Bay City, Michigan
Metropolitan Area

BCATS
2040 METROPOLITAN TRANSPORTATION PLAN

FINAL Report
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The Bay City Area Transportation Study

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Forward

Coordination of the 2040 Metropolitan Transportation Plan with MAP-21

On July 6, 2012 President Obama signed into law PL 112-141, Moving Ahead for Progress in the 21st Century (MAP-21). This new transportation bill authorizes and funds federal surface transportation programs for two years, taking effect on October 1, 2012 and expiring on September 30, 2014.

The provisions of MAP-21 were being developed and debated by Congress at the same time the BCATS 2040 Metropolitan Transportation Plan (2040 MTP) was being developed locally by the MPO staff and members. While BCATS was aware of the potential for a new federal transportation bill, the BCATS 2040 MTP was actually completed and locally approved prior to the passage of MAP-21.

This information in this section is provided to acknowledge the existence of MAP-21 and to note its implications for transportation planning. It is also important to note that the emergence of MAP-21 does not represent an abandonment of the programs and planning requirements established under SAFETEA-LU, the previous federal transportation bill. In fact, many of the same programs and metropolitan planning requirements are continued under MAP-21. However, MAP-21 does consolidate several highway programs and establishes new requirements for transportation planning. The most significant changes are summarized below:

Metropolitan Transportation Planning
New policy initiatives include:

- Long-range transportation plans and TIPs are to be developed through a performance-based approach.
- Within two years of the enactment of MAP-21, each MPO shall include representation by transportation providers, including providers of public transit systems. (***Note: BCATS already does this)***.
- Requires MPO establish and use performance-based approach to support national goals.
- MPOs establish targets to track progress toward attainment of outcomes for the region:
  - The targets are established in coordination with the state and providers of public transportation no later than 180 days after the state or public transportation establish performance target.
  - The MPO integrates the targets into the planning process directly or by reference goals, objectives, performance measures, and targets of state and transit plans.
  - The long-range plan shall include a description of performance measures and targets.

Performance Measures

- MAP 21 establishes national goals in seven areas: Safety; Infrastructure Condition; Congestion Reduction; System Reliability; Freight Movement and Economic Vitality; Environmental Sustainability; Reduced Project Delivery Delays.

- USDOT is responsible for establishing performance measures, in consultation with the states,

- MPOs, transit agencies, and stakeholders (and through a rulemaking within 18 months) for the following:
    - NHPP – NHS highway and bridge performance and condition;
    - Highway safety – Serious injuries and fatalities;
    - CMAQ – Traffic congestion and on-road mobile source emissions;
    - Freight movement-related measures; and
    - Transit safety and state of good repair.

- States are required to establish performance targets in coordination with the MPOs and transit operators for the measures (including rural transit-related measures) within one year after the final rule establishing the performance measures.

- MPOs are required to establish performance targets in coordination with the states and transit operators within 180 days after adoption of targets by the state or transit operator.

- Performance measures and targets must be incorporated into long-range planning and short-term programming processes.

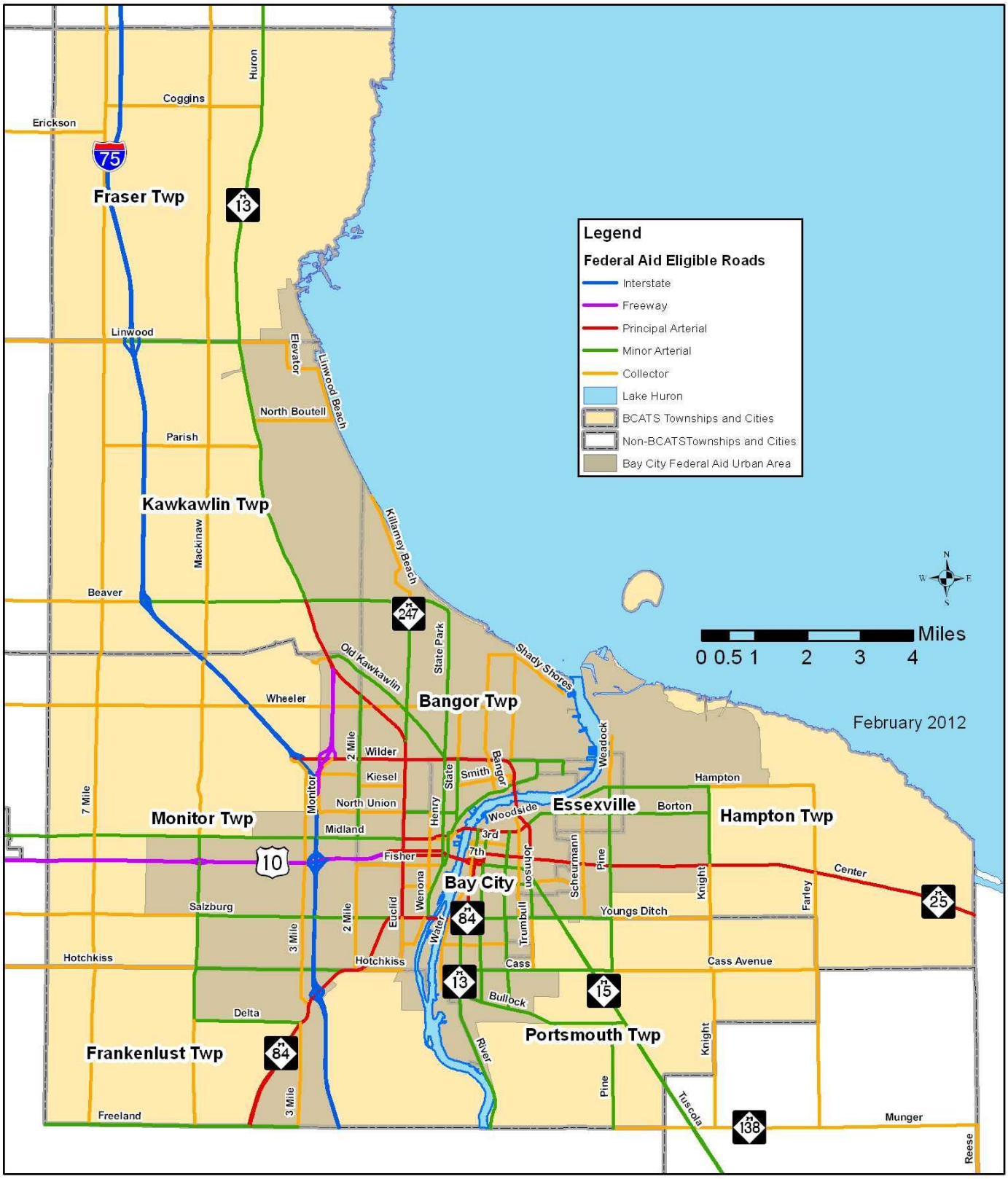
    - Long-range plans, TIPs, and STIPs must show the progress that is expected to be achieved by planned decisions and investments.
    - USDOT will evaluate the appropriateness of state targets and the progress that the state is making in achieving performance targets.
    - States and MPO long-range plans will include System Performance Reports that describe the progress made toward achieving performance targets.
    - USDOT will establish minimum condition levels for all highways on the interstate system and bridges on the NHS.

From the preceding summary, it is apparent that ***performance measures and targets*** are major new items that will need to be addressed in the transportation planning process. Performance measures are

noted in the BCATS 2040 MTP (see Chapter 2). However, these measures may not be the same as the ones that are eventually approved through the USDOT rulemaking process, and the MTP does not specify performance targets.

The MAP-21 language appears to require a collaborative process to establish the performance targets that involves the state, the MPO's, and the transit operators after the final rule to establish the performance measures is put in place by USDOT. Therefore, BCATS intends to fully participate in this process with MDOT, the other Michigan MPO's, and the transit operators to establish appropriate performance targets. If this process results in changes that are required in the 2040 MTP, the appropriate additions and changes will be incorporated as a plan amendment in the future

The Bay City Area Transportation Study (BCATS) Overview Map



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Chapter One

Overview of Bay City Area Transportation Study

BCATS and Transportation Planning

The Bay City area as well as our state and nation, is held together by an extensive transportation network. The transportation system connects people to jobs, hospitals, schools, cultural and sporting events, parks, shopping centers, and to family members. It also provides a vital link in economic development and national defense by connecting seaports, airports, and railroads.

Therefore, legislation contained in Section 134 (a) of title 23, United States Code indicates that it is in the national interest to encourage and promote the safe and efficient management, operation, and development of surface transportation systems. This system will serve the mobility needs of people and freight and foster economic growth and development within and through urbanized areas, while minimizing transportation related fuel consumption and air pollution.

The Bay City Area Transportation Study (BCATS) is the principal public agency, as per Section 134 (a), conducting regional transportation studies for the Bay City Urbanized Area. BCATS, through an agreement with the Bay County Board of Commissioners, provides management and policy functions for the transportation planning programs as required by the **Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)**. BCATS provides transportation planning services on behalf of the metropolitan planning organization (MPO) for the cities of Bay City and Essexville and the townships of Bangor, Monitor, Hampton, Portsmouth, Kawkawlin, Frankenlust and Fraser (see map, page 11). The MPO is established by federal law in all urbanized areas of the nation to carry out the "3C" (continuing, cooperative and comprehensive) transportation planning process. This process is required for the area to continue to receive U.S. Department of Transportation (USDOT) funding. Extensive USDOT funds are spent annually in the Bay City area for highway, bridge, transit, transportation enhancement and safety projects and improvements.

One major function of BCATS under federal law is to produce a transportation plan for the area. The transportation plan is used as a basis to guide the decision of where federal transportation funds should be spent. The transportation plan identifies the area's transportation needs through the year 2040 as well as projects, both funded and unfunded and policies to meet those needs. The plan shall include both long-term and short-term strategies/actions, including but not limited to, operations and management activities that lead to the systematic development of an integrated intermodal transportation system that facilitates the safe and efficient movement of people and goods in addressing current and future transportation demand. The transportation plan shall be reviewed and updated every five years in air quality attainment areas and at least every four years in non-attainment areas to confirm its validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period. In updating a plan, BCATS shall base the update on the latest estimates and assumptions for population, land use, travel, employment, congestion and economic activity.

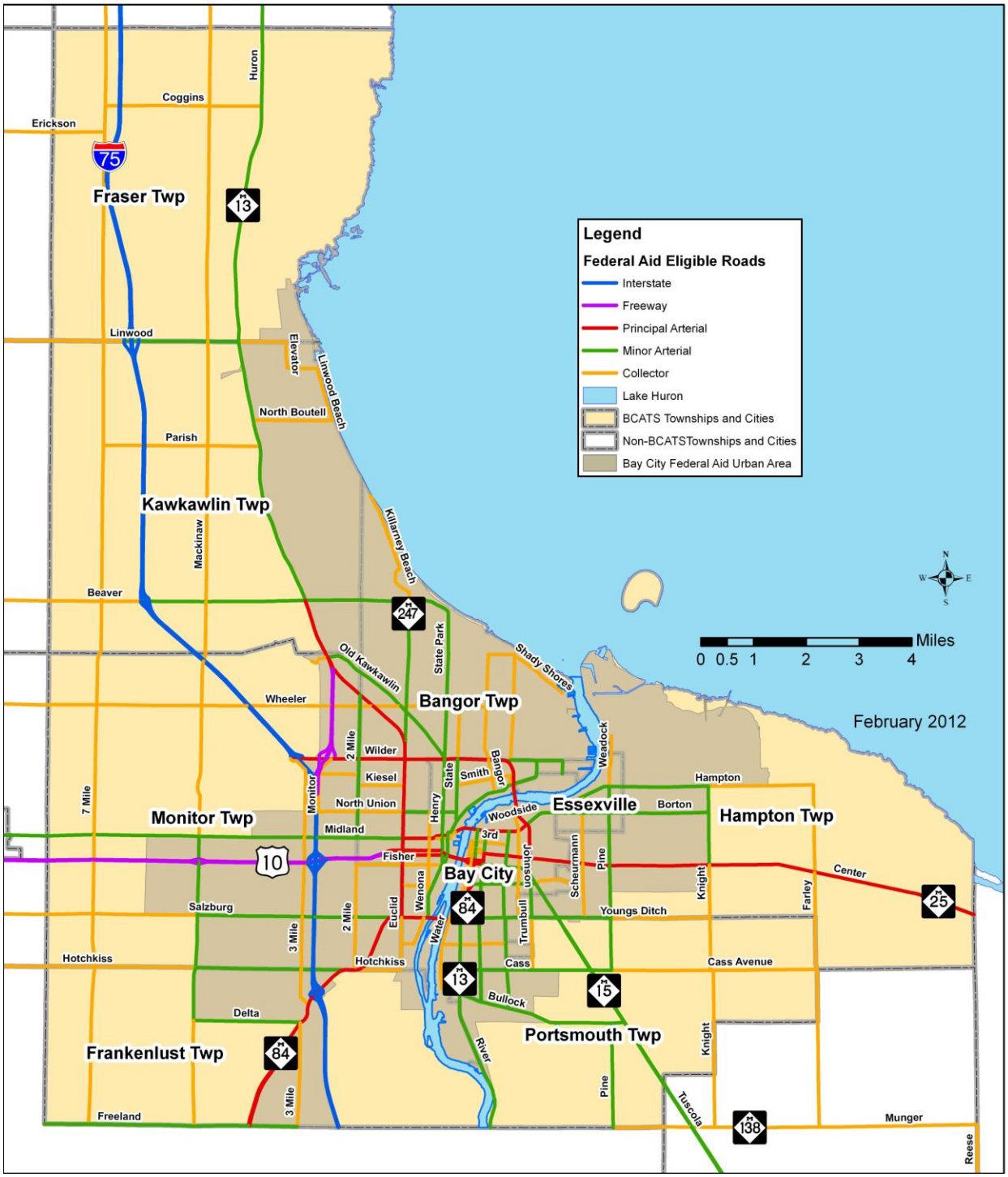
The BCATS is governed by a policy committee that includes various elected and appointed officials from the transportation planning area plus other members from the Michigan Department of Transportation and the U.S. Department of Transportation. The Policy Committee generally meets on the third Wednesday of every other month and the meetings are open to the public.

The BCATS Policy Committee generally acts under the advisement of the BCATS Technical Committee. The Technical Committee reviews, in greater detail, the activities of BCATS and provides recommendations to the Policy Committee. The Technical Committee is composed of technically oriented representatives that presently include various transportation planning, engineering and other interests in the area. The Technical Committee generally meets on the second Tuesday of the week of every other month and is open to the public. The Policy and Technical Committee members are listed below.

BCATS Policy Committee Voting Members	
Terry Watson, Supervisor	Bangor Township
Kim Coonan, Chairman	Bay County Commission
Christopher Rupp, Commissioner	Bay County Commission
Thomas Hickner, Executive	Bay County Executive
Richard Gromaski, Chairman	Bay County Road Commission
Robert Redmond, Chairman	Bay Metro Transit Authority
Christopher Shannon, Mayor	City of Bay City
Larry Elliot, Commission President	City of Bay City
Russell Tanner, Mayor	City of Essexville
Sue Fortune, Executive Director	East Michigan Council of Governments
Ronald Campbell, Supervisor	Frankenlust Township
George Augustyniak, Supervisor	Fraser Township
Terry Spegel, Supervisor	Hampton Township
Dennis Bragiel, Supervisor	Kawkawlin Township
Pamela Boyd, Statewide Planning	Michigan Department of Transportation
Gary Brandt, Supervisor	Monitor Township
Robert Pawlak, Supervisor	Portsmouth Township

BCATS Technical Committee Members	
David Engelhardt, BCATS Director	Bay County Transportation Planning
Jim Lillo, Engineer-Manager	Bay County Road Commission
Mike Stoner, General Manager	Bay Metro Transit
Jack Wheatley, Rowe Engineering	Representing the City of Bay City
Terry Moultane, Planner	City of Bay City
Dan Hansford, Interim City Manager	City of Essexville
Anamika Laad, Planner	East Michigan Council of Governments
Andy Pickard, Transportation Planning Team Leader	Federal Highway Administration
Jack Hofweber, Manager	MDOT / Bay Transportation Service Center
Rachel Phillips, Engineer	MDOT / Bay Transportation Service Center
Jay Reithel, Regional Planner	MDOT / Bay Region
Brandon Wilcox, Planner	MDOT / Statewide Planning

The Bay City Area Transportation Study (BCATS)
Overview Map



Introduction to the BCATS Transportation Plan

The adoption of a long range plan for transportation is not a new concept for the Bay City area. BCATS has adopted long range plans since 1965. However, the Clean Air Act Amendments of 1990 (CAAA), SAFETEA-LU, and the prior transportation bills: ISTEA, and TEA-21, have significantly changed what the long range plan must look like and the issues to be addressed.

In the past, transportation planning and funding was segmented between highways and transit. It emphasized new construction over maintenance, and largely ignored funding availability. There was little related to non-transportation issues and was advisory at the local level. Under SAFETEA-LU, the process links highways and transit, emphasizes maintenance of existing infrastructure, requires that plans and programs be fiscally responsible, requires attention to improving air quality in urban areas, examines land use impacts of transportation decisions and moves much of the decision-making responsibility from the federal and state levels to the local level. Fundamental changes have been made to the way the transportation system is planned, how federal funds can be used for improvements and, most importantly, how and by whom decisions are made.

SAFETEA-LU and the CAAA are two recent pieces of federal legislation that directly impact the transportation planning process. The CAAA calls for a greater integration of transportation and air quality planning processes. It requires that transportation plans, programs and projects conform to state air quality plans, and it mandates a reduction of vehicle miles traveled and congestion levels in some areas not meeting air quality standards.

The goal of the transportation planning process is to improve the entire regional transportation system by emphasizing the preservation of the existing system. Projects and strategies for the transportation system will look to improve the accessibility and mobility for people and goods, creating/enhancing connectivity between modes of transportation, increase the safety and security along the system for all users, promote an efficient manner of management and operation, encourage energy conservation, support economic vitality of the region and provide for consistency between transportation projects and the growth and development patterns.

Safety improvement projects, both motorized and non-motorized, have been done, to a large extent, by individual implementing agencies, as problems are identified. Efforts have also been made on the transit system to increase efficiency and safety. Protection of the environment and the social and economic well-being of the citizens concerning transportation projects are achieved through reducing transportation system costs, reducing environmental pollution and energy consumption, and coordinating land use and transportation.

Even the Bay City area, which has a good highway system and the ease of automobile travel in the area, is experiencing congestion in some areas and moderate congestion in many other parts of the region. Roadway improvements are not being built fast enough, and the prospects for the congestion problem are only that it will get worse. The Bay City area does not face the same severity of the

congestion problem as some larger cities, but the relative deterioration of conditions here is comparable to many of those larger cities.

The 2025 Transportation Plan report was developed from May 2001 to April 2002. The final version of the report was approved in June, 2002. The 2027 Transportation Plan was a minor update to extend the 2025 plan for a two year period, while a new Travel Demand Model was under development to synchronize the Bay City Area Transportation Study (BCATS) Metropolitan Transportation Plan with the Saginaw Metropolitan Area Transportation Study (SMATS) Metropolitan Transportation Plan after which the 2035 Metropolitan Transportation Plan, also known as the Long Range Transportation Plan, was developed between January 2006 and July 2007 to include information from the Tri-Cities Travel Demand Model and to include all aspects of the Transportation Bill, SAFETEA-LU signed by President Bush on August 10, 2005. The 2040 Metropolitan Transportation Plan was developed from January 2011 to June 2012 and incorporated the updated Great Lakes Bay Region Travel Demand Model which identifies peak period deficiencies as well as the incorporation transit travel.

One important aspect of SAFETEA-LU is the enhanced role of local governments. Metropolitan Planning Organizations (MPOs) such as the Bay City Area Transportation Study, in cooperation with state and local transit authorities, have been required to produce long range transportation plans since 1965. Under SAFETEA-LU, BCATS is required to develop both a Metropolitan Transportation Plan (MTP) and a Transportation Improvement Program (TIP) which encompass a broader spectrum of issues, including intermodal facilities and fiscal constraints. As a result, BCATS has developed this 2040 Metropolitan Transportation Plan.

The 2040 planning process

Previous transportation legislation provided broad guidelines for the process used in developing long range transportation plans. SAFETEA-LU continues the tradition of allowing as much flexibility as possible. However, it does specify certain issues that the plan must address. Addressing these issues will result in a plan that significantly improves transportation decisions in the Bay City area including:

- The projected transportation demand of persons and goods in the metropolitan planning area over the period of the transportation plan.

- Existing and proposed transportation facilities (including major roadways, transit, multimodal and intermodal facilities, pedestrian walkways and bicycle facilities, and intermodal connectors) that should function as an integrated metropolitan transportation system, giving emphasis to those facilities that serve important national and regional transportation functions over the period of the transportation plan. In addition, the locally preferred alternative selected from an Alternatives Analysis under the FTA's Capital Investment Grant program (49 U.S.C. 5309 and 49 CFR part 611) needs to be adopted as part of the metropolitan transportation plan as a condition for funding under 49 U.S.C. 5309 when required as a major capital investment project.

- Operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.

- Assessment of capital investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs. The metropolitan transportation plan may consider projects and strategies that address areas or corridors where current or projected congestion threatens the efficient functioning of key elements of the metropolitan area's transportation system.

- Design concept and design scope descriptions of all existing and proposed transportation facilities in sufficient detail, regardless of funding source, in nonattainment and maintenance areas for conformity 53 determinations under the EPA's transportation conformity rule (40 CFR part 93). In all areas (regardless of air quality designation), all proposed improvements shall be described in sufficient detail to develop cost estimates.

- A discussion of types of potential environmental mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain the environmental functions affected by the metropolitan transportation plan. The discussion may focus on policies, programs, or strategies, rather than at the project level. The discussion shall be developed in consultation with Federal, State, and Tribal land management, wildlife, and regulatory agencies. The MPO may establish reasonable timeframes for performing this consultation.

- Identify pedestrian walkway and bicycle transportation facilities in accordance with 23 U.S.C. 217(g).

- Transportation and transit enhancement activities, as appropriate.

- A financial plan that demonstrates how the adopted transportation plan can be implemented.
    - For purposes of transportation system operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).
    - For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under Sec. 450.314(a)(1). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the

transportation plan shall be identified.

- The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified.
- In developing the financial plan, the MPO shall take into account all projects and strategies proposed for funding under title 23, U.S.C., title 49 U.S.C. Chapter 53 or with other Federal funds; State assistance; local sources; and private participation. Starting December 11, 2007, revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars,'' based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).
- For the outer years of the metropolitan transportation plan (i.e., beyond the first 10 years) the financial plan may reflect aggregate cost ranges/cost bands, as long as the future funding source(s) is reasonably expected to be available to support the projected cost ranges/cost bands.
- For illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.
- In cases that the FHWA and the FTA find a metropolitan transportation plan to be fiscally constrained and a revenue source is subsequently removed or substantially reduced (i.e., by legislative or administrative actions) the FHWA and the FTA will not withdraw the original determination of fiscal constraint; however, in such cases, the FHWA and the FTA will not act on an updated or amended metropolitan transportation plan that does not reflect the changed revenue situation.

Participation Plan

There must be adequate opportunity for public officials (including elected officials) and citizen involvement in the development of the transportation plan before it is approved by BCATS, in accordance with the requirements of SAFETEA-LU sec.6001 sec. 134 i(5)b. Such procedures shall include opportunities for interested parties to be involved in the early stages of the plan development/update process. The procedures shall include publication of the proposed plan or other methods to make it readily available for public review and comment. The procedures also shall include publication of the approved plan or other methods to make it readily available for information purposes. The BCATS Participation Plan is included in Chapter 8 of this document.

Conformity Determination

In nonattainment areas for transportation related pollutants, the FHWA and the FTA, as well as BCATS, must make a conformity determination on any new/revised plan in accordance with the Clean

Air Act and the EPA conformity regulations (40 CFR parts 51 and 93). Bay County was an attainment/maintenance area operating under limited maintenance requirements under EPA's 1-hour Ozone Standard. Since EPA has revoked the 1-hour Ozone Standard and replaced it with a newer standard, the former minimal maintenance requirements for the County under the 1 hour Ozone Standard have been removed with that action.

Bay County is in attainment for Ozone under USEPA's recently implemented 8-hour Ozone Standard. There is no requirement to conduct a conformity analysis for the County under this designation.

Projects not currently included in the Plan

Although BCATS compiled the list of local projects with the aid of MDOT, local road agencies, transit operation agencies and the local communities, there will ultimately be projects that will arise that were not included in the Plan. There are two methods through which these projects will be able to receive federal funds provided by SAFETEA-LU. First, a project may be eligible to be part of the Plan if it is determined to be consistent with the policies of the Plan and meets SAFETEA-LU requirements, such as fiscal feasibility, etc.

