



Chapter Six:

Intermodal Inventory and Other Issues

Public Transit
Air Transportation
Rail Transportation
Water and Port Transportation
Regional Intermodal Study
Non-Motorized Transportation
Intelligent Transportation Systems (ITS)





Intermodal Inventory

The Bay City Urban Area is currently served by many forms of transportation. This provides accessibility which extends to connections both inside and outside the Metropolitan Area Boundary. The state trunkline highway network includes two freeways and five state highways, the county and municipal arterials and collectors that have been discussed previously in this report. Although the street and highway system is a very high priority with transportation planners, so are the other modes of transportation in the Bay City area. We are truly a multi-modal community as described on the following pages.

Public Transit





Existing Conditions

The Bay Metropolitan Transportation Authority (BMTA), organized under Public Act 196 of 1986, as amended, is the sole publicly owned transportation system operating in Bay County. Its service area is countywide. In fiscal year 2016, BMTA carried 587,000 riders. In addition to BMTA services, four public school districts, a few private carriers and numerous social service agencies provide rides for students and agency clients in the county. BMTA contracts with a private carrier to supplement the passenger capacity for its paratransit, demand response service, as well as provide rides to and from work when the buses are not running (Job Access and Reverse Commute program).

BMTA Services

The Bay Metropolitan Transportation Authority is an independent local authority governed by an eleven member board of directors. Board Members are appointed by the Bay County Board of Commissioners. In FY 2016, the BMTA operated 45 buses and 17 vans in fixed route and demand response service. Nine traditional fixed routes operate in the Bay City area and serve non-urban locations such as Pinconning, Linwood, Kawkawlin, Auburn, and University Center (Delta College and Saginaw Valley State University). The fixed routes also allow for connections to public transit services in Arenac, Midland, and Saginaw Counties. Fixed routes operate Monday through Saturday (except routes 1 and 4, which do not operate on Saturday). Flexed routes are operated countywide throughout the year. These routes take individuals to and from work sites for the disabled, to educational facilities, and to child care centers. A countywide demand response system (DART) is also operated Monday through Saturday. This service provides curb-to-curb rides for seniors and disabled residents.

BMTA fixed and flexed route services are operated between the hours of 6:00 am and 6:30 pm weekdays and between 9:00 am and 6:00 pm on Saturday. The base fare for fixed route service is \$1.00. Seniors and the disabled (including those with a valid medicare card) pay \$0.50 and full-time students of any age pay \$0.75. Transfers are free. The demand response fare is \$1.50 for all rides.

BMTA Improvements

Services –Bay Metro Transit is currently engaged in an effort to identify the types of transit service that it will need to operate in the community 5 years and 10 years from today in order to determine what sort of capital investment may be needed to support the service and whether the current revenue stream will be sufficient to operate at the anticipated level. The following factors are being examined:

- Demographic make-up of the current service area population and projections of population 10 years from now are being analyzed. With the aging of the population [as baby boomers retire] it appears the need for more demand-response transit service is likely. This is a much



more expensive type of service to provide and may require the elimination or reduction of other transit services currently being provided. The Bay Metro service area covers the entire county. About 85% of the county lies outside the urbanized area and about 33% of the population lives outside the urbanized area, making demand-response service even more difficult and expensive.

- Bay Metro is researching various demand-response scheduling systems for future use as well as the type of employees who will be needed to operate the systems. Unless the efficiency of the current demand-response [paratransit] system can be significantly improved the cost to run an expanded version of that system may be unaffordable.
- Gradually diminishing, and ultimately discontinuing, some of the current transit services offered, in order to expand the demand-response system, must be handled very carefully since the transit authority receives a large share of its operating revenues [about 30%] from a local property tax that must be renewed every 5 years.

Bay Metro is also researching to possibility of upgrading the basic fixed route system, at least during peak times in the urban area. If there were to be a shift in attitude concerning local transit usage, whether in response to the cost of gasoline or concerns for the environment, etc, the current system could not accommodate much of an increase in ridership. Some buses at peak times are already standing room only. Reducing current headways of 45 minutes to something like 15 minutes would be one important response to a significant increase in transit ridership, but the question must be answered as to where the buses would come from to provide the service and how the service would be financed. Either other lower priority services would have to be discontinued or additional funds would have to be found.

Bay Metro Transit serves Bay County, Michigan, only, although it does make regular connections with transit systems in the adjacent counties of Saginaw, Midland and Arenac. Bay County is a geographic area of about 450 square miles with a population of about 107,000. In the future it is very possible that the three urban counties in our region [Bay, Saginaw, Midland] will be consolidated into a single urbanized area. These three counties include about 1,800 square miles of territory with a population in excess of 400,000. Regional consolidation could have a significant impact on the four local transit systems that operate in the area, especially since they would be sharing the same annual federal FTA allocation for the urban area. In the coming years, it would be wise to begin the effort to examine the possibility of either consolidating the systems or developing a coordination plan to make travel between the communities more seamless. Consolidation seems unlikely at this time for at least two main reasons. First, the political climate is not conducive to the surrender of local control of anything, let alone public transit. Second, each system is funded differently at the local level. One is funded with city general funds. Another is funded with a city only property tax. One is funded with a countywide property tax controlled by the transit system. One is funded with a countywide property tax controlled by the county government. Funding rates are different in each community. As a result, fare structures are different. Two of the systems are strictly demand-response. Two of the systems are fixed route with



a demand-response component.

A few years ago, a regional transit study was conducted with grant funds provided by the Michigan DOT. That study covered a 10 county area. The study concluded that in this large region it was not possible to identify enough regional transit trips to justify pursuing a 10 county regional transportation system. Perhaps another study could be conducted using that study as a starting point, concentrating on the three urban counties which make up the core of the region. This would be a major undertaking requiring buy-in by the three counties and grant funds to hire a consultant to coordinate the data collection and analysis. As a regional study, it could also incorporate other modal features, like air travel [MBS International Airport], intercity bus service and, perhaps, even the Saginaw River port.

Transportation Enhancement Activities

Two types of enhancements might be beneficial to local transit service. First is the intermodal terminal in downtown Bay City which serves both local public transit and the intercity bus systems. The site functions well but there are very few amenities for passengers and visitors. Better customer service facilities are needed, both to handle customers who appear in person at the terminal and to deal with telephone callers. The site also needs to be made more pedestrian friendly, both in terms of access to the site and circulation within the site. It would be useful to incorporate bicycle storage facilities on the site as well to accommodate those wishing to ride a bicycle to the terminal to board a bus.

Coordinating local transit service with non-motorized modes [pedestrians, bicycles] is the second area where enhancement projects would make sense. If transit usage is expanded beyond the transit-dependent population it will be necessary to consider park and ride lots for both automobile users and bicyclists. Bike lockers are amenities that could greatly enhance the ability of bicyclists to interface with the transit system. Providing better ways to accommodate bicyclists who wish to bring their bike along when using the bus need to be found as well. The buses currently used in local fixed route service cannot be fitted with exterior bike racks. As a result, bikes must be secured inside the bus. This sometimes causes conflicts with individuals using wheelchairs and scooters who need to use the securement locations for their equipment. Erecting secure bike lockers in very visible locations [the mall, schools, medical facilities, etc] as part of park and ride program might help to address this issue.

