Cass County Board of Commissioners	Michael Grice
Cass County Board of Commissioners	Roseann Marchetti
Cass County Road Commission	Sandra Seanor
Regional	
Four Flags Area Chamber of Commerce	(vacant)
Four Flags Area Chamber of Commerce	(vacant)
Pokagon Band of Potawatomi Indians	(vacant)
State	
MDOT - Bureau of Transportation Planning	Jim Sturdevant
MDOT - Southwest Region	Brian Sanada
MDOT - Transportation Service Center	Jonathon Smith
Non-Voting	
Federal Highway Administration	Andrea Dewey
Federal Transit Administration	Susan Weber
Michiana Area Council of Governments	(vacant)
Southwest Michigan Planning Commission	Kim Gallagher

NATS Technical Advisory Committee Membership	
Local Government	
Bertrand Township	Butch Payton
Buchanan Township	Lynn Ferris
City of Buchanan	Don Ryman
City of Buchanan Dial-A-Ride	Kim O'Haver
City of Niles Community Development Director	Sanya Vitale
City of Niles Dial-A-Ride Transit	Kelly Getman-Dissette
City of Niles Public Works Director/Airport	Joe Ray
Howard Township	Bill Kasprzak
Mason Township	Doug Fetters
Milton Township	Susan Flowers
Niles Charter Township	Richard Cooper
Ontwa Township	Dawn Bolock
Village of Edwardsburg	Dennis Peak
County	
Berrien County Community Development Dept.	Evan Smith
Berrien County Road Department	Keven Stack
Cass County Planning Commission	(Vacant)
Cass County Road Commission	Joe Bellina (TAC Chair)
Regional	
Four Flags Area Chamber of Commerce	(vacant)
Kinexus	(vacant)
Pokagon Band of Potawatomi Indians	(vacant)
Southwest Michigan Economic Growth Alliance	(vacant)
State	
MDOT - Bureau of Transportation Planning	Jim Sturdevant
MDOT - Southwest Region	Brian Sanada
MDOT - Transportation Service Center	Jonathon Smith
Non-Voting	
Federal Highway Administration	Andrea Dewey
Federal Transit Administration	Susan Weber
MDEQ - Air Quality	Breanna Bukowski
MDOT - Modeling	Jon Roberts
MDOT - Office of Passenger Transportation	Fred Featherly
Michiana Area Council of Governments	(vacant)
Southwest Michigan Planning Commission	Kim Gallagher

PERFORMANCE MEASURES

Specific performance measures *target specific areas for improvement.*
Measurable performance measures *are quantifiable and objective.*
Available performance measures *use data that can be accessed.*
Relevant performance measures *are strongly linked to the objectives they support.*
Timely performance measures *are able to be measured regularly and to be forecasted over the life of the long-range plan.*

Safety Performance Measures					
Performance Measure	Description	Base Data - 2017		State Target 2019	Data Source
		NATS	State		
Number of fatalities.	The number of fatalities due to a vehicular crashes.	9.2	968.0	1,023.2	Michigan Crash Facts
Fatalities per 100 million vehicle miles traveled (VMT).	The rate of serious injuries based on the total miles driven in the area.	1.87	1.01	1.02	Michigan Crash Facts & HPMS
Number of serious injuries.	The number of serious injuries due to a vehicular crash	32.4	5,186.8	5,406.8	Michigan Crash Facts
Serious injuries per 100 million vehicle miles traveled (VMT).	The rate of serious injuries based on the total miles driven in the area.	7.21	5.32	5.41	Michigan Crash Facts & HPMS
Non-motorized fatalities, serious injuries.	The number of pedestrians and bicyclists seriously injured or killed due to a vehicular crash.	2.6	741.8	759.8	Michigan Crash Facts

Reliability Performance Measures

Performance Measure	Description	Base Data - 2017		State Target 2021	Data Source
		SWMPC	State		
Percentage of the person-miles traveled on the Interstate that are reliable.	The percentage of miles traveled by a person on the Interstate that are reliable.	NA	85%	75%	INRIX/ NPMRDS
Percentage of person-miles traveled on the non-Interstate NHS that are reliable.	The percentage of miles traveled by a person on the non-Interstate NHS that are reliable.	94.3%	86.1%	70%	INRIX/ NPMRDS
Truck Travel Time Reliability (TTTR) Index	The sum of maximum TTTR for each reporting segment, divided by total Interstate system miles	1.11	1.38	1.75	INRIX/ NPMRDS

Road and Bridge Condition Performance Measures

Performance Measure	Description	Base Data - 2017		State Target 2021	Data Source
		NATS	State		
Pavement condition of the Interstate System	Percentage of pavement in good condition Percentage of pavement in poor condition	NA NA	56.8% 5.2%	47.8% 10.0%	International Roughness Index
Pavement condition of the non-interstate National Highway System	Percentage of pavement in good condition Percentage of pavement in poor condition	20.4% 53.1%	49.7% 18.6%	43.7% 24.9%	International Roughness Index
National Highway System (NHS) bridge Condition	Percentage of deck area in good condition Percentage of deck area in poor condition	6.7% 0%	32.7%` 9.8%	26.2% 7.0%	National Bridge Inventory

Transit State of Good Repair Performance Measures

Performance Measure	Description	Asset	Base Data - 2019	Target 2019-2020	Data Source
Rolling stock in a state of good repair	Percent of rolling stock transit vehicles that have exceeded useful life	CU – Cutaway Buses –6	43% Exceeds ULB	29% Exceeds ULB	PTMS
Non-Revenue Vehicles in a state of good repair	Percent of non-revenue vehicles that have exceeded useful life	Truck with snow plow	100% Exceeds ULB	100% Exceeds ULB	PTMS
Facilities in a state of good repair	Percent of facilities within an asset class rated 3 or below on the FTA TERM scale.	Administration/ Maintenance Building	1% rated 3.0 on FTA TERM scale.	0 % rated below a 3.0 on FTA TERM Scale	PTMS

Transportation/System Performance Management

According to the FAST Act, a long range transportation plan needs to include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the Performance targets. The information should include progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data. The LRP will provide information on the current and proposed target information adopted by MPO for roads, bridges, and transit. Updates to target data will be posted on the SWMPC website.

The Federal Highway Administration (FHWA) defines Transportation Performance Management (TPM) as a strategic approach that uses system performance information to make investment and policy decisions to achieve national performance goals. In short, TPM is systematically applied to:

- Provide key information to help decision makers understand the consequences of investment decisions across transportation assets or modes;
- Improve communication between decision makers, stakeholders, and the traveling public; and ensures targets and measures are developed in cooperative partnerships and based on data and objective information.

Congress developed, through the Moving Ahead for Progress in the 21st Century (MAP-21) Act and the Fixing America's Surface Transportation (FAST) Act, new rules for states and metropolitan planning organizations (MPOs) to collect data and establish performance targets, to be utilized in transportation planning and programming processes.
Rather than setting its own targets, the NATS MPO has chosen to support the statewide safety, pavement, bridge, system performance, and freight targets set by MDOT , and the transit asset management targets set by the Niles Dial A Ride. The MPO supports those targets by agreeing to plan and program projects so that they contribute toward the accomplishment of the performance measures.

By agreeing to support the state's targets for safety, pavement, bridges, system performance, and freight, and transit asset management targets, the NATS MPO agrees to:

- Work with the Michigan DOT and stakeholders to address areas of concern regarding fatalities and serious injuries, pavement, bridges, system performance, and freight within the metropolitan planning area.
- Work with the Niles Dial A Ride and Buchanan Dial A Ride to address areas of concern regarding transit and transit asset management.
- Coordinate with the Michigan DOT, Niles Dial A Ride, and Buchanan Dial A Ride to include the State and transit performance measures and targets in the Long-Range Transportation Plan.
- Integrate into the metropolitan transportation planning process the goals, objectives, performance measures, and targets described in other Michigan DOT transportation plans and processes.

