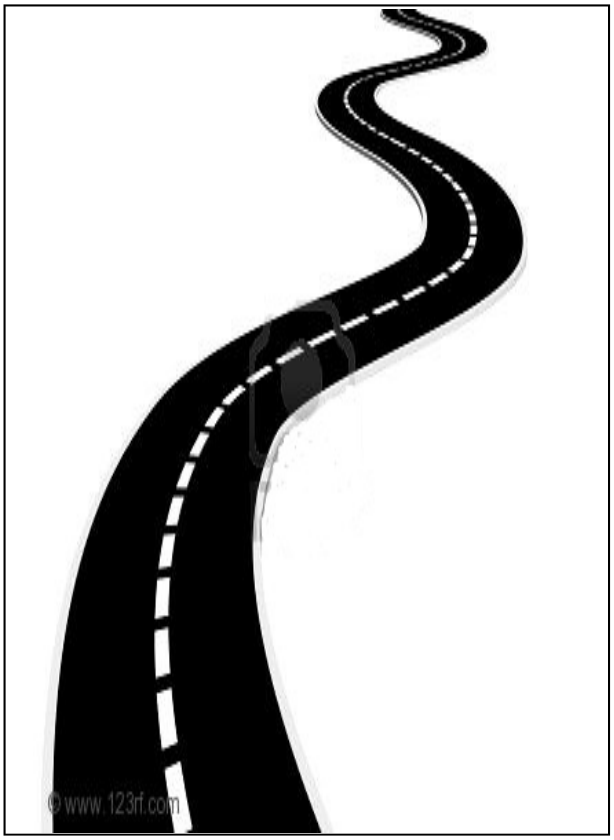

2045 Metropolitan Transportation Plan

for the

Battle Creek Area Transportation Study

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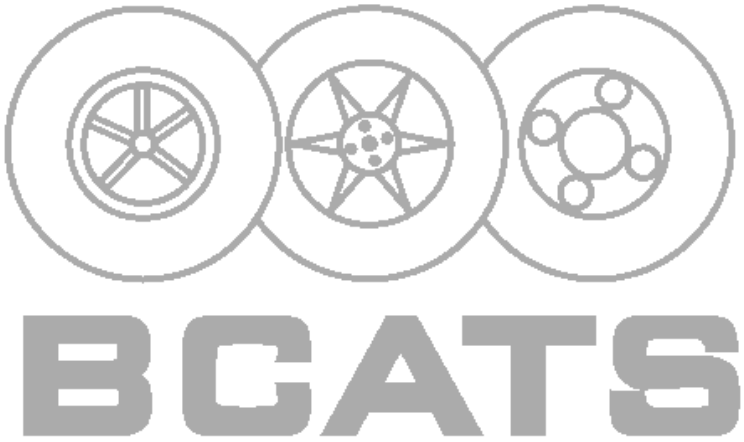
February, 2022


BCATS

ACKNOWLEDGMENTS

This document partially fulfills the Federal requirements for the development of a twenty-year long range Transportation Plan by the Metropolitan Planning Organization (MPO), in this case the Battle Creek Area Transportation Study (BCATS). This Plan was prepared under work activity 2.0428 of the Unified Work Program of BCATS.

The contents of this report reflect the analysis, findings and recommendations of the BCATS planning process and do not necessarily represent programs or projects that have been approved for final funding and implementation by the Michigan Department of Transportation (MDOT), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), or any local road or transit agency. The contents of this report do not necessarily reflect the official views or polity of the U.S. Department of Transportation. This document does not constitute a standard, specification, or regulation. Final funding and implementation approvals are carried out through the Transportation Improvement Program process.

This Plan and document were financed by the following means: through grants from the FHWA, and indirectly from the FTA; with funds provided by the MDOT (for its staff time); and locally with matching funds provided by the City of Battle Creek, the Calhoun County Road Department, and the City of Springfield.

The BCATS 2045 Metropolitan Transportation Plan was formally approved by the BCATS' Policy Committee on February 23, 2022.