Second, the Plan may be formally amended to include a specific project through the BCATS committee process.

Chapter Two

Planning Factors and Performance Measure

SAFETEA-LU Planning Factors

The development of goals and objectives for any planning effort reflect the values and principles of the people of an area. They are also a means of measuring the relative success of implementing the proposed plan. When applying these goals and objectives to any effort, the decision makers will need to make tradeoffs between different goals and objectives.

The following goals and objectives have been formulated by an integration of previous BCATS goals and objectives along with the SAFETEA-LU seven planning factors that must be considered as part of the planning process for BCATS. The following factors have been explicitly considered, analyzed as appropriate, and reflected in the BCATS long range planning process.

BCATS Goal One/SAFETEA-LU Factor One

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

Objectives

1. Promote general economic development
2. Specifically improve or enhance tourism
3. Specifically improve or enhance the movement of freight and services
4. Improve or enhance the movement of workers
5. Provide new access to jobs and opportunities
6. Improve the value of residential or nonresidential properties
7. Encourage investments from the private sector
8. Improve access to terminals (sea, air, multimodal, etc)
9. Enhance the ability of the freight system to support product exports/imports

BCATS Goal Two/SAFETEA-LU Factor Two

Increase the safety and security of the transportation system for motorized and nonmotorized users.

Objectives

1. Reduce vehicular accidents and eliminate hazardous locations
2. Minimize rail/auto/transit/nonmotorized conflicts
3. Assist the monitoring or patrolling of the system
4. Increase access to accident incidences and/or disabled vehicles
5. Enhance or add to the system of bike lanes and sidewalks
6. Enhance the public safety of pedestrians
7. Contribute to a reduction in traffic volume
8. Improve the handling of hazardous materials movement

BCATS Goal Three/SAFETEA-LU Factor Three

Increase the accessibility and mobility of both people and freight.

Objectives

1. Provide enhanced or new capacity or mobility to the transportation system to move people
2. Provide enhanced or new accessibility to the transportation system to move people
3. Provide enhanced or new capacity or mobility to the transportation system to move freight
4. Provide enhanced or new accessibility to the transportation system to move freight
5. Enhance the range of freight service options available to local business
6. Provide appropriate access to and from major land uses
7. Minimize barriers to disadvantaged mobility-limited persons

BCATS Goal Four/SAFETEA-LU Factor Four

Protect and enhance the environment, promote energy conservation, improve quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns.

Objectives

1. Reduce vehicle emissions
2. Reduce vehicle noise
3. Decrease fuel consumption
4. Add to the convenience or efficiency of the system
5. Specifically protect wetlands or other natural habitats
6. Decrease air or water pollution
7. Promote nonmotorized travel
8. Promote traffic calming measures
9. Support cultural and/or historic property retention or development
10. Support community cohesion and design
11. Promote environmental equity
12. Enhance development of brownfields
13. Conserve prime agricultural resources and open spaces
14. Planning consistent with local township and city land use plans

BCATS Goal Five/SAFETEA-LU Factor Five

Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

Objectives

1. Improve intermodal connectivity for people
2. Improve the integration/connectivity within people serving modes
3. Improve intermodal connectivity for freight
4. Improve the integration/connectivity within freight serving modes
5. Enhance the information/telecommunication networks that integrate freight and people serving modes

BCATS Goal Six/SAFETEA-LU Factor Six

Promote efficient system management and operation.

Objectives

1. Use Intelligent Transportation Systems (ITS) technology
2. Reduce transportation system cost
3. Contribute to better vehicle and commercial traffic counts
4. Enhance administrative productivity/efficiency
5. Enhance electronic processing of vehicle information
6. Provide technologies to alert traffic to road conditions/alternate routing

BCATS Goal Seven/SAFETEA-LU Factor Seven

Emphasize the preservation of the existing transportation system.

Objectives

1. Contribute to better system maintenance
2. Emphasize system rehabilitation rather than expansion
3. Incorporate new technologies
4. Maximize existing capacity
5. Optimize use of existing infrastructure to enhance service

Performance Measure

Performance Measures (PMs) are ways of determining whether implementation of the Metropolitan Transportation Plan (MTP) will bring BCATS closer to the adopted goals and objectives. PMs can be either quantitative or qualitative. Examples of quantitative PMs include: change in average speed, change in air quality emissions and change in congested Vehicle Miles Traveled (VMT). Following is each MTP goal followed by identification of the PMs.

BCATS Goal One/SAFETEA-LU Factor One

Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

Performance Measure:

- Transit system operation cost per Household served; Transit operating cost per Passenger; Transit operating cost
- Passenger miles of travel
- Estimated Cost of Planned Improvements compared to Actual Project Costs for transportation projects within a range of 0.90 to 1.1
- Percentage of total transportation investment money that came from private sector
- Maintain Level Of Service (LOS) D or better on all major truck routes in the study area
- Monitor the freight traffic volumes along major commercial corridors

BCATS Goal Two/SAFETEA-LU Factor Two

Increase the safety and security of the transportation system for motorized and nonmotorized users.

Performance Measure:

- Incident rate statistics can be used to compare incident rates for the BCATS area to statewide rates over time.
- Work to reduce the number of non-standard traffic control devices
- Review incident rates to locate intersections needing traffic control devices
- Number of accidents at grade crossings; number of fatalities at grade crossings
- Review pedestrians and non-motorized with vehicle incidents
- Compliance with access management guidelines published by the Bureau of Transportation Planning

BCATS Goal Three/SAFETEA-LU Factor Three

Increase the accessibility and mobility of people and for freight.

Performance Measure:

- Percent of demand response fleet that is accessible per ADA guidelines
- Reduced fares to seniors and disabled persons
- Number of autoless households within walking distance of a bus route.
- Reduce travel time in target corridors; Travel time thresholds could be set and performance could be monitored; Before and after improvement comparisons could also be done to show how much a particular improvement contributes to overall system performance
- Percent of demand response pickups that are on time
- Number of employers with flexible work hours; number of rideshare customers; percent increase in rideshare customers
- Level of Service thresholds for each National Functional Class
- Number of miles at unacceptable LOS

BCATS Goal Four/SAFETEA-LU Factor Four

Protect and enhance the environment, promote energy conservation, and improve quality of life and promote consistency between transportation improvements and State and local planned growth and economic development patterns.

Performance Measure:

- Compliance with State and Federal Law including the Clean Air Act Amendments and the Clean Water Act
- The MTP takes into account other plans developed for the area, considers different modes of travel and promotes using land use techniques to help reduce the costs of transportation projects
- Assist in identification of potential environmental mitigation issues by acquiring, creating, and updating, as needed, geographic information system data layers for use by the implementing agencies

BCATS Goal Five/SAFETEA-LU Factor Five

Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.

Performance Measure:

- The MTP takes into account other plans developed for the area, considers different modes of travel and promotes using land use techniques to help reduce the costs of transportation projects

BCATS Goal Six/SAFETEA-LU Factor Six

Promote efficient system management and operation.

Performance Measure:

- Vehicle Hours of Travel at Unacceptable LOS compared to Total Vehicle Hours of Travel. Commercial Vehicle Miles of Travel at Unacceptable LOS; Average Travel Rate for each Roadway Type or National Functional Class
- Lane Miles of deficient pavement by jurisdiction; Number (or percent) of deficient intersections by jurisdiction; Funds spent to retire these deficiencies (distribution by jurisdiction)
- Peak Period transit load factors by route; Peak Period available capacity by route; Peak head-ways by route
- Miles of Multi-Use Roadways (suitable for pedestrian, non-motorized and motorized traffic)
- Vehicle Hours of delay due to drawbridge and rail crossing

BCATS Goal Seven/SAFETEA-LU Factor Seven

Emphasize the preservation of the existing transportation system.

Performance Measure:

- Number of households, business, churches, historic sites disrupted, displaced, relocated due to transportation projects; Costs associated with these disruptions, displacements compared to benefits associated with the projects
- Increase the Percentage of Pavement Surface Evaluation and Rating (PASER) conditions to Good or better

Chapter Three

Socio-Economic Data

Socio-Economic Data

The travel forecast model (discussed in Chapter 4), is dependent on various socio-economic inputs. In the Bay City area, these inputs include population, occupied dwelling units, autos/dwelling unit, retail employment, service employment, other employment and total employment. The 2009 base data was determined by beginning with the 2000 Census Data which was grown to 2009 based on projections from REMI (Regional Econometric, Inc.) and local knowledge of development. Using local information such as building and demolition permits, the growth areas were pinpointed to determine the population changes and shifts.

Employment data was obtained from the combination of the Michigan Employment Security Commission (MESC) and two proprietary company's, *Claritas and Hoovers*, Business Point Data, both of which was reviewed locally. The employment data for 2020, 2030 and 2040 were grown based on the REMI (Regional Econometric, Inc.) projections as well as local knowledge of expected development. REMI is discussed in the next paragraph.

The basic national, state and county source for the REMI EDFS Model is the Bureau of Economic Analysis (BEA) employment, wage, and personal income series. It is an internally consistent data set covering the years from 1969 to the present (updated in the fall/winter for states, spring/summer for counties). The BEA data is available for states at the two-digit level (53 + industries), and available for counties at the one-digit level (14 + industries).

In the table below are the BCATS 2009, 2020, 2030 and 2040 totals for socio-economic data as they are approved by the Policy Committee for use in the base year calibration and future year trip generation of the travel forecast model. The 2010 population and occupied household data are from the 2010 census blocks. Model development started before this data was available but it was used as a base for population and households for the future year forecasts. See chapter 4 for more information on the use of the population and employment data.

BCATS Study Area Socio-Economic Data

Year	Population	Occupied Households	Total Employment	Retail Employment	Service Employment	Other Employment
2009	84,613	38,561	33,882	5,758	16,884	11,240
2010	88,862	37,193	n/a	n/a	n/a	n/a
2020	88,048	37,541	36,205	5,824	18,735	11,646
2030	88,945	38,351	38,228	5,877	20,557	11,794
2040	89,516	38,953	39,618	5,799	21,968	11,851

The Traffic Analysis Zones (TAZs) were created from the 2000 census blocks and constrained by the network and Minor Civil Division (MCD) boundaries. Values for population and occupied households

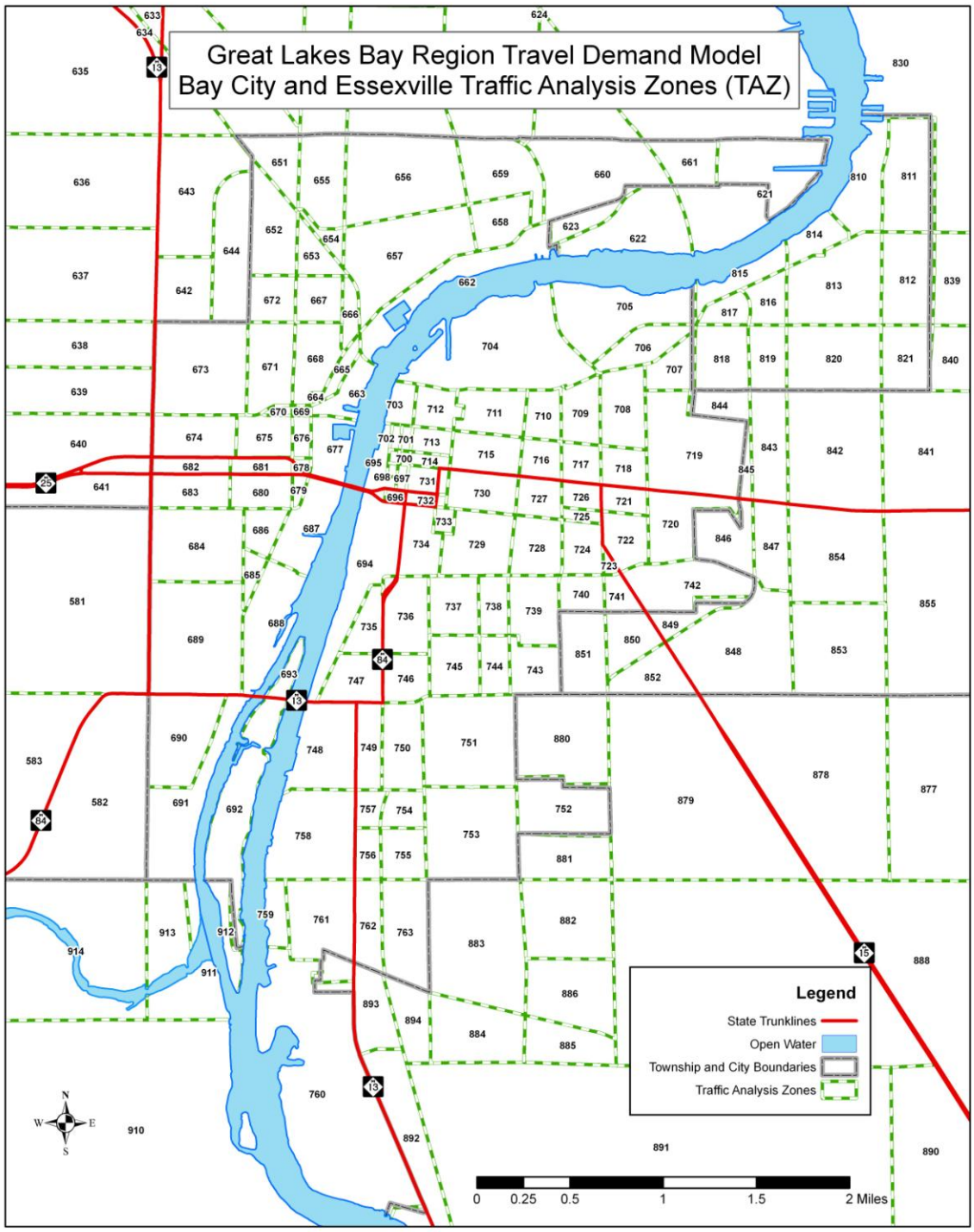
were aggregated from the 2000 census blocks to arrive at TAZ totals for 2000. BCATS staff used methods outlined in chapter 3 to develop the TAZ values for the base year of 2009, 2020, 2030 and 2040 forecast years.

Auto ownership was calculated from 2000 census data. The average autos per household in each census block group were determined. This value was then assigned to each census block in that block group. The average autos per household was then aggregated up to the TAZ level using a weighted average by number of occupied households in each block. This average was held constant for future years.

It is important to remember that socio-economic forecasting is essentially a matter of judgment. Judgment is required in selecting the type of forecast to be implemented; in determining the procedures for making the forecast; and the process used in reviewing the effects of the factors that induce changes in population and employment. The establishment of a large new industry or the loss of a similar size industry can lead to considerable impact on an area's development.

Therefore, although socio-economic projections are a useful and required tool in the planning of an area's future growth and development, it is important to note that the projections are not infallible and should be modified as time progresses to better reflect development impacts occurring in the BCATS planning area.


Great Lakes Bay Region
Travel Demand Model
Bay County Traffic
Analysis Zones (TAZ)
Legend
State Trunklines
Open Water
Township and City Boundaries
Traffic Analysis Zones
N
W
E
S
0 1 2 4 6 8 Miles


Great Lakes Bay Region Travel Demand Model
Bay City and Essexville Traffic Analysis Zones (TAZ)
Legend
State Trunklines
Open Water
Township and City Boundaries
Traffic Analysis Zones
0 0.25 0.5 1 1.5 2 Miles
N
S
E
W

Chapter Four

Urban Area Travel Demand Modeling Process

Urban Area Travel Demand Modeling Process

Because of the interaction of traffic between Bay City, Saginaw and Midland 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 Bay City Area Transportation Study (BCATS) 2040 Metropolitan Transportation Plan (MTP) is a regional model, referred to as the Great Lakes Bay Region (GLBR) Model that includes Bay, Midland and Saginaw Counties. This effort required coordination and cooperation between BCATS, Saginaw Metropolitan Area Transportation Study (SMATS), Midland County Road Commission and the City of Midland.

The urban area travel demand modeling process for the Bay County portion of the GLBR Model was a cooperative effort between the Bay City Area Transportation Study (BCATS), being the Metropolitan Planning Organization (MPO), and the Michigan Department of Transportation, Statewide and Urban Travel Analysis Section (MDOT). MDOT provided the lead role in the process and assumed responsibility for modeling activities with both entities reaching consensus on selective process decisions.

The results of the modeling effort is to provide an important decision making tool for the MPO Metropolitan Transportation Plan development as well as any transportation related studies that might follow. The modeling process is a systems-level effort. Although individual links of a highway network can be analyzed, the results are intended for determination of system-wide impacts. At the systems level, impacts are assessed on a broader scale than the project level.

The travel demand modeling for BCATS has been completed through the use of *TransCAD* software utilized by MDOT. The model is a computer estimation of current and future traffic conditions and is a system-level transportation planning model. Capacity deficiencies are determined using a Level of Service D capacity.

The urban travel demand forecasting process used has seven phases:

1. **Data Collection,** in which socio-economic and facility inventory data are collected.

2. **Trip Generation**, which calculates the number of person trips produced in or attracted to a Traffic Analysis Zone (TAZ).

3. **Trip Distribution**, which takes the person trips produced in a TAZ and distributes them to all other TAZs, based on attractiveness of the zone.

4. **Mode Choice,** which assigns person trips to a mode of travel such as drive alone, shared ride 2, shared ride 3+, walk to transit, park and ride transit.

5. **Assignment,** which determines what routes are utilized for trips. There is a highway assignment and a transit assignment.

6. **Model Calibration/Validation**, which is performed at the end of each modeling step to make sure that the results from that step are within reasonable ranges. The final assignment validation involves verifying that the volumes (trips) estimated in the base year traffic assignment replicate observed traffic counts.

7. **System Analysis**, tests alternatives and analyzes changes in order to improve the transportation system.

There are two basic systems of data organization in the travel demand forecasting process. The first system of data is organized based on the street system. Roads with a national functional class (NFC) designation of "minor collector" and higher are included in the network. Some local roads are included to provide connectivity in the network or because they were deemed regionally significant. The unit of analysis is called a "link." Usually, a link is a segment of roadway which is terminated at each end by an intersection. In a traffic assignment network, intersections are called "nodes." Therefore, a link has a node at each end.

The second data organization mechanism is the Traffic Analysis Zones (TAZ). TAZs are determined based upon several criteria, including similarity of land use, compatibility with jurisdictional boundaries, the presence of physical boundaries, and compatibility with the street system. Streets are generally utilized as zone boundary edges. All socio-economic and trip generation information for both the base year and future year are summarized by TAZ.

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

Network

The road network used in the model is based on Version 10 of the Michigan Geographic Framework and includes most streets 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 available, national functional classification, traffic counts (where available), and volumes for level of service D (frequently described as its capacity). If the information is not the same for the entire length of a link, the predominant value is used. The network attributes were provided to the MPO and MDOT staff by the respective road agencies, with the exclusion of link capacity. The link capacity was determined by utilizing the Capacity Calculator program which takes into account the network attributes and sets a capacity that would approximate a level of service "D" or acceptable level of traffic. Higher volume to capacity ratios are characterized by: stop-and–go-travel, reduced flow rates and severe intersection delays. This typifies unacceptable or deficient traffic conditions.

The street network is used in the traffic assignment process. The traffic assignment process takes the trip interactions between zones from trip distribution and loads them onto the network. The travel paths for each zone-to-zone interchange are based on the minimum travel time between zones. They are calculated by a computer program which examines all possible paths from each origin zone to all destination zones. The shortest path is determined by the distance of each link and the speed at which it operates. The program then calculates travel times for all of the possible paths between centroids and records the links which comprise the shortest travel time path.

The transit network is used in the transit assignment process and overlays the street network as a route system. It reflects the current fixed route system available for the base year. It has its own set of attributes such as bus headway, speed and rider fee. Person trips that are determined to be transit trips are assigned to this network.

Speeds used to calculate minimum travel times are based on each link's national functional classification, facility type, and area type. Speeds represent a relative impedance to travel and not posted speed limits.

Trip Generation

The trip generation process calculates the number of person-trips produced from or attracted to a zone, based on the socio-economic characteristics of that zone. The urban transportation forecasting models do not consider travel characteristics such as direction, length, or time of occurrence as part of trip generation. The relationship between person-trip making and land activity are expressed in equations for use in the modeling process. The formulas were derived from MI Travel Counts Michigan travel survey data and other research throughout the United States. Productions were generated with a cross-classification look-up process based on household demographics. Attractions were generated with a regression approach based on employment and household demographics. In order to develop a trip table, productions (P's) and attractions (A's) must be balanced also referred to as normalization.

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

Trips that begin or end beyond the study area boundary are called "cordon trips." These trips are made up of two components: external to internal (EI) or internal to external (IE) trips and through-trips (EE). EI trips are those trips which start outside the study area and end in the study area. IE trips start inside the study area and end outside the study area. EE trips are those trips that pass through the study area without stopping; this matrix is referred to as the through-trip table.

Trip Distribution

Trip distribution involves the use of mathematical formula which determines how many of the trips produced in a zone will be attracted to each of the other zones. It connects the ends of trips produced in one zone to the ends of trips attracted to other zones. The equations are based on travel time between zones and the relative level of activity in each zone. Trip purpose is an important factor in development of these relationships. The trip relationship formula developed in this process is based on principals and algorithms commonly referred to as the Gravity Model.

The process which connects productions to attractions is called trip distribution. The most widely used and documented technique is the "gravity model" which was originally derived from Newton's Law of Gravity. Newton's Law states that the attractive force between any two bodies is directly related to the masses of the bodies and inversely related to the distance between them. Analogously, in the trip distribution model, the number of trips between two areas is directly related to the level of activity in an area (represented by its trip generation) and inversely related to the distance between the areas (represented as a function of travel time).

Research has determined that the pure gravity model equation does not adequately predict the distribution of trips between zones. In most models the value of time for each purpose is modified by an exponentially determined "travel time factor" or "F factor" --also known as a "Friction Factor." "F factors" represent the average area-wide effect that various levels of travel time have on travel between zones. The "F factors" used were developed using an exponential function described in the Travel Estimation Techniques for Urban Planning, NCHRP 365. The matrix is generated in TransCAD during the gravity model process.

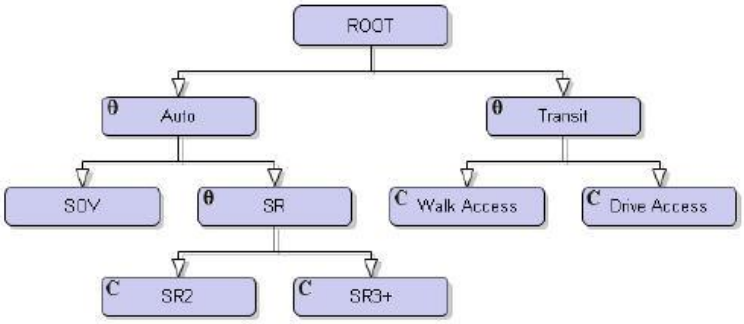
The primary inputs to the gravity model are the normalized productions (P's) and attractions (A's) by trip purpose developed in the trip generation phase. The second data input is a measure of the temporal separation between zones. This measure is an estimate of travel time over the transportation network.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

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

The Gravity Model utilizes the by-purpose P's & A's, the by-purpose "F factors", and the travel times; including terminal and intra-zonal.

Mode Choice

The number of person trips and their trip starting and ending point have been determined in the trip generation and trip distribution steps. The mode choice step determines how each person trip will travel. The GLBR travel demand model uses a nested logit model to predict mode choice.



With this logit structure the basic modes are:
1. Single Occupancy Vehicle (SOV)
2. Shared Ride 2 people in vehicle (SR2)
3. Shared Ride 3 or more people in vehicle (SR3+)
4. Walk to transit stop
5. Drive to transit stop

Mode choice model utility equations are used to predict the mode used for a trip. Utility equations vary by trip type and take into consideration things like in-vehicle time, out-of-vehicle time, length and cost. The proximity to transit routes or park and ride locations limits the TAZs that can utilize transit options. The output to this step is a vehicle trip matrix and transit trip matrix. The external trips and the truck trips are added to the vehicle trip matrix.

Assignment

The GBLR model has 4 time periods that were developed to match the peak periods observed in traffic counts.

The following period were used:
AM Peak (7a - 9a)
Mid Day (9a - 3p)
PM Peak (3p - 6p)
Night Time (6p – 7a)

A fixed time of day factor method was utilized. The factors were developed from the MI Travel Counts Michigan travel survey data and vary by trip type. Default factors from the Quick Response Freight Manual I (QRFM I) were used for truck trips.