New federal performance measurement requirements focus on:

⇒ **Safety**
⇒ **Pavement condition**
⇒ **Bridge condition**
⇒ **Travel time reliability & freight**
⇒ **Congestions mitigation & air quality**
⇒ **Public transportation**

- Include a description in the Transportation Improvement Program (TIP) of the anticipated effects of the programming process towards achieving the State safety, pavement, bridges, system performance, freight, and transit asset management targets.

Roads and Highways Reporting Requirements

MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1 of each even numbered year). An exception is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year. MPOs are not required to provide annual reports other than MPO decisions on targets. MPOs are required to report MPO performance targets to MDOT in accordance with the documented procedures. This will result in MPOs reporting MPO safety targets annually to MDOT, and other performance targets as they are established (every two or four years).

Safety Performance

Total Fatalities & Fatalities Rate

How Targets Are Set: MDOT and Office of Highway Safety planning used two different models to forecast the total fatalities for target setting. The fatality models developed by MDOT relied on the relationship between oil prices, the Dow Jones Industrial futures and fatalities. The price of oil and the level and changes in the Dow Jones Industrial futures are closely correlated to the travel demand and traffic crashes. The second model, developed by the University of Michigan Transportation Research Institute (UMTRI), relies on results of a recently completed research report titled *Identification of Factors Contributing to the Decline of Traffic Fatalities in the United States.* This model is based on the correlation between crashes and vehicle miles traveled (VMT), Gross Domestic Product (GDP) per capita, median income, and the unemployment rate among 16-24 year olds. The final forecasted value for fatalities is the average of MDOT and UMTRI forecasted values.

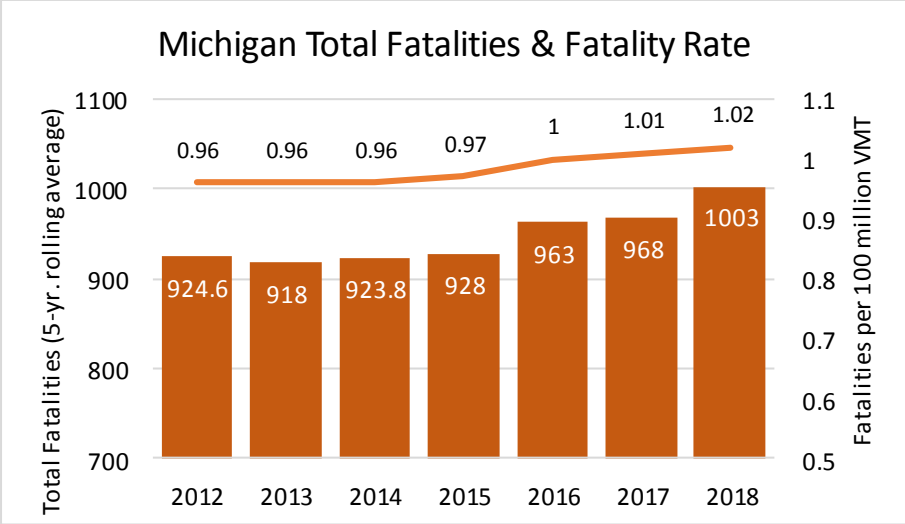


Chart Interpretation: The statewide number of fatalities rose significantly in 2016 and 2017. While part of the rise reflects an increase in the overall amount of travel in the state, the fatality rate shows elevated risk for every mile traveled in 2016 and 2017.

Total Serious Injuries & Serious Injuries Rate

How Targets Are Set: The UMTRI model was the sole model used in forecasting total serious injuries as it exhibited a strong linear relationship of the ratio of serious injuries and fatalities (A/K). The forecasting total for serious injuries is **5,243 in 2017 and 5,031 in 2018.** The target for calendar year 2018 is **5,136** for serious injuries and **5.23** for serious injury rate.

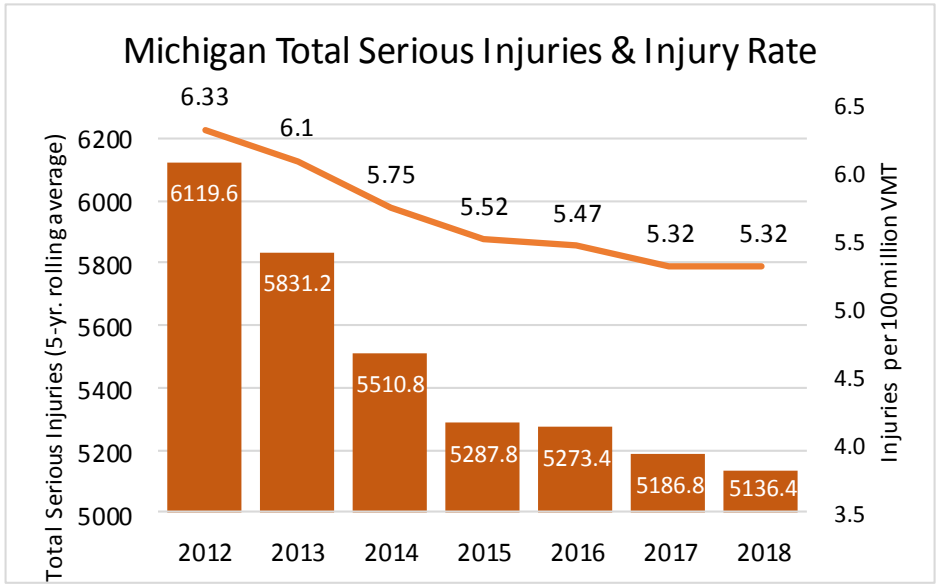


Chart Interpretation: The statewide number of serious injuries has seen a decrease since 2012. While there has been an increase in the overall amount of travel in the state, the serious injury rate is trending down for risk for 2017 (5.32) and 2018 (5.23).

State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state trunkline system, the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's SHSP, to address trunkline locations with correctable fatality and serious injury crashes.

- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the region. Priority is given to those projects, within each region, with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.

- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

MPO Actions

- As shown in the table below, NATS supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2019. This established targets for five performance measures based on five year rolling averages, including:
    - ◊ Number of Serious Injuries
    - ◊ Rate of Serious Injuries per 100 million VMT
    - ◊ Number of Serious Injuries
    - ◊ Rate of Serious injuries per 100 million VMT

Michigan State Safety Targets for Calendar Year 2019

Safety Performance Measure	Baseline Through Calendar Year 2017	Calendar Year 2019 State Safety Target
Fatalities	968.0	1,023.2
Fatality Rate	1.01	1.02
Serious Injuries	5,186.8	5,406.8
Serious Injury Rate	5.32	5.41

- Give points in TIP project section to projects that address safety

- Encourage Act 51 Agencies to implement systemic treatments, such as cable stay barriers and center rumble strips to reduce lane departure crashes

- Use data to develop projects that address safety hazards in particular locations

- Promote safe travel habits for drivers, cyclists, and pedestrians through education and enforcement initiatives and programs

Total Bicycle & Pedestrian Fatality & Serious Injuries

How Targets Were Set: Results from the UMTRI model (the A/K relationship) were also used to generate forecasted 5 year moving average values for bicycle and pedestrian fatalities and serious injuries for 2017 and 2018. The forecasting total for fatalities and serious injuries is **782 in 2017 and 752 in 2018.** The target for calendar year 2019 is **759.8** for fatalities and serious injuries.