Battle Creek Area Transportation Study

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Statement of Vision

2045 Metropolitan Transportation Plan

"The 2045 Transportation Plan for the Battle Creek Area Transportation Study is a vision of the area's transportation system through the year 2045. The transportation improvements in the first four years (2022-2025) of the Plan are considered firm commitments by the implementing agencies. This means that the improvements in the first four years will be completed unless unforeseen circumstances prevent completion. The remaining years of the Plan are a vision of how the transportation system may develop based on the existing master and zoning plans of the cities and townships in the Battle Creek Area Transportation Study area, transit development programs, and the current projections of available revenues. The transportation improvements in the later years (2026-2045) represent current priorities for the future. The transportation plan is updated every four to five years and the priorities for the later years can and will change as conditions warrant."

BCATS

BATTLE CREEK AREA TRANSPORTATION STUDY

2045 METROPOLITAN TRANSPORTATION PLAN

February 2022

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BCATS

Glossary of Transportation Planning Terms

3-C AGENCY - The local agency or group responsible for the conduct of the Continuing, Cooperative, Comprehensive transportation planning process.

AGRICULTURE/MINING (AG/MNG) - An employment category comprised of workplaces related primarily to agriculture (including agricultural services such as veterinarian and landscaping services), forestry, fishing, and mining (including oil and gas extraction).

ALL-OR-NOTHING ASSIGNMENT - The process of allocating the total number of trips between each pair of traffic analysis zones (TAZ) to the path or route with the minimum traveltime.

ANALYSIS AREA - Any geographic area such as a TAZ or group of TAZs combined for the purpose of making an analysis.

ANNUAL AVERAGE DAILY TRAFFIC (AADT) - The total number of vehicles passing a given location on a roadway over the course of one year, divided by 365 (days in the year). Requires permanent traffic recorder to measure annual total.

ARTERIAL - Class of street serving major movement of traffic not served by freeways.

ASSIGNMENT - See traffic assignment.

ATTRACTION - The pull or attracting power of a traffic analysis zone. For non-home based trips, attractions in a TAZ can be considered synonymous with trip destinations in that TAZ.

AVERAGE DAILY TRAFFIC (ADT) - The average number of vehicles passing a specified point during a 24-hour period, calculated from an approximation of AADT based on a limited number of 24-hour counts, adjusted for known variation in levels of travel by month of year and day of week.

AVERAGE VEHICLES/DWELLING UNIT - A socio-economic variable input to determining trip generation. A "surrogate" variable for household income, which relates directly to the number of vehicles available and consequently to the number of trips per day by household members.

BASE YEAR - The year selected to which the major portion of data is related.

BCATS - Battle Creek Area Transportation Study

BLOCKS - The smallest Census Geographic area used as basic tabulation units in urbanized areas with populations of 10,000 or more.

CALIBRATION - The procedure used to adjust travel models to simulate base year travel.

CAPACITY RESTRAINT - The process by which the assigned volume on a link is compared with the practical capacity of that link and the speed of the link adjusted to reflect the relationship between speed, volume, and capacity. The procedure is iterative until a realistic balance is achieved.

CAPACITY - The maximum number of vehicles that can pass over a given section of a lane or roadway in one direction (or in both directions for a two-lane or three-lane highway) during a given time period under prevailing roadway and traffic conditions. It is the maximum rate of flow that has a reasonable expectation of occurring. The terms "capacity" and "possible capacity" are synonymous. In the absence of a time modifier, capacity is an hourly volume. The capacity would not normally be exceeded without changing one or more of the conditions that prevail. In expressing capacity, it is essential to state the prevailing roadway and traffic condition under which the capacity is applicable. Refer to the revised edition of the "Highway Capacity Manual" for more detail.

CBC - City of Battle Creek

CCRD - Calhoun County Road Department, a department under the governing body (Calhoun County Board of Commissioners) of Calhoun County, Michigan

CENSUS TRACT - Small areas into which large cities and adjacent areas are divided for the purpose of providing comparable small area population and housing census tabulations.

CENSUS TRANSPORTATION PLANNING PACKAGE (CTPP) - Results of appropriate data items from the 1990 Census tabulated at the TAZ level by the Census Bureau for transportation planning applications.