Transit Financing

In 2014, the voters of Bay County approved a county-wide .75 mill transportation tax renewal good through the year 2020. Revenues in excess of \$1,900,000 have been generated annually since that time. This strong local support has enabled the Authority to operate smoothly in spite of decreasing support from the state and federal governments. Millage renewals will come up on the ballot again in years 2019, 2024, 2029, 2034, 2039, and 2044.

The State of Michigan is still an important player in terms of operating support, presently providing



about 37 percent of operating revenues as well as the 20 percent local match for most capital improvements. The role of the Federal Transit Administration has been mostly in the area of capital acquisitions, providing 80 percent of the funds for most major items (buses, building improvements, and maintenance equipment).

Financial Planning

Bay Metro Transit staff is currently projecting forward 10 years into the future to determine the type of public transit service likely to be provided at that time, and the likely cost to operate the service. Staff is also projecting likely sources of revenue, assuming current funding levels continue, to determine whether a revenue shortfall is to be expected. If a shortfall is anticipated, then one of two things must happen; the system must either reduce the level of service provided, and perhaps the types of service provided, or find additional local funds to cover the shortfall. If demand for local transit service increased to the point where the general public called for more or better transit service it would be possible to request an increase in the local millage rate. Having received millage funds since 1981 the staff has enough data to be able to project revenues likely to result from changes in the tax rate well into the future. More difficult to project are federal and state assistance levels. For projection purposes, Bay Metro will assume that current funding levels will hold steady with very slight annual increases into the future.

While many revenues are beyond the control of the local transit system, expenses are things that are under local control. How many persons are employed, how much they are paid, what types of benefits they receive, etc, are decisions made locally. The goal of the current effort of looking 10 years into the future is to make sure, at least for the next decade, that annual balanced operating budgets are possible. Revenue projections and expense projections based on anticipated service levels will be developed to accomplish this goal.

Plan Recommendation

1. Replace aging bus fleet. Bus replacements are at a significant cost and almost exclusively dependent on federal and State discretionary funds. The availability of these funds is unreliable and inconsistent. BMTA must make a proactive effort in its grant preparation and be more aggressive in its approach in making FTA and MDOT aware of our community's need for safe, economical buses.
2. Improve coordination between demand-response and fixed route operations.
3. Improve coordination with transit providers in Saginaw, Midland, and Arenac counties with the goal of providing/improving regional transportation service between Bay City and these areas.



4. Adapt to the financial environment based on the projection of reduced operating and capital assistance from federal and state funding sources.

Air Transportation

The Bay City Urban Area is served by two airports, MBS International Airport and the City of Bay City owned James Clements Airport on (M-13) River Road. MBS is a class D-IV airport and James Clement is a class B-II airport.

The Michigan Airport System Plan ([MASP 2008](#)) documents the planning process that identifies the aviation role of public use airports in Michigan through the year 2030. *MASP 2008* presents the results of a system planning process that has been aligned with the goals and objectives of MDOT's MI Transportation Plan. The *MASP 2008* supports programming decisions and is useful in evaluating programming actions related to airport system and airport facility deficiencies. The MDOT Office of Aeronautics is currently developing the MASP 2017.

Among the key functions of the *MASP 2008* is, from a state perspective, identifying those airports that can best respond to state goals and objectives. To this end, all airports, following a rigorous analytical process, were assigned to one of three tiers based on their contribution in each of the State's goals. Tier 1 airports respond to critical/essential state airport system goals. These airports should be developed to their full and appropriate level. Tier 2 airports complement the essential/critical state airport system and/or respond to local community needs. Focus at these airports should be on maintaining infrastructure with a lesser emphasis on facility expansion. Tier 3 airports duplicate services provided by other airports and/or respond to specific needs of individuals and/or small businesses. A series of system goals were identified as an outcome of an issue identification process related to the [MDOT's MI Transportation Plan](#). The system goals identified were:

- Airports should serve significant population centers
- Airports should serve significant business centers
- Airports should serve significant tourism/convention centers
- Airports should provide access to the general population
- Airports should provide adequate land area coverage
- Airports should provide adequate regional capacity, and
- Airports should serve seasonally isolated areas

For each goal, with the exception of serving seasonal isolated areas, MBS International Airport was classified as Tier 1. James Clement Airport was classified as a Tier 1 airport for the goal of "provide adequate regional capacity," and a Tier 3 airport for all other goals.



MBS International Airport

MBS International Airport was conceived in the 1930’s to serve the entire Saginaw Valley and surrounding communities. The airport is owned by the cities of Midland, Saginaw and the County of Bay. It is centrally located between these three communities in the northeastern portion of Saginaw County. The airport was, prior to 1994, known as Tri-City International Airport. The airport is operated by the MBS International Airport Commission.

The airport has two main runways with lengths of 8,002 and 6,400 feet. Both runways are 150 feet wide. The Instrument Landing System is the Category One type common at Michigan airports outside of Detroit Metro. It is adequate for most weather conditions.

Michigan Department of Transportation – Total Scheduled Passengers						
Community	Airport Name	2015	2014	2013	2012	% Change 2012-2015
Detroit	Metro Wayne	33,440,112	32,513,555	32,389,544	32,241,731	3.72%
Grand Rapids	G Ford Intl	2,550,193	2,335,105	2,237,979	2,134,956	19.45%
Flint	Bishop Intl	820,708	837,736	784,371	818,852	0.23%
Lansing	Capital City	323,510	376,912	418,850	389,600	-16.96%
Traverse City	Cherry Capital	429,364	397,649	378,241	362,059	18.59%
Kalamazoo/BCreek	Intl	244,878	266,758	253,236	255,236	-4.06%
Mid/Bay City/Sag	M B S Intl	235,598	246,957	244,504	271,686	-13.28%
Marquette	Sawyer Intl	83,732	80,657	84,254	76,001	10.17%
Houghton/Hancock	Co. Mem.	52,879	48,250	51,741	51,850	1.98%
Pellston	Emmet Co Reg	50,758	56,817	53,831	49,451	2.64%
Sault Ste Marie	Chip Co Intl	45,391	41,752	42,794	39,125	16.01%
Muskegon	County	36,453	33,396	35,912	36,089	1.01%
Escanaba	Delta County	31,705	34,176	29,089	25,363	25.00%
I. Mtn/Kingsford	Ford	21,058	20,820	18,406	16,388	28.50%
Alpena	Alpena Co Rg	19,474	24,852	31,292	25,350	-23.18%
Manistee	Co Blacker	9,365	7,708	5,390	5,908	58.51%
Ironwood	Gogebic Co	9,218	4,971	4,948	5,081	81.42%

Table 8: Michigan Department of Transportation – Total Scheduled Passengers



MBS has experienced a 54% decline in scheduled passengers since 1998 when the airport peaked with 589,798 down to only 235,598 for 2015. MBS has seen a slight decline since the 2040 long range plan was adopted (262,069 in 2010), according to the Michigan Department of Transportation Measure of Michigan Air Demand. The decline in passengers can be attributed to various factors including; the post 9-11 period, the economic decline, the deterioration of aging MBS terminal and/or the growth of Flint's Bishop International Airport. This ranks MBS the 7th busiest airport in terms of passengers in Michigan, behind Kalamazoo/Battle Creek and ahead of Sawyer Airport in Marquette. Delta Air Lines and United Airlines are currently operating daily scheduled flights in and out of MBS to Chicago, Detroit, and Minneapolis.