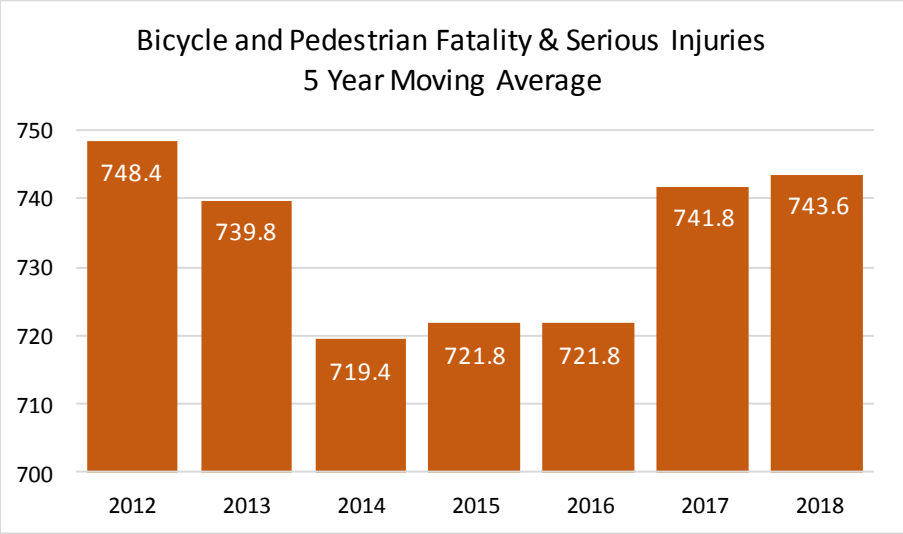


Chart Interpretation: Fatalities and Serious Injuries have seen a general downward trend since 2012 and saw lower numbers from 2014-2016. The increase in fatality and serious injury rate may be due to an overall increase in vehicular traffic (due to a good economy and inexpensive gas prices) as well as an increase in distracted driving. These factors don't appear to be changing in the near future, likely keeping the trends high.

State Actions

- Implement the recommendations of the MDOT Southwest Region Non-Motorized Plan.
- MDOT continues to work with researchers to improve pedestrian and bicycle safety. Examples of current or past work include the development of gateway treatments for pedestrians and Michigan bicycle and pedestrian travel models.
- MDOT supports Western Michigan University's participation in the Roadway Safety Institute as part of the Region 5 University Transportation Center aimed at high risk road users
- MDOT also participates with UMTRI in the development of a risk model for non-motorized users, and with Wayne State University in research to further side-path safety.

MPO Actions

- As shown in the table below NATS supported the adoption of MDOT's State Targets for pedestrian & bicycle Safety Performance Measures for Calendar Year 2019. This established targets for performance measures based on five year rolling averages of the:
  - ◊ Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries

Michigan State Safety Targets for Calendar Year 2019

Safety Performance Measure	Baseline Through Calendar Year 2017	Calendar Year 2019 State Safety Target
Non-motorized Fatalities & Serious Injuries	741.8	759.8

- Consider non-motorized elements during project design.
- Work with the Communities to advocate for the issues and needs of non-motorized users.
- Utilize MDOT road safety audits and engineering countermeasures, and other initiatives, programs or designs that are promoted as part of the Toward Zero Deaths National Strategy.

Transit State of Good Repair

On July 26, 2016, the Federal Transit Administration published the final rule on Transit Asset Management (TAM) (49CFR Part 625). Under the final TAM rule, State DOTs, MPOs, and designated transit providers must collect and report data for four performance measures covering rolling stock, equipment, infrastructure, and facility condition.

The NATS MPO area contains no relevant infrastructure as defined under 49 CFR part 625 (e.g. fixed guideway for light rail mass transit), and therefore the MPO is only required to set targets for equipment, rolling stock, and facilities. Targets are based on Niles Dial A Ride, which is the federally recognized public transit service provider for the Michigan portion of the South Bend urbanized area, and therefor must adopt targets for the performance of their transit assets annually for the ensuring year. MPOs must establish TAM targets specific to the MPO planning area. The MPO then updates its TAM targets every four years.

How Targets are Set

SWMPC in partnership with the Niles Dial A Ride ran reports from the Public Transportation Management System (PTMS, the reporting system for public transit agencies who receive federal funding. Targets were based upon funds available to Niles Dial A Ride and the current condition of revenue vehicles, service vehicles, and facilities. Targets are set on an annual basis each year in January and reported by Niles Dial A Ride to the National Transit Data Base (NTD).

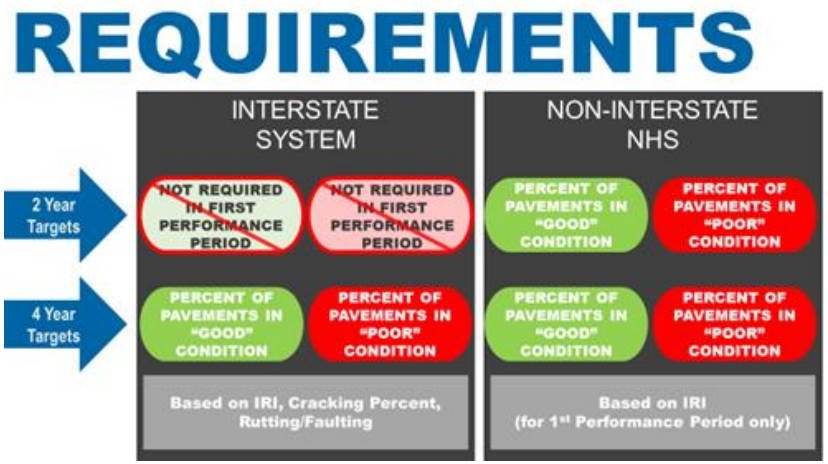
NATS targets were set for 2020 and the four year period will coincide with the four years' of the Transportation Improvement program (TIP). NATS has adopted the following TAM targets:

Category	Performance Measure	Assets	2019 Condition	2020 Target
Revenue Vehicles	Age – Percent of revenue vehicles within a particular asset class that have met or exceeded their useful life benchmark (ULB)	CU – Cutaway Buses –6	43 % exceeds ULB	29 % Exceeds ULB
Non-revenue Vehicles	Age – Percent of non-revenue vehicles that have met or exceeded their useful life benchmark (ULB)	Truck with snow plow	100% Exceeds ULB	100% Exceeds ULB
Facilities	Condition – percent of facilities with a condition rating below 3.0 on the FTA TERM Scale	Administration /Maintenance Building	1% rated 3.0 on FTA TERM scale.	0 % rated below a 3.0 on FTA TERM Scale

Pavement Performance

The Federal Highway Administration (FHWA) published in the Federal Register (82 FR 5886) a final rule establishing performance measures for State Departments of Transportations (DOTs) to use in managing pavement and bridge performance on the National Highway System (NHS). The National Performance Management Measures; Assessing Pavement Condition and Bridge Condition for the National Highway Performance Program Final Rule addresses requirements established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and reflects passage of the Fixing America's Surface Transportation (FAST) Act. The rule became effective May 20, 2017.

The federal rule requires MDOT to establish targets for pavement condition measures Percent Good and Percent Poor on the Interstate and non-Interstate NHS. Targets are required for two and four-year intervals for each measure, with eight targets in total. For the Interstate measures, there will be no two-year targets for the first (2018-2021) performance period per 23 CFR Part 490, therefore, there will only be six targets in the first period.



The rule requires states to measure, monitor and set targets based upon a composite index of pavement condition measures (PCM). The four metrics to be used are International Roughness Index (IRI), Cracking Percent, Rutting, and Faulting as reported by states to the FHWA's Highway Performance Monitoring System (HPMS). All four metrics will be used to determine the condition for Interstate. If all three metrics on a segment are "good," then a pavement is rated in good condition. If two or more metrics are "poor," it is to be considered in poor condition. Only IRI will be used to determine non-interstate condition for the 2018-2024 performance period, after which it will use PCM. Cracking Percent and IRI are to be reported on all pavement types. Rutting is to be reported only on asphalt pavements, and faulting, on jointed concrete pavements. The table below indicates the metric thresholds for condition on each pavement type, as defined by the rule.