CENTRAL BUSINESS DISTRICT (CBD) - Usually the downtown retail trade area of a city, or generally an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and service businesses.

CENTROID - An assumed point in a TAZ that represents the origin or destination of all trips to or from the TAZ. Generally, it is the center of trip ends rather than a geometrical center of the zonal area.

CORDON LINE - An imaginary line enclosing a study area, along which external interviews with motorists may be conducted for input to the modeling process.

CORRELATION - A mutual or reciprocal relation between variables.

CORRIDOR - A group of linear transportation facilities established by common characteristics, such as proximity, direction, or functional classification.

COUNT - A volume counted on the street, which may be used for comparison with the present traffic volume assigned to the corresponding link. The count may be directional or total two-way, peak hour - morning and/or afternoon - and/or a 24 hour value.

CTPP - Census Transportation Planning Package

CUTLINE - An imaginary line placed at a strategic location, in order to intercept all the links in an identified corridor. Traffic counts and trips assigned to the corridor are compared as a check of survey accuracy or model calibration.

DESIGN HOURLY VOLUME (DHV) - A volume determined for use in design, representing traffic expected to use a road.

DESTINATION - The TAZ in which a trip terminates.

DISTRIBUTION - The process by which the movement of trips between TAZs is estimated. The distribution may be measured or be estimated by a growth factor process, or be a synthetic model.

DRIVING TIME - The time to traverse the distance between TAZs, not including terminal time at each end of the trip.

DWELLING UNIT - A room or group of rooms occupied or intended for occupation as separate living quarters by persons or a group of persons. Includes houses, flats, apartments, or other places thought of as homes. Occasionally a dwelling unit may be located in a warehouse, office building, trailer, on the grounds of another "house" , or in other unusual places.

EV - Electric Vehicle

EXPRESSWAY - A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at intersections.

FACILITY - A specific road, road segment, route, or route segment.

FEDERAL-AID URBAN BOUNDARY - The boundaries of the area which encompass the entire urban place as designated by the U.S. Bureau of Census plus that adjacent area as agreed upon by local officials in cooperation with the State.

FHWA - Federal Highway Administration

FISCAL YEAR (FY) - For Federal and State of Michigan agencies, and BCATS, the time period beginning October 1 and ending September 30 of the subsequent calendar year. Fiscal years are designated by the calendar year in which they end.

FORECAST ZONE - A subdivision of the study area used for purposes of forecasting trip ends and perhaps for trip distribution.

FORECASTING - The process of determining the future values of land use, socio-economic, and trip making variables within the study area.

FUNCTIONAL CLASSIFICATION - An identification and categorization of segments of the street and highway system according to the character of service they provide.

GOVERNMENT (GOVT) - An employment category comprised of, for this study, workplaces related primarily to public health/social services, and public administration, including public safety personnel.

GRAVITY MODEL - A mathematical model of trip distribution based on the premise that trips produced in any given area will distribute themselves in accordance with the accessibility of other areas and the opportunities they offer.

GRIDLINE - An imaginary line, extending across the study area, splitting the area into 2 parts. Unlike a screenline, the location need not follow a natural barrier. Checks of traffic counts and trips assigned may be made in addition to a check of survey accuracy or model calibration.

GROWTH FACTOR - A ratio of future trip ends divided by present trip ends.

HOME-BASED TRIP - A trip with one end at the residence.

LABOR FORCE - The number of persons residing in a designated area assumed to be employable and actively seeking work.

LEVEL OF SERVICE (LOS) - The term used to indicate the quality of service provided by a facility under a given set of operating conditions. Refer to the revised edition of the "Highway Capacity Manual" for more detail.

LINK - In traffic assignment, a section of the highway network defined by a node at each end. A link may be one-way or two-way.

LINK LOAD - The assigned volume on a link.

LOCAL STREET - A street intended only to provide access to abutting properties. In traffic assignment, any link having a centroid as one node.