In 2001 MBS added daily charter service flights, which has carried nearly 30,013 passengers in 2010. These passengers are considered Supplemental Passengers; those traveling on charter or other for hire air services, and are not included among scheduled passengers. The great majority of these supplemental passengers are part of the Dow Chemical Company, headquartered in Midland, which contract daily charter flights out of MBS to their other major operations centers in Texas and Pennsylvania.

Air cargo activity in 2015 consisted of 164,219, up from 142,734 pounds in 2012. This slight increase was seen through much of the state. MBS is served by Fed Ex which has a terminal just outside the airport property.

In 2012, MBS International Airport completed construction on their new terminal. The cost to build the terminal was approximately \$55 million. This new terminal should meet the aerial needs for the region for the next 40-50 years and will improve the efficiency for air transportation for both the passengers and carriers. With this new terminal, improvement may also be on the way for Garfield Road from US-10 to MBS, the main access road to the new terminal from the north. Currently, the road is a two lane, rural route and is operating under capacity. There are several safety issues along the route including large drainage ditches and during the winter months, wind driven snow and the mix of jurisdictional snow removal timing becomes an issue. This corridor will likely be studied in the future for possibly airport related development as the new terminal comes on line. BCATS would be involved in any related study, as while MBS is outside of BCATS, MBS provides an integral transportation component to the BCATS urbanized area.

James Clements

The city of Bay City owned [James Clements Airport](#) was originally founded in 1930. Today the airport consists of two (2) asphalt runways with lengths of 2,619 ft and 3,800 ft., and three (3) seaplane runways on the Saginaw River two (2) of which are 3,500 ft. in length and the other at 2,600 ft. In Michigan, there are only seven (7) seaplane bases and only two that are available for public use, one being James Clements.



In a recently completed ten-year capital improvement plan for James Clements Airport (2012-2021), nearly \$3.8 million in capital improvements are planned. These include construction of new hangers, runway repairs, improvements to maintain security at the airport entrances and property lines, installation of a flock dock for seaplanes at the new seaplane ramp on the Saginaw River, and rehabilitation of the historic hanger.

Plan Recommendations:

- Promote the new terminal construction plans at MBS to increase the market share of air transportation.
- Encourage the continued operation of James Clement Airport as long as these operations are efficient and feasible.
- Continue development of new hangers, taxi-streets, aprons and auto parking facilities.
- Design and development of James Clements Airport as a Seaplane Base in addition to the existing facilities.
- Provide for adequate access and connectivity between air and other modes of transportation.

Michigan Freight Movement

In the years since the recession, freight tonnage moved has increased for all modes. All forecasts are calling for continued growth in freight movements. The mix of commodities moving by each mode has stayed relatively the same, with manufacturing production the major driver of Michigan freight totals. The auto industry continues to play a crucial role in the overall totals of freight movements in the state. Two of the major freight-related projects in the state, the Detroit Intermodal Freight Terminal and the Gordie Howe International Bridge, have made progress and should alleviate congested infrastructure.

The tonnage moved throughout the state has increased substantially since 2009. The total tonnage moved to, from, within, and through Michigan in 2013 was more than 505 million tons. This is about 70 million tons more than 2009, an increase of 16 percent. The modal shares remained largely the same. While all modes saw an increase in overall tonnage, water increased the least relative to 2009, leading to a decrease in share from 14 percent to 13 percent. This was met by an increase in rail from 19 percent in 2009 to 20 percent in 2013.

Rail Transportation

While Michigan's rail miles have decreased over the past decade, the number of carloads has grown by almost 11 percent. This has made private carriers much more stable than in previous decades and has enabled them to keep mainline railroads in better condition, at the expense of abandonment of light



density lines. The abandonment of certain routes has left some areas without service or with rail links dependent on maintenance subsidies.

Twenty-one percent of Michigan's rail miles are state owned. The state owns 665 miles of right-of-way, of which 650 are in use, with the balance preserved for possible future use. Maintenance is partially at state expense. Five private carriers under contract to the state operate state owned routes.

Two rail lines provide service to the BCATS area. Scheduling can vary but generally, the Huron & Eastern Railway operated by RailAmerica Inc. runs four trains daily on their lines, Saginaw Bay Southern operated by Lake State Railway runs one train twice daily and another three trains once a week, and the Lake State Railway runs two trains through the BCATS area. The majority of commodities shipped in, out, or through the BCATS region include chemical products, coal, stone, and other bulk material. None of the rail lines in the study area provide passenger service.

The Federal Railroad Administration wants to remove 25 percent of the existing highway grade crossings. Most should be closed permanently. Some should be separated at grade. These measures would substantially improve rail safety, while allowing operating speeds to be increased, adding to the quality of service and the capacity of routes.

A coordinated effort to improve rail crossings by local, state and federal governments and by private business interests would enhance efforts to maximize Michigan's ability to compete for international trade.

Abandonment of railroad service is allowed by federal law which permits a railroad carrier to end its obligation to provide service over a particular line. In the Bay City area, local officials have encouraged the reuse of abandoned railway lines as non-motorized railtrails. This effort has been very successful and is scheduled to continue. Currently, abandoned rail road sections are being used to complete a regional trail linking Saginaw to Bay City. Continued use of abandoned railroad lines may be used for the Great Lakes Bay Regional Trail and the Iron Belle Trail.

In summary, the last long range plan indicated a decline over the last two decades in rail transport. Yet, many of the State's leading manufacturing, agricultural and extraction industries still relied on the railroad as a means of efficient and economical shipment of bulk freight. Currently there has been an increasing trend in the use of rail transport. Railroads carried more than 100 million tons of freight throughout Michigan in 2013, an increase of nearly 17 percent from 2009. The value of these movements totaled about \$161 billion, an increase of 49 percent. Forecasts for rail show a more than 50 percent growth in tonnage and 70 percent growth in value by 2030. To take advantage of these trends BCATS, following the study from EMCOG, recommends that Bay County could benefit from a regional transportation hub to facilitate the increase freight traffic in the region.