The traffic assignment process takes the trips produced in a zone (trip generation) and distributed to other zones (trip distribution) and loads them onto the network via the centroid connectors. A program examines all of the possible paths from each zone to all other zones and calculates all reasonable time paths from each zone (centroid) to all other zones. Trips are assigned to paths that are the shortest path between each combination of zones. As the volumes assigned to links approach capacity, travel times on all paths are recalculated to reflect the congestion and the remaining trips are assigned to the next shortest path. This process continues through several iterations until no trip can reduce its travel time by taking the next shortest path. This is a user equilibrium assignment method and reflects the alternative routes that motorists use as the shortest path becomes congested. The assignment produces an assigned volume for each link.

The transit assignment is a daily assignment and uses the transit network route system to assign the shortest path for trips.

Model Calibration/Validation

The outputs of each of the four main steps, Trip Generation, Trip distribution, Mode Choice and Assignment, are checked for reasonableness against national standards. Modifications can be made at each step before moving on to the next.

The final model calibration/validation verifies that the assigned volumes simulate actual traffic counts on the street system. When significant differences occur, additional analysis is conducted to determine the reason. At this time additional modifications may be made to the network speeds and configurations (hence paths), trip generation (special generators), trip distribution (F factors), socio-economic data, or traffic counts.

The purpose of this model calibration phase is to verify that the base year assigned volumes from the traffic assignment model simulate actual base year traffic counts. When this step is completed, the systems model is considered statistically acceptable. This means that future socio-economic data or future network capacity changes can be substituted for base (existing) data. The trip generation, trip distribution, mode choice and traffic assignment steps can be repeated, and future trips can be estimated for systems analysis. It is assumed that the quantifiable relationships modeled in the base year will remain reasonably stable over time.

Applications of the Calibrated/Validated Model

Forecasted travel is produced by substituting forecasted socio-economic and transportation system data for the base year data. This forecasted data is provided by the MPO. The same mathematical formulae are used for the base and future year data. The assumption is made that the relationships expressed by the formulae in the base year will remain constant over time (to the target date).

After either base year or future trips are simulated, other types of modeling studies can be conducted.

- Network alternatives to relieve congestion can be tested for the 2040 Metropolitan Transportation Plan. Future traffic can be assigned to the existing network to show what would happen in the future if no improvements were made to the present transportation system. This process is often referred to as “deficiency analysis.” From this, improvements can be planned that would alleviate demonstrated capacity problems.

- The impact of planned roadway improvements or network changes can be assessed.

- Links can be analyzed to determine what zones are contributing to the travel on that link. This can be shown as a percentage breakdown of total link volume.

- The network can be tested to simulate conditions with or without a proposed bridge or new road segment. The assigned future volumes on adjacent links would then be compared to determine traffic flow impacts. This, in turn, would assist in assessing whether the bridge should be replaced and/or where it should be relocated.

- Road closure/detour evaluation studies can be conducted to determine the effects of closing a roadway. This type of study is very useful for construction management.

- The impacts of land use changes on the network can also be evaluated (e.g., what are the impacts of a new regional mall being built).

Two issues are critical in using the modeling tools and processes:

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

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

System Analysis for MTP

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

1. Existing trips on the existing system. This is the "calibrated," existing network/scenario. This is a prerequisite for the other two scenarios.

2. Future trips on the existing network. Future trips are assigned to the existing network. This alternative displays future capacity and congestion problems if no improvements to the system are made. This is called the "No Build" alternative, and usually includes the existing system, plus any projects which are committed to be built in the future.

3. Future trips on the future system. This scenario is the future Metropolitan Transportation Plan network. It includes capacity projects listed in the MTP.

It is important to remember that the volume to capacity ratio reflects a volume for a specified time period and a capacity for that same period of time. It does not reflect deficiencies that only occur briefly at certain short time periods because of roadway geometrics, signalization or roadway condition. Please refer to the maps of the deficiencies and chapter 5 for the capacity deficiencies identified by the model.

Chapter Five

Transportation Deficiencies, Issues, and Projects

Bay County Road Commission
City of Bay City
City of Essexville
Michigan Department of Transportation
Bay Metro Transit Authority
Transit Project List
Adopted Project List
Environmental Mitigation

Transportation Deficiencies, Issues, and Projects

The center or focus of the Metropolitan Transportation Plan is a list of specific projects, which have been developed by BCATS. Each project must meet an identified transportation need, primarily addressing capacity and maintenance deficiencies and improving safety. Under SAFETEA-LU guidelines, each project must be fundable within anticipated financial resources.

The following is a list of projects that may be programmed into the Transportation Improvement Program (TIP):

A. Identified capacity deficiencies from the 2009 transportation network loaded with 2009 traffic volumes (existing problem areas).

B. Identified capacity deficiencies from the 2040 transportation network loaded with 2040 traffic volumes (expected future problem areas).

C. Maintenance type deficiencies (reconstruction or resurfacing needs) identified from ongoing pavement management practices of the implementing agencies and BCATS.

D. Intersections identified as having existing or potential capacity or safety related issues from review of accident data or lane capacity analysis.

E. Area wide or system wide issues or potential projects needing transportation systems management solutions or further study, which may include transportation enhancement and/or other intermodal solution.

The major priority is roadway repair and preservation. There are approximately 202.4 miles of federal-aid routes within the BCATS urbanized area. About 129.7 miles are under local jurisdiction and about 73.7 miles are under state jurisdiction. BCATS, through funding from the Transportation Asset Management Council (TAMC), has rated the condition of these roadways since 2003. Working closely with the road agencies, pavement management practices are reviewed. As of February 2012, approximate 35% of BCATS federal aid eligible roads are in Good to Excellent condition, 34% in Fair condition and 31% are in Poor condition.

If the goal is to upgrade the pavement condition of these roadways so that 75% are rated good or excellent by 2022, then funding levels for all agencies would need to be at least double what is currently being spent annually on capital improvement to reach that goal.

Deficiency Ratings by Agency in the GLBR Travel Demand Model: 2040

Bay County Road Commission

2009 CAPACITY DEFICIENCIES

- AM Peak deficiency
  1. Mackinaw Rd – US-10 and Tech Dr (V/C: 1.03)
  2. Wilder Rd – State Park Dr to Bay City Mall approaching capacity (V/C: 0.87)

- PM Peak deficiency (none identified)
  1. Mackinaw Rd – US-10 and Tech Dr approaching capacity (V/C: 0.95)
  2. Wilder Rd – State Park Dr to Bay City Mall approaching capacity (V/C: 0.83)

2040 CAPACITY DEFICIENCIES

- AM Peak deficiency
  1. Mackinaw Rd – US-10 and Tech Dr (V/C:1.07); Addition of Center Turn Lane (V/C: 0.99)
  2. Wilder Rd – State Park Dr to Bay City Mall approaching capacity (V/C: 0.87)

- PM Peak deficiency
  1. Mackinaw Rd – US-10 and Tech Dr approaching capacity (V/C: 0.99)
  2. Wilder Rd – State Park Dr to Bay City Mall approaching capacity (V/C: 0.83); Addition of Center Turn Lane on Trumbull St (V/C: 0.87)

Maintenance Deficiencies

Road Segments

Bangor Rd – Wheeler Rd to Donahue Beach Drive
Beaver Rd – Old Beaver Rd to Fraser Rd (I-75)
Chip Rd - Mackinaw Rd to Fraser Street (Kawkawlin)
Erickson Rd – Seven Mile Rd to Eight Mile Rd
Euclid Avenue - M-84 to Hotchkiss Rd
German Rd – M-15 to S. Trumbull Rd
Killarney Beach Rd - North of Euclid Avenue
Linwood Rd – M-13 to Seven Mile Rd
Mackinaw Rd – Prevo Rd to Anderson Rd; Delta Rd to Freeland Rd
Midland Rd - Mackinaw Rd to Three Mile Rd

Monitor Rd – Wheeler Rd to Grove Street (Kawkawlin)
North Union Rd- Monitor Rd to Euclid Avenue
Old Kawkawlin Rd - M-13 to State Park Drive
Patterson Rd – Wilder Rd to Wheeler Rd
Pine Rd – Cass Avenue to Youngs Ditch
Ridge Rd - Bay City Limits to Scheurmann Rd
Salzburg Rd – Three Mile Rd to Mackinaw Rd
Scheurmann Rd - Youngs Ditch Rd to M-25
Seven Mile Rd – Salzburg Rd to Midland Rd; Beaver Rd to River Rd; Prevo Rd to Anderson Rd
Shady Shores Drive - Patterson Rd to Saginaw River
Three Mile Rd - M-84 to Amelith Rd; Wilder Rd to Midland Rd
Trumbull Street - 22nd Street to North of Cass Avenue
Weadock Highway/Pine Rd -Railroad Crossing to Karn-Weadock Power Plant
Wilder Rd - Patterson Rd to Tiernan Rd
Youngs Ditch – Pine Rd to Knight Rd
Zimmer Rd – Bangor Rd to Patterson Rd

Intersections
Pine Road / Youngs Ditch (safety, capacity)
Ridge Road / Scheurmann Road (realignment)
Truman Parkway / Wilder Road (safety*, channelization)
Two Mile Road / Wilder Road (safety*)

*Safety issues were determined by crash history, alignment, local knowledge and/or design deficiencies.

Bridges
Chip Road over the Kawkawlin River
Mackinaw Road over the Kawkawlin River
Midland Road over the Culver Creek
Wheeler Road over the Kawkawlin River

Issues
Access Management
All-season roadway network (truck related)
Changing land-use impacts on transportation facilities
Closing of Monitor Road south of Wilder Rd and diverting traffic to Bay-Arenac Dr
Interconnection of traffic signals along all corridors
Railroad crossings (at grade)
Providing Paved Shoulder
County Drains adjacent to County Roads

City of Bay City

2009 CAPACITY DEFICIENCIES

- AM Peak
  1. N. Water –Woodside to Essexville city limits (V/C: 1.18)
  2. Trumbull St – Woodside Ave to M-25 (V/C: 1.15)
  3. Kosciuszko St – Michigan Ave to Lincoln St (V/C: 1.05)
  4. Midland St – Euclid to Wenona, approaching capacity (V/C: 0.98)
- PM Peak
  1. Trumbull St – Woodside Ave to M-25 (V/C: 1.09)
  2. N. Water – Woodside to Essexville city limits (V/C: 1.08)
  3. Midland St – Euclid to Wenona, approaching capacity (V/C: 0.94)
  4. Kosciuszko St – Michigan Ave to Lincoln St approaching capacity (V/C: 0.83)

2040 CAPACITY DEFICIENCIES

- AM Peak
  1. N. Water –Woodside to Essexville city limits (V/C: 1.21)
  2. Trumbull St – Woodside Ave to M-25 (V/C: 1.16); with center turn lane (V/C < 0.8)
  3. Kosciuszko St – Michigan Ave to Lincoln St (V/C: 1.1)
  4. Midland St – Euclid to Wenona, approaching capacity (V/C: 0.97)
- PM Peak
  5. N. Water – Woodside to Essexville city limits (V/C: 1.07)
  6. Trumbull St – Woodside Ave to M-25 (V/C: 1.04); with center turn lane (V/C < 0.8)
  7. Midland St – Euclid to Wenona, approaching capacity (V/C: 0.92)
  8. Kosciuszko St – Michigan Ave to Lincoln St approaching capacity (V/C: 0.87)

Maintenance Deficiencies

Segments

- Smith St: State St to Patterson St
- Bangor St: Wilder Rd to Marquette Ave
- State St: Wilder Rd to Elm St
- Marquette Ave: Hart St to Transit St
- Patterson St: Smith St to Marquette Ave
- E North Union St: Henry St to State St
- Wenona Ave: Ionia Ave to North Union St
- Midland St: Euclid Ave to Wenona Ave (Resurfacing); Henry St to Litchfield Ramp
- Midland And Vermont St: Wenona St to Walnut St (Resurfacing)
- Marquette Ramp: Liberty Bridge to Marquette Ave (Joint Repairs)
- Henry St: Vermont St to Thomas St (M-25 EB)
- Walnut St: north of Veteran Bridge to Fisher St
- Fisher St: Euclid Ave to Walnut St

- Ionia Ave: Euclid Ave to Henry St
- Wenona Ave: Salzburg Ave to Ivy St (reconstruction planned for 2013 as part of M-13/M-84 project)
- Backus St: Euclid Ave to Morton St
- Morton St: Salzburg Ave (M-13/M-84) to Backus St
- N Water St: Woodside Ave to Atlantic St
- Woodside Ave: McEwen to Truman Parkway (Joint Repairs)
- Trumbull St: Woodside to M-25; 10th St to South City Limits
- Johnson St: North of Woodside; 3rd St to Center; Center to Columbus; 15th St to 22nd St
- 3rd St; Water St to Saginaw St; Washington Ave to Adams St; Madison Ave to Grant St
- 5th St: Water St to Madison Ave
- Center Ave: Water St to Madison Ave
- 6th St: Water St to Washington Ave
- Washington Ave: Woodside Ave to 7th St (Resurfacing, streetscape)
- Saginaw St: 3rd St to 10th St
- Water St: 3rd St to Center Ave
- Lincoln St: Woodside Ave to 1st St; 18th St to Cass Ave
- Madison Ave: Woodside Ave to Center Ave (Resurfacing); McKinley St to Columbus Ave
- Lafayette Ave: Garfield Ave to Michigan Ave (Resurfacing)
- Fremont Ave: Water St to Lincoln St
- Cass Ave: Water St to Michigan Ave
- McGraw St: Water St to Michigan Ave

Intersections

- Vermont / Walnut (capacity)
- Henry / Vermont (capacity and timing)
- State / Wilder (capacity)
- Woodside/Trumbull (safety)

Issues

- Railtrail crossings
- Operation and maintenance of moveable bridges
- Mast-arm signal replacements
- Interconnection of traffic signals along various corridors
- All season roadway network (truck related)
- Access Management
- Land-use impacts on transportation facilities
- Traffic signal removal at unwarranted locations
- Center Avenue Historic Heritage Route
- Trumbull St/M-15/Wilder Rd Corridor Study
- Establishment of Bicycle Routes on the existing roads

City of Essexville

2009 CAPACITY DEFICIENCIES

- AM Peak
  1. Borton Ave –East of Woodside to N Water St approaching capacity (V/C: 0.81)

- PM Peak
  1. Borton Ave –East of Woodside to N Water St approaching capacity (V/C: 0.85)

2040 CAPACITY DEFICIENCIES WITH LISTED PROJECTS

- AM Peak
  1. Borton Ave –East of Woodside to N Water St approaching capacity (V/C: 0.87)

- PM Peak
  1. Borton Ave –East of Woodside to N Water St approaching capacity (V/C: 0.84)

Maintenance Deficiencies

Segments

- Woodside Avenue - Scheurmann St to Pine St

Intersections

- Woodside Ave & Scheurmann St
- Woodside Ave & Main St

Issues

- Streetscaping along all federal-aid routes
- Intermodal connection to port facilities
- Access Management
- Transportation facilities needed as a result of changing land-uses
- Transportation Enhancement and local Safety projects
- All-season roadway network (truck related)
- Railroad crossing at Woodside and 'Y' junction
- Establishment of Bicycle Routes on the existing roads

Michigan Department of Transportation

2009 CAPACITY DEFICIENCIES

- AM Peak
  1. M-13/M-84 Salzburg Ave and Lafayette Bridge – Euclid to Water St(V/C: 1.39)
  2. M-13/M-84 Lafayette Street – Water to Garfield Ave (V/C: 1.19)
  3. M-25 (Veterans Memorial Bridge), approaching capacity (V/C: 0.86)

- PM Peak
  1. M-13/M-84 Salzburg Ave and Lafayette Bridge – Euclid to Water (V/C: 1.37)
  2. M-13/M-84 Lafayette Street – Water to Garfield Ave (V/C: 1.11)

2040 CAPACITY DEFICIENCIES WITH LISTED PROJECTS

- AM Peak
  1. M-13/M-84 Salzburg Ave – Euclid Ave to Wenona Ave (V/C: 1.4); with addition of Center Turn Lane (V/C: < 0.8)
  2. M-13/M-84 Lafayette Bridge – Wenona to Water St (V/C: 1.39)
  3. M-13/M-84 Lafayette Street – Water to Garfield Ave (V/C: 1.19)
  4. M-25 (Veterans Memorial Bridge), approaching capacity (V/C: 0.95)

- PM Peak
  1. M-13/M-84 Salzburg Ave – Euclid Ave to Wenona Ave (V/C: 1.24); with addition of Center Turn Lane (V/C: < 0.8)
  2. M-13/M-84 Lafayette Bridge – Wenona Ave to Water St (V/C: 1.33)
  3. M-13/M-84 Lafayette Street – Water to Garfield Ave (V/C: 1.11)

Maintenance Deficiencies

Segments

- M-13/M-84 (Salzburg Ave): (Reconstruction planned for 2013)
- M-84: M-25 to 15th St (Concrete Road)
- M-84: 15th St to Lafayette Ave (Asphalt Road)
- M-84: Delta Rd to Euclid Ave
- US-10: I-75 to Midland

Intersections

- US-10 and Mackinaw Rd Interchange
- M-84 and Lafayette / Garfield
- M-13/M-84 and Lafayette / Broadway
- M-13 (Euclid Ave) / M-84 Salzburg (safety, capacity)

- M-13/I-75 Connector at Wilder Rd and Monitor Rd (capacity, safety)
- Signal progression at intersections along M-25 and M-13 corridors

Issues

- US-10 & Mackinaw Rd road interchange (operational/capacity)
- US-10 & Garfield Rd road interchange (relocation of Fisher Rd and safety-line of sight)
  - Outside of the BCATS area but has significant impact to the transportation network as the route to the regional Airport
- See State Long Range Transportation Plan Strategies, Appendix A. regarding highway, bridge, truck, carpool, access management, ridesharing, non-motorized, public transportation, regional rail, intercity bus, air, marine and intercity rail issues.

Bay Metro Transit Authority Projects

Vehicle Replacement

Bay Metro currently operates 47 buses and 18 vans. The estimated useful life for the smaller buses is seven years, for the medium buses is 10 years, and for the larger buses is 12 years. Useful life for vans is four years or 100,000 miles. Due to the significant effort placed on maintaining the fleet, the useful lives of BMTA vehicles are typically extended as follows:

Small buses: seven years extended to 15-18 years
Medium buses: 10 years extended to 18-20 years
Large buses: 12 years extended to 18-20 years
Vans: four years extended to 5-6 years

Based on these estimates, all 47 buses should be eligible to be replaced twice from fiscal year 2013 until the end date of the current Metropolitan Transportation Plan. Twelve of 18 BMTA vans will need to be replaced six times and six vans five times in this time frame, (see the Transit Projects table on the following page for more details).

Facilities

Our current facility which houses maintenance, operations and administrative functions of the transit system is 56,000 square feet and was completed in 1981 at a cost of $3.5 million. The building is presently 32 years old but is in very good condition and should continue to be functional for many more years. However, it will be reasonable to consider either a major renovation or building replacement during the term of the Metropolitan Transportation Plan terminating in the year 2040. The facility will reach 40 years of age in the year 2021 and planning for its replacement/ upgrade should have begun by that time. Assuming a building of similar size and function the cost estimate (for a new building) would be about $15,000,000 in 2021.

The intermodal central bus station, located in downtown Bay City, serves both the local transit system and intercity carriers. It was completed in 1991. Constant bus traffic, especially by the much heavier intercity coaches, takes a significant toll on the pavement. Concrete drives on the site have already been replaced one time at a cost of about $250,000. It is expected that replacement will need to be done about every 15 years with the next replacement occurring about 2015 at an estimated cost of $300,000. The next concrete replacement would occur in 2030 in conjunction with the replacement of the terminal itself. The terminal is relatively small, about 2,500 square feet, most of which is a glass enclosed lobby. A renovation has occurred in 2012; however, another major renovation will likely be necessary during the term of the Metropolitan Transportation Plan. The initial cost of construction (for the building alone) was about $500,000. A major renovation, tentative scheduled for 2030, should only cost in the neighborhood of $250,000, since smaller facility maintenance projects will take place along the way. For instance, a new roof was installed six years ago and a new heating/cooling system was installed about seven years ago.

Transit Projects

Year	Vehicle to be Replaced	Number of Vehicles	Cost Per Vehicle (5% increase/yr)	Total
2013-2018	Lift Vans	18	$57,000	$1,026,000
2013	1994 Orion II2013	4	$330,000	$1,320,000
2014	1996 Orion II2014	6	$347,000	$2,082,000
2015	1998 Orion II2015	9	$365,000	$3,285,000
2015	Central Bus Station Concrete Drive Replacement	1	$300,000	$300,000
2016	1999 Orion II2016	4	$384,000	$1,536,000
2017	2000 Orion II2017	3	$404,000	$1,212,000
2019-2024	Lift Vans	18	$60,000	$1,080,000
2019	2002 Gillig2019 (40ft.)	3	$500,000	$1,500,000
2019	2002 Gillig2019 (30 ft.)	7	$425,000	$2,975,000
2020	2007 Thomas2020	3	$447,000	$1,341,000
2020-2025	Lift Vans	18	$70,000	$1,260,000
2021	2008 Thomas2021	4	$470,000	$1,880,000
2021	Maintenance & Administration Building Replacement	1	$15,000,000	$15,000,000
2026	2011 Gillig2026 (30 ft.)	4	$494,000	$1,976,000
2026-2031	Lift Vans	18	$63,000	$1,134,000
2027	2013 Replacement	4	$519,000	$2,076,000
2028	2014 Replacement	6	$545,000	$3,270,000
2029	2015 Replacement	9	$573,000	$5,157,000
2030	2016 Replacement	4	$607,000	$2,428,000
2030	Central Bus Station Renovation	1	$250,000	$250,000
2031	2017 Replacement	3	$638,000	$1,914,000
2032-2037	Lift Vans	18	$67,000	$1,206,000
2036	2019 Replacement (40 ft.)	3	$710,000	$2,130,000
2036	2019 Replacement (30 ft.)	7	$670,000	$4,690,000
2037	2020 Replacement (30 ft.)	3	$704,000	$2,112,000
2038	2021 Replacement	4	$740,000	$2,960,000
2038-2040	Lift Vans	12 out of 18	$71,000	$852,000
	Replacement Totals	**195**		**$67,952,000**

Transportation Projects

The following transportation projects are specifically identified as part of this BCATS 2040 Plan. These projects have an identified source of funding, thus ensuring a financially constrained plan. Additional funding that is available after these projects are constructed is currently appropriated for operations and maintenance of the transportation network.