LONG RANGE TRANSPORTATION PLAN (LRTP)/METROPOLITAN TRANSPORTATION PLAN (MTP) - Documentation of transportation facilities/improvements that are projected for the next 20 years.

LRP - Long Range Plan

MAJOR STREET OR HIGHWAY - An arterial highway primarily for traffic movement and secondarily for providing direct access to abutting properties, with intersections at grade, and with traffic control and geometric design features used to expedite safe traffic movement.

MANUFACTURING (MANUF) - A category of employment which includes establishments engaged in the mechanical or chemical transformation of substances into new products. These establishments are usually described as plants, factories, and mills. Production is usually carried on for the wholesale market, inter-plant transfer, or for industrial purposes. Seldom is there direct sale to the domestic consumer. For this study, manufacturing includes construction, direct manufacturing, transportation, communication, and public utility operations.

MDOT - Michigan Department of Transportation

METROPOLITAN PLANNING ORGANIZATION (MPO) - The organization designated by the Governor responsible, together with the State, for comprehensive transportation planning according to 23 U.S.C. 134, 23 U.S.C. 104(f)(3), and 49 U.S.C. 1602(a)(2) and (c)(a)1, 49 U.S.C. 1603(a), and 49 U.S.C. 1064(g)(1) and (1). This organization shall be the forum for cooperative decision-making by principal elected officials of general local government.

MICHIGAN TRANSPORTATION ECONOMIC DEVELOPMENT FUND (TEDF) - Special fund of transportation monies for projects promoting economic development. There are several categories of funds available, all with specific requirements and restrictions. Administered at the MDOT, calls for projects not on a predetermined schedule.

MINIMUM PATH - That route of travel between two points which has the least accumulation of time, distance or other parameter to traverse. This path is found by path building programs (BUILDVN, UPATH, UROAD).

MODAL SPLIT - The term applied to the division of person trips between public and private transportation. The process of separating person trips by the mode of travel.

MODE OF TRAVEL - Means of travel such as auto driver, vehicle passenger, mass transit passenger, or walking.

MODEL - A mathematical formula that expresses the actions and interactions of the elements of a system in such a manner that the system may be evaluated under any given set of conditions: i.e. land use, economic, socio-economic, and travel characteristics.

MPO - Metropolitan Planning Organization

NETWORK - A system of links describing a transportation system for analysis.

NODE - A numbered point representing an intersection or TAZ centroid.

ORIGIN - The location of the beginning of a trip or the TAZ in which a trip begins.

PEAK HOUR - That one-hour period during which the maximum amount of travel occurs. Generally, there is a morning peak and an afternoon peak and traffic assignments may be made for each period, if desired.

PERSON TRIP - A trip made by a person using any mode for any purpose.

POPULATION - Refers to the number of persons residing in a designated area.

PRODUCTIONS - The number of home based trip ends in the TAZ of residence. For all non-home based trips, productions are synonymous with origins.

RAMP - An entrance to or exit from a freeway. In traffic assignment, a link which connects a freeway node and an arterial node.

RETAIL TRADE - The sale of merchandise for personal or household consumption. Any service or processing (as in a restaurant or delicatessen) is incidental or subordinate to the sale of goods.

RIGHT-OF-WAY - A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes

ROUTE - That combination of street and freeway sections connecting an origin and destination. In traffic assignment, a continuous group of links connecting centroids that normally require the minimum time to traverse.

S/E - Socio-Economic

SAMPLE - The individual occurrence that represents a set or group of occurrences, usually trips.

SCREENLINE - An imaginary line, usually along a physical barrier such as river or railroad tracks, splitting the study area into a few parts. Traffic counts and possibly interviews are conducted along this line, and the crossings are compared to those calculated from the interview data as a check of survey accuracy.

SERVICES (SRVCS) - An employment category comprised of workplaces related primarily to finance, insurance, real estate, and business, professional, and personal services.

SMPC - Southcentral Michigan Planning Council

SOUTHCENTRAL MICHIGAN PLANNING COUNCIL (SMPC) - A regional planning organization located in Kalamazoo, MI. It is responsible for transportation planning in the rural areas outside of Battle Creek and Kalamazoo in a five county area.