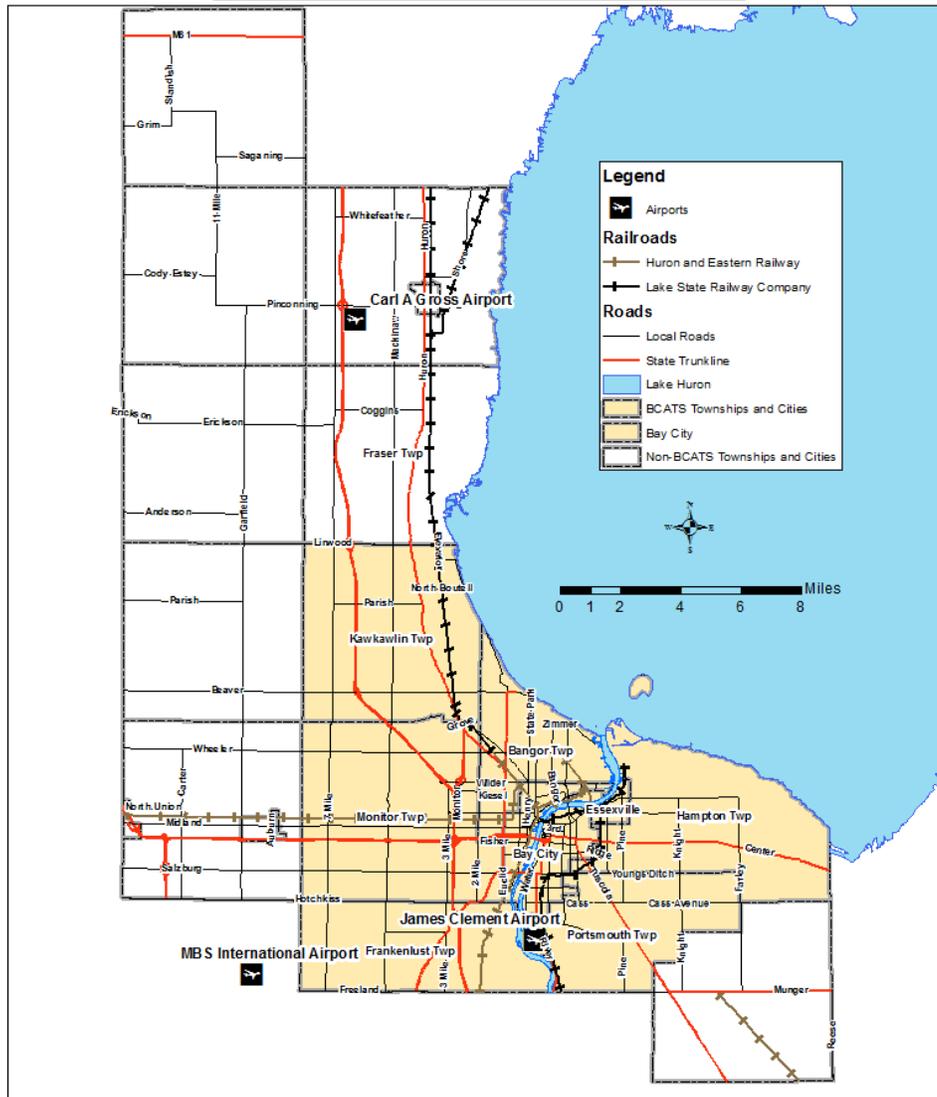


Plan Recommendations:

- Relocate rights-of-ways that will allow a blend of safety improvements, consolidation of rail traffic on fewer lines and increased operating efficiencies.
- Continue upgrading of highway/ rail crossings.
- Remove unused or abandoned rail lines.
- Promote intermodal connection and access between rail and other modes of transportation.
- Continue development and expansion of the existing rail to trail system.
- Increase security/safety of rail cars carrying hazardous material through the BCATS region.
- Indicate and perform studies on a proposed multi-model transportation hub



Bay County Transportation Facilities
2017-2020



Map 7: Bay County Railroad and Airport Facilities



Water and Port Transportation

The number of commercial ports in Michigan remained at approximately 40 between 2000 and 2015. Michigan's important water borne commodities are stone, iron ore, coal, cement, salt petroleum, and chemicals. Tonnage handled ranged from a low of 52 million tons in 1982 to a high of 91 million tons in 1989. Traffic volumes are highly dependent on the steel and construction industries. Currently water freight movement accounted for 13% of the total tonnage moved, which water ports handled between 70 and 90 million tons per year.

In 1986, federal legislation fundamentally changed the funding of navigation projects. Waterway users now pay the entire cost of maintaining navigation channels through a harbor tax and trust-fund mechanism. Non-federal contributions are now required for several types of navigation projects, new construction, navigation studies, and disposal of dredged material.

The Saginaw River is one of Michigan's most important commercial harbors. The port ranks about fifth in the value of commodities being shipped from Michigan ports. It ranks seventh in total tonnages and second in the number of terminals and diversity of cargoes.

Approximately 20 marine terminals are located along the river from Saginaw to the mouth of the river. These terminals handled approximately three million tons of cargo in 2009 and 320 ships in 2006, and have dropped to 110 ships in 2014. Currently, port transportation trends are increasing and future projections show that port usage will increase to 250 ships in the next 10 years.

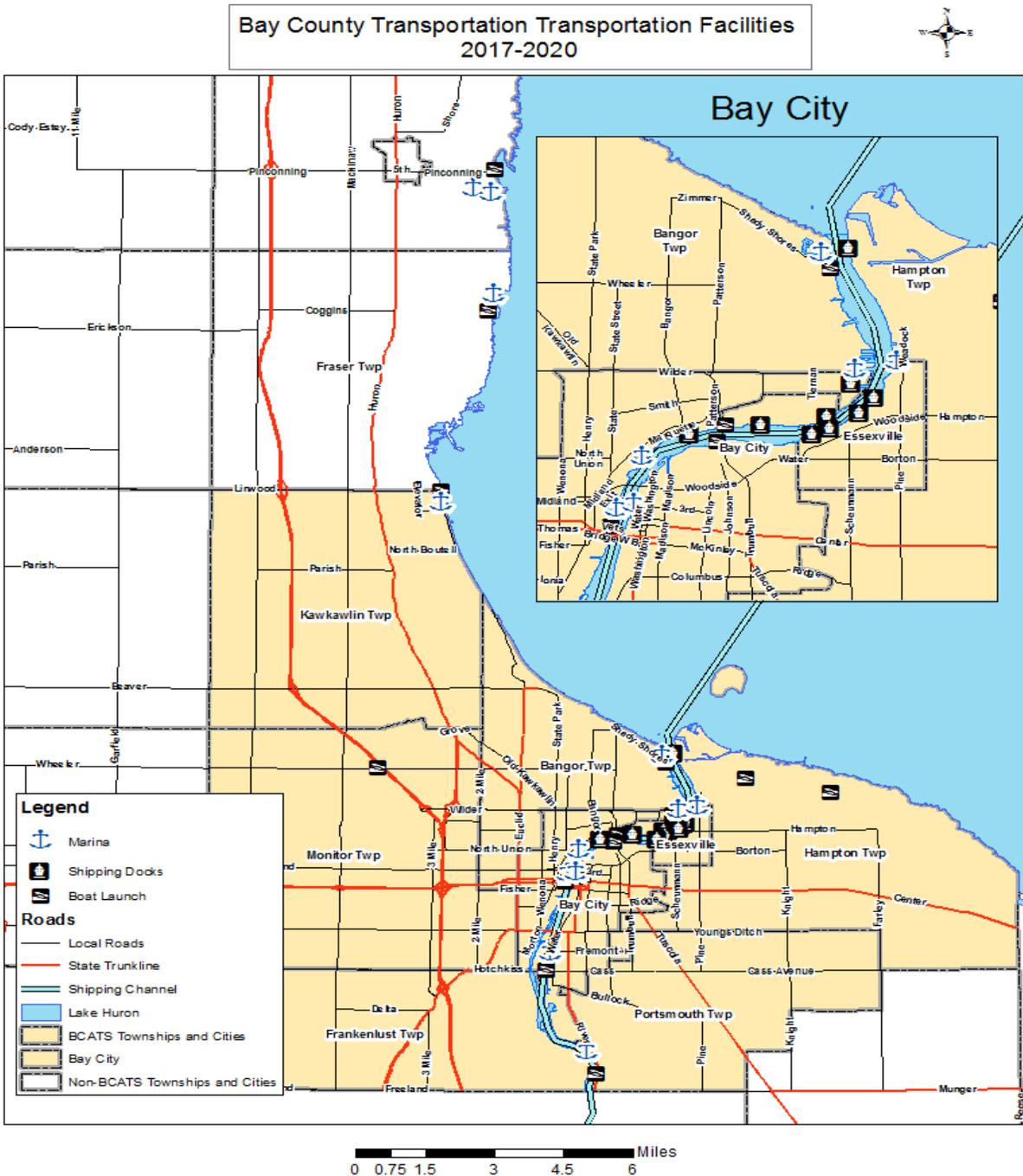
Major commodities include limestone, sand, coal, salt, fertilizers, cement, petroleum and chemicals. These products serve the manufacturing, agricultural, and construction industries throughout a large portion of the Lower Peninsula. Most water borne commerce on the Saginaw River consists of U.S. domestic and Canadian trades. A port study conducted by BCATS in 1984 concluded that the future for the port would be in terms of cargo handling.