Pavement Condition Thresholds

		Metric Value Range		
Metric	**Surface Type**	**Good**	**Fair**	**Poor**
International Roughness Index [IRI] (inches/mile)	Asphalt Pavement, Jointed Concrete Pavement, CRCP[1]	<95	95 - 170	>170
Cracking Percent (% of total area)	Asphalt Pavement	<5%	5 - 20%	>20%
	Jointed Concrete Pavement	<5%	5 - 15%	>15%
	CRCP[1]	<5%	5 - 10%	>10%
Rutting (inches)	Asphalt Pavement	<0.20	0.20 - 0.40	>0.40
Faulting (inches)	Jointed Concrete Pavement	<0.10	0.10 - 0.15	>0.15

Performance Measures: There are four performance measures for assessing pavement condition based on composite analysis of the metrics above:

1) Percent of Interstate pavement in Good Condition
2) Percent of Interstate pavement in Poor Condition
3) Percent of Non-Interstate NHS pavement in Good Condition
4) Percent of Non-Interstate NHS pavement in Poor Condition.

How Targets Were Set

The TPM Pavement Team reviewed historical trends of condition metric data from the last decade (2007-2017) to support future target establishment. FHWA and MDOT use the Highway Performance Monitoring System (HPMS) to report pavement condition. According to the rule, HPMS data must be submitted annually by April 15 for Interstate data, and June 15 for Non-Interstate NHS data. These figures were used as a baseline to establish the statewide targets. With MDOT's current funding levels, trunkline pavement condition is anticipated to decline over the course of the next decade, and therefore, MDOT has chosen conservative targets to reflect this decline. Given the definition of significant progress (equal to or better than the target, or better than the baseline condition), MDOT can achieve significant progress while targets are declining if condition does not fall below the targets.

Conservative Targets

The conservative nature of the approved targets is based on several factors:

1) Forecasts of the trunkline pavement condition based on Remaining Service Life (RSL) is declining.

2) Sample size for the cracking measure will move from 30% to 100% of roads sampled.

3) Issues surrounding the data such as the use of new vendors and the introduction of more advanced data collection may make data collection inconsistent.

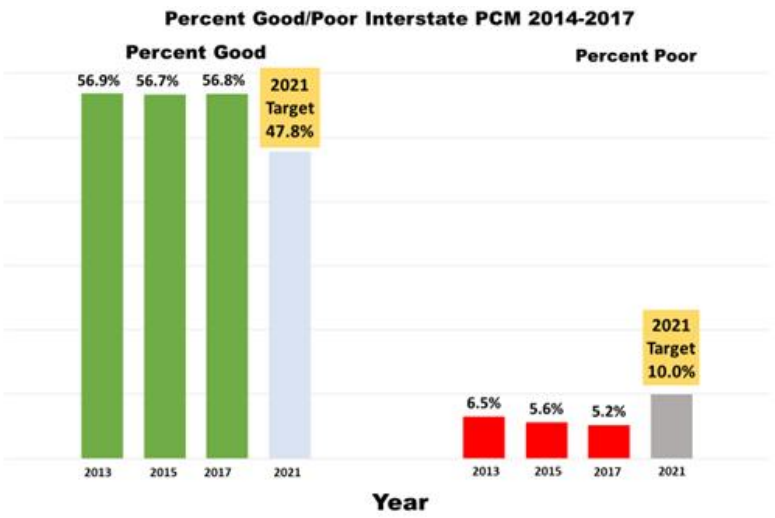
4) A buildup in the Interstate IRI category at the edge of good gives the potential for a significant number of segments to fall into fair.

5) The use of a composite score means that all three measures must be good to be counted as good. If only one measure was to fall the whole segment is no longer considered good.

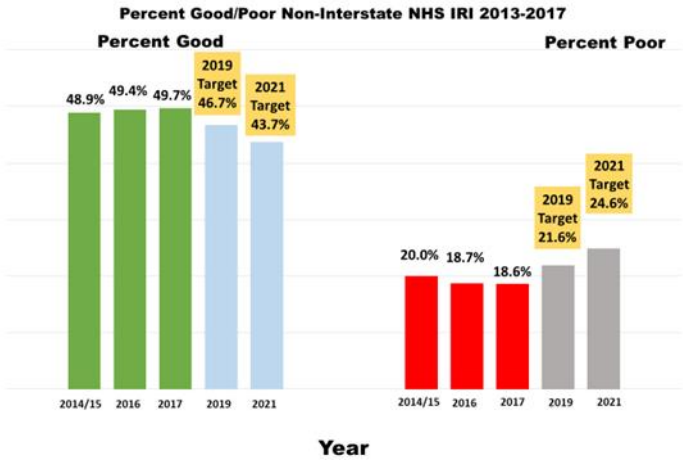
6) At the current time the sample size available for previous years is relatively small for the use of trend analysis.

Other major potential hindrances include climate changes, funding uncertainties, and funding levels.

Interstate Targets



Non-Interstate Targets



State Actions:

Department goals for state trunkline pavement condition are established by the State Transportation Commission (STC) and influence the way MDOT invests in and maintains state-owned transportation infrastructure. To do this, MDOT conducts investment planning. Investment strategies guide the allocation of capital resources to achieve the goals established. Investments are focused where they will most benefit the public, consistent with the direction established.

- Investment strategies are developed utilizing anticipated available funding, life cycle planning, and performance gap analysis, and the results of risk analysis.
- The various strategies are also analyzed and compared to determine how they would impact the overall goals and objectives set by the STC.
- The desired mix of fixes, investment levels, and funding targets are developed for the selected investment strategy and provided in the Highway Call for Projects memo. They form the basis for project selection and prioritization.
- The selected investment strategy is communicated to the public by way of the annual Five-Year Transportation Program. MDOT's investment strategy to achieve the constrained Michigan targets for asset condition are reflected in the STIP program of projects.

MPO Actions

- Encourage all agencies to adopt a road asset management plan
- Use a scoring system to help guide the programing of federal funds in a way that achieves maximum benefit to the region

Reporting Requirements:

Baseline Performance Report: In this report, MDOT must establish 2-year and 4-year targets, describe baseline conditions, urbanized area boundaries and population data, NHS limits, and relationships with other performance expectations. The Baseline Performance Report will include HPMS data collected in 2016 and 2017. States will be able to adjust the 4-year targets in the Mid Performance Progress Report based on data collected in 2018 and 2019. To allow for the phasing in of new reporting requirements for Interstate pavement conditions, states are only required to establish 4-year targets for Interstate pavements in the Baseline Performance Report that is due October 1, 2018. Both 2-year and 4-year targets are required for non-Interstate NHS pavements. **Baseline Performance Report due 10/1/18**.

Mid Performance Progress Report: MDOT must report on 2-year conditions and performance, investment strategy effectiveness and discuss progress in achieving targets. States have the option to adjust 4-year targets at this time. In this report states may include a discussion of target achievement and extenuating circumstances. Because states are not required to establish 2-year targets for Interstate pavements in the Baseline Performance Report, they would use the Mid Performance Progress Report to update baseline condition/performance data and, if necessary, adjust the 4-year targets. **Mid-Performance Period Progress Report due 10/1/20**.