STANDARD METROPOLITAN STATISTICAL AREA (SMSA) - A county or a group of counties containing at least one city (or twin cities) of 50,000 or more population, plus any adjacent counties which are metropolitan in character and economically and socially integrated with the central county or counties.

STATE IMPLEMENTATION PLAN FOR AIR QUALITY (SIP) - A plan developed by the State for an air quality control region which details what has to be done to assure compliance with the air quality guidelines.

STATION - A location at the external cordon line where driver interviews are conducted.

STUDY AREA - The area delineated for the purpose of data collection by a transportation study. This area contains the central city and surroundings, which will become urbanized in 20 to 30 years and is the area for which forecasts of travel are made.

STUDY AREA BOUNDARY - The area that is expected to take on urban characteristics in the next 20 to 30 years (i.e. - by the end of the planning period).

SURVEILLANCE - Maintenance of land use, socio-economic and transportation data on an annual basis that are necessary elements in the ongoing land use/transportation planning process if comparisons and evaluations of existing conditions in relation to forecasts are to be made.

TDFM - Travel Demand Forecast Model

TEDF - Michigan Transportation Economic Development Fund

TERMINAL TIME - Time included in the total traveltime of a given trip, accumulated at either end of the trip. Terminal time typically involves pedestrian travel to and from the vehicle and parking.

TRAFFIC ANALYSIS ZONE (TAZ) - The basic analysis unit into which all socio-economic, land use, and trip generation used to determine origin and destination of travel are summarized. Their development is based on land use, human activity, natural boundaries, and compatibility with the street system.

TRAFFIC ASSIGNMENT - The process of determining route or routes of travel and allocating the TAZ-to-TAZ trips to these routes.

TRAFFIC MODEL - See Travel Demand Forecast Model

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) - A staged multi-year program of planned transportation improvement projects.

TRANSPORTATION SYSTEM MANAGEMENT (TSM) - Efforts undertaken to improve the efficiency of the existing transportation system.

TRAVEL DEMAND FORECAST MODEL (TDFM) - A series of computer programs used to analyze and evaluate motor vehicle travel on a highway network. It uses various data on the location and characteristics of a population and its employment to predict travel demand, which can ultimately be used to identify highway deficiencies.

TRAVELTIME - The time required to travel between two points, including the terminal time at both ends of the trip.

TRIP - A one-direction movement which begins at the origin at the start time, ends at the destination at the arrival time, and is conducted for a specific purpose.

TRIP DISTRIBUTION - The process by which the movement of trips between TAZs is estimated. The data for each distribution may be measured or be estimated by a growth factor process, or by synthetic model.

TRIP END - Either a trip origin or a trip destination.

TRIP GENERATION - A general term describing the analysis and application of the relationships which exists between the trip-makers, the urban area, and the trip making. It relates to the number of trip ends in any part of the urban area.

TRIP PURPOSE - The reason for making a trip. Normally, one of ten possible purposes each trip may have a purpose at each end. For example, home to work.

TRIP TABLE - A table showing trips between TAZs - either directionally or total two-way. The trips may be separated by mode, by purpose, by time period, by vehicle type or other classification.

URBAN AREA - An urban place as designated by the Bureau of the Census having a population of 50,000 or more and not within any other urbanized area.

URBAN AREA BOUNDARY - The boundaries of the area that encompass the entire urban place as designated by the U.S. Bureau of Census plus that adjacent area as agreed upon by local officials in cooperation with the State.

URBAN(IZED) AREA (UA) - An urban place containing a city (or twin cities) of 50,000 or more (central city) plus the surrounding closely settled incorporated area which meets certain criteria of population size or density, as designated by the Bureau of the Census, and not within any other urbanized area. As defined by minimum population density, the urbanized area can include the central city, suburbs, and the closely settled fringe of development.

VEHICLE HOURS OF TRAVEL - Generally used as an area-wide measure. May be calculated by dividing the product of average trip length (in miles) and number of vehicle trips by average speed (in mph).