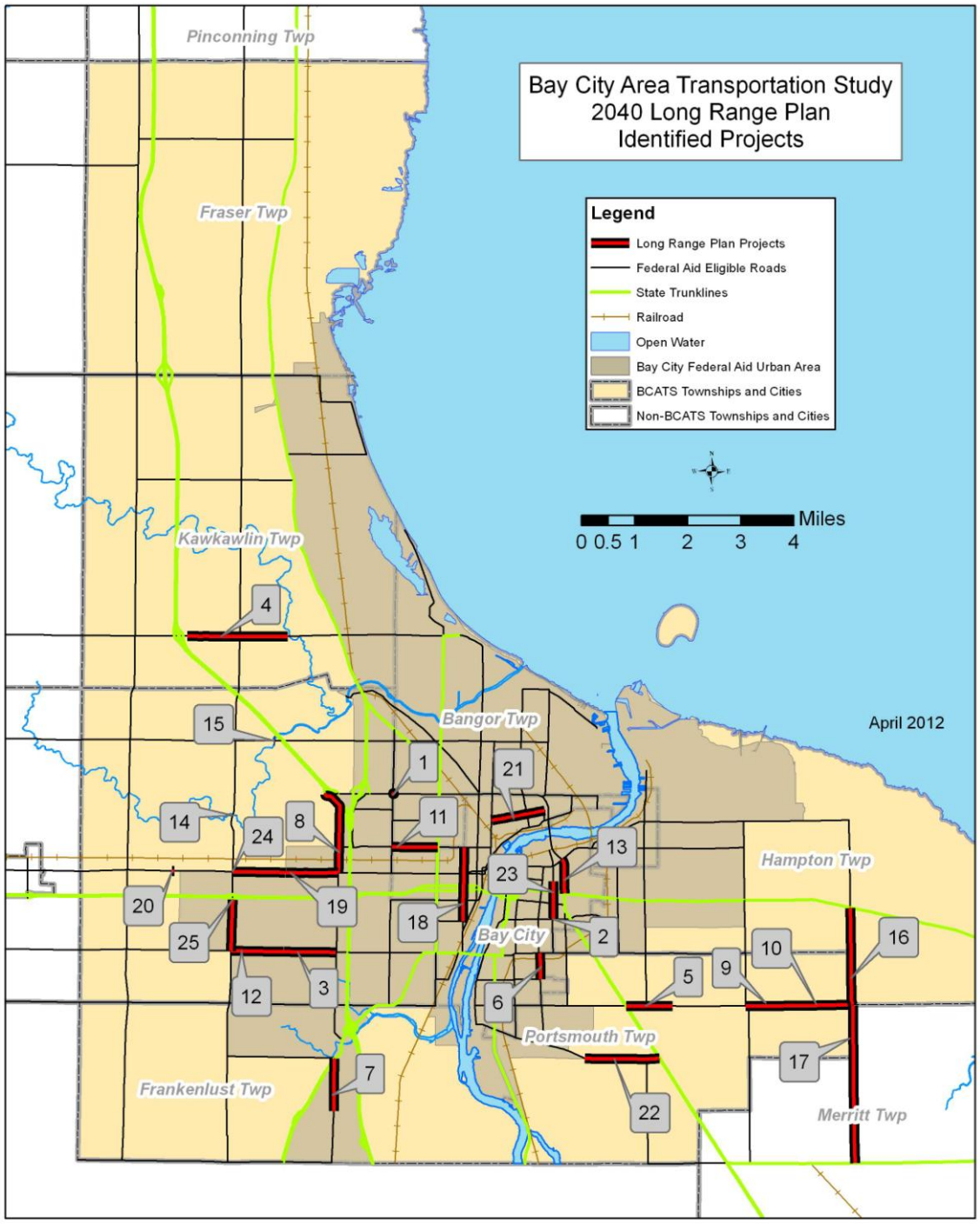
Project Number	Project	Location	Project Type	Length (mi.)	Year	Cost (x1000)
1	2 Mile Rd & Wilder Rd	Intersection Improvements	Left Turn Phase	0	2012	$100
2	Johnson St	Center Ave to Columbus Ave	Reconstruction	0.51	2012	$1,498
3	Salzburg Rd	3 Mile Rd to 4 Mile Rd	Crush & Shape	1	2012	$650
4	Beaver Rd*	Old Beaver Rd to Fraser Rd	Crush & Shape	2	2013	$710
5	Cass Ave*	M-15 to Southeast Boutell Rd	Crush & Shape	0.89	2013	$340
6	Lincoln St	22nd St to Fremont St	Reconstruction	0.49	2013	$1,471
7	3 Mile Rd	Amelith to M-84	Crush & Shape	0.99	2014	$550
8	3 Mile Rd	Wilder Rd to Midland Rd	Crush & Shape	1.64	2014	*$550*
9	Cass Ave*	Knight Rd to Finn Rd	Crush & Shape	1	2014	$410
10	Cass Ave*	Finn Rd to Farley Rd	Crush & Shape	1.03	2014	$410
11	North Union	2 Mile Rd to Euclid Ave	Crush & Shape	0.88	2014	$700
12	Salzburg Rd	4 Mile Rd to Mackinaw Rd	Crush & Shape	1	2014	$700
13	Trumbull St	Woodside Ave to M-25 (Center Ave)	Reconstruct and add center turn lane	0.53	2014	$2,000
14	Mackinaw Rd	Over Kawkawlin River	Bridge Rehabilitation	0	2015	$140
15	Wheeler Rd	Over Kawkawlin River	Bridge Rehabilitation	0	2015	$160
16	Farley Rd*	Cass to M-25	Resurface	1.95	2016	$350
17	Farley Rd*	Cass to M-138	Resurface	3	2016	$500
	2012-2016 Urban Project Totals					**$8,514**
	2012-2016 Totals					**$11,814**
	**Road segment is within BCATS, but outside the urbanized area.*					

The following transportation projects are specifically identified as part of this BCATS 2040 Plan. However, these projects have yet to have a specific funding source identified or year of construction.. Revenue estimates for this Plan indicates funding for these would be available in future years. Any additional funding that is available after these projects are constructed would be appropriated for operations and maintenance of the transportation network.

Project Number	Project	Location	Project Type	Length (mi.)	Year of Cost Estimate	Cost (x1000)
18	Wenona Ave	North Union St to Ionia	Reconstruction	1.397	2015	$4,240
19	Midland Rd	3 Mile Rd to 4 Mile Rd	Widen to 3 lanes	1	2016	$2,000
20	Midland Rd*	Over Culver Creek	Bridge Rehabilitation	0	2016	$500
21	Smith St	State St to Patterson St	Reconstruction	1.022	2016	$3,200
22	German Rd	M-15 to Bullock Rd	Crush & Shape	1.41	2017	$600
23	Johnson St	Center Ave to 3rd St	Reconstruction	0.21	2017	680
24	Midland Rd	4 Mile Rd to Mackinaw Rd	Widen to 3 lanes	1	2019	$2,300
25	Mackinaw Rd	US-10 to Delta	Widen to 3 Lanes	3.02	2020	$9,000
	2015-2020 Planned Urban Project Funding Source not specifically Identified					**$22,020**
	2015-2020 Totals					**$22,520**
	**Road segment is within BCATS, but outside the urbanized area.*					

In summary, more than $30.5 million ($8.5 million and $22 million from project tables above) are planned to be spent on urban road projects from 2012 to 2020. When compared to table 2, *Comparison of Estimated Revenue and Expenditure*, located in Chapter 7, it indicates that $51.6 million would be available for unassigned preservation and maintenance projects. This unallocated estimated revenue will go towards general rehabilitation/resurface projects not yet identified at this time to assist in the maintenance, preservation and efficiency of the existing BCATS transportation system.

The implementing agencies used an inflation factor of 3.3% per year in determining future cost projections.


Bay City Area Transportation Study
2040 Long Range Plan
Identified Projects
Legend
Long Range Plan Projects
Federal Aid Eligible Roads
State Trunklines
Railroad
Open Water
Bay City Federal Aid Urban Area
BCATS Townships and Cities
Non-BCATS Townships and Cities
Miles
0 0.5 1 2 3 4
April 2012
Pinconning Twp
Fraser Twp
Kawkawlin Twp
Bangor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp
1
2
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Environmental Mitigation

BCATS has inventoried the following Environmental Sensitive Resources in the BCATS area using Geographic Information System (GIS) technology along with local knowledge. Maps of these resources and the related Metropolitan Transportation Plan Projects can be seen on pages 49 & 50.

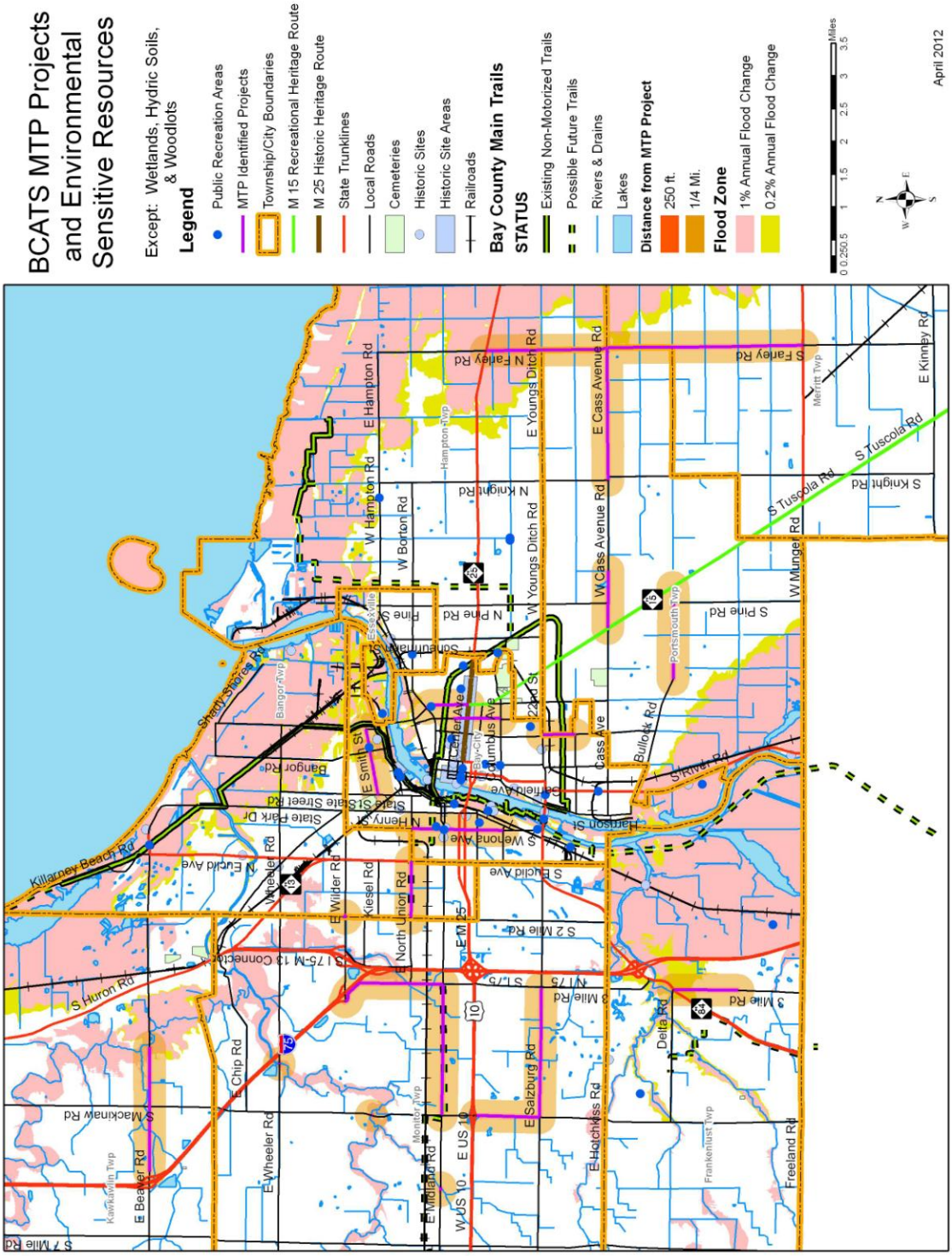
GIS Data Layers	Source
Flood prone areas	FEMA
Historic Sites	Bay County GIS, Nat. Register of Historic Places & Michigan Department of History, Arts and Libraries
Heritage routes	Bay County GIS & MDOT
Wetlands	Michigan Center for Shared Solutions
Cemeteries	Bay County GIS
Parks and Recreation Areas	Bay County GIS & Recreation Dept.
Lakes and Streams	Michigan Center for Shared Solutions
Woodland	Michigan Center for Shared Solutions - IFMAP/GAP
Non-motorized Trails	Bay County GIS & Saginaw Bay Greenways
Hydric Soils	Michigan Center for Shared Solutions & Bay County Soil Survey Manual

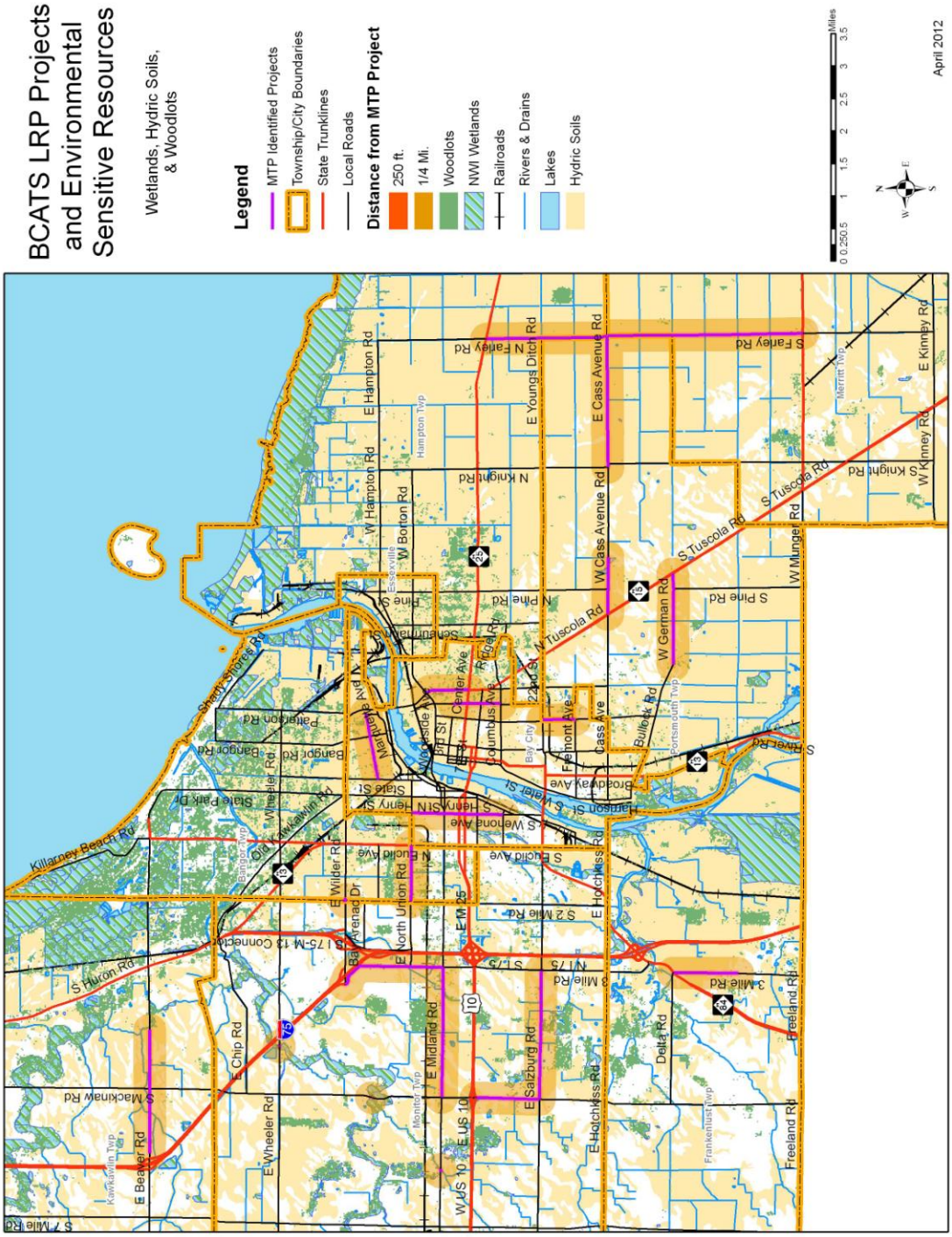
Of the 25 transportation improvement projects, only four projects will have expansion outside of the existing road surface, the remaining 21 are pavement reconstruction or resurfacing projects that would not expand the current roadway. Following is a list of the number of possible projects that may impact environmental sensitive resources within BCATS.

Environmental Sensitive Resource	Number of Expansion Projects	Number of Pavement Projects
Flood prone areas (within 1320 ft.)	0	11
Historic Sites (within 250 ft.)	1	3
Heritage routes (within 250 ft.)	1	4
Wetlands (within 1320 ft.)	2	12
Cemeteries (within 250 ft.)	0	0
Parks and Recreation Areas (within 250 ft.)	1	2
Lakes and Streams (within 1320 ft.)	3	17
Woodland (within 1320 ft.)	4	8
Non-motorized Trails (within 250 ft.)	1	1
Hydric Soils (within 1320 ft.)	4	25

The analysis of possible impacts from planned transportation projects on environmental sensitive resources should not be used to infer that simply because an impact is possible, the transportation project is not justified. It is simply designed to draw attention to the range of possible impacts and to elevate the consideration of environmental resources in all phases of project planning, design, construction, and maintenance.

BCATS and the implementing agencies in the area shall take appropriate measures to minimize the impact on these environmental sensitive resources for these and future project by using the guidelines set forth by the American Association of State Highway and Transportation Officials (AASHTO) Center for Environmental Excellence located on the Internet at http://www.environment.transportation.org/.


BCATS MTP Projects and Environmental Sensitive Resources
Except: Wetlands, Hydric Soils, & Woodlots
Legend
Public Recreation Areas
MTP Identified Projects
Township/City Boundaries
M 15 Recreational Heritage Route
M 25 Historic Heritage Route
State Trunklines
Local Roads
Cemeteries
Historic Sites
Historic Site Areas
Railroads
Bay County Main Trails
STATUS
Existing Non-Motorized Trails
Possible Future Trails
Rivers & Drains
Lakes
Distance from MTP Project
250 ft.
1/4 Mi.
Flood Zone
1% Annual Flood Change
0.2% Annual Flood Change
Miles
April 2012


BCATS LRP Projects and Environmental Sensitive Resources
Wetlands, Hydric Soils, & Woodlots
Legend
MTP Identified Projects
Township/City Boundaries
State Trunklines
Local Roads
Distance from MTP Project
250 ft.
1/4 Mi.
Woodlots
NWI Wetlands
Railroads
Rivers & Drains
Lakes
Hydric Soils
0 0.25 0.5 1 1.5 2 2.5 3 3.5
Miles
April 2012

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 connection both inside and outside the Metropolitan Area Boundary. The state trunkline highway network including two freeways and five state highways, the county and municipal arterials and collectors 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. The BMTA is an independent local authority governed by a nine member board of directors. Board Members are appointed by the Bay County Board of Commissioners. In fiscal year 2011, BMTA carried 600,000 riders and traveled 1.6 million miles. 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.

BMTA Services

In FY 2011, the BMTA operated 47 buses and 16 vans in fixed route and demand response service. Ten 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. Flexed routes are operated countywide throughout the year. These public routes primarily transport disabled individuals to and from work sites and to educational facilities. BMTA fixed and flexed route services are operated between the hours of 6:00 am and 6:30 pm weekdays and 9:00 am and 6:30 pm on Saturday. The base fare for the fixed and flexed route services 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. A countywide demand response system (DART) provides curb-to-curb rides for seniors and disabled residents. DART service is operated

between the hours of 6:00 am and 6:30 pm weekdays and 9:00 am and 6:30 pm on Saturday. The demand response fare is $1.50 for all rides.

Future Conditions

BMTA is currently engaged in an effort to identify the types of services that will need to operate in the community 5 to 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 - Because of a network of quality support services in the community, a relatively high proportion of the population is made of seniors and individuals with disabilities. This segment of the population will continue to grow. The need for more demand-response transit service is likely. This is a much more expensive service and may require the reduction or elimination of other transit services currently being provided. 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. Unless the efficiency of the current demand-response system can be significantly improved, the cost to run an expanded version of that system may be unsupportable. 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 larger share of its operating revenues (about 27 %) from local property tax that must be renewed every 5 years.

Fixed route efficiency, effectiveness and necessity - The increasing demand on the demand-response service requires a constant evaluation of the fixed route service. The fixed route service is a much less expensive service to operate in terms of cost per passenger. An improvement in the efficiency and effectiveness of the fixed route service would allow for a shift of resources toward the demand-response service and draw passengers from the demand-response service to the fixed route service. Questions which must be answered regarding the effectiveness of the fixed routes service are; is this service properly marketed, is the system easy to learn, do the routes stop where needed, do the buses give the impression of being clean and safe, do the routes operate early or late enough, and do the routes operate with enough frequency. Centers of employment, education facilities, shopping centers, governmental service centers, medical facilities, and residential areas generate the transit passengers. These “stakeholders” shift geographically and in relevance to the community over time; if the fixed route service does not adapt to the community’s needs, the service will lose its relevance. The evaluation of the fixed route service could result in additional buses on existing routes, schedule adjustments, shifting of routes, elimination of routes, or a combination of all of the above.

Regionalization – BMTA serves Bay County only, although it does make regular connections with the

transit systems in the adjacent counties of Saginaw, Midland and Arenac. It is possible that in the future, the three urban areas in the region, Bay City, Saginaw, and Midland, will be consolidated into a single urbanized area. The single urbanized area would overlap the service area of four (BMTA, STARS, Midland City, Midland County) local transit systems and consolidate those systems' federal funding sources into a single account to be shared based on local agreements. In anticipation of these conditions, efforts should begin to examine the possibility of either consolidating the systems or developing a coordination plan to make travel between the communities more seamless and regional; the same fares, transfer procedure, schedule formatting, etc. Without the effort to consolidate or coordinate, the four systems may find themselves in a position where the State mandates a consolidation at which point it would be too late to transition at an orderly, locally-managed pace. There are two main barriers to the near-term consolidation or coordination efforts; political, the sense of surrendering local authority of the transit system; and differences in the systems' structure and funding. One system 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, and one is funded with a countywide property tax controlled by the county government. Two of the systems are strictly demand-response and two of the systems are fixed route and demand-response.

Transportation Enhancement Activities

Transit service which reaches out to the non-transit dependant population becomes much more of a community asset. BMTA will seek to improve coordination with non-motorized transportation modes. Efforts will include improved bicycle racks/storage at the central bus station and other bus stop locations, adding bus-mounted bicycle racks, and designating bus stops at foot and bicycle trailheads. BMTA will also look at the possibility of designated stops at park-and-ride lots and approaching local stakeholder to establish a steady stream of park-and-ride lot users and transit passengers.

Transit Financing

BMTA's FY 2011 operating expenses were approximately $8.1 million. Fares covered 9% of operating expenses. Other sources of revenue include the local property tax levy (27%), State of Michigan assistance (37%), federal assistance (26%) and miscellaneous (1%). In 2009, the voters of Bay County approved a county-wide .75 mill transportation tax renewal good through the year 2015. This strong local support has enabled the Authority to operate smoothly in spite of decreasing support from the state and federal governments. 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

BMTA is projecting that current sources of revenue, assuming funding levels continue without being supplemented, will not sustain the current level of service. BMTA will have to reduce the level of service or find additional funding sources. If public demand dictates maintaining or improving 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 project tax revenues likely to result in changes in the tax rate. While many revenue sources are beyond the control of the local transit system, expenses are under local control. How much service is operated, how many persons are employed, how much they are paid, and what type of benefits they receive, are examples of decisions made locally. BMTA must continue to project forward as any reaction to concerns about balancing the operating budget, generally, will not have an impact for at least a year. Projecting forward and taking action before a crisis allows for small measures to be implemented which may go largely un-noticed, instead of making large cuts which would only serve to antagonize loyal BMTA passengers.

Plan Recommendation

1. Replace aging bus fleet. Bus replacements are at a significant cost and almost exclusively dependant 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.

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 8002 and 6400 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**	**2011**	**2010**	**2009**	**2008**	**2007**	**2006**	**% Change 2006-2011**
Detroit	Metro Wayne	32,406,159	32,377,064	31,143,262	34,707,368	31,395,803	35,091,309	-7.65%
Grand Rapids	G Ford Intl	2,275,332	2,185,924	1,771,465	1,809,445	1,990,896	2,015,846	12.87%
Flint	Bishop Intl	938,986	986,505	975,758	1,049,863	1,071,238	1,061,389	-11.53%
Lansing	Capital City	358,307	257,350	265,967	429,639	497,824	557,417	-35.72%
Traverse City	Cherry Capital	352,250	343,679	357,955	371,444	406,537	415,547	-15.23%
Kalamazoo/BCreek	Intl	303,497	276,276	276,856	331,167	378,989	408,068	-25.63%
Mid/Bay City/Sag	**M B S Intl**	**273,789**	**262,069**	**267,436**	**304,263**	**348,281**	**382,140**	-28.35%
Marquette	Sawyer Intl	104,985	114,295	107,353	112,072	133,681	132,169	-20.57%
Houghton/Hancock	Co. Mem.	46,642	42,652	50,340	51,187	54,081	57,789	-19.29%
Pellston	Emmet Co Reg	45,422	44,179	46,219	50,263	58,902	64,719	-29.82%
Sault Ste Marie	Chip Co Intl	37,129	28,189	25,945	25,698	26,860	26,428	40.49%
Muskegon	County	28,371	26,414	32,009	55,972	63,214	66,345	-57.24%
Escanaba	Delta County	26,555	17,810	13,779	10,277	17,216	18,485	43.66%
I. Mtn/Kingsford	Ford	23,971	14,916	11,322	8,042	12,927	15,485	54.80%
Alpena	Alpena Co Rg	22,747	16,818	14,876	14,608	15,288	15,625	45.58%
Manistee	Co Blacker	21,992	6,760	5,472	4,044	6,004	5,551	296.18%
Ironwood	Gogebic Co	6,683	1,445	2,290	2,905	5,826	6,622	0.92%

MBS has experienced a 54% decline in scheduled passengers since 1998 when the airport peaked with 589,798 down to only 273,789 for 2011, a slight uptick from 2010, according to the Michigan Department of Transportation Measure of Michigan Air Demand. The decline in passengers can be attributed to various factors include; 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. Added in 2011, Allegiant Airlines added twice weekly flights to Orlando, Florida.