Full Performance Progress Report: This report includes the same content as the Mid Performance Period Progress Report but reports on the 4-year targets. If a state has not made significant progress for achieving the NHPP targets in two consecutive biennial determinations, then the state DOT will include a description of the actions they will undertake to better achieve the NHPP targets in the next performance period. Even though significant progress is assessed for all four pavement performance measures, pavement condition penalties only apply for Interstate pavements. As part of the Full Performance Progress Report, MPOs will report targets and progress toward the achievement of targets. MPOs will report their established targets, performance, progress, and achievement of the targets to their respective state DOT in a manner that is agreed upon by both parties and documented in the Metropolitan Planning Agreement. **Full Performance Period Progress Report due 10/1/20.**

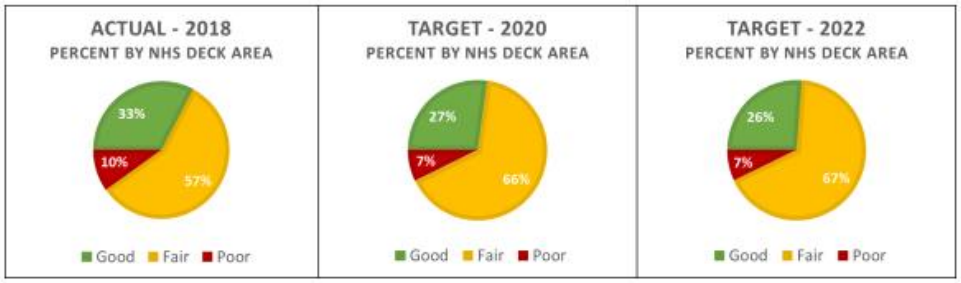
Bridge Condition

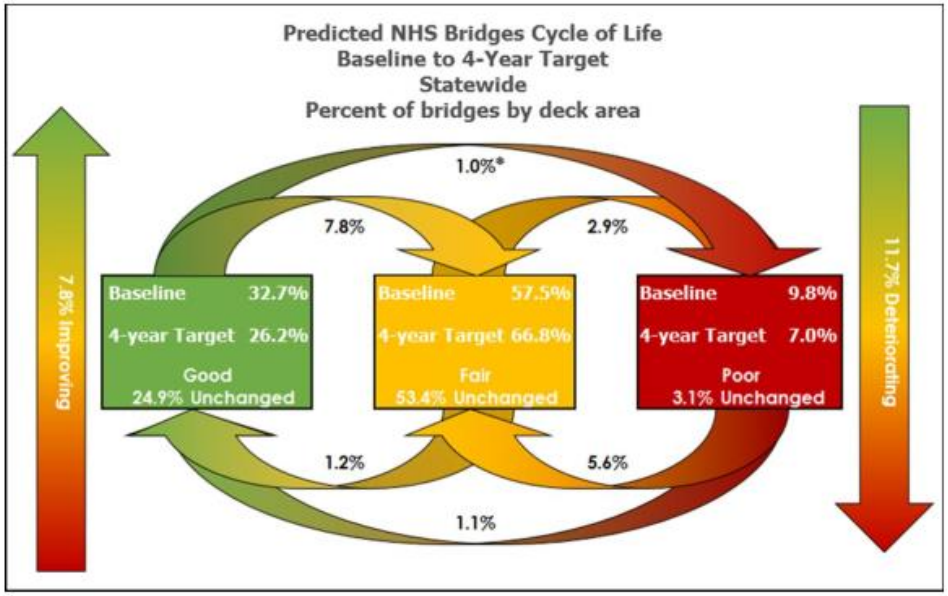
Federal law, outlined in the National Bridge Inspection Standards (NBIS), defines a bridge as a structure carrying traffic with a span greater than 20 feet and requires that all bridges be inspected every two years to monitor and report condition ratings. The FHWA requires that for each applicable bridge, the performance measures for determining condition be based on the minimum values for substructure, superstructure, deck, and culverts. The FHWA further requires counting this condition by the respective deck area of each bridge and express condition totals as a percentage of the total deck area of bridges in a state.

Condition ratings are based on a 0-9 scale and assigned for each culvert, or the deck, superstructure and substructure of each bridge. These ratings are recorded in the National Bridge Inventory (NBI) database. Condition ratings are an important tool for transportation asset management, as they are used to identify preventative maintenance needs, and to determine rehabilitation and replacement projects that require funding

How Targets Were Set

Starting from the condition reported with the NBI submittal on March 14th of 2018, the expected improved condition from projects and reduced condition from deterioration was summarized into expected condition in 2020 and in 2022. The deck areas in good, fair and poor conditions at each year was summarized. To account for uncertainty, the amount of deck area in good condition was conservatively reduced by 1%, and the amount of deck area in poor condition was increased by 1%. A 1% reduction for uncertainties reflects about 30 average size structures that either deteriorated faster than predicted or that did not see as much of an improvement as predicted.





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Reporting Requirements

The Transportation Performance Management (TPM) Bridge Condition Rule designates recurring four-year performance periods for which MDOT is required to two year (midpoint) and four-year (full performance) targets for bridge condition on the National Highway System (NHS). MDOT is required to submit three performance reports to FHWA within the 4-year performance period.

- Baseline Performance Report

-October 1st, 2018

- Mid-Performance Period Progress Report

-October 1st, 2020

- Full Performance Period Progress Report

-October 1st, 2022

The two performance measures for assessing bridge condition are:

- Percent of NHS bridges in Good Condition; and
- Percent of NHS bridges in Poor Condition.

MDOT established bridge targets on May 20, 2018

MDOT Actions:

As the product of ongoing asset management by MDOT and our local agencies, projects are programmed each year to extend life or improve condition throughout the bridge network. MDOT analyzes the candidates for each of the major work types – preventive maintenance, rehabilitation and replacement – and identifies a strategy that is the most cost-effective means to achieve and sustain a state of good repair within financial constraints.

Starting from this initial strategy, the regions then perform more detailed analysis and scopes, coordinating with other programs such as road, and selecting projects through the annual Call for Projects process.

A small number of MDOT bridges are managed centrally within the Big Bridge Program. The Big Bridge Population is a unique subset of MDOT's trunkline bridge population that includes twenty-three large deck bridges (deck area in excess of 100,000 sq ft), thirteen complex bridges, and twelve moveable bridges. These forty-eight bridges are unique not only from an engineering standpoint, but they also represent large capital investments in terms of their initial construction costs and in terms of their long-term preservation and rehabilitation costs. Because of the significant investment these bridges represent, MDOT's goal is to preserve and maintain the Big Bridge inventory in a continuously good or fair condition state. This population is also of unique importance to the Performance Management Target Settings as the 37 structures that carry NHS comprise 14% of the trunkline NHS deck area.

NATS Project Selection Process Background

NATS requires agencies to submit a project application who are requesting Surface Transportation Program (STP). NATS updated the application in 2016 and again in 2018 to meet the MAP-21 and current FAST Act guidance for performance based planning. The updated application is a way to ensure projects are addressing Long Range Transportation goals, are outcome based and meet the federal funding policies.

- Safety
- Preservation
- Multi-Modal Connectivity
- Project Coordination
- Project Readiness
- Reliability
- State of Good Repair

Call for Projects –SWMPC staff initiates calls for projects based on the State of Michigan's Transportation Improvement Program (TIP) and/or Regional Transportation Plan (RTP) schedules. NATS posts the application on the SWMPC website and sends instructions to all NATS member transportation agencies and communities who are eligible for STP funding.

Prioritizing Projects – SWMPC provides a ranking and total project score for each local project to the Project Selection Committee (PCS) for TIP development. A draft of projects and scores is distributed prior to the PSC to facilitate discussion. The project selection committee will recommend projects to the Technical Advisory Committee, who will then recommend projects to the Policy Committee. The project prioritization application/system serves as a guiding document in project selection, and project selection is only made only after debate in an open, public process.

NATS Road Project Prioritization System for the 2020-2023 Transportation Improvement Program.