VEHICLE-MILES OF TRAVEL - Generally used as an area-wide measure. May be calculated by summing data on a link basis or by multiplying average trip length (in miles) times the total number of vehicle trips.

VHT - Vehicle Hours of Travel

VMT - Vehicle-Miles of Travel

VOLUME - The number of vehicles using a facility.

VOLUME TO CAPACITY RATIO (V/C) - A measure of the level of service on a facility.

WHOLESALE TRADE (WHLSLE) - Inclusive of businesses primarily engaged in selling merchandise to retailers, or other wholesalers. Wholesalers may sometimes act as brokers or agents, buying or selling merchandise to bring companies or person togethers.

ZONE - A portion of the study area, delineated as such for particular land use and traffic analysis purposes. There may be two types of zones used in the traffic assignment process: 1) Survey Zone - A subdivision of the study area which is used during the data collection phase of the study; and 2) Traffic Analysis Zone (TAZ) - A subdivision of the study area.

CHAPTER 1
EXECUTIVE SUMMARY

The Battle Creek Area Transportation Study (BCATS), as the Metropolitan Planning Organization (MPO) for the greater Battle Creek, Michigan area, is charged by the Federal Department of Transportation, DOT with maintaining a continuing, comprehensive, and cooperative transportation planning program. At present, this charge includes the development of a transportation plan, with a minimum horizon of 20-years, that is fiscally constrained by reasonably available revenues, and meets the conditions of air quality conformity, as applicable.

The development and content of this Plan is mandated by federal legislation, starting with the "Intermodal Surface Transportation Efficiency Act" (ISTEA) of 1991 and its successor legislation. The Moving Ahead for Progress in the 21st Century (MAP-21) and the Fixing America's Surface Transportation Act (FAST Act) have had the most impact on planning regulations as far as the development and content of MPO long range plans. The 2045 Plan includes chapter that are new from the previous 2040 MTP in order to meet the expanded planning regulations. The 2045 Plan also has to comply with certain air quality conformity requirements of the USEPA, see Chapter 19, that were not required of the 2016 MTP update. The BCATS 2045 Metropolitan Transportation Plan was approved by the BCATS Policy Committee on February 23, 2022. Copies of the approving resolutions for the MTP and for air quality conformity are included as the last pages of this Executive Summary and as Appendices in the full Plan document.

GOALS & OBJECTIVES

An important first step in any planning effort is the development of goals and objectives to support and to provide direction for the planning work to come. Goals and objectives reflect the values and desires of the individuals setting them. Goals and objectives are also valuable in measuring the effectiveness and success of the plans that are developed. Some of the objectives may compete or conflict within one another. This is to be expected, as the goals and objectives are broad in nature and designed to deal with many issues. It is the responsibility of the policy decision-makers to weigh the trade-offs between the goals and objectives when evaluating the plans and programs or improvements to directly satisfy the stated goals and objectives. However, BCATS provides a forum for coordinated decisions to be made cooperatively in the best interests of the greater Battle Creek area.

In developing goals and objectives for the Plan, and for BCATS in general, several existing plans and policy statements were considered as input, including: BCATS' previously adopted Goals and Objectives from the 2040 Long Range Transportation Plan, Michigan Department of Transportation goals for the MI Transportation Plan (see Chapter 6), State of Michigan Strategic Highway Safety Plan for 2019-2022, and FHWA's FAST Act rules and regulations.

The FAST Act requires transportation plans which involve all levels of government and all surface transportation modes. The intent of the legislation is to improve transportation and provide for consideration of projects and strategies that:

(1) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
(2) increase the safety of the transportation system for motorized and non-motorized users
(1) increase the security of the transportation system for motorized and non-motorized users
(4) increase accessibility and mobility of people and freight

(5) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
(6) enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
(7) promote efficient system management and operation
(8) emphasize the preservation of the existing transportation system
(9) improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
(10) enhance travel and tourism

The MPO plans are coordinated with the state plans (as noted above) and the statewide planning process. The following updated goals and objectives were approved by the BCATS Policy Committee in March 2021 to guide this update of the 2040 Transportation Plan to a horizon year of 2045. A complete representation of the goals and objectives for the MTP is included in Chapter 3 of the full 2045 Metropolitan Transportation Plan document.