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 a daily charter flights out of MBS to their other major operations centers in Texas and Pennsylvania.

Air cargo activity in 2010 consisted of 124,123, down from 467,711 pounds in 2006. This decrease is seen through much of the state as well as the decline of GM shipments from the Great Lakes Bay Region. MBS is served by Fed Ex which has a terminal just outside the airport property.

In 2008, the MBS International Airport Commission approved the design for the new terminal. The cost to build the terminal is approximately $48 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 their 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:

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

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 872 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. Six private carriers under contract to the state operate state owned routes.

Three 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.

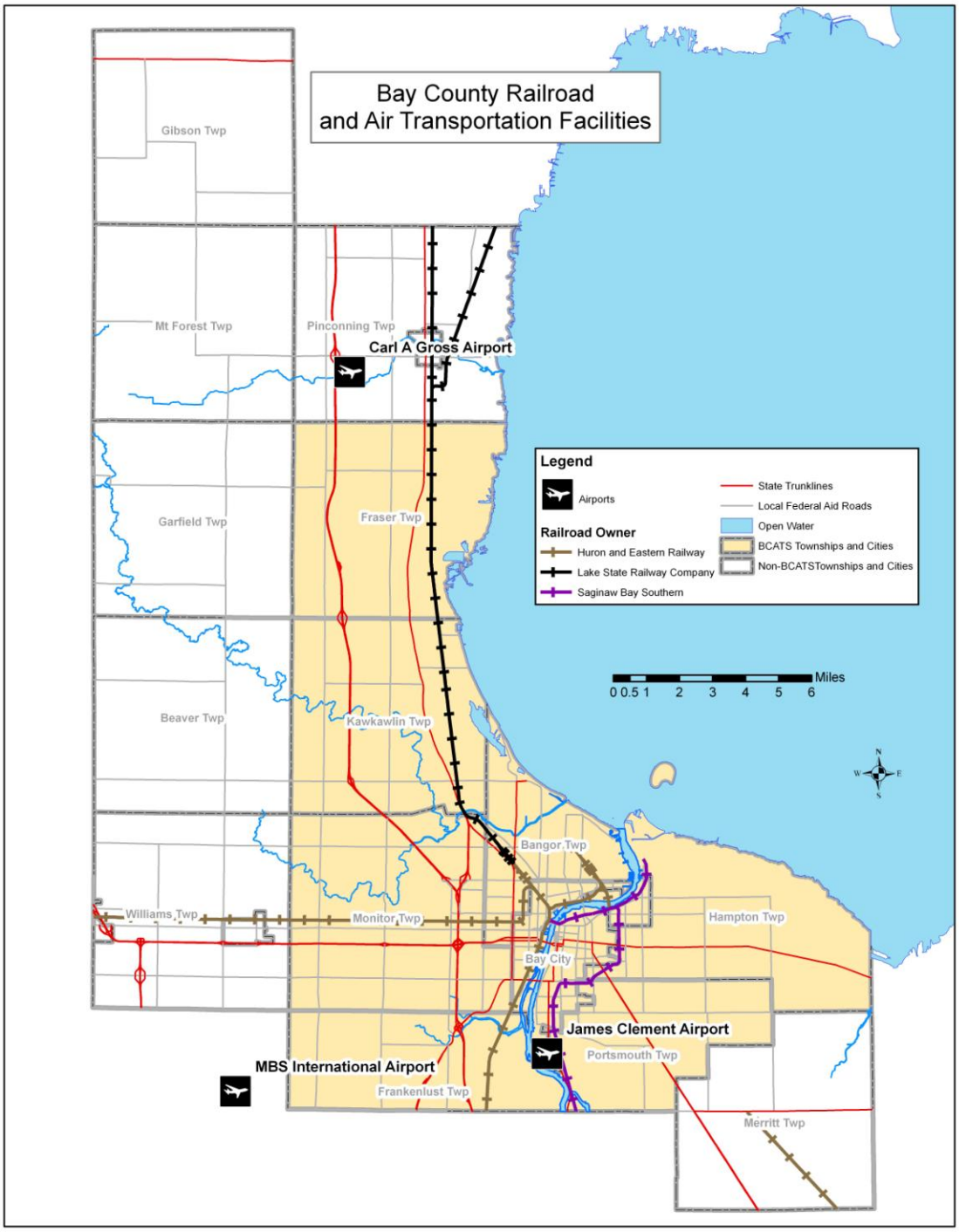
A coordinated effort to improve rail crossings by local, state and federal governments and by private business interests would enhance efforts to maximize Michigan's ability to compete for international trade.

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.

In summary, the railroad's decline over the last two decades is evidenced in the trend toward the use of other modes for the movement of goods, changes in the type of commodities being shipped, and consolidation and diversification of rail systems. Yet, many of the State's leading manufacturing, agricultural and extraction industries still rely on the railroad as a means of efficient and economical shipment of bulk freight. Continued operation of smaller railroads will require a restructuring of their systems in order to meet the demands of a changing market and intermodal competition.

Plan Recommendations:

1. Relocate rights-of-ways that will allow a blend of safety improvements, consolidation of rail traffic on fewer lines and increased operating efficiencies.
2. Continue upgrading of highway/ rail crossings.
3. Remove unused or abandoned rail lines.
4. Promote intermodal connection and access between rail and other modes of transportation.
5. Continue development and expansion of the existing railtrail system.
6. Increase security/safety of rail cars caring hazardous material through the BCATS region.


Bay County Railroad
and Air Transportation Facilities
Gibson Twp
Mt Forest Twp
Pinconning Twp
Carl A Gross Airport
Garfield Twp
Fraser Twp
Beaver Twp
Kawkawlin Twp
Bangor Twp
Williams Twp
Monitor Twp
Hampton Twp
Bay City
James Clement Airport
Portsmouth Twp
MBS International Airport
Frankenlust Twp
Merritt Twp
Legend
Airports
Railroad Owner
Huron and Eastern Railway
Lake State Railway Company
Saginaw Bay Southern
State Trunklines
Local Federal Aid Roads
Open Water
BCATS Townships and Cities
Non-BCATSTownships and Cities
Miles
0 0.5 1 2 3 4 5 6
N
W
E
S

Water and Port Transportation

The number of commercial ports in Michigan remained at approximately 40 between 2000 and 2009. 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.

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. 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.

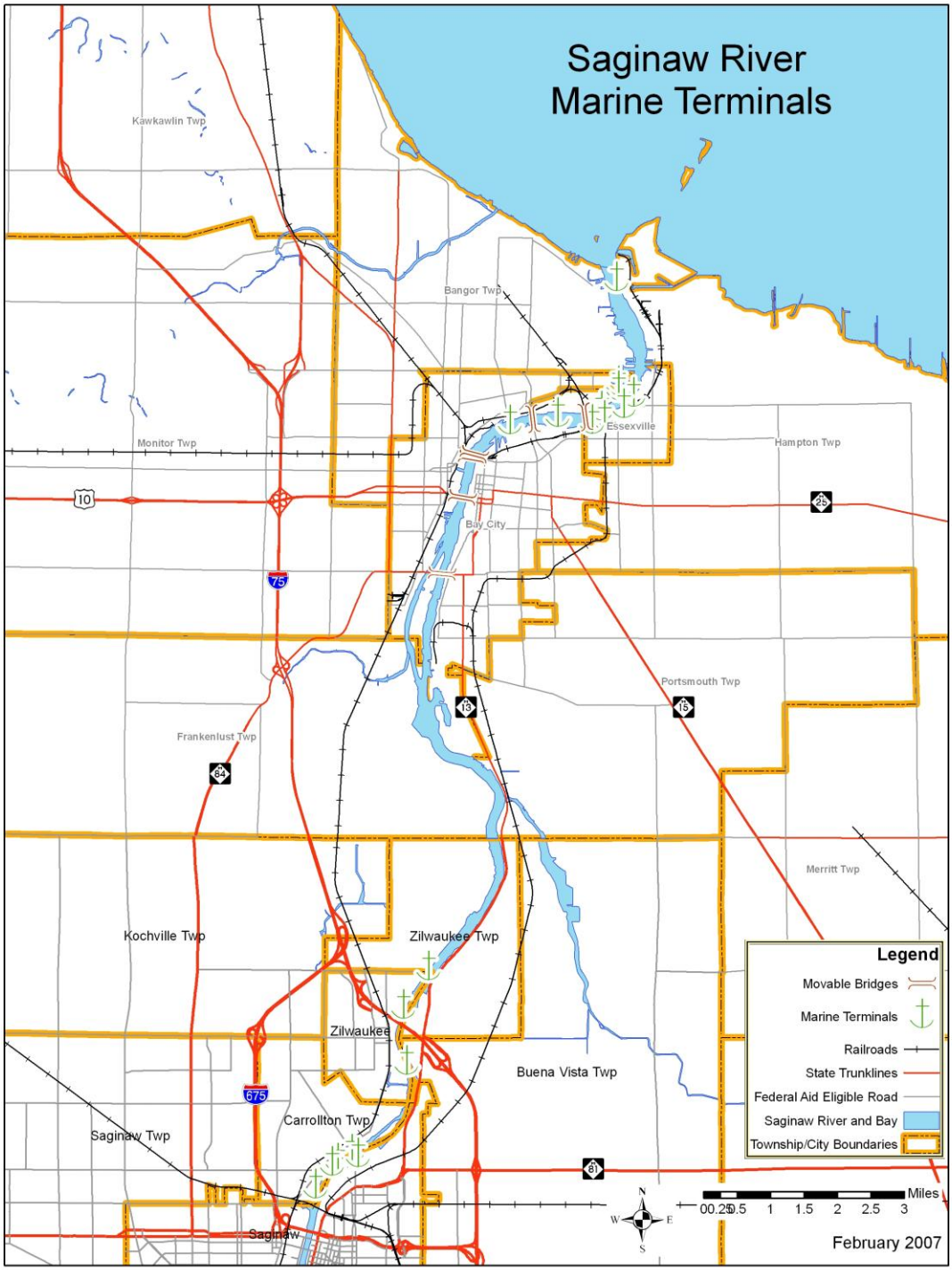
In addition to shipping, Bay County's extensive river system is heavily utilized for recreational boating and fishing.

Plan Recommendations:

1. Promote the retention and upgrading of port facilities.

2. Promote intermodal connectivity and access between the port and other forms of transportation, specifically rail and trucking.

3. Assist in finding ways to keep up the maintenance on the river channel to keep shipping on the river.


Saginaw River
Marine Terminals
Kawkawlin Twp
Bangor Twp
Essexville
Monitor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp
Kochville Twp
Zilwaukee Twp
Zilwaukee
Buena Vista Twp
Carrollton Twp
Saginaw Twp
Saginaw
Legend
Movable Bridges
Marine Terminals
Railroads
State Trunklines
Federal Aid Eligible Road
Saginaw River and Bay
Township/City Boundaries
Miles
0 0.25 0.5 1 1.5 2 2.5 3
February 2007

Regional Intermodal Study

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 capitalized on our existing transportation infrastructure to the region's best economic advantage.

Non-Motorized Transportation

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) 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 exits;

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

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 Township has 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 20 miles of non-motorized trails in three (3) separate areas, the Fraser Township Trail, the Hampton Township Nature Trail, and the Bay County Riverwalk and Railtrail.

The Fraser Township Trail utilizes 4 miles of the abandon rail line from north of Sherman Rd to south of Almeda Beach Rd and runs adjacent to the Nayanquing Point Wildlife Area.

The Hampton Township Nature Trail is a 2.5 mile crushed limestone path which connects the Finn Rd campground to Knight Rd and then continues west along the Saginaw Bay.

The Riverwalk and Railtrail is a 9.5 mile trail loop that connects both sides of the Saginaw River and runs through Bay City, Hampton Township, and Portsmouth Township. Connecting to the Railtrail Loop is the Bangor Extension which runs 7.5 miles from the Railtrail Loop at the Liberty Bridge and out to the Bay City State Recreation Area (BCSRA) where it connects to the 1.5 mile long Frank Anderson Nature Trail and the nature trails in the Tobico Marsh Wildlife Area.

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. The Liberty Bridge has a 4 foot concrete infill on the metal grates of the bascule portion of the bridge. This portion of the road is striped to mark the vehicle lane, but not officially identified as a bike lane. Completed during the summer of 2010, a bike lane was added on Two Mile Road and concrete sidewalks on Kiesel Road near Christa McAuliffe Middle School. Beyond these examples, the on-road facilities consist of the existing network of low volume residential streets. There are no officially signed bicycle routes within BCATS.

Routes Currently in the Planning Phases

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 and the Bay-Zilwaukee railway segment linking to the city of Zilwaukee in Saginaw County to the south. 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.

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 on ways to provide for non-motorized transportation within their boundaries and to make bicycling a viable transportation alternative.

Plan Recommendations:

1. 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.

2. 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.

3. Support the development of recreational non-motorized routes.

4. Improve safety issues such as drainage grate replacement, improving rail crossings, re-striping and alternate routing.

5. Encourage police agencies to provide stricter enforcement of bicyclists who disregard the Uniform Vehicle Code.

6. Acquire rights-of-way for independent bikeway and walkway construction.

7. Install curb ramps on new or existing facilities.

8. Provide traffic control devices, including signs, pavement markings, signals, and signal actuation devices.

9. Promote access between non-motorized and other modes of transportation.

10. Improve connectivity to transit routes.


BCATS Existing
Non-Motorized Infrastructure
Legend
Bay County Main Trails
STATUS
Existing Non-Motorized Trails
Possible Future Trails and Connections
Roads with Paved Shoulders
State Trunklines
Primary Roads
Open Water
BCATS Cities and Townships
Non BCATS Townships
Miles
0 0.5 1 2 3 4 5 6
N
S
E
W
Pinconning
Coggins
Erickson
Tower Beach
Prevo
Linwood
North Boutell
Parish
Doud
9 Mile
8 Mile
Mackinaw
Beaver
Chip
Wheeler
Old Kawkawlin
Wilder
Kiesel
Midland
Fisher
Salzburg
Hotchkiss
Delta
Freeland
Euclid
Bangor
Patterson
State Park
Washington
Hampton
Bortón
Knight
Fraley
Youngs Ditch
22nd
Pine
Cass
Cass Avenue
Bullock
German
Munger
Smith
Marquette
Woodside
Water
Borton
Tiernan
Scheurmann
Midland
Jenny
Fisher
Ionia
Salzburg
Backus
Vernon
Henry
Wenona
Walnut
Washington
Madison
Garfield
Lincoln
Johnson
Trumbull
Center
Columbus
Ridge
Lafayette
Kosciuszko
22nd
Youngs Ditch
Fremont
Michigan
Tuscola

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 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. Objectives include:

- An electronic information network that works in concert with the physical infrastructure to maximize the efficiency, safety and utility of the system, encourage modal integration and consumer choice, and provide quick response in times of national crises.

- Far fewer and less severe crashes for all types of vehicles and far faster response and recovery when crashes do occur.

- Information for operators and users of the transportation system to help contain congestion and increase the effective capacity of the system while reducing the need for new construction.

- Facilities, technology, and information that help reduce energy consumption and negative environmental impact.

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 http://www.michigan.gov/documents/mdot/Bay_Region_ITS_Architecture_271327_7.pdf.

Chapter Seven

Financial Analysis and Constraint

Financial Analysis

The BCATS 2040 Metropolitan Transportation Plan is a composition of the significant transportation system improvements scheduled for implementation in the urbanized area during the next 29 year time frame and updated every five years. The purpose of the Plan is defined by the rules put forth in 23 CFR Part 450 which require state and local governments develop a Plan that is financially constrained and includes a financial plan that demonstrates which projects can be implemented using current revenue sources and which projects are to be implemented using proposed revenue sources, while the existing transportation system is being adequately operated and maintained. A financially constrained Plan will be more meaningful for elected officials and citizens. Once the Plan is financially constrained, it will remove all wishful or unbuildable projects from the documents, thus removing false hope. In other words, Federally-funded expenditures are required by federal law to be consistent with the Metropolitan Transportation Plan and to be constrained to include only projects that we anticipate having enough revenue to complete.

Local Agencies Revenue Estimates

Table 1: Local Agencies Revenue Estimates

Estimates as of 4/10/2012	BCATS STUL Funds (Federal $)	BCRC Urban Area (Bay City) Act 51 - Primary	Bay City Act 51 - Major	Essexville Act 51 - Major	Total $ for Local Federal Aid Eligible Roads	Total Funds for Capital Improvement Projects*
2011 Funding	$1,388,148	$821,383	$1,836,589	$159,805	$4,205,926	$2,233,481
Lane miles	298	196	93	9	298	298
2012	$1,388,148	$821,383	$1,836,589	$159,805	$4,205,926	$1,933,481
2013	$1,388,148	$821,383	$1,836,589	$159,805	$4,205,926	$1,933,481
2014	$1,415,911	$837,811	$1,873,321	$163,002	$4,290,044	$1,978,151
2015	$1,444,229	$854,567	$1,910,787	$166,262	$4,375,845	$2,023,714
2016	$1,473,114	$871,659	$1,949,003	$169,587	$4,463,362	$2,070,188
2017	$1,502,576	$889,092	$1,987,983	$172,979	$4,552,629	$2,117,592
2018	$1,541,944	$912,386	$2,040,068	$177,511	$4,671,908	$2,180,933
2019	$1,582,342	$936,290	$2,093,518	$182,161	$4,794,312	$2,245,933
2020	$1,623,800	$960,821	$2,148,368	$186,934	$4,919,923	$2,312,637
2021	$1,666,343	$985,995	$2,204,655	$191,832	$5,048,825	$2,381,088
2022	$1,710,002	$1,011,828	$2,262,417	$196,858	$5,181,104	$2,451,332
2023	$1,754,804	$1,038,338	$2,321,692	$202,015	$5,316,849	$2,523,417
2024	$1,800,779	$1,065,542	$2,382,521	$207,308	$5,456,150	$2,597,391
2025	$1,847,960	$1,093,459	$2,444,943	$212,740	$5,599,102	$2,673,302
2026	$1,896,376	$1,122,108	$2,509,000	$218,313	$5,745,798	$2,751,203
2027	$1,946,062	$1,151,507	$2,574,736	$224,033	$5,896,338	$2,831,144
2028	$1,997,048	$1,181,677	$2,642,194	$229,903	$6,050,822	$2,913,180
2029	$2,049,371	$1,212,637	$2,711,420	$235,926	$6,209,354	$2,997,366
2030	$2,103,065	$1,244,408	$2,782,459	$242,108	$6,372,039	$3,083,757
2031	$2,158,165	$1,277,011	$2,855,359	$248,451	$6,538,986	$3,172,411
2032	$2,214,709	$1,310,469	$2,930,170	$254,960	$6,710,308	$3,263,388
2033	$2,272,734	$1,344,803	$3,006,940	$261,640	$6,886,118	$3,356,749
2034	$2,332,280	$1,380,037	$3,085,722	$268,495	$7,066,534	$3,452,556
2035	$2,393,385	$1,416,194	$3,166,568	$275,530	$7,251,677	$3,550,873
2036	$2,456,092	$1,453,298	$3,249,532	$282,749	$7,441,671	$3,651,766
2037	$2,520,442	$1,491,375	$3,334,670	$290,157	$7,636,643	$3,755,302
2038	$2,586,477	$1,530,449	$3,422,038	$297,759	$7,836,723	$3,861,551
2039	$2,654,243	$1,570,546	$3,511,695	$305,560	$8,042,045	$3,970,584
2040	$2,723,784	$1,611,695	$3,603,702	$313,566	$8,252,747	$4,082,473
Total	**$56,444,333**	**$33,398,769**	**$74,678,65**	**$6,497,94**	**$171,019,704**	**$82,116,944**

**Includes 30% of total Act 51 funds less $1,000,000 for two Bay City Bascule Bridges*
Estimates are based on 2011 and are flat for '12 and '13, 2% annual increase from '14 to '17, and 2.62% increase thereafter

The table on the previous page, table one, shows the yearly estimates of future revenue for the BCATS road agencies, excluding MDOT, for Act 51 funds dedicated for urban areas and the Surface Transportation Funds received by BCATS for local agency transportation projects, the two primary sources of revenue for road projects within the BCATS. Future estimates are based on the 2011 funding levels. No growth in revenues is expected for 2012 and 2013. Starting in 2014 a 2% increase is estimated through 2017. After 2017, the estimated yearly increase is 2.62%, bringing the 29 year total for all the BCATS local agencies to $171 million.

Of that $171 million, nearly 70% is used for routine maintenance and operations which includes snow and ice removal, administration, mowing, road patching, and equipment. It excludes any capital improvement projects that will extend the life on the road such as crack sealing, chip and seal, resurfacing, and reconstruction. The amount that is left available for capital improvement from 2012 to 2040 totals $82 million, averaging $2.8 million per year between the Bay County Road Commission (BCRC), Bay City and Essexville to maintain 298 lane miles of roads.

Table 2: Local Agency Fiscal Constraint Demonstration		Dollars (x1000)
Total Local Road Agency Available Funds		$171,020
Operations and Maintenance Cost	-	$88,903
Funds Available for Capital Projects		$82,117
Metropolitan Transportation Plan Identified Projects	-	$30,534
Available for unassigned Preservation and Maintenance Projects		$51,583

Table two (above) compares the local agency roads projects listed in Chapter 5 with the estimated revenue from table one. Although the local agency program is fiscally constrained with the cost of the listed projects being less than the estimated revenue for the local agencies, numerous preservation and maintenance transportation projects are not currently identified by the BCATS implementing agencies. These agencies will fully utilize any and all existing dollars in attempts to maintain the existing transportation system. It is reasonably expected for local agencies to need more than $180 million for capital projects over the life of this plan to adequately maintain the existing federal aid road system. The following scenarios on the Bay City asphalt roads will help identify this trend.

Bay City Federal Aid Asphalt Road Funding Scenarios

In an attempt to determine the amount of funding needed to maintain the existing transportation system, BCATS has utilized the asset management software, RoadSoft; along with road treatment cost estimates and existing surface conditions on the Bay City Federal Aid Asphalt Roads and ran several scenarios.

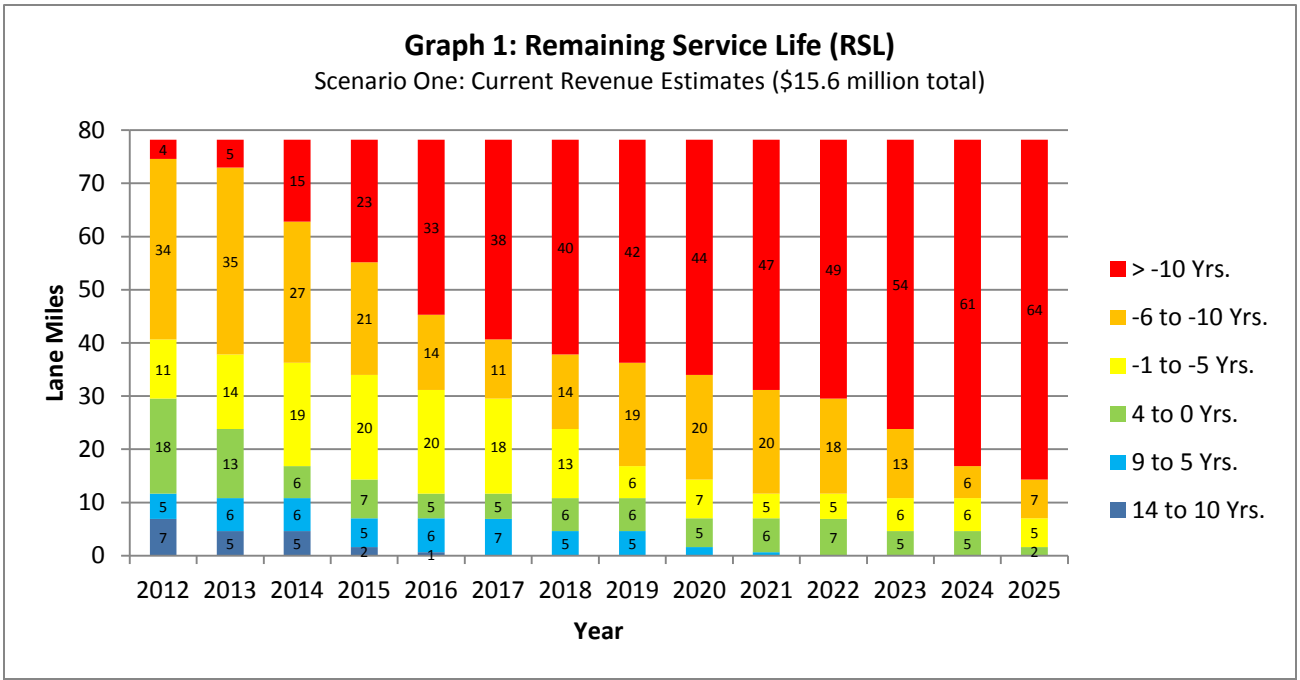
Scenario One uses the existing revenues estimates as identified in table one. Scenario Two shows a cost-effective route to improve the transportation system by 2025. This scenario more than doubles the year expenditures on the Bay City asphalt road system. Both scenarios utilize the same "mix of fixes" approach to road treatment by providing the right fix at the right time to maximize the funds with the improvement to the Remaining Service Life (RSL) of the road. The "mix of fixes" includes five different asphalt treatments that would be applied to a road at a specific point in its life span. They include crack sealing ($4,800), chip seal ($32,000), mill and overlay ($150,000) crush and shape rehabilitation ($342,000) and total reconstruction ($600,000). Theses cost are in 2012 dollars per lane mile and are inflated by 3.3% per year through 2025.