In addition to shipping, Bay County's extensive river system is heavily utilized for recreational boating and fishing. Current and future development on the river has been benefited by recent funding from the 2.8 million dollar allocation from the federal government to dredge the Saginaw River. Along with the dredging, a feasibility study for deepening the upper Saginaw river has been approved and expected to be completed in the next two years. The deepening of the river would make it easier for commercial ships to move up and down the channel that connects Saginaw and Bay City to the Saginaw Bay. The dredging and feasibility study will have major impacts on the BCATS area and will be beneficial to incorporate the results of the study into future long range plans. Additionally, the proposed improvements are projected to increase and broaden the current material shipped, and the increased usage of the water and port transportation could be a major part in a regional multi-model transportation hub.



Plan Recommendations:

- Promote the retention and upgrading of port facilities.
- Promote intermodal connectivity and access between the port and other forms of transportation, specifically rail and trucking.
- Assist in finding ways to keep up the maintenance on the river channel to keep shipping on the river.
- Identify ways to increase usage of BCATS ports and waterways from the Saginaw River study.



Map 8: BCATS Marine Transportation Facilities



Regional Intermodal Study

The Genesee County Metropolitan Planning Commission Regional Study (In 2040 LRP)

The Genesee County Metropolitan Planning Commission (MPO for the Flint area), in cooperation with its partners, the Flint Area Chamber of Commerce and the Michigan Department of Transportation, conducted the [I-69/I-75 Intermodal Transportation Study](#) to determine how the region of Genesee, Lapeer, Saginaw, St. Clair, and Shiawassee counties can capitalize on its location at a significant crossroads of the national and international freight network. By doing so, it is expected that economic conditions and the quality of life in the region will improve.

The study area is served by major transportation facilities such as I-69, I-75, U.S. 23, and a number of state highways, the Blue Water Bridge and double-stacked rail tunnel in Port Huron which link the United States and Canada, deep water ports in Saginaw (the study incorporates the deep water ports in Bay County), and Port Huron; airports in Saginaw County (MBS) and Flint (Bishop); and, the Canadian Nation (CN) and CSX rail lines. The current population of the five-county area is approximately 975,000 people. Major manufacturing, commercial, and agricultural entities, dominated by automobile-related businesses, form a major part of the economy, which employs 460,000 people.

The vision of this study was forwarded to each county's Study Review Committee and the public for comment and stated the following:

- A major regional intermodal freight system serving trucks, trains, planes and ships with seamless interaction among all modes.
- Overseen by an intermodal commission, the region will offer transportation assets supported by state-of-the-art intelligent transportation system (ITS) technologies.
- This intermodal system provides a competitive advantage for commodity flow; creates a new dimension in the region's economy and improves the quality of life for the region's citizens.

While Bay County is not directly included in this study, due to the inclusion of the Saginaw County (MBS) airport and the Bay County deep water ports, the unfolding of this study could impact transportation issues and ultimately the financial health of the Bay City area.

A similar study focused on the three counties of the Great Lakes Bay Region (Bay, Midland, and Saginaw) might provide insight on how to capitalize on our existing transportation infrastructure to the region's best economic advantage.



East Michigan Council of Governments Regional Economic Study (2016)

The East Michigan Council of Governments (EMCOG) in cooperation with its partners conducted a study of the three Regional Prosperity Initiative areas within the 14 county region. EMCOG produced the report (appendix: [Document References](#)) Comprehensive Economic Development Strategy (CEDS) for the purpose to study the regional economics of the area. The CEDS is designed to provide baseline information, development strategies, and projects for Council members, the CEDS Committee, staff, local government officials, interest groups and citizens from throughout the region, while meeting the requirements set forth by the Economic Development Administration. The CEDS should be viewed as one of many tools in the economic and community development toolbox. The document is not a still life photo of a period in time but will evolve through the year into the next update.

One of the study focus areas was transportation and infrastructure and the goals are to capitalize on EMCOG's existing transportation assets, roads, rail, port and harbor facilities, airports, Aviation MRO, public and private transit, and make strategic investments in regional infrastructure (including broadband) that improve the region's economic competitiveness and resiliency.

The CEDS provided a strength, weakness, opportunity, and threat (SWOT) analysis of the regions strengths, weaknesses, opportunities, and threats. The SWOT analysis of this study incorporated the whole region, but the relevant information for Bay County is stated in the following:

Strengths:

- Region's strategic location and good interstate and highway system offers easy access to Detroit metro and northern Michigan
- Public water and sewer systems in most larger communities (Bay City is the 3rd largest municipal utility in Michigan)
- MBS Airport (new terminal) and the Oscoda-Wurtsmith Airport large aircraft maintenance facilities are major assets for the region as are the numerous other general aviation airports that are key assets for some companies
- No traffic congestion issues
- Port of Bay City is second largest port in Michigan for tonnage shipments

Weaknesses:

- No Class 1 railroads in region (nearest Class 1 railroads are to the south in Flint and Lansing) many existing rail lines are slow (10-15 mph)
- Very few transit hubs; the transit system is not connected for both residents and tourists
- Rails to trails program has reduced freight rail capacity
- The need for services for transportation, education, training, economic development and infrastructure improvements, far outstrips available funds.



Opportunities:

- Airports and Ports have capacity to expand operations
- Dow Chemical would like to use more rail to ship products/materials
- Potential for an inter-modal (truck to rail) facility in region
- Expansion of region's freight rail infrastructure would spur additional growth in agriculture & other industries
- Expand public transportation hours to include evenings to support adult education and college students
- Combine individual transit agencies to pool resources and provide improved service
- Increase collaboration among the private port operators in Saginaw Bay and Saginaw River

Threats:

- Public transportation does not adequately serve the region's workforce and adult education needs
- Transportation (to/from work & school) is also a big challenge for high school and college students
- Roads are generally in poor condition in the region (and in Michigan as a whole) and the current/expected funding for maintenance is far less than what is needed

One of the region's biggest advantages is the significant amount of underutilized capacity across all modes (roads, rail, water, air). MBS International Airport is a major asset for the entire 14-county region (and beyond) that can be leveraged for economic development. There are also several small local airports such as James Clements airport that are vital to the local economy. The region's rail network and the water-based transport facilities and harbors along the Saginaw River, the Saginaw Bay and Lake Huron can also be further capitalized on to support the growth of freight-intensive industries like agriculture, construction, manufacturing, and tourism. Many of the region's major manufacturing and agriculture companies, Dow Chemical in particular, have expressed a desire to increase their use of rail and water-based transport.