Adopted on October 23, 2018

System Preservation (21 points possible total)

A. PASER Rating (11 points possible)

11 points if the most recent PASER rating is 3-4

8 points if the most recent PASER rating is 5-6

5 points if the most recent PASER rating is 1-2

B. Extension of Remaining Service Life (RSL) (10 points possible)

10 points if the project extends RSL by 15 years or more (4R project)

6 points if the project extends RSL by 10-14 years (3R Project)

4 points if the project extends RSL by 5 – 9 years

2 points if the project extends RSL by 2-4 years

Safety (10 points total possible)

A. Expected Crash Reduction (7 points possible)

7 points for reduction of 50% or more

6 points for a reduction between 40% and 49.9%

5 points for a reduction between 30% and 39.9%

4 points for a reduction between 20% and 29.9%

2 point for a reduction between 10% and 19.9%

0 points for a reduction between of less than 10%

B. Addressing High Crash Location (3 points possible)

3 points if the number of crashes is 25% higher than MPO median

1 point if the number of crashes are within 25% of MPO median

0 points if the number of crashes is lower than 25% of the MPO median

Non-motorized Transportation (4 points possible total)

A. Pedestrian or Bike Facility (2 points possible)

2 points if the project provides a facility for pedestrians and/or bicyclists

B. Connectivity (2 point possible)

NATS Road Project Prioritization System for the 2020-2023 Transportation Improvement Program.

Safety (7 points total possible)

Expected Crash Reduction - Based on MDOT approved Crash Reduction Factors

(5 points possible)

5 points for reduction of 50% or more

4 points for a reduction between 40% and 49.9%

3 points for a reduction between 30% and 39.9%

2 points for a reduction between 20% and 29.9%

1 point for a reduction between 10% and 19.9%

0 points for a reduction between of less than 10%

Addressing High Crash Location (2 points possible)

Based on the 5 yr. (2013-2017) total crashes per federal aid eligible road segment

2 points if the number of crashes is 20% higher than MPO median (4 crashes or more)

1 point if the number of crashes are within 20% of MPO median (2-3 crashes)

0 points if the number of crashes is lower than 20% of the MPO median (0-1 crashes)

Complete Streets (6 points possible total)

Complete Streets Policy (4 points possible)

4 points if project meets the Complete Streets Policy

Connectivity (2 point possible)

2 points if the pedestrian and bicycle elements of the project connect to existing bicycle and pedestrian facilities or those that can reasonably expect to be completed during 2020-2023.

NATS Road Project Prioritization System for the 2020-2023 Transportation Improvement Program.

Strategic Planning & Investment (10 points possible)

A. Asset Management (3 points possible)

3 points if the project is identified in an approved asset management plan.

B. **Local Planning Document (1 point possible)**

1 point if project is identified in another local planning document such as a master plan or a parks and recreation plan.

C. **Cross Jurisdictional Coordination (1 points possible)**

1 point if the project crosses jurisdictional boundaries

D. Project Continuity (2 points possible)

2 points if project continues resurfacing, reconstruction or Preventative Maintenance on a segment of roadway adjacent to a resurfacing, reconstruction or preventative maintenance project done during the 2017-2020 TIP cycle or through Rural Task Force funding.

E. Additional Local Match (3 points total possible)

3 points if agency is willing to provide 40% or more of the total construction cost in local match. 2 point if agency is willing to provide 30% or more of the total construction cost in local match. An 18.15% minimum local match is required to proceed.

F. Project Readiness (No Points)

If the project requires relocation of utilities, purchase of ROW, or railroad crossing permits, these items must be addressed in the project schedule.

G. Coordination with sewer and water projects (No Points)

Prioritization of fiscal year if the project is coordinated with a planned sewer and/or water improvement in your community

A Grand Total of 50 Points is possible

Consultation

"The Secretary shall encourage each metropolitan planning organization to consult with officials responsible for other types of planning activities that are affected by transportation in the area (including State and local planned growth, economic development, tourism, natural disaster risk reduction, environmental protection, airport operations, and freight movements) or to coordinate its planning process, to the maximum extent practicable, with such planning activities." – 23 USC 134(g)

The Consultation Process is a separate but complimentary process to the general public participation process. The process is meant to ensure that the long-range plan compliments and does not conflict with the other planning efforts undertaken within the NATS planning area. By consulting with agencies during the development of this plan, these groups can compare project lists and maps with other natural 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.

Consultation was done among agencies responsible for the following:

Economic Growth and Development
Environmental Protection & Conservation
Natural Resources
Historical Preservation
Health and Human Services
Intercity Travel (Bus, Train)

The consulted agencies can either be directly responsible for providing services, regulatory agencies or advocacy agencies.

Agencies that were requested for consultation received the following:

- A letter explaining the transportation planning consultation process according to FAST ACT legislation
- A draft of the 2045 Long Range Plan
- An explanation of their critical role in the process and how they can provide input to the plan

Education
Brandywine Schools
Buchanan Schools
Edwardsburg Schools
Lake Michigan College – Niles Campus
Niles Schools

Economic Development
Niles Greater Area Chamber of Commerce
MSHDA
Kinexus
Michigan Economic Development Corporation

Environmental Protection
Fish and Wildlife Service
Michigan Department of Environmental Quality
Berrien County Conservation District
Cass County Conservation District
US Environmental Protection Agency

Health and Human Services
Lakeland Health
Area Agency on Agency
Berrien County Department of Human Services
Cass County Department of Human Services

Historic Preservation
Berrien County Historical Association
Michigan State Historic Preservation Office

Governmental Partners
MACOG
Office of State Senator
79th District State Representative
Pokagon Band of Potawatomi Indians

Natural Resources
Department of Natural Resources
Berrien County Parks
Cass County Parks

SUPPORTING DOCUMENTS—Public Outreach

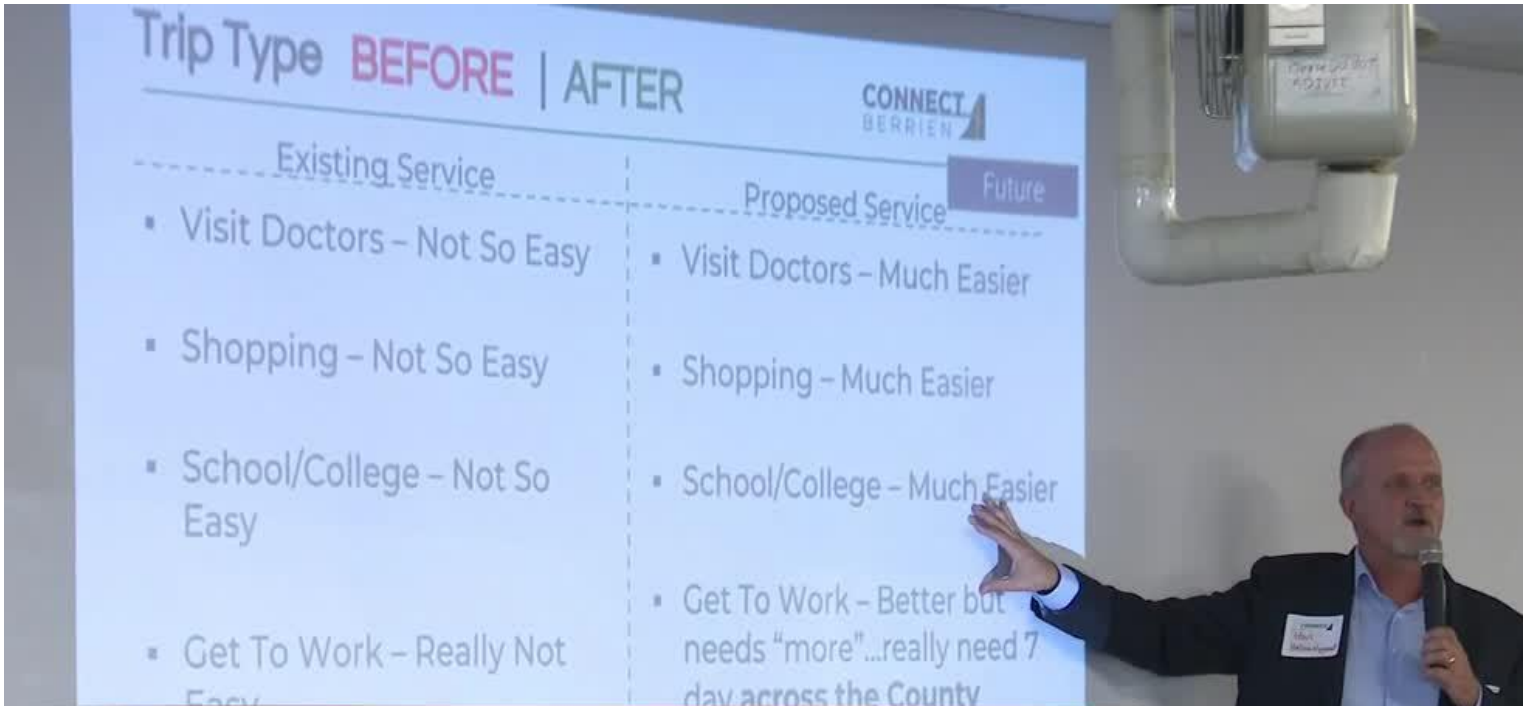
County residents and stakeholders were invited to give input into the Connect Berrien County-wide service plan. The feedback helped to guide the final recommendations. The public input was used to create transit service goals and objectives, and then to form evaluation criteria for selecting the most appropriate type of service.