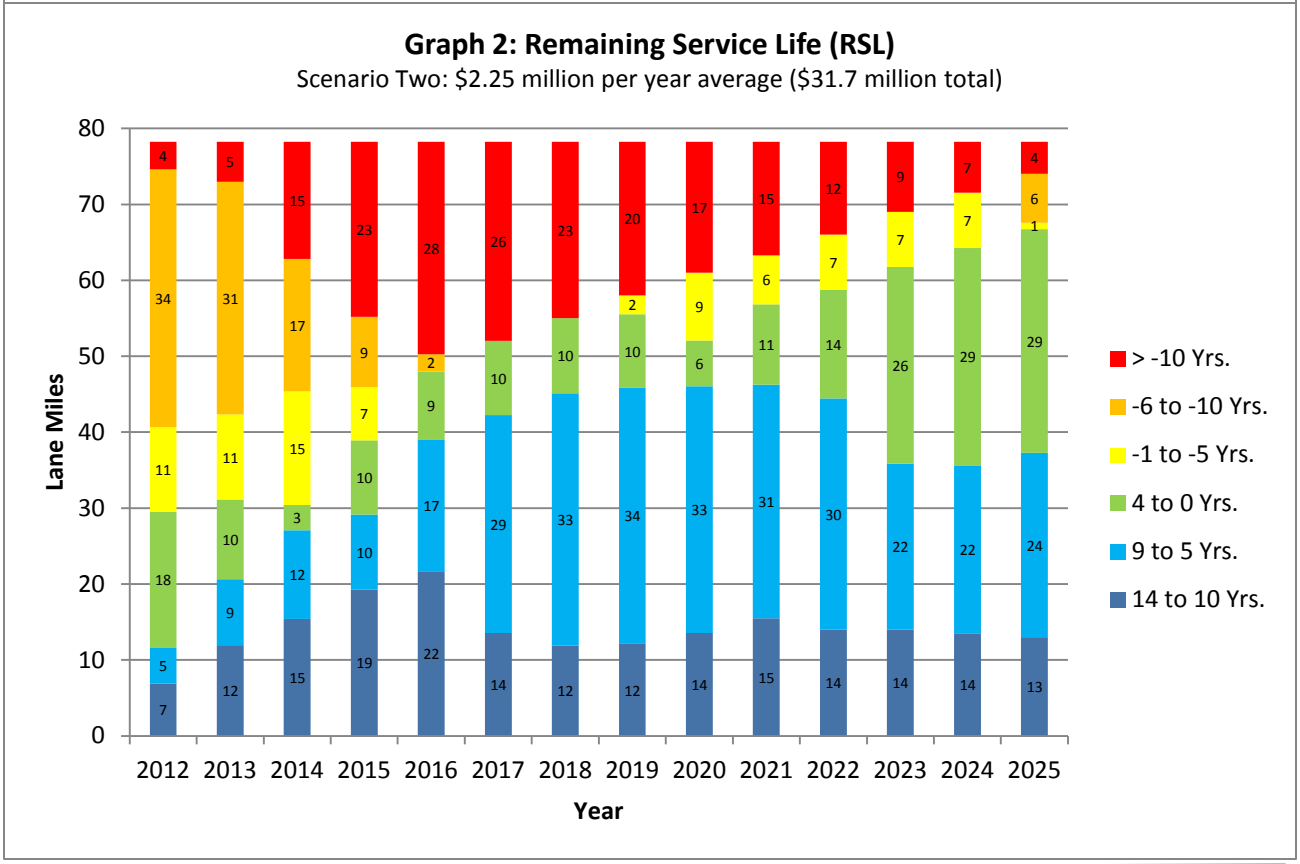
Table 3: Asphalt Treatments

Asphalt Treatment	2012 Cost per Lane Mile	RSL before Treatment	RSL after Treatment
Total Reconstruction	$600,031	< -10	15
Crush and Shape	$342,395	-6	14
Mill & Overlay	$150,000	-1	11
Sealcoat	$32,000	3	7
Crack Seal	$4,800	9	10

Graph 1 on the following page shows the result of the annual RSL of the Bay City asphalt Federal Aid roads if the City utilizes their entire estimated Act 51 revenue only on the asphalt roads plus half of BCATS surface transportation funds. By 2025, the condition of the of those roads will continue to deteriorate to the point where 82% of those lane miles will be at least 10 years past their remaining service life (RSL) and only 2% will have a positive RSL. This would also put most, if not all, the 15.3 lane miles of concrete and sealcoat roads in poor condition as they would be neglected during this time frame.

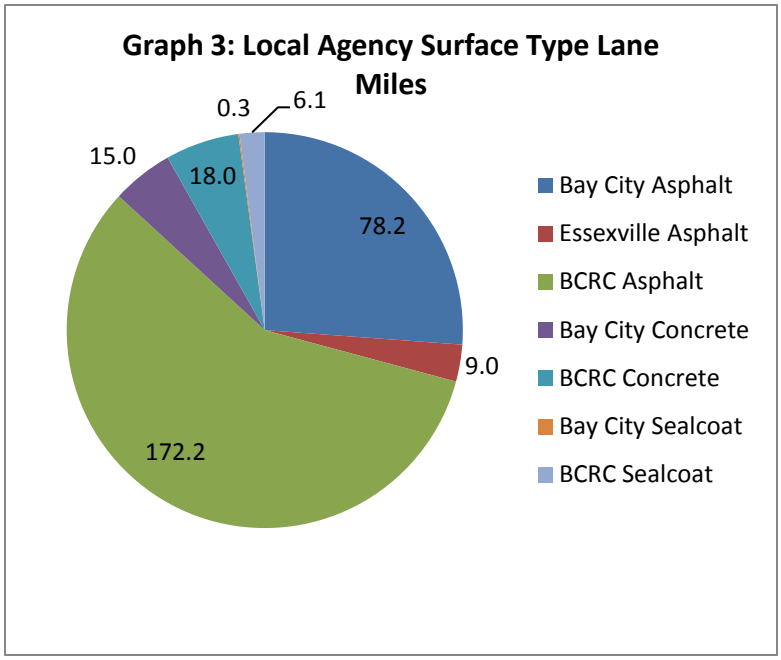
Graph 2, also on the next page, highlights the scenario of Bay City spending approximately $2.25 million per year on asphalt roads. The result would produce only 15% of lane miles with a negative RSL all while costing $31.7 million through 2025. However, between the years of 2015 and 2019, there are more than 20 lane miles (25% of asphalt roads) with an RSL at negative 10 or older, much higher than the 5% it is in 2012.


Graph 1: Remaining Service Life (RSL)
Scenario One: Current Revenue Estimates ($15.6 million total)
Lane Miles
Year
> -10 Yrs.
-6 to -10 Yrs.
-1 to -5 Yrs.
4 to 0 Yrs.
9 to 5 Yrs.
14 to 10 Yrs.


Graph 2: Remaining Service Life (RSL)
Scenario Two: $2.25 million per year average ($31.7 million total)
Lane Miles
Year
> -10 Yrs.
-6 to -10 Yrs.
-1 to -5 Yrs.
4 to 0 Yrs.
9 to 5 Yrs.
14 to 10 Yrs.

Summary of Bay City Asphalt Road Scenario

Bay City asphalt roads are only one slice of the transportation pie with BCATS and account for 26% (Graph 3) of all BCATS local agency lane miles. There are also concrete and sealcoat roads in Bay City as well as roads under other agencies including the Bay County Road Commission (BCRC), Essexville, and the Michigan Department of Transportation.



With Scenario Two costing $31.7 million from 2012 to 2025 (13 years), the remaining 14 years (2026-2040) of this plan can be expected to cost around $60 million to maintain the same road system over a similar time span while accounting for a 3.3% inflation rate.

The cost for maintaining this 26% of the BCATS local agencies Federal Aid Road System over the life of this plan totals $91 million. If the assumption is made that this accounts for half of the cost to the roads system, as repairs in the city tend to run higher than repairs in the townships due to more utilities, higher population and employment densities, and traffic issues, then the total funds needed to just maintain the system in good repair would be $182 million.

The total estimated revenues for Bay City roads plus half of the BCATS federal funds (the other half would be available for the BCRC and Essexville) is not enough to adequately maintain the Bay City asphalt roads. This shortfall applies similarly to the remainder of the system which will continue to deteriorate faster than repairs can be made without a substantial increase in funding.

MDOT Revenue Estimate

Table four (right), shows the 5-year estimates of future revenue for the MDOT expenditure within the entire BCATS rural and urban areas. Future estimates are based on the 2011 funding levels. No growth in revenues is expected for 2012 and 2013. Starting in 2014 a 2% increase is estimated through 2017. After 2017, the estimated yearly increase is 2.62%, bringing the 29 year total for MDOT to $428 million. As MDOT currently has no identified projects in this plan, all the funding will go specifically to capital improvement over the 29 year plans. Future projects include more work on I-75 and US-10 as portions of those expressways are expected to reach the end of their life span during the timeframe of this plan. As these are high volume, high cost roads, it is expected that cost to maintain MDOT roads through 2040 within BCATS will exceed the estimated revenue by at least 50%, similar to the numbers shown by Bay City.

Table Four: MDOT Revenue Estimates

Estimates as of 4/10/2012	BCATS STUL Funds (Federal $)	MDOT Trunkline Fund for BCATS
Lane Miles	298	338
Year		
2012-2016	$7,454,262	$47,776,208
2017-2021	$8,428,637	$47,529,739
2022-2026	$9,747,484	$57,256,454
2027-2031	$11,248,394	$74,209,405
2032-2036	$12,956,499	$101,916,748
2037-2040	$11,752,432	$99,188,834
Total	$56,444,333	$427,877,388

Although the plan is fiscally constrained, numerous transportation projects, mainly preservation and maintenance in nature, not currently identified by the BCATS implementing agencies will fully utilize any and all existing dollars to maintain the existing BCATS transportation system. The implementing agencies, with tighter and tighter budgets, find it difficult to match existing federal and state road construction funding. Without additional funding sources or increases to the existing funding sources improvements to the BCATS transportation network sufficient to maintain the system at its existing maintenance level will become impossible to achieve.

MDOT 2040 MPO Long Range Revenue Forecast Methodology

(March 28, 2012)

Highway Revenue Forecast Growth Rate

MDOT Statewide Transportation Planning Division analyzed historical state highway revenue and historical federal obligations. State revenue and federal obligation growth rates were calculated. The revenue growth used in the long range revenue forecast for the near term has virtually flat rates to reflect the current economic conditions. For some years the state forecast assumes additional revenue through a variety of mechanisms to match federal aid. In order to take a conservative approach with the federal and state revenue forecasts beyond the near term, 90% of the historic growth rates were used.

The resulting rates beyond the near term are: federal 2.6% annual growth, and state 2.3% annual growth.

Total estimated federal revenue: $31.4 B
Total estimated state revenue: $27.9 B

Revenue available for Capital outlay
Debt service, non-capital uses and routine maintenance are deducted from the estimated federal and state revenue. The resulting FY 2012-2040 total estimated revenue available for highway capital outlay is $37.5 billion (in future year dollars).

Methodology for MPO Allocation of Capacity Improvement/New Road Dollars
The trunkline capacity improvement and new road (CI/NR) projects in the Long Range Revenue Forecast are in the 2012-2016 Five-Year Transportation Program, have earmarks or are on corridors of National Significance. They were reviewed and vetted by MDOT executive management. The revenue remaining after accounting for the CI/NR projects is available for the preservation program.

Methodology for MPO Allocation of Highway Program Preservation Dollars
A ten-year history (2002-2011) of highway capital program investments (excluding CI/NR) was compiled. Each MPO's share was calculated by dividing the MPO investment by the total statewide investment over the ten year time frame. Next the FY 2012-2040 total estimated revenue for preservation was multiplied by each MPO share of historic investments. The result is FY 2012-2040 total estimated revenue for preservation for each MPO.

Transit Revenue Estimates

Table Five: Transit Revenue Estimates

Year	Federal Transit Funding	State Operating Funds	Locally raise revenue (millage, fare box, etc)	Total
2011 Base	$1,381,516	$2,805,630	$3,697,000	$7,884,146
2012	$1,381,516	$2,805,630	$3,697,000	$7,884,146
2013	$1,381,516	$2,805,630	$3,697,000	$7,884,146
2014	$1,433,323	$2,816,011	$3,710,679	$7,960,013
2015	$1,487,072	$2,826,430	$3,724,408	$8,037,911
2016	$1,542,838	$2,836,888	$3,738,189	$8,117,914
2017	$1,600,694	$2,847,384	$3,752,020	$8,200,098
2018	$1,671,765	$2,865,608	$3,776,033	$8,313,405
2019	$1,745,991	$2,883,947	$3,800,200	$8,430,138
2020	$1,823,513	$2,902,405	$3,824,521	$8,550,439
2021	$1,904,477	$2,920,980	$3,848,998	$8,674,455
2022	$1,989,036	$2,939,674	$3,873,631	$8,802,342
2023	$2,077,349	$2,958,488	$3,898,423	$8,934,260
2024	$2,169,584	$2,977,423	$3,923,373	$9,070,379
2025	$2,265,913	$2,996,478	$3,948,482	$9,210,873
2026	$2,366,520	$3,015,656	$3,973,752	$9,355,928
2027	$2,471,593	$3,034,956	$3,999,184	$9,505,733
2028	$2,581,332	$3,054,380	$4,024,779	$9,660,491
2029	$2,695,943	$3,073,928	$4,050,538	$9,820,408
2030	$2,815,643	$3,093,601	$4,076,461	$9,985,705
2031	$2,940,658	$3,113,400	$4,102,551	$10,156,608
2032	$3,071,222	$3,133,326	$4,128,807	$10,333,355
2033	$3,207,585	$3,153,379	$4,155,231	$10,516,195
2034	$3,350,001	$3,173,560	$4,181,825	$10,705,387
2035	$3,498,742	$3,193,871	$4,208,588	$10,901,201
2036	$3,654,086	$3,214,312	$4,235,523	$11,103,921
2037	$3,816,327	$3,234,884	$4,262,631	$11,313,841
2038	$3,985,772	$3,255,587	$4,289,912	$11,531,271
2039	$4,162,741	$3,276,423	$4,317,367	$11,756,530
2040	$4,347,566	$3,297,392	$4,344,998	$11,989,956
TOTAL	**$73,440,318**	**$87,701,628**	**$115,565,103**	**$276,707,049**

The other piece of the transportation funding pie is the funds to transit related activities including operation, capital improvement, and bus and van replacement. Table five (above) includes the estimated funds expected to be available for the Bay Metro Transit Authority (BMTA). The majority of these funds (State operating, and local revenue) go towards day to day operations of the bus routes and dial-a-ride service. The remainder is what is available for capital improvement including bus replacement, central bus station repairs and improvements, and life van replacement.

Table Six: Transit Fiscal Constraint Demonstration		Dollars (x1000)
Total Transit Available Funds		$276,707
Operations and Maintenance Cost	-	$207,121
Funds Available for Capital Projects		$69,586
Metropolitan Transportation Plan Identified Projects	-	$67,952
Available for unassigned Transit Projects		$1,634

Table Six compares the local agency roads projects listed in Chapter 5 with the estimated revenue from table five. The transit program is fiscally constrained with the cost of the listed projects being less than the estimated revenue for the BMTA.

Chapter Eight

Participation Plan for Transportation Planning and Environmental Justice

Adopted
June 28, 2006
Amended
June 24, 2009

Summary of Objectives

- Create a plan that will enable BCATS to improve & increase participation into the transportation planning process
- Develop measures to prevent the denial of, reduction in, or significant delay in the receipt of transportation benefits by low-income and minority population.
- Facilitate participation of non-traditional participants in the planning process.
- To provide and encourage timely and early participation to ensure the opportunity for comment (by stakeholders and the public) on transportation decisions.
- Develop transportation plans and projects that reflect BCATS communities' values.

Overview of Participation Plan Development Process

SAFETEA-LU continues the ISTEA and TEA21 trends of federal legislation that moves the decision making authority away from the federal government and closer to the citizens. The federal government wants transportation decisions to be more responsive to state and local needs. In response, the Bay City Area Transportation Study (BCATS) has developed this Participation Plan that includes provisions to ensure early and continuing involvement of the public in (a) the transportation planning process, (b) the development of transportation plans, and (c) the development of Transportation Improvement Program (TIP). Therefore, the Participation Plan shall reflect consultation with interested parties. At a minimum, the BCATS Organization shall publish the Participation Plan to be used and allow 45 days for written public comment before the revised plan is adopted.

Citizens, public officials, affected public agencies, representatives of transportation agency employees, users of public transit, freight shippers, private providers of transportation and other interested parties shall have full access to plans and programs, their supporting materials, and an opportunity to participate in all stages of the planning process. The Participation Plan shall dictate the methods of the publication for the Participation Plan, the Transportation Plan and the Transportation Improvement Program to make it readily available for public review and comment. The Participation Plan will comply with the Americans with Disabilities Act of 1990.

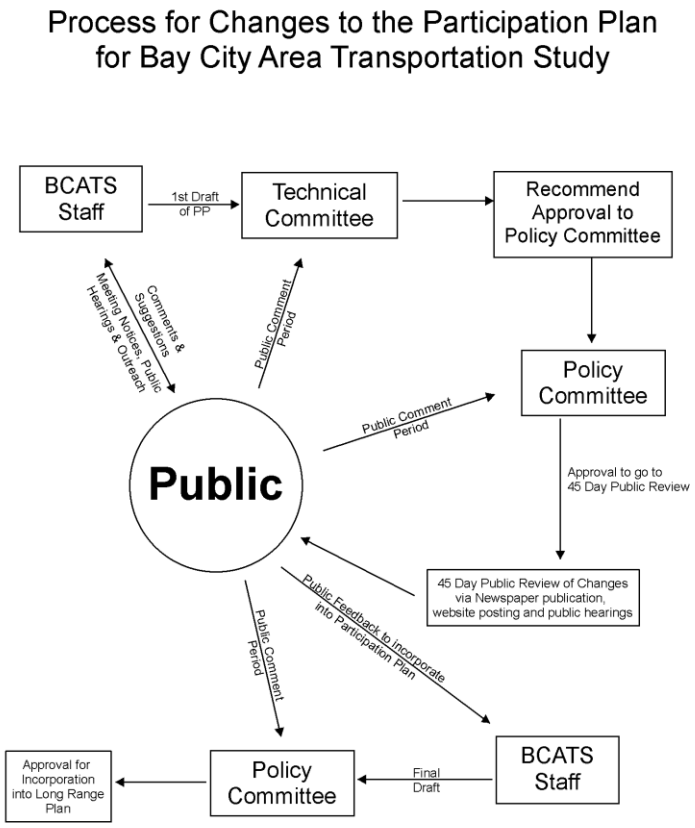
TIP and MTP Development Process

BCATS shall consult with governmental units within the MPO, local economic development organizations, freight related businesses, non-motorized transportation groups and clubs, local transportation providers, and other interested parties in the development of the Transportation Improvement Program and the Metropolitan Transportation Plan. BCATS shall also conduct outreach, public comment periods and public hearings as described in the Participation Plan.

Both the initial Transportation Improvement Program (TIP) and Metropolitan Transportation Plan (MTP) shall be published for a minimum of 30 days to receive written public comment before adoption. For any amendments that are deemed necessary for the adopted TIP and/or the MTP, BCATS shall publish at least one notice in a local news publication of general circulation within the Bay City Urbanized Area prior to the approval of the amendment.

The BCATS Participation Plan consists of the following tools:

1. Notice of Meetings
2. Annual Report
3. Public Comment Period
4. Public Hearings
5. Radio, TV, Newspaper, Internet
6. Outreach
7. Visualization Techniques
8. Environmental Justice
9. Development & Analysis
10. Summary



1. Notice of Meetings

All notices of BCATS Policy Committee meetings and public hearings will be published in a local news publication of general circulation within the Bay City urbanized area and will also be listed on the Bay County Board of Commissioners "official calendar of monthly meetings." Notices will also be posted on the bulletin board in the Office of the BCATS Secretary which is at the Bay County Building, 5th floor, 515 Center Avenue, Bay City, Michigan as well as the Bay County Transportation Planning Division website. Should the proposed agenda for the meeting include action on the Participation Plan, the Transportation Plan or the Transportation Improvement Program, it shall be specifically noted.

It is also the adopted policy of the BCATS Policy Committee to include in all public meeting notices the following paragraph:

Pursuant to the Americans with Disabilities Act, individuals with disabilities may request aids/services within a reasonable time period to participate in the meeting. Contact Michael Gray, Director of Administrative Services, County Executive's Office, 515 Center Avenue, Suite 403, Bay City, MI 48708-5125; phone: 989-895-4130 or 989-895-4049 TDD.

2. Annual Report

Publishing of the BCATS Annual report in a local news publication of general circulation within the Bay City urbanized area occurs every December. The BCATS annual report shall also be included on the Transportation Planning website. This multi-modal report is a summary of the previous year's work in transportation. It includes updates on planning studies, completed and upcoming roadway construction projects, transit related information and other general data concerning the activities of BCATS. The report also provides names and phone numbers the public can contact regarding transportation issues.

3. Public Comment Period at all BCATS Policy Committee Meetings

During each BCATS Policy Committee meeting, time shall be allocated for public comment. The public may submit comments to BCATS in person or in any other form of communication (letters, phone, e-mail, fax, etc.). All comments that are received will be read at the meeting during the public comment period. In addition, BCATS encourages citizens to go to the source, that is, the best place to influence a project is at the local level – where projects begin. For example, if a citizen has a suggestion for improving a roadway or transit route, find out who has jurisdiction over the road or route (for example, is it the city of Bay City, the city of Essexville, the Bay County Road Commission, the Michigan Department of Transportation or the Bay Metro Transit Authority, etc.). Once you know who's in charge, take advantage of opportunities to voice your support or objection of a proposed project. Projects are approved at the local level (by planning commissions, township boards, city commissions, or road commissions) before they make it on to the BCATS approved project list for federal funding.

4. Public Hearings

Specifically, before approving any Participation Plan, Transportation Plan or Transportation Improvement Program, BCATS shall conduct a public hearing to solicit comments. Such hearings shall take place during the regularly scheduled BCATS meeting unless deemed otherwise by the BCATS Policy Committee. Notice of public hearings will be administered in the same manner as notice of meetings. To supplement the public hearing process, BCATS may also engage in hosting public information/ public open house meetings in publicly convenient and accessible locations such as, but not limited to, public libraries, schools, shopping malls, or township halls. During public hearing BCATS will utilize various visualization techniques, as described in section 7, to assist in conveying the transportation plans and programs.

5. Radio, TV, Newspaper, Internet

To the extent feasible, BCATS staff will utilize the opportunities provided through local radio, TV, Bay 3TV, newspaper, Internet, and social media to inform the public of the development of

transportation planning products such as the Metropolitan Transportation Plan or the Transportation Improvement Program. This would include news releases, bulletin board formats, public service announcements and interview opportunities that may be available. Citizens with internet access can go to the BCATS homepage at *www.baycounty-mi.gov/Transportation*.