There is a wealth of transit options within the area, but they are not coordinated to the degree needed provide comprehensive transit options within the region. This is important for increasing the assets within the BCATS area. Below are some of the objectives and actions from the CEDS that incorporate transportation and infrastructure within the BCATS area:

Objective 1- Support efforts to maintain and improve the region's highways and local roadways.

- Continue working with the Michigan Transportation Asset Management Council, and regional civil engineers to re-evaluate current road maintenance standards to make the most efficient use of financial resources devoted to the repair and maintenance of local roadways.
- Continue working with the region's MPOs, local governments, and transportation planners to



prioritize road improvements where they are needed most to improve

- Work with MDOT, MPOs, local road commissions and county road associations to modernize road and highway planning and infrastructure to effectively accommodate storm water runoff and infiltration needs, thereby reducing the costs and impacts of flooding.

Objective 2- Provide more comprehensive and more efficient transit services to support the region's workforce, employers, educational providers, veterans, older adults, people with disabilities, and people with lower incomes.

- Encourage the region's public transportation agencies to meet regularly and work together to serve the region more efficiently through inter-agency agreements or other cooperative efforts.
- Work with the region's higher education institutions, adult education providers, major employers, and other key constituents to identify ways to expand transit options to better serve the region's workforce. This may include extending public transportation into evening hours in some cases.
- Over the long-term, consider combining some or all of the region's separate public transportation agencies into a single, region-wide transit agency.

Objective 3- Leverage and make strategic investments in the region's existing rail infrastructure to support the growth of key industries, particularly the agriculture sector.

- Prioritize rail-related investments based on the recommendations from MDOT's recent report titled "The Role of Rail Infrastructure in the Economic Development of Michigan's Northern Lower Peninsula".
- Consider investing in re-configurations and/or expansions of the rail yards in Saginaw and Bay City to make rail transport more efficient for the region's rail-dependent businesses.
- Build on the success of the Standish Grain Elevator by exploring opportunities to develop additional connections, capacity, and rail-related infrastructure (inter-modal facilities, trans-load facilities, grain elevators, etc.) to support existing companies and make the region more competitive in attracting new businesses.

Objective 4- Convene a freight mobility roundtable that meets a minimum of two times per year to share information on regional transportation issues.

- EMCOG can serve as the convening body for this group.
- The roundtable can serve as a regular forum to bring together public and private sector leaders involved in transportation and freight mobility to discuss transportation issues affecting the region, hear presentations from local/state/federal transportation planners, and learn about major transportation policy or funding efforts.



Objective 5- Explore ways to make better use of the regions harbors for economic growth in tourism and recreational opportunities.

- Collaborate with the state and other stakeholders to prioritize infrastructure needs for repair and upgrade of public recreational harbors and access.

Objective 6- Explore ways to make better use of water-based transport for goods movement, especially for the agriculture, construction, and utilities sectors.

- Support and leverage the US Army Corps of Engineers' study to widen and deepen the Saginaw River shipping channel as a way to encourage the continued and expanded use of the river for goods movement.
- Conduct an economic impact analysis of the water-based transport facilities in the Saginaw River and Saginaw Bay to demonstrate the number of jobs and amount of tax revenue that these transportation facilities provide to the region and the state, along with historical fluctuations of this impact.
- Support greater collaboration among the region's private port operators and industries that depend on water-based transport (agriculture and construction in particular).

As stated above, a similar study focused on the three counties of the Great Lakes Bay Region (Bay, Midland, and Saginaw) might provide insight on how to capitalize on our existing transportation infrastructure to the region's best economic advantage. The study does not entirely just focus on the Bay County and it does indicate how coordination with the region could benefit the BCATS area. This study does provide some insight in the current problems faced within the region and how improved transportation and infrastructure is a vital component in the overall improvement of the region's economic development, sustainability, entrepreneurship, workforce development, place making, and community resiliency.



Non-Motorized Transportation



The Fixing America's Surface Transportation Act (FAST Act) planning and funding guidelines have encouraged development of bicycle and other non-motorized transportation facilities.

Accommodating Bicycle and Pedestrian Travel: Recommended Approach is a policy statement adopted by the United States Department of Transportation. USDOT hopes that public agencies, professional associations, advocacy groups, and others adopt this approach as a way of committing themselves to integrating bicycling and walking into the transportation mainstream.

The Design Guidance incorporates three key principles:

- a) A policy statement that **bicycling and walking facilities will be incorporated into all transportation projects** unless exceptional circumstances exist;
- b) An approach to achieving this policy that has already worked in State and local agencies; and
- c) A series of action items that a public agency, professional association, or advocacy group can take to achieve the overriding goal of improving conditions for bicycling and walking.

Existing Non-Motorized Facilities

Multi-modal transportation options, particularly in urban areas, extend beyond transit and light rail, and include walking and bicycling.



Sidewalks

In Bay City and Essexville, more than 90% of the roads have sidewalks on at least one side of the road. In the townships, more than 90% of the roads lack sidewalks, including those in subdivisions. Of the townships in BCATS, only Bangor and Hampton Township have any ordinance requiring construction of sidewalks in new subdivisions and along strategic road corridors when an adjacent property undergoes major improvements or a new building is constructed. None of the townships in the BCATS have an ordinance pertaining to bicycle facilities and/or bicycle riders on the roadway.

Trails

In BCATS, there is more than 62 miles of non-motorized trails in eight (8) separate areas, the Hampton Township Nature Trail, the Bay County Riverwalk and Railtrail, the Great Lakes Bay Regional Trail, Delta College trail, Tobico Marsh Trail, Saginaw Bay Land Conservancy Trails (Golson and Michigan Sugar), and Bay County State Recreation trails.

The Hampton Township Nature Trail is a 2.5 mile crushed lime stone path. The last section a 0.5 mile extension of the Nature Trail was completed in 2013. The trail now runs from Finn Rd Park and Campground and winds through the woods, to the end at Jones Rd.

Riverwalk/Rail trail interconnected 17.5 mile network of pedestrian walkways provides non-motorized, handicapped-accessible pathways linking the full range of our community landscapes; from Bay City's highly popular riverfront at Veteran's Memorial Park, to the City's center, and back out again through woodlands and marshes to agricultural and residential areas of Portsmouth, Hampton and Bangor Townships. Our most recent trail extension links the Bay City loop northwesterly to the Bay City State Recreation Area.

Delta College trail has 7.5 miles of interlocking trails on the campus. The overall plan is to construct a 4 mile long trail is to linking Delta College to Saginaw Valley State University.

The Great Lakes Bay Regional Trail is currently in construction to create a trail that connects Bay City, Midland, and Saginaw. In the fall, of 2016, a section of the trail was completed linking the city of Zilwaukee in Saginaw County to the southeast part of Bay City. The overall trail linking the cities will include over a 100 miles of trails.

On Road Bicycle Facilities

A limited, unconnected network of on-road bicycle facilities exists within BCATS. Portions of the Riverwalk/Railtrail do use on-road facilities which include paved shoulders and "Share the Road" signing on low volume residential streets. There are several other roadways in the townships that provide a minimum 4 foot paved shoulder. In 2011, Michigan Department of Transportation approved a 310-mile long bike route (US Bicycle Route 20) that connects Marine City and Ludington. The US Bicycle Route 20 goes through the BCATS area from the south on North Trumbull Road through



Riverwalk/Railtrail and leading to Wheeler Road where the route heads west. Bike Lanes with extended shoulders along M-84 and Midland Street have been constructed in certain segments of the road. Continued construction of on road facilities (paved shoulders, bike lanes, sharrows (shared bike lane), and wide outside lanes) when road construction is being completed is vital in providing complete streets for both motorist and non-motorist alike. Beyond these examples, the on-road facilities consist of the existing network of low volume residential streets.