Outreach included a total of eleven workshops where surveys were distributed.

May 2017: *Three workshops were held conducted with invited stakeholders that included; elected officials, community leaders and human service agency staff. -78 people attended*

June 2017: *Four public meetings were held in Benton Harbor, Niles and New Buffalo –93 people attended*

September 2018: *Four public meetings were held in Benton Harbor, Niles, Bridgeman. –89 people attended*



HELP SHAPE THE FUTURE OF PUBLIC TRANSIT

CONNECT BERRIEN
Berrien County Transit Integration Plan

The Connect Berrien Project Team is seeking your input on the future of public transit in Berrien County.

We will host three community meetings to:

1. Explain what public transit currently looks like in Berrien County
2. Learn more about your needs and concerns
3. Describe future opportunities to get involved in the countywide transit service planning process

LEARN MORE AND PROVIDE YOUR INPUT

Attend a Community Meeting!

Niles
Tuesday May 9
(Two Options)
3pm - 4:30pm
5pm - 6:30pm
Niles Library
620 E. Main Street
Niles, MI 49120

Benton Harbor
Wednesday May 10
5:30pm - 7pm
Southwest Michigan Planning Commission
376 W. Main Street
Benton Harbor, MI 49022

New Buffalo
Thursday May 11
5:30pm - 7pm
New Buffalo Twp. Library
33 N. Thompson Street
New Buffalo, MI 49117

125 people attended.

What is the future of public transit in Berrien County?

CONNECT BERRIEN

COUNTY-WIDE PUBLIC SERVICE/ECONOMIC DEVELOPMENT ISSUES: Today there are four independent public transit providers in Berrien County providing essential services within their service boundaries; however, the coverage and level of the services is inconsistent across the county and many residents and employees do not have public transit options available to them. Communities in Berrien County face serious challenges over the next ten years: meeting the needs of the aging population and tackling poverty, while attracting and retaining young people and supporting growth in the regional economy.

FINDING SOLUTIONS—THE CONNECT BERRIEN PROJECT: Over the last year and a half the Connect Berrien Project Team has been working with Nelson Nygaard on a plan for an improved and more robust countywide transit system that will put Berrien County in a better position to rise to these challenges. The plan was developed through a collaborative process including public outreach meetings, interviews and surveys. The plan is sponsored by the Federal Transit Administration, Michigan Department of Transportation, Lakeland Foundation, Berrien County Manufactures Association, Berrien County, and the Southwest Michigan Planning Commission.

CONNECT BERRIEN VISION PLAN GOALS:

- **ENHANCE** — *Make transit more convenient than it is today*
- **CONNECT** — *Connect people to more places than they can reach today*
- **SIMPLIFY** — *Make transit easier to use than it is today*
- **SUSTAIN** — *Ensure the financial and long-term sustainability of all transit systems*

MAKING THE FUTURE HAPPEN: Future implementation of the recommended service plan will create a transit system in Berrien County which is easier to understand and use, and which better meets the needs of the County. A more seamless experience for planning trips, paying fares, and traveling from place to place will be the biggest benefit. The increased coordination will reduce costs, attract ridership, and be more effective for both users and transit agencies.

More info: connectberrien.org

WE NEED YOUR GUIDANCE & ASSISTANCE: Please attend one of these public forums to learn more about how services outlined in this plan could benefit your community.

BRIDGMAN	NILES	BENTON HARBOR
Tuesday, September 25th	Wednesday, September 26th	Thursday, September 27th
5:30 pm –7:00 pm	3:00 pm – 4:30 pm & 5:00 pm – 6:30 pm	5:30 pm – 7:00 pm
Lake Charter Township Hall	Niles Public Library	Southwest Michigan Planning Commission
3220 W Shawnee Rd Bridgman, MI 49106	620 E. Main Street Niles, MI 49120	376 W. Main Street Benton Harbor, MI 49022

98 people attended

What do you think is currently most effective with public transit in Berrien County?

CONNECT BERRIEN

- ⇒ *No idea*
- ⇒ *Plead ignorance*
- ⇒ *TCATA if you live in the BH area. Berrien Bus in there is a contracted relationship*
- ⇒ *Unknown*
- ⇒ *Have never been involved with bus system in any way.*
- ⇒ *Since all that is available in our area is Berrien Bus, not really able to evaluate*
- ⇒ *I do not feel I am familiar enough with the system to give an informed answer.*
- ⇒ *Providing an option for those in need of service.*
- ⇒ *Some people have public transit access already.*
- ⇒ *Dial-A-Ride*
- ⇒ *Even though there are four separate systems, we work well together and make every effort to get people where they need to go.*
- ⇒ *We have some form of public transit – somewhat effective in the local area of service but so limited it has little value for the dollars spent.*

- ⇒ *The existing fixed routes provided by TCATA.*
- ⇒ *Red & Blue Route – TCATA in Benton Harbor/St. Joseph.*
- ⇒ *Nothing effective*
- ⇒ *Call for a Ride.*
- ⇒ *Nothing – not customer/need focused*
- ⇒ *Per my agency clients, there is not one public transit in Berrien County. Should communicate across city lines if possible. Many agencies trying to meet needs in local communities. Some fixed routes.*
- ⇒ *Dial-A-Ride*
- ⇒ *The few fixed routes seem the most effective. Expanding fixed routes seems reasonable.*
- ⇒ *Public transit get you where you need to be.*
- ⇒ *Fixed route seems to work for some, but not for seniors or disabled.*
- ⇒ *I cannot speak in a knowledgeable way to that question.*
- ⇒ *Fixed route service*
- ⇒ *That it exists*

What concerns or transportation needs should be addressed ?

CONNECT BERRIEN

⇒ Demand vs cost - Is there a need in SW county? What needs are going to be addressed? Senior Needs

⇒ All of them. It seems more education is necessary to illustrate benefits to the common good. (Urban, Rural.)

⇒ I feel there is a sizeable potential ridership in people using transit to get to and from work. Currently it is limited to day shifts only and not weekends. Unrealistic.

⇒ Rural/Summer

⇒ That it benefits every community and is equitable to everyone.

⇒ US 12 Corridor – New Buffalo, Three Oaks, Galien, Buchanan, Niles. Provide buses along US 12, with connecting busses to South Bend and Michigan City.

⇒ That seniors, disabled and financially need residences needs are met. Shopping, jobs and medical trips are available and affordable.

⇒ Time available – Service hours, limited ridership, needs a broader appeal.

⇒ Both look to transit from SW MI to Michigan City and connections to Chicago bound transportation. And look at seasonal events.

⇒ From Niles to other cities. I would like longer hours to work full time and be able to do other stuff with asking friends to help.