6. Outreach

BCATS staff will attempt to identify and contact special interest groups in the community to assure their opportunity to have input. These would include organizations such as citizen district councils, minority populations, low-income populations, private transportation providers, etc. These groups will receive a direct mailing which describes the transportation planning process and their opportunity for input. This includes but is not limited to the organizations listed below. This list may be added to at any meeting of the BCATS Policy Committee:

Midland Salzburg Citizen District Council (CDC)
Northwest CDC
Northeast CDC
Columbus Avenue CDC
South-End CDC
NAACP, Bay City Branch
Bay City Downtown Development Authority (DDA)
Essexville DDA
Hampton DDA
Bangor DDA
Monitor DDA
Senior Citizens Advisory Committee

Community Foundation Railtrail/Riverwalk Committee
James Clements Airport Advisory Committee
AAA Taxi Company
Bangor Township Public Schools Transportation Program
Bay City Public Schools Transportation Program
Essexville-Hampton Public Schools Transportation Program
Bay City Housing Commission (elderly and low income housing)

United Way of Bay County
Bay County Division on Aging
Region VII Area Agency on Aging
Tri-City Cyclist
Great Lakes Bay Region Hispanic Business Association

7. Visualization Techniques

BCATS will utilize various visualization techniques to inform the public and convey the message of transportation projects, plans, and programs ranging from, but not limited to, static maps, interactive GIS demonstrations, computer model simulations, photo manipulation to artist renderings. For each individual project, plan, or program, BCATS will use the most efficient visualization technique possible to best inform the public.

8. Environmental Justice

In April 1997 the U.S. Department of Transportation (DOT) issued the DOT order on environmental justice to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 5610.2). The order generally describes the process for incorporating environmental justice principles into all DOT programs, policies, and activities.

Environmental justice is an important part of the planning process and must be considered in all phases of planning. This includes all Participation Plans and activities, the development of Regional Transportation Plans and Transportation Improvement Programs adopted by BCATS. Specifically, BCATS will consider environmental justice concerns within their established participation procedures.

There are three fundamental concepts of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.

2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

BCATS will continue to work to identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed, and the benefits and burdens of transportation investments can be fairly distributed. BCATS will also continue to evaluate and where necessary, improve the Participation Plan to eliminate barriers and engage minority and low-income populations in transportation decision making. However, BCATS cannot fully meet community needs without the active participation of well-informed, empowered individuals; community groups; and other non-governmental organizations. These individuals and groups advance the letter, spirit, and intent of environmental justice in transportation when they participate in public participation activities (meetings, hearings, advisory groups) to help BCATS understand community

needs, perceptions, and goals.

Our basic message to all citizens is that the earlier you get involved, the better your chances will be to create the impact you desire. There are many situations where public participation has influenced transportation decisions made in our community**.**

Transportation programs and projects cannot proceed without citizen acceptance and support that come through an educated public and an open inclusive process.

At this time BCATS has identified the following groups to begin initial outreach efforts for environmental justice purposes: All Citizen District Councils, NAACP Bay City branch, the Saginaw Chippewa Indian Tribe and the Senior Citizen Advisory Committee. This list may grow significantly as environmental justice efforts increase. Specific strategies will be developed with each group after initial contact and discussions have occurred. This will ensure that the strategies will be developed jointly and cooperatively between the MPO and community organizations representing low-income populations and minority populations.

Definition of "Minority" for Purposes of Environmental Justice

According to the U.S. DOT Order 5610.2 the following groups are defined as "minority":

1. Black (a person having origins in any of the black racial groups of Africa).
2. Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race).
3. Asian American (a person having origins in any of the original people of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands).
4. American Indian and Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

Definition of "Low-income" for Purposes of Environmental Justice

Low-income is defined as a person whose household income is at or below the Department of Health and Human Services (HHS) poverty guidelines. HHS poverty guidelines are used as eligibility criteria for the Community Services Block Grant Program and a number of other federal programs. However, a state or locality may adopt a higher threshold for low-income, as long as the higher threshold is not selectively implemented and is inclusive of all persons at or below the HHS poverty guidelines.

9. Development & Analysis

BCATS has developed and will update as necessary a demographic profile of the transportation

planning area that includes identification of the locations of minority populations and low-income populations as covered by the executive order on environmental justice. Maps of minority and low-income areas which have had the proposed MTP projects overlain on them to provide a visual analysis of potential impacts are located on the following pages.

BCATS will continue to address environmental justice issues over the coming months. Coordination with the MDOT with assistance and guidance provided by the FHWA will help to refine and expand on our efforts.

10. Summary

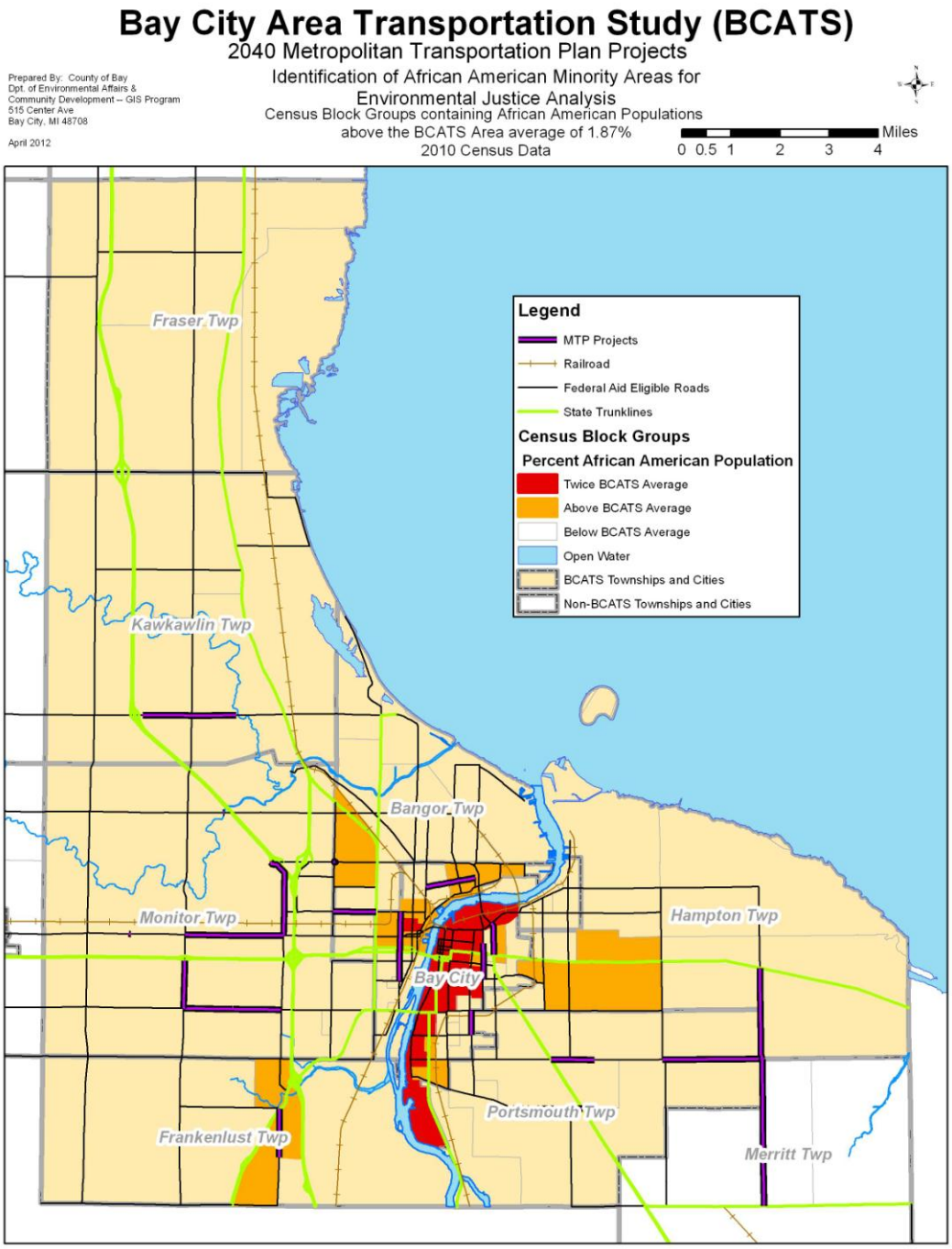
The BCATS Participation Plan described above will ensure maximum access by the public and encourage proactive public participation to all aspects of the transportation planning process. This increased access for local citizens and other groups to transportation planning will help foster the continuous improvement of BCATS plans and programs to serve the Bay City area.

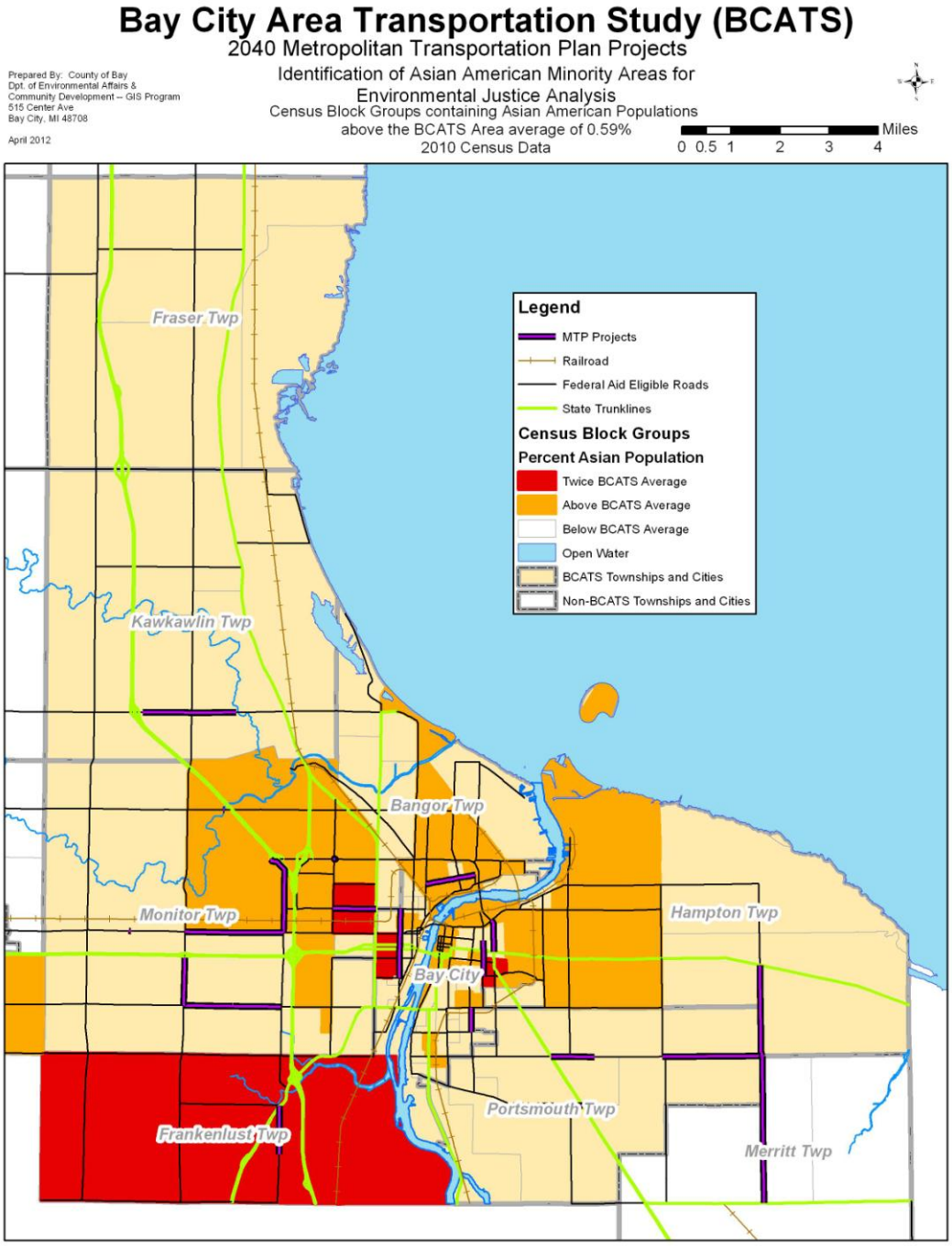
Of the 25 total street and highway projects in the MTP, 6 projects are located within or adjacent to census block groups identified as having a total minority percentage higher than the overall BCATS average for all census block groups. For each identified minority population, 7 projects are located within or adjacent to African American minority areas, 11 projects are located within or adjacent to Asian minority areas, 17 projects are within or adjacent to Native American minority areas, and 6 projects are within or adjacent to Hispanic minority areas. In addition, 6 of the 25 projects are within or adjacent to block groups which have been identified to have a low-income population higher than the overall BCATS average for all block groups.

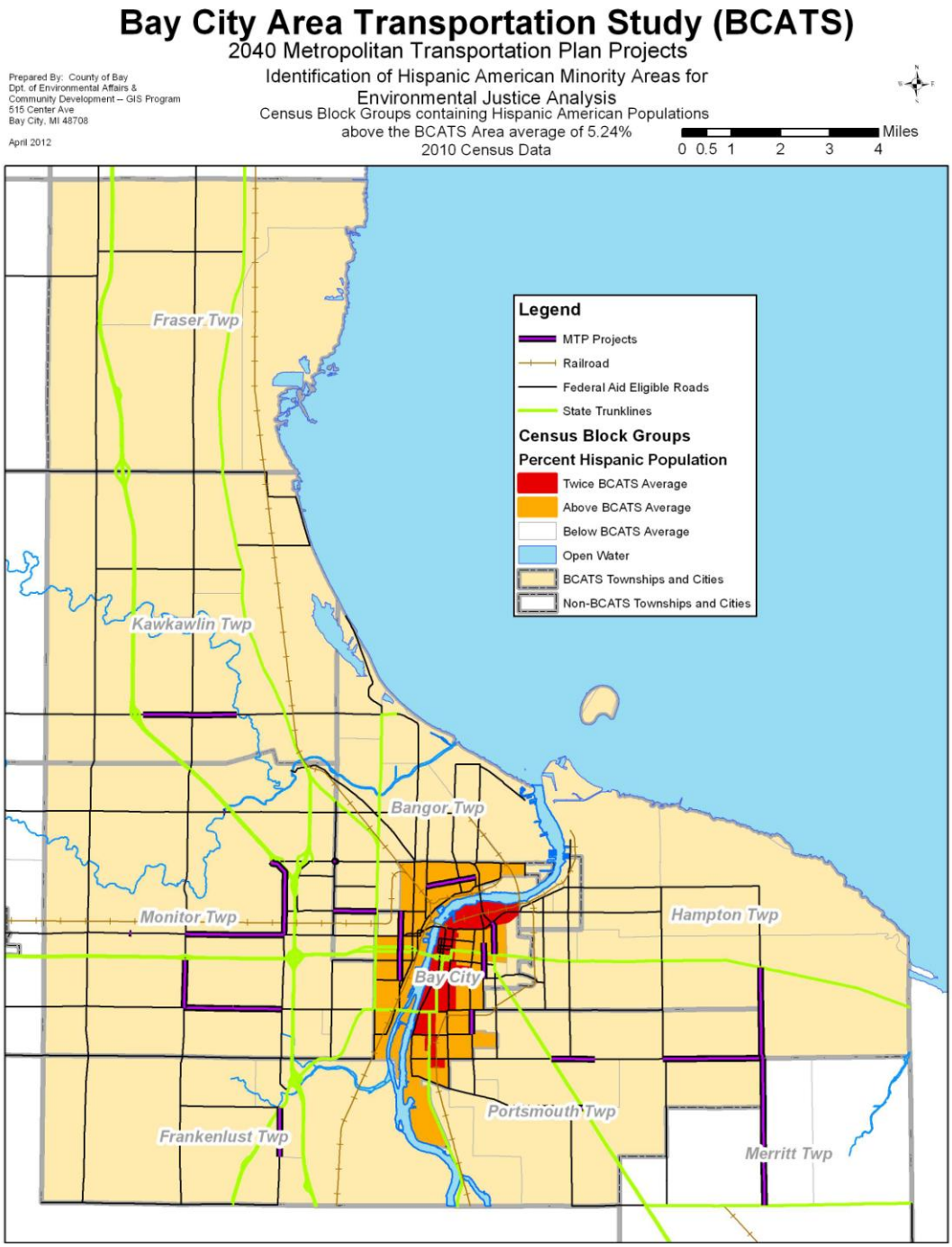
Overall, 21 of the 25 projects are complete preservation and maintenance in nature. These projects do not include any relocations and displacements. All four of the expansion projects, two on Midland Rd, one on Mackinaw Rd and one on Trumbull Rd, involve the addition of a center turn lane and do not include any relocations and displacements.

During the planning process, all projects will have an opportunity for public comment and participation. A project open house is held for major projects to discuss the socio-economic impacts of the project on the community which includes any low-income populations or minority populations. Also, during construction, appropriate detour routes are developed to minimize delay and disruption on all population groups. Having followed the adopted environmental justice practices BCATS has not identified any disproportionate adverse effects on minority or low-income populations.

Environmental Justice Maps




Bay City Area Transportation Study (BCATS)
2040 Metropolitan Transportation Plan Projects
Identification of Asian American Minority Areas for
Environmental Justice Analysis
Census Block Groups containing Asian American Populations
above the BCATS Area average of 0.59%
2010 Census Data
Prepared By: County of Bay
Dpt. of Environmental Affairs &
Community Development -- GIS Program
515 Center Ave
Bay City, MI 48708
April 2012
0 0.5 1 2 3 4 Miles
Legend
MTP Projects
Railroad
Federal Aid Eligible Roads
State Trunklines
Census Block Groups
Percent Asian Population
Twice BCATS Average
Above BCATS Average
Below BCATS Average
Open Water
BCATS Townships and Cities
Non-BCATS Townships and Cities
Fraser Twp
Kawkawlin Twp
Bangor Twp
Monitor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp


Bay City Area Transportation Study (BCATS)
2040 Metropolitan Transportation Plan Projects
Identification of Hispanic American Minority Areas for
Environmental Justice Analysis
Census Block Groups containing Hispanic American Populations
above the BCATS Area average of 5.24%
2010 Census Data
Prepared By: County of Bay
Dpt. of Environmental Affairs &
Community Development -- GIS Program
515 Center Ave
Bay City, MI 48708
April 2012
0 0.5 1 2 3 4 Miles
Legend
MTP Projects
Railroad
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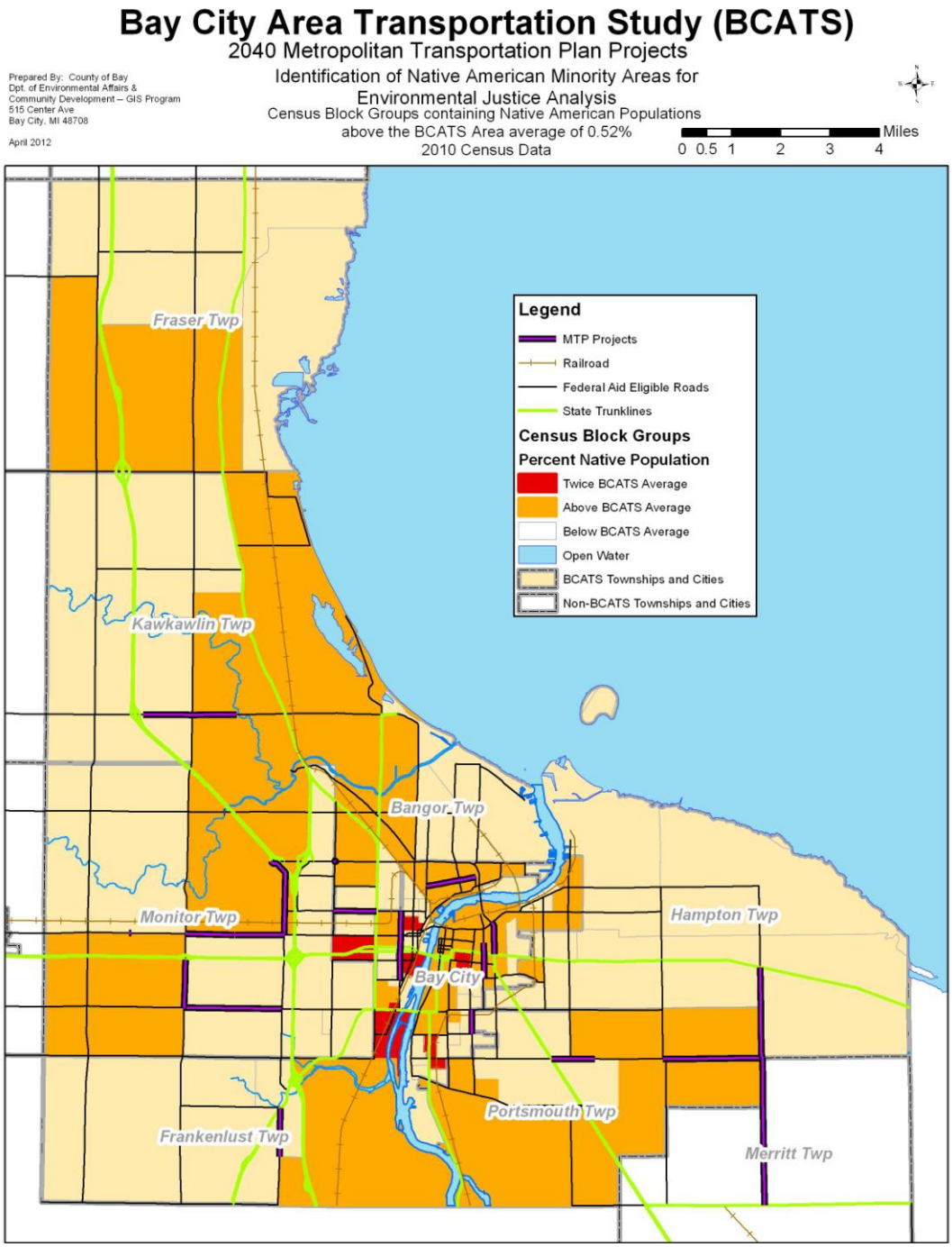
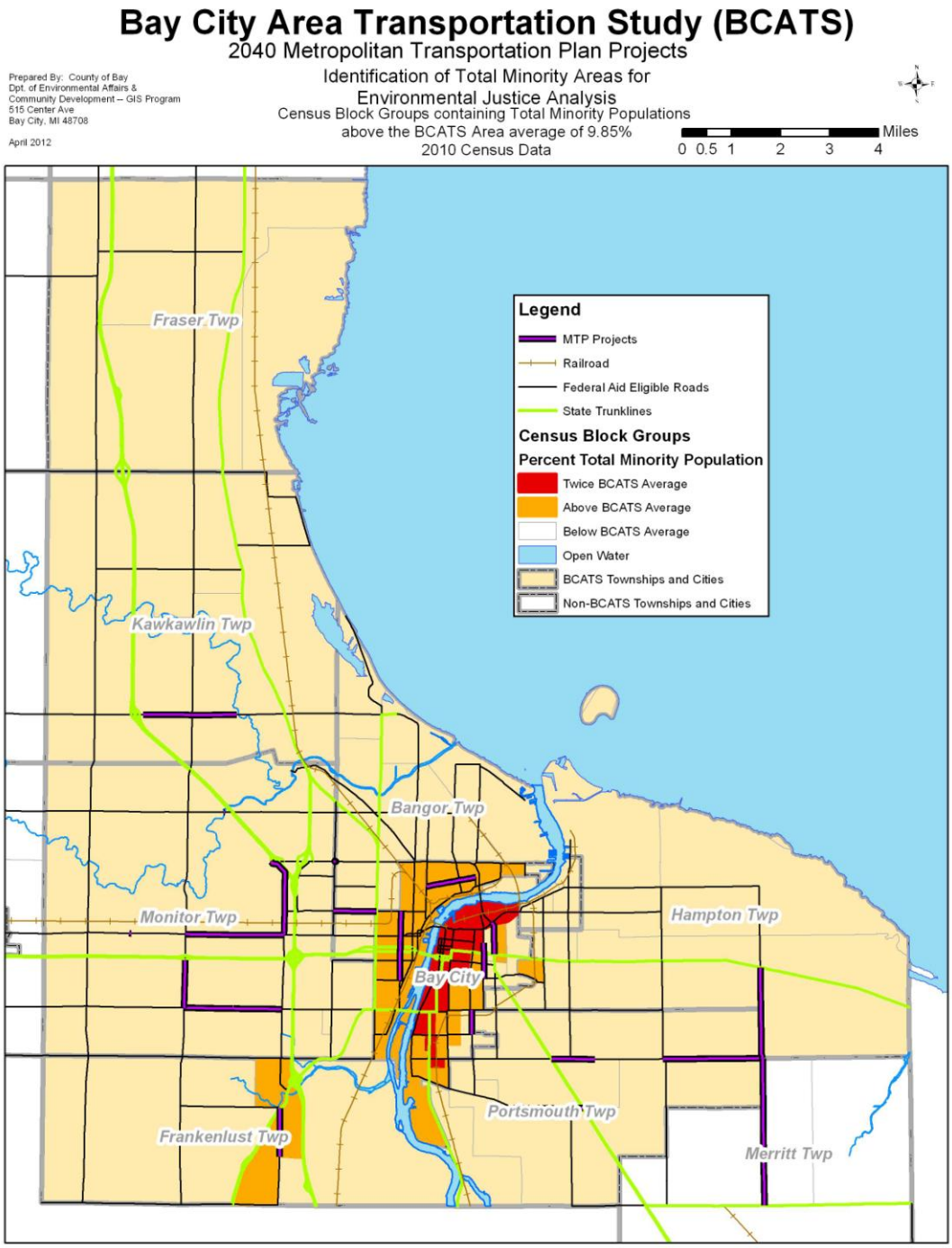
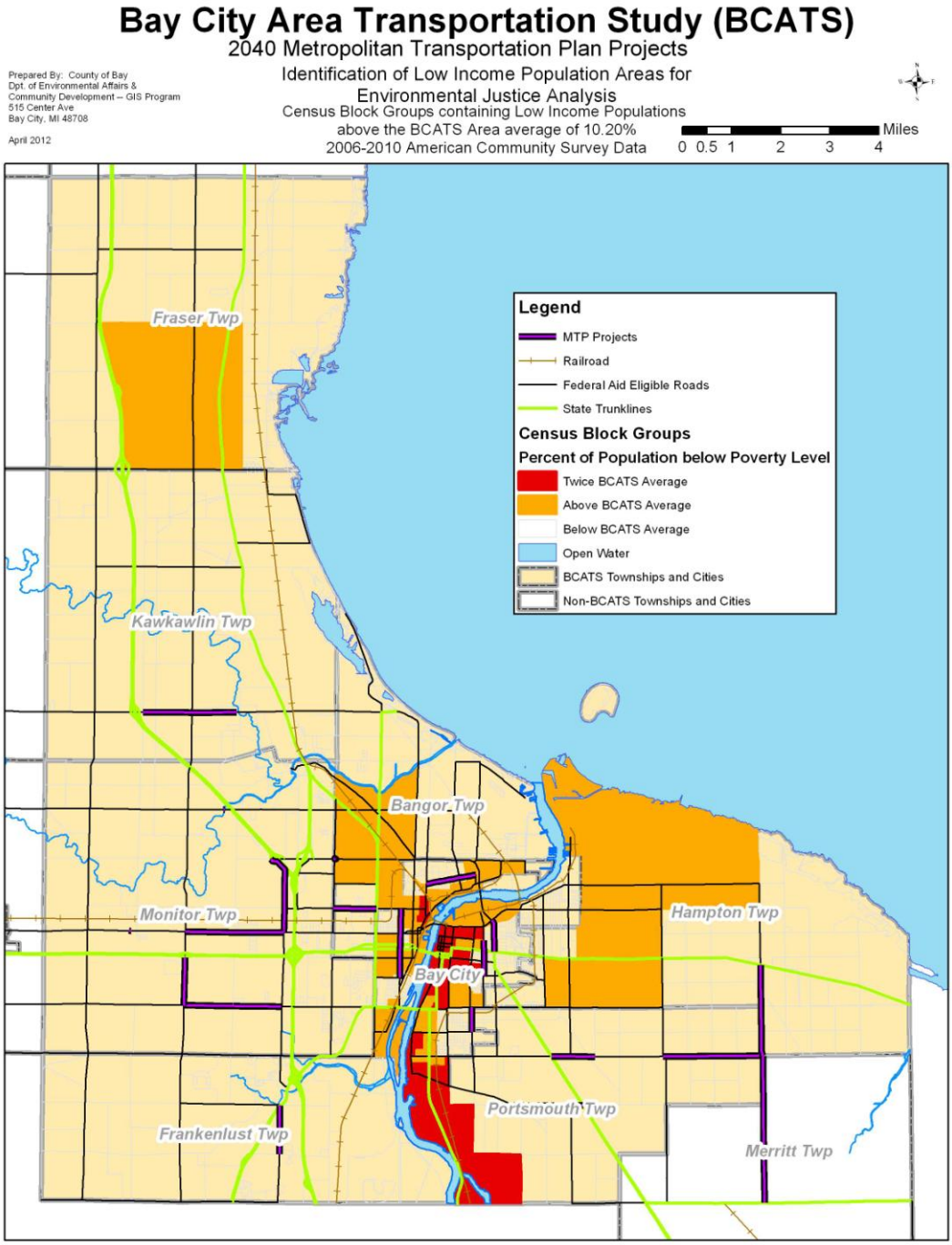
Frankenlust Twp
Merritt Twp