GOAL 1: SAFETY

To minimize the loss of life, injuries, and property damage resulting from travel on all modes within the BCATS area

GOAL 2: ACCESSIBILITY

To provide all travelers in the community with reasonable access to important destinations such as: residence, employment, recreation, community facilities and commercial centers

GOAL 3: PRESERVATION

To preserve the investment in the area's transportation system

GOAL 4: EFFICIENCY

To achieve maximum efficiency, utilization, and performance from the transportation system

GOAL 5: FINANCIAL

To minimize the financial costs of the transportation system to travelers and the community as a whole

GOAL 6: COMPREHENSIVE PLANNING

To coordinate the planning and development of transportation facilities within the metropolitan area and in conjunction with countywide and statewide planning efforts

GOAL 7: PUBLIC INVOLVEMENT

To provide for public involvement in the planning and development of transportation facilities and services

GOAL 8: ENVIRONMENTAL IMPACTS

To avoid disrupting social and economic life or creating a less attractive or less healthy living environment for Battle Creek area residents due to unintended harmful effects of transportation on the immediate and global environment

GOAL 9: COMMUNITY IMPACT

To avoid and reduce conflicts between transportation facilities and land use

PUBLIC PARTICIPATION

The Map-21/FAST Act legislation continued the requirements of prior legislation relative to the public participation process relative to the participation of the public and other interested parties in the transportation process. The metropolitan transportation planning regulations originating in that prior legislation (SAFETEA-LU) related to public involvement specify that:

"*The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation,*

representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with reasonable opportunities to be involved in the metropolitan transportation planning process."

To this end, BCATS developed an initial Participation Plan, which was approved by the BCATS Policy Committee in December of 2006. That original Plan has been updated twice, once in July 2014 and again in January 2021. Chapters 4 and 5 of the full 2045 MTP document identify interested parties in the BCATS area and the public participation process.

BCATS provided updates relative to the MTP development throughout the process, at its regular meetings (held virtually for most of the Plan development time period), online at its website, and with newsletters/flyers distributed by e-mail and regular mail. The newsletters/flyers were also provided to local units of government to be made available to the public at their offices. A notice was published in the local general circulation newspaper, the Battle Creek Enquirer, on February 7, 2022 indicating a public comment period for the final draft of the 2045 MTP and the Committee meeting dates when comments could be provided as well. Documentation of these outreach efforts are included in Chapter 4 - Public Participation. No public comments were received relative to the 2045 MTP.

CONSULTATION

A requirement for the development of long range plans, since the implementing regulations of SAFETEA-LU back in 2005, has been the aspect of Consultation with federal, state, and local entities that are responsible for the following:

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

The goal of this process is to eliminate or minimize conflicts with other agencies' plans and programs that impact transportation, or for which transportation decisions may impact them. A listing of contact agencies and organizations is included in Chapter 5 of the full MTP document.

BCATS has received little comments from the consultation agencies about the MTP update. The consultation agencies and organizations received the same newsletters and updates as those on the public participation list. BCATS has received one comment from DNR Fisheries Division has a result of the outreach to consultation agencies. The Division's comment was to offer a contact person's name and indicated that the agency had "no major issues" wit the MTP. This feedback is documented in Chapter 5 of the MTP. The 2045 MTP document and chapters are available on the BCATS website, to be consulted at any time.

INTERMODAL CONSIDERATIONS

Three chapters in the 2045 MTP are devoted to the inventory and consideration of modes other than highways which are utilized for the movement of people and goods in the BCATS area. The modes reviewed include: aviation, rail, trucking, pedestrian, non-motorized, transit, taxi, intercity bus and ride-sharing. Transit provided information for the inclusion of transit projects in the overall Plan project listing. Ongoing work being done by the local agencies in the planning and implementation of

non-motorized projects is supported by BCATS within the programming of the MTP and the Transportation Improvement Program (TIP).