⇒ Connecting South County with North County more effectively. Creating greater access to transportation for those most in need, making it user friendly.

⇒ Southern access to Twin Cities.

⇒ Countywide Service that allows greater mobility for the present group of riders and make public transportation more viable for the next group of the public who would ride if it actually got them where they need to go.

⇒ Access to Countywide human/health services. Access to K-12 for school-of-choice and Lake Michigan College students.

⇒ Access to 2nd & 3rd shift jobs countywide.

⇒ Connectivity that is predictable so you can plan your life.

⇒ Connectivity.

⇒ Times, fare, options, wait times, simplicity in navigation (i.e., transfers and connecting)

⇒ Ability for willing, Prepared workers to get to work when they do not possess a driver's license or vehicle.

⇒ How to effectively merge (or at the very least) assist all county transportation to collaborate for clients and community benefit.

⇒ People need easy access to jobs and services (e.g. medical, legal). Connectivity to intercity transit (train, bus, plane). Speed and frequency (long waits or routes or transfers will diminish use).

⇒ Affordable routes that are able to allow travel countywide (no boundary issues).

⇒ Cost of Countywide Service, service routes, times available, etc.

⇒ Travel throughout the county is difficult! Ease of connectivity and affordability are primary concerns.

Legal Notices and Press Inserted Here

Environmental Justice Review

SWMPC staff has undertaken a variety of actions to ensure that the needs of low-income and minority populations are recognized and addressed. The primary method is through involvement with the public, community groups, and other stakeholders. The SWMPC public participation plans lays out goals and strategies for gaining greater input from all groups, including low-income and minority populations. These individuals and groups are invited to participate in meetings and other involvement activities to voice their opinions and offer their input. SWMPC staff also conducted an analysis of the investments in this plan to ensure that EJ concepts were met using the following methodology:

For the purposes of the environmental justice analysis, a couple of terms need to be defined; these are "low income" and "minority".

Low-Income is defined as a household living below the poverty level based on the U.S. Department of Health and Human Services (HHS) poverty guidelines. These guidelines change every year due to inflation and vary with the number of people within each household.

Minority is defined based on US DOT order 5610.2 as any person identifying as the following:

- African American (a person having origins in any of the black racial groups of Africa)
- American Indian and Alaskan Native (A person having origins in any of the original peoples of North America and who maintain cultural identification through tribal affiliation or community recognition)
- Asian Americans (A Person having origins in any of the original peoples of the Far East, South East Asia or the Indian subcontinent)
- Hispanic or Latino (a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race)
- Native Hawaiian or other Pacific Islander (A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other pacific islands)
- Other Minorities (a person having origins from regions not included in any of the above categories, but who does not identify as white)

For the environmental justice analysis SWMPC staff identified areas within the NATS boundaries where the percentage of minority populations and low-income populations are higher than the statewide average, using the following data:

Characteristic	Analysis level	Geographic Level	Data Source	Statewide average
Minority Population	Individual	Census Block	2010 Census	21.1%
Low-Income	Household	Census Block Group	2016 American Community Survey	15%

The NATS area is predominately white in terms of race (88.1% with minorities representing 11.9 % of the population. Further, there are 3501 households below-poverty-level in the NATS area representing 15.9 percent of households.

For the EJ analysis, 15 road and non-motorized projects were evaluated (MDOT & Local); this excludes transit, region wide safety, and pavement marking projects. Of these projects, 13 are with ¼ mile of an identified EJ area.

All of these projects are reconstruction, rehabilitation, maintenance, or non-motorized improvements. These preservation projects will not cause any health or environmental impacts to the surrounding area.

The other component of Environmental Justice is to ensure a fair distribution of projects so that EJ populations are not being denied the benefits that non-EJ populations receive. To do this SWMPC staff compared the total population to the population living in an impact area, defined as ¼ mile around a project. The following table shows the summary of the minority populations and households below poverty in the NATS Area. It also shows the populations of each group located within the impact area of a project. To estimate the population within an impact area the ratio of impact area to total block/block group area was used. If a project's impact area covered half a block group, then 50% of that block group's population is counted as being within an impact area.

The percent of impact area population shows each group as a percent of the entire population that lives within an impact area. For example, there are an estimated 11,655 people living in within ¼ mile of a project. Out of these 9,416 or 80.7% are white. Another way to visualize this is using the percent of the total NATS population living within an impact area. For example of the 49,312 total white population in the NATS area, 9,416 or 19.1% live within an impact area.

For each minority group, the percentage within the impact area is either close to equal or higher than the percentage in the NATS area as a whole. The same is true for low-income population. The 20.8% of low-income (below-poverty-level) households that are within the impact area is slightly higher than the overall percentage of low- income households in the NATS area as a whole (15.9%). Similarly, the percent of minorities and low-income residents living within an impact area shows that higher percentages of minority groups and low-income population are represented within impact areas. (i.e. minorities and low income residents are slightly more likely to live near a project than the white or non low-income population).

	NATS Population	NATS Percent	Estimated Population within Impact Area	Percent of Impact Area Population	Percent of NATS Total Population within Impact Area
Total Population	55,979	100%	11,665	100%	20.8%
White	49312	88.1%	9,416	80.7%	19.1%
Hispanic	1971	3.5%	718	6.2%	36.4%
African American	2699	4.8%	1,045	9.0%	38.7%
American Indian	333	0.6%	76	0.7%	22.8%
Asian	289	0.5%	62	0.5%	21.5%
Hawaiian	16	0.0%	2	0.0%	12.5%
Other Minority	43	0.1%	10	0.1%	24.3%
Two Or More Races	1316	2.4%	336	2.9%	25.5%
Total Minority	**6,667**	**11.9%**	**2,249**	**19.3%**	**33.7%**

	NATS Households	NATS Percent	Estimated Households within Impact Area	Percent of Impact Area Households	Percent of NATS Total Households within Impact Area
Total Households	22052	100%	4,207	100%	19.1%
Households in Poverty	**3501**	**15.9%**	**876**	**20.8%**	**25.0%**

SWMPC staff concluded that transportation system investments in this plan are not avoiding minority or low-income populations and therefore ***projects do not disproportionately burden nor fail to meet the needs of any segment of the population.***

This pages is reserved for public comments on the plan

Process for Amending and Updating the NATS Long Range Transportation Plan

Amendments to the Plan may occur either as part of the comprehensive update (every four years), annual TIP-related update, or at other times as needed. The comprehensive update is a federal mandate and consists of re-examining the basic assumptions behind the Plan and the resulting projects and strategies. Amendments to the Plan requiring a comprehensive update consist of reassessing:

· Land use, demographic, and economic forecasts;

· Projected traffic and travel deficiencies;

· Financial Analyses (Cost/Revenues);

· Regional (Air Quality) Emissions Analyses; and

· Other aspects of the vision and Plan. Amendments to the Plan requiring a comprehensive update would need to be adopted by NATS Technical and Policy Committees and approved by Southwest Michigan Planning Commission Board of Directors, after the opportunity for general public review and comment.

A comprehensive update is normally initiated by staff on a timetable that ensures the continuation of a 20-year horizon for the Plan and that meets the federal update timeframe requirements. On those other rare occasions when a comprehensive or major update might be requested by a road agency due to unforeseen changes to a major project or due to drastic and immediate changes in land uses/demographics/economics, staff would develop a timeline to conduct the update in a timely manner.

The following outlines the anticipated process for Plan amendments:

· Receive a formal request for a Plan amendment;

· Provide a detailed project profile.

· Determine if additional revenues are available to cover the project or modified project;

· Submit justification for the amendment. SWMPC staff would then finalize the project evaluation, review the appropriateness of the proposed amendment, review the financial constraints, conduct the air quality conformity analysis, and make a recommendation for the NATS Policy Committee and SWMPC board action.

This page is reserved for Resolutions approving the LRP.