Blue Ways Trails

The Saginaw River shoreline is one of Bay County's best kept secrets. Our riverbanks and shoreline host fringe wetlands and a diverse array of wildlife, migrating birds and historic battleground areas. These are the water trails along the southern and western shores of the Saginaw Bay including river trails on the AuGres, Rifle, Kawkawlin and Saginaw Rivers. Campground areas along the shore are available for longer excursions or as a base for day use. The Saginaw Bay Blue Way Trail was created in 2014. Future use of this trail could see increased traffic along river bringing people to local business.

Future Non-Motorized Projects

Planning efforts are ongoing to connect this non-motorized trail system to others trails in the region, such as a proposed connection between Delta Community College and Saginaw Valley State University along the M-84 Corridor. There are also proposed connections to trail systems developing in both Saginaw and Midland Counties. The following trail planning efforts portray the level of effort being expended in the BCATS study area, as well as, the greater Bay County area in regards to non-motorized transportation efforts. The following projects are listed in order of priority from first to last. The BCATS staff prioritized the projects based on promoting livability within the BCATS area such as promoting a healthier living, non-motorized safety, and access to amenities and jobs. BCATS also looked at feasibility and cost such as if the project is partially completed or currently has funding in place.

Bay City sidewalks replacement program is currently in process of replacing the sidewalks throughout the entire city.

Great Lakes Bay Regional Trail is currently in construction and will complete the segment linking Saginaw to Bay City in 2016. Future development of the trail will link Bay City to Midland and Midland to Saginaw.

The Iron-Belle Trail is a set of hiking and biking routes, is being developed by the Michigan Department of Natural Resources (MDNR), with MDOT as a partner. The Iron Belle Trail is the longest designated state trail in the nation and includes a route for hiking and a route for biking between Belle Isle Park in Detroit and Ironwood in the Upper Peninsula. The 1,273-mile hiking route incorporates a large portion of the existing North Country National Scenic Trail. It traverses the west side of the Lower Peninsula and borders Lake Superior in the Upper Peninsula. The east part of that



runs through Bay County will traverse through the City of Bay City, Bay City Recreation Area, City of Linwood, and Pinconning. Most of the trail will follow the existing segment of the Riverwalk/Rail trail. An interactive map can be found on the MDNR website by following the link (<http://www.midnr.com/Publications/pdfs/ArcGISOnline/ironBelleWebApp/index.html>).

The current connection of the Bay City State Recreation Area (BCSRA) to downtown Bay City by non-motorized modes of transportation is currently inconvenient for bicyclists and pedestrians. The current route does not provide a direct link between downtown Bay City and the BCSRA and may prevent visitors to the BCSRA from taking bike trips to downtown Bay City or vice versa. Providing signage and infrastructure along Henry Street and State Park Drive would help highlight a direct link between the two destinations for bicyclists and pedestrians alike.

Conduct and prioritize a non-motorized corridor study on connecting current paths, trails, and on-road paths. Additionally, an overall assessment of current conditions of the non-motorized system will be needed with assessment management plan to continue to manage the system.

Non-Motorized Plan

BCATS adopted a [Non-Motorized Transportation Plan](#) in 2011. This plan identify recommended routes for on-road bicycle facilities and is intended to be a guide for the communities within and surrounding the BCATS area on ways to provide for non-motorized transportation within their boundaries and to make bicycling a viable transportation alternative. An updated Non-Motorized Transportation Plan is being worked on and expected to be completed in 2018, and will continue to illustrate the importance of connectivity of non-motorized transportation.

One essential for creating a network of non-motorized transportation facilities is connectivity. To create the network, the routes that will provide non-motorized facilities must be defined prior to developing the system. They should connect non-motorized users between their homes and destinations throughout the area. To make these routes possible, they must incorporate more than just the low volume residential/local roads and the separated trail system. The arterial and collector roads are needed to provide non-motorized transportation system connectors to the user's destination(s). Once a network of non-motorized facilities is established, it also needs to be maintained as any roadway. Proper maintenance on the network including on-road bicycle facilities and separated non-motorized facilities (shared use paths, sidewalks, etc.) is essential to providing a connected network of non-motorized transportation facilities.

The creation of a connected network of non-motorized routes could be a vital component in the Fast Act performance measure and EMCOG study on enhancing travel and tourism. MDOT is currently conducting case studies throughout Michigan on the benefits of bicycling in the community and the economy in a city. Key results from the study showed that throughout the state of Michigan total



benefits of bicycling is approximately \$668 million including \$38 million in event and tourism spending¹. The BCATS area with the existing and future development of regional trails could become a destination for bicycling, running, and kayaking events and a stop for long distance riders. Bicycle tourists seek scenic trails, support and service facilities (bike maintenance area and good maps) and nearby attractions which are provided or can be provided in the BCATS area.

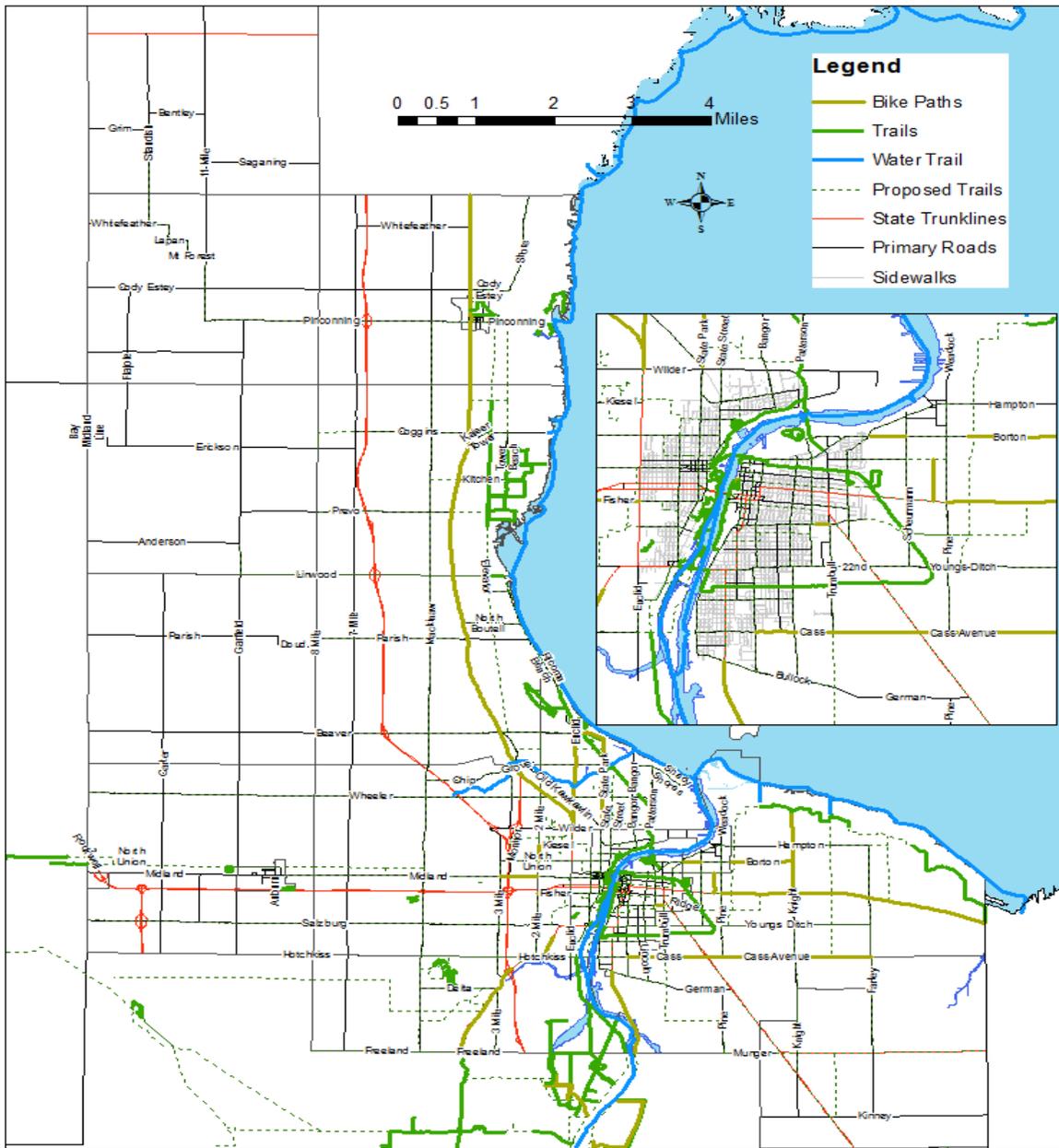
Plan Recommendations:

- Incorporate non-motorized interests into the design of projects to ensure that as many streets and highways as possible can be safely shared by motorists and bicyclists, and identify specific routes that would act as connectors between existing non-motorized trails.
- Improve bicycle facilities including: storage, shelters, comfort stations and automobile parking at trip ends for minor/major generators and transit hubs. Develop the width of paths, grading, drainage, barriers, fixed lighting, landscaping, and structures where appropriate to accommodate users of the facilities.
- Support the development of recreational non-motorized routes and have over 100 miles of trail by 2020.
- Improve safety issues such as drainage grate replacement, improving rail crossings, re-striping and alternate routing.
- Encourage police agencies to provide stricter enforcement of bicyclists who disregard the Uniform Vehicle Code.
- Acquire rights-of-way for independent bikeway and walkway construction.
- Install curb ramps on new or existing facilities.
- Provide traffic control devices, including signs, pavement markings, signals, and signal actuation devices.
- Promote access between non-motorized and other modes of transportation.
- Improve connectivity to transit routes.
- Promote regional trail use through BCATS area to increase tourism and bring in new business.
- Conduct a gap analysis and corridor study of the non-motorized network

¹ The case study can be found by following this [link to MDOT website](#)



Bay County Non-Motorized Trail System



Map 9: Non-Motorized Transportation Route



Intelligent Transportation Systems (ITS)

The BCATS planning process recognizes that ITS technologies must become an integral component of transportation plans and programs. BCATS will work toward the successful implementation of the objectives of the National ITS Plan.

The objective of The National Intelligent Transportation Systems Plan is to advance the safety, efficiency and security of the surface transportation system, provide increased access to transportation services, and reduce fuel consumption and environmental impact.

The ITS Vision is to ensure that:

Future transportation systems will be managed and operated to ensure that they provide seamless, end-to-end intermodal travel for passengers regardless of age, disability, or location, as well as efficient, seamless, end-to-end intermodal freight movement. Future transportation systems will be safe, customer oriented, performance driven, and institutionally innovative, enabled by information from a fully integrated spectrum of computing, communications, and sensor technologies. Public policy and private sector decision-makers will seize the opportunity to make ITS a vital driver in achieving the vision of the transportation system for the 21st century. The National ITS Architecture has eight groups of ITS service areas. That include:

- Traffic Management (ATMS) – includes transportation operations centers, detection systems, Closed Circuit Television (CCTV) cameras, dynamic message signs (DMS), Portable Changeable Message Signs (PCMS), and other related technologies.
- Emergency Management (EM) – includes emergency operations/management centers, improved information sharing among traffic and emergency services, automated vehicle location (AVL) on emergency vehicles, traffic signal preemption for emergency vehicles, and wide-area alerts.
- Commercial Vehicle Operations (CVO) – includes coordination with Commercial Vehicle Information Systems and Networks (CVISN) efforts, Hazardous Material (HAZMAT) management, weigh-in motion (WIM) technology, and security technology, including driver authentication.
- Traveler Information (ATIS) – includes broadcast traveler information such as web sites, traveler information kiosks, and highway advisory radio (HAR).
- Archived Data Management (AD) – includes electronic data management and archiving systems.
- Vehicle Safety (AVSS) – includes connected vehicle technology such as collision avoidance and vehicle automation, specifically speed and steering.
- Maintenance and Construction Management (MCM) – includes work zone management, roadway maintenance and construction information, winter maintenance, and Road Weather Information Systems (RWIS).



- Public Transportation Management (APTS) – includes transit and paratransit AVL, dispatch systems, transit travel information systems, electronic fare collection, and transit security.

The introduction of ITS technologies into the institutional and funding framework of surface transportation, the current and proposed transportation infrastructure and future vehicle development offers the opportunity to achieve an Integrated Network of Transportation Information that will facilitate:

- Availability of information to allow travel choices wherever and whenever desired without being limited by physical disability, age or location.
- Full coordination between bus and rail transit, railroads, highway and arterial systems and eliminating missed connections, confusion during detours and diversions due to emergency and weather conditions.
- Timely and accurate commercial vehicle and freight data shared electronically among authorized stakeholders to support safety, security, productivity, mobility and environmental goals.

An Integrated Network of Transportation Information will require:

- Forging new partnerships within the public sector, at all levels, and the private sector, in its broadest sense, including manufacturers, carriers, service providers and travelers in all modes.
- Research into traveler behavior and requirements, user response to new types of information and personal services, and the types and quality of data that will be most useful to travelers and that will affect their travel patterns and behavior.
- Reaching out to the public safety community to assure a high level of communication and interface to support emergency and disaster response.

Interim Guidance issued by the USDOT:

The final rule and FTA policy on Intelligent Transportation Systems (ITS) Architecture and Standards were issued on January 8, 2001, to implement section 5206(e) of the Transportation Equity Act for the 21st Century (TEA-21). This final rule/policy requires that ITS projects funded by the Highway Trust Fund and the Mass Transit Account conform to the National ITS Architecture, as well as to USDOT adopted ITS Standards.

The final rule/policy means that regions currently implementing ITS projects must have a regional ITS architecture in place in four years. Regions not currently implementing ITS projects must develop a regional ITS architecture within four years from the date their first ITS project advances to final designs.



ITS projects funded by the Highway Trust Fund and the Mass Transit Account must conform to a regional ITS architecture. Major ITS projects should move forward based on a project level architecture that clearly reflects consistency with the National ITS architecture.

The Michigan Department of Transportation has completed a regional ITS architecture and deployment plans for the Bay Region in January of 2008. The document is available at https://www.michigan.gov/documents/mdot/Bay_Region_ITS_Architecture_271327_7.pdf with amendments in 2015. The only current ITS projects that have been completed or a projected project are on I-75 in the BCATS area. The project consists of installing ITS triangle devices.