Bay City Area Transportation Study (BCATS)
2040 Metropolitan Transportation Plan Projects
Identification of Native American Minority Areas for
Environmental Justice Analysis
Census Block Groups containing Native American Populations
above the BCATS Area average of 0.52%
2010 Census Data
Prepared By: County of Bay
Dpt. of Environmental Affairs &
Community Development -- GIS Program
515 Center Ave
Bay City, MI 48708
April 2012
0 0.5 1 2 3 4 Miles
Legend
MTP Projects
Railroad
Federal Aid Eligible Roads
State Trunklines
Census Block Groups
Percent Native Population
Twice BCATS Average
Above BCATS Average
Below BCATS Average
Open Water
BCATS Townships and Cities
Non-BCATS Townships and Cities
Fraser Twp
Kawkawlin Twp
Bangor Twp
Monitor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp


Bay City Area Transportation Study (BCATS)
2040 Metropolitan Transportation Plan Projects
Prepared By: County of Bay
Dpt. of Environmental Affairs &
Community Development -- GIS Program
515 Center Ave
Bay City, MI 48708
April 2012
Identification of Total Minority Areas for
Environmental Justice Analysis
Census Block Groups containing Total Minority Populations
above the BCATS Area average of 9.85%
2010 Census Data
0 0.5 1 2 3 4 Miles
Legend
MTP Projects
Railroad
Federal Aid Eligible Roads
State Trunklines
Census Block Groups
Percent Total Minority Population
Twice BCATS Average
Above BCATS Average
Below BCATS Average
Open Water
BCATS Townships and Cities
Non-BCATS Townships and Cities
Fraser Twp
Kawkawlin Twp
Bangor Twp
Monitor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp


Bay City Area Transportation Study (BCATS)
2040 Metropolitan Transportation Plan Projects
Identification of Low Income Population Areas for
Environmental Justice Analysis
Census Block Groups containing Low Income Populations
above the BCATS Area average of 10.20%
2006-2010 American Community Survey Data
Prepared By: County of Bay
Dpt. of Environmental Affairs &
Community Development -- GIS Program
515 Center Ave
Bay City, MI 48708
April 2012
0 0.5 1 2 3 4 Miles
Legend
MTP Projects
Railroad
Federal Aid Eligible Roads
State Trunklines
Census Block Groups
Percent of Population below Poverty Level
Twice BCATS Average
Above BCATS Average
Below BCATS Average
Open Water
BCATS Townships and Cities
Non-BCATS Townships and Cities
Fraser Twp
Kawkawlin Twp
Bangor Twp
Monitor Twp
Hampton Twp
Bay City
Portsmouth Twp
Frankenlust Twp
Merritt Twp

Block Group	Total Pop.	African Amer. Pop.	% African Amer.	Native Amer. Pop.	% Native Amer.	Asian Amer. Pop.	% Asian Amer.	Hispanic Amer. Pop.	% Hispanic Amer.	Total Minority Pop.	% Minority
Bangor											
2858001	2816	54	1.92%	15	0.53%	28	0.99%	106	3.76%	248	8.81%
2858002	737	1	0.14%	1	0.14%	0	0.00%	21	2.85%	31	4.21%
2858003	1943	17	0.87%	7	0.36%	46	2.37%	89	4.58%	187	9.62%
2858004	867	10	1.15%	18	2.08%	3	0.35%	27	3.11%	68	7.84%
2859001	1332	6	0.45%	3	0.23%	6	0.45%	57	4.28%	82	6.16%
2859002	1885	18	0.95%	9	0.48%	12	0.64%	65	3.45%	112	5.94%
2859003	1868	10	0.54%	11	0.59%	9	0.48%	78	4.18%	132	7.07%
2860001	984	4	0.41%	6	0.61%	5	0.51%	33	3.35%	56	5.69%
2860002	782	2	0.26%	2	0.26%	5	0.64%	31	3.96%	60	7.67%
2860003	1427	7	0.49%	9	0.63%	2	0.14%	60	4.20%	85	5.96%
Bay City											
2803001	1300	94	7.23%	9	0.69%	6	0.46%	118	9.08%	281	21.62%
2804001	645	15	2.33%	5	0.78%	5	0.78%	67	10.39%	100	15.50%
2804002	592	30	5.07%	4	0.68%	0	0.00%	47	7.94%	102	17.23%
2804003	766	92	12.01%	8	1.04%	8	1.04%	84	10.97%	207	27.02%
2804004	975	73	7.49%	14	1.44%	1	0.10%	102	10.46%	231	23.69%
2805001	1124	40	3.56%	6	0.53%	3	0.27%	80	7.12%	127	11.30%
2805002	1046	14	1.34%	2	0.19%	8	0.76%	52	4.97%	84	8.03%
2805003	680	6	0.88%	4	0.59%	9	1.32%	30	4.41%	58	8.53%
2805004	648	10	1.54%	4	0.62%	0	0.00%	38	5.86%	57	8.80%
2806001	748	32	4.28%	5	0.67%	0	0.00%	79	10.56%	140	18.72%
2806002	916	10	1.09%	4	0.44%	6	0.66%	66	7.21%	101	11.03%
2806003	1148	47	4.09%	3	0.26%	5	0.44%	105	9.15%	180	15.68%
2807001	1366	78	5.71%	14	1.02%	0	0.00%	214	15.67%	358	26.21%
2807002	1381	82	5.94%	10	0.72%	3	0.22%	202	14.63%	356	25.78%
2807003	713	40	5.61%	5	0.70%	0	0.00%	89	12.48%	159	22.30%
2808001	1468	21	1.43%	2	0.14%	5	0.34%	93	6.34%	133	9.06%
2808002	1231	6	0.49%	1	0.08%	6	0.49%	115	9.34%	159	12.92%
2808003	892	10	1.12%	5	0.56%	1	0.11%	68	7.62%	105	11.77%
2809001	909	30	3.30%	11	1.21%	7	0.77%	132	14.52%	209	22.99%
2809002	898	24	2.67%	4	0.45%	0	0.00%	65	7.24%	121	13.47%
2809003	1145	48	4.19%	5	0.44%	1	0.09%	119	10.39%	211	18.43%
2810001	705	4	0.57%	9	1.28%	0	0.00%	64	9.08%	84	11.91%
2810002	709	12	1.69%	2	0.28%	2	0.28%	45	6.35%	74	10.44%
2810003	569	5	0.88%	9	1.58%	1	0.18%	43	7.56%	79	13.88%
2810004	726	12	1.65%	5	0.69%	0	0.00%	52	7.16%	85	11.71%
2810005	692	8	1.16%	3	0.43%	15	2.17%	41	5.92%	79	11.42%
2810006	627	14	2.23%	4	0.64%	13	2.07%	38	6.06%	78	12.44%
2813001	826	24	2.91%	6	0.73%	6	0.73%	51	6.17%	90	10.90%
2813002	709	15	2.12%	6	0.85%	1	0.14%	40	5.64%	74	10.44%
2813003	1633	19	1.16%	10	0.61%	12	0.73%	94	5.76%	162	9.92%
2865001	1796	148	8.24%	15	0.84%	12	0.67%	190	10.58%	395	21.99%
2866001	751	9	1.20%	1	0.13%	2	0.27%	48	6.39%	74	9.85%
2866002	847	23	2.72%	4	0.47%	4	0.47%	71	8.38%	145	17.12%
2866003	999	31	3.10%	1	0.10%	5	0.50%	66	6.61%	140	14.01%
2866004	839	47	5.60%	13	1.55%	5	0.60%	61	7.27%	155	18.47%

2866005	814	18	**2.21%**	3	0.37%	2	0.25%	58	**7.13%**	96	**11.79%**
2866006	1099	31	**2.82%**	8	**0.73%**	5	0.45%	43	3.91%	111	**10.10%**
Essexville											
2851001	1286	20	1.56%	10	**0.78%**	13	**1.01%**	42	3.27%	102	7.93%
2851002	1461	5	0.34%	8	**0.55%**	12	**0.82%**	38	2.60%	74	5.07%
2851003	731	7	0.96%	2	0.27%	3	0.41%	25	3.42%	45	6.16%
Frankenlust											
2854001	741	3	0.40%	5	**0.67%**	18	**2.43%**	13	1.75%	44	5.94%
2854002	1548	49	**3.17%**	4	0.26%	37	**2.39%**	56	3.62%	166	**10.72%**
2854003	1273	3	0.24%	5	0.39%	20	**1.57%**	32	2.51%	63	4.95%
Fraser & Garfield											
2862001	877	2	0.23%	5	**0.57%**	0	0.00%	13	1.48%	24	2.74%
2862002	1872	4	0.21%	17	**0.91%**	2	0.11%	50	2.67%	87	4.65%
2862003	1233	2	0.16%	6	0.49%	0	0.00%	23	1.87%	36	2.92%
2862004	953	2	0.21%	4	0.42%	3	0.31%	23	2.41%	42	4.41%
Hampton											
2852011	692	1	0.14%	1	0.14%	3	0.43%	15	2.17%	22	3.18%
2852012	795	14	1.76%	2	0.25%	0	0.00%	26	3.27%	61	7.67%
2852013	2252	46	**2.04%**	9	0.40%	16	**0.71%**	92	4.09%	187	8.30%
2852014	1090	1	0.09%	0	0.00%	8	**0.73%**	39	3.58%	71	6.51%
2852015	1005	22	**2.19%**	9	**0.90%**	10	**1.00%**	50	4.98%	105	**10.45%**
2852021	2007	29	1.44%	4	0.20%	17	**0.85%**	62	3.09%	136	6.78%
2852022	1811	28	1.55%	5	0.28%	8	0.44%	61	3.37%	151	8.34%
Kawkawlin											
2861001	1501	2	0.13%	7	0.47%	0	0.00%	27	1.80%	62	4.13%
2861002	880	4	0.45%	3	0.34%	0	0.00%	19	2.16%	29	3.30%
2861003	836	0	0.00%	5	**0.60%**	1	0.12%	10	1.20%	27	3.23%
2861004	1631	4	0.25%	16	**0.98%**	7	0.43%	37	2.27%	86	5.27%
Monitor											
2855001	2670	16	0.60%	1	0.04%	11	0.41%	66	2.47%	130	4.87%
2855002	1481	7	0.47%	0	0.00%	6	0.41%	22	1.49%	43	2.90%
2855003	962	0	0.00%	7	**0.73%**	0	0.00%	36	3.74%	58	6.03%
2855004	1580	5	0.32%	4	0.25%	16	**1.01%**	32	2.03%	66	4.18%
2857001	1700	6	0.35%	8	0.47%	15	**0.88%**	67	3.94%	126	7.41%
2857002	1004	2	0.20%	3	0.30%	4	0.40%	11	1.10%	34	3.39%
2857003	1338	4	0.30%	8	**0.60%**	10	**0.75%**	23	1.72%	58	4.33%
Portsmouth & part of Merritt											
2853001	1312	10	0.76%	3	0.23%	2	0.15%	51	3.89%	74	5.64%
2853002	1002	2	0.20%	6	**0.60%**	3	0.30%	36	3.59%	49	4.89%
2853003	475	3	0.63%	3	**0.63%**	1	0.21%	21	4.42%	29	6.11%
2853004	1097	7	0.64%	8	**0.73%**	1	0.09%	38	3.46%	57	5.20%
BCATS Totals											
	88,346	**1,656**	**1.87%**	**460**	**0.52%**	**522**	**0.59%**	**4,630**	**5.24%**	**8,699**	**9.85%**

Bold *percentages are greater than BCATS average,* ***Red*** *percentages are twice the BCATS average.*
Data Source: 2010 United States Census

Chapter Nine

Consultation Efforts

Documentation of consultation and public participation efforts during the drafting and public review period of the Bay City Area Transportation Study (BCATS) 2040 Metropolitan Transportation Plan

Section 1

BCATS 2040 Metropolitan Transportation Plan Description

The Bay City Area Transportation Study (BCATS) is the principal public agency, as per Section 134 (a), conducting regional transportation studies for the Bay City Urbanized Area. BCATS, through an agreement with the Bay County Board of Commissioners, provides management and policy functions for the transportation planning program as required by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). BCATS provides transportation planning services on behalf of the metropolitan planning organization (MPO) for the cities of Bay City and Essexville and the townships of Bangor, Monitor, Hampton, Portsmouth, Kawkawlin, Frankenlust and Fraser. The MPO is established by federal law in all urbanized areas of the nation to carry out the "3C" (continuing, cooperative and comprehensive) transportation planning process. This process is required for the area to continue to receive U.S. Department of Transportation (USDOT) funding. Extensive USDOT funds are spent annually in the Bay City area for highway, bridge, transit, transportation enhancement and safety projects and improvements.

One major function of BCATS under federal law is to produce a transportation plan for the area. The transportation plan is used as a basis to guide the decision of where federal transportation funds should be spent. The transportation plan identifies the area's transportation needs through the year 2040 as well as projects, both funded and unfunded and policies to meet those needs. The plan shall include both long-term and short-term strategies/actions, including but not limited to, operations and management activities that lead to the systematic development of an integrated intermodal transportation system that facilitates the safe and efficient movement of people and goods in addressing current and future transportation demand. The transportation plan shall be reviewed and updated every five years in air quality attainment areas and at least triennially in non-attainment areas to confirm its validity and consistency with current and forecasted transportation and land use conditions and trends and to extend the forecast period. In updating a plan, BCATS shall base the update on the latest estimates and assumptions for population, land use, travel, employment, congestion and economic activity.

There was considerable and numerous discussions with city and township staff, airport staff, various DDA staff, and other community agencies during the course of the traffic demand model creation and development of the BCATS 2040 Metropolitan Transportation Plan (MTP). Many of these efforts will be ongoing even after the BCATS 2040 MTP is adopted. This chapter is designed to discuss those outreach and consultation efforts and detail what response or action was taken in regard to the comment.

Section 2

Public Involvement and Consultation Efforts

During the development of the Great Lakes Bay Region Travel Demand Model, which occurred from April 2008 through January 2011, nearly every city and township was contacted directly. These efforts included personal visits with every township and city offices in the BCATS study area, and at least a phone conversations with representative staff in townships and cities outside of the BCATS study area. The tabulation of building and demolition permits in the various units of government, as well as, verification of existing business locations required lengthy discussions with local supervisory, assessor, and/or building and zoning officials, as well as future development sites and an estimated time frame of the site development. Transportation issues were a main component of these data gathering discussions. These efforts were instrumental in analysis of the ongoing shift of persons and businesses which indicate shifting demands on the transportation system. This shifting demand of goods and services are reflected in the Travel Demand Model in future years by changes in the estimated traffic flows in those future years.

Those contacted include:
Within the BCATS Study Area
Bangor Township - Dan Darland, Township Assessor
Frankenlust Township - Paul Arnold, Township Assessor
Fraser Township – George Augustaniak, Township Supervisor
Hampton Township - Terry Spegel, Township Supervisor
Kawkawlin Township – Dennis Bragiel, Township Supervisor
Monitor Township - Margaret Ford, Township Assessor
Portsmouth Township – Bob Pawlak, Township Assessor
City of Bay City - Jim Bedell and Terry Moultane, Planning Department
City of Essexville - Dale Majerczyk, City Manager

The building and demolition permit data will be a continuous data gathering effort over the life of the 2040 Plan. Additionally, the review of business locations within the BCATS study area will be an ongoing effort. Through this continuous social and economic data update process BCATS will maintain an open communication regarding transportation issues with the townships and cities within the BCATS area and within Bay County in general.

Bay County Offices

BCATS staff had numerous and continuing contact with Mosquito Control, Bay County Drain Office, Bay County Soil Erosion Office, Bay County Environmental Affairs and Community Development Office, Bay County Equalization Office, Bay County Emergency Services, Bay County 911 and the Bay County Health Department. Each of these offices has their own unique and specific transportation related interests. For example, BCATS assisted Bay County Emergency Services in a project that supplied major ports with emergency action plans (EAG). BCATS has assisted the Bay County Health Department in creating route maps for emergency response planning purposes.

2012 BCATS Transportation Summit

On January 30, 2012, BCATS held a Transportation Summit to solicit comments for the 2040 Metropolitan Transportation Plan. At the meeting, attended by 32 from various government organization, road agencies, news agencies, and general public, the upcoming projects were discussed as well as the future outlook for transportation within the Bay City Urbanized Area.

The following comments received or discussed during the Summit:

- Can we more fully use the Traffic Demand Model to forecast how our cities/townships, etc. will look traffic-wise in 10 – 20 years so we can plan better for growth?
- Do we need more participation and involvement by local planning boards for long range road growth planning? It sounds like we do.
- Better integration by use of pictures and visual display at unit level (city/township) for local discussion.
- Safe Routes to School
- Issues with high weight limits of trucks. Are beet plant trucks weight limits taken into consideration when such traffic is diverted?
- This is a good time to do broad regional planning (Bay, Saginaw, Midland Counties) on the variety of transportation modes: Rail, Port, Road, and Trail – to explore how we want traffic to flow through our communities. Do we want to allow another Trumbull? Do we want a highway through a residential area? Henry Street?
- Need better communication
- Local businesses are impacted by construction and road closures. What is MDOT doing to meet/help to keep business open? MDOT meets with each business individually and then have a public meeting once a draft plan is prepared to gather input. (Salzburg Road)
- Need better signage when there is construction and businesses are still open. It's important that customers realize that businesses are open during road work and that can be accomplished through better signage.

MBS Airport Contact

There were numerous contacts with MBS International Airport staff during the drafting of the BCATS MTP. Existing Long Range Plans for BCATS and MBS International were exchanged on the first visit with MBS on October 28, 2011. At this meeting snow discussions involved the traffic patterns that may result from the new terminal, Garfield Rd expansion and safety issues at the US-10/Garfield Rd interchange, and possible freight and manufacturing projects at the site.

Newspaper Contact

Contact with the local newspaper, the Bay City Times, was conducted initial with the public outreach letter. Beth Bellor, Bay City Times Staff writer, wrote an article regarding our transportation plan publish in the Bay City Times on May 9, 2012. The article also informed the readers of our public meeting which was held on May 23, 2012. A copy of this article is included in Appendix.

Other Contacts

In the effort by BCATS to fully engage the public, BCATS sent out a letter informing various agencies, governments, and organizations in the area to solicit comments on the on the 2040 Metropolitan Transportation Plan and the candidate projects. A copy of this letter and a list of the recipients are included in Appendix.

BCATS 2040 Metropolitan Transportation Plan Public Review and Comments

At the BCATS 2040 Metropolitan Transportation Plan Public Review session held on May, 23 2012 at the Bay County Building, 515 Center Ave, Bay City, MI 48708. BCATS received comments from five individuals. The participants were comprised of home owners on major streets, a county staff member, and an employee of a local Engineering Firm. A copy of the sign-in sheet and any submitted comments are included in Appendix.

During the public review period, BCATS receive several letters, emails, and phone calls regard projects and information in the Metropolitan Transportation Plan. Those letters/comments are included in Appendix along with the list of contacts names and agencies.

All comments that were received prior to the close of the Public Comment Period were reviewed by BCATS staff and incorporated into the Appendix of the Plan, and if necessary, corrections were made to the Plan according to the comments received by BCATS.

After receiving comments from FHWA and FTA, BCATS has incorporated a discussion of MAP-21 as well as clarifications on several minor points. All comments that were received from FHWA and FTA are included in the Appendix.

Appendix

Travel Demand Model Maps

- 2009 TDM AM Deficiencies Map
- 2009 TDM PM Deficiencies Map
- 2040 TDM AM Deficiencies Map
- 2040 TDM PM Deficiencies Map
- 2040 TDM AM Deficiencies Map - Built Network
- 2040 TDM PM Deficiencies Map - Built Network

Transportation Summit, January 30, 2012

- Flyer
- Contact List
- Sign-in Sheet

Public Notice and Comment Solicitation

- Public Notice Letter
- Contact List
- Bay City Times Article, Web addition 9 May, 2012
- Bay City Times Article, Print addition 10 May, 2012
- Public Open House Sign-in Sheet
- Comments received
- Bay County Executive Newsletter
- FTA Comments
- FHWA Comments
- FHWA Approval Letter