COORDINATION WITH THE STATE LONG RANGE PLAN & LONG RANGE PLANNING

Federal regulations require that BCATS' MTP coordinate with statewide long range plans required of the state. The Michigan Department of Transportation updated its long range transportation plan July of 2016 and again in November of 2021. The 2021 plan, *Michigan Mobility 2045 Transportation Plan* (MM2045) sets forth six goals that reflect similar goals as the BCATS' 2045 MTP goals.

The MM2045 goals are:

1. Quality of Life: Enhance quality of life for all communities and users of the transportation network
2. Mobility: Enhance mobility choices for all users of the transportation network through efficient and effective operations and reliable multimodal opportunities
3. Safety and Security: Enhance the safety and ensure the security of the transportation network for all users and workers
4. Network Condition: Through investment strategies and innovation, preserve and improve the condition of Michigan's transportation network so that all modes are reliable, resilient, and adaptable
5. Economy and Stewardship: Improve the movement of people and goods to attract and sustain diverse economic opportunities while investing resources responsibly
6. Partnership: Strengthen, expand andm promote collaboration with all users through effective public and private partnerships

MDOT also has an updated State Highway Safety Plan (SHSP), with the most current edition being the *2019-2022 State of Michigan Strategic Highway Safety Plan*. The SHSP identifies four broad emphasis areas where resources should be focused. They are: high-risk behaviors, at-risk road users, engineering infrastructure, and system administration. Another state plan in development (based on Governor's Executive Directive 2020-10 Building a Carbon-Neutral Michigan) is a "MI Healthy Climate Plan" to be completed by the Michigan Department of Environment, Great Lakes and Energy (EGLE). The state's freight and rail plans were incorporated into the MM2045 Plan.

PERFORMANCE -BASED PLANNING

A new component in the current long range plan update is the Performance-Based Planning chapter. The objective of a performance based program is for states and MPOs to invest resources in projects that collectively will make progress toward the achievement of nationally set goals. The federal regulations identify seven areas as measures for the transportation system. Those areas are:

1. pavement condition on the Interstate system and on the remainder of the National Highway System (NHS)
2. performance (system reliability) of the Interstate system and the remainder of the NHS
3. bridge condition on the NHS
4. fatalities and serious injuries, both number and rate per vehicle mile traveled, on all public roads, plus bicycle and pedestrian fatalities and serious injuries

5. traffic congestion
6. on-Road mobile source emissions
7. freight movement on the Interstate system

There are also performance measures applicable to transit relative to the condition of rolling stock, equipment, facilities and infrastructure. In addition, transit is required to develop a safety plan and safety targets. All of these requirements have been met by the local transit operator, Battle Creek Transit. Transit needs to update its asset condition targets on an annual basis.

MDOT has set state targets for the various road specific target categories, only some of which are to be addressed by BCATS due to the size of the metropolitan area. For the applicable road targets, BCATS has 180 days to either support the state targets or set independent targets for the MPO area. For the safety, payment condition, bridge condition, and system reliability (including freight movement) targets, BCATS has acted within the 180 day window to support the MDOT selected targets at each point that MDOT has set or updated the targets. BCATS also has acted to support the transit targets for asset condition each year. In addition, BCATS acknowledged receipt of the transit safety plan and BCATS' intent to support the transit safety targets as developed by BCT.

Detailed target information and examples of projects addressing the targets is included in Chapter 10 of the MTP.

IDENTIFICATION OF RECOMMENDED PROJECTS FOR THE *2045 METROPOLITAN TRANSPORTATION PLAN*

Future capacity deficiencies on the BCATS roadway network have been identified utilizing a computerized Travel Demand Forecast Model (TDFM) maintained by MDOT. Socio-economic data (for population, households, and employment) in the model base year of 2016 were used to develop a simulation of traffic volumes and conditions on the area's roadways which are compared to known volumes and conditions in the same base year. Once the two sets of information are in relative agreement ("calibrated"), the projection of future socio-economic data allows for future traffic volumes to be approximated on the roadway network and for locations of future congestion (too many vehicles for the road design) to be identified. There were no significant future traffic capacity issues identified for the BCATS area using the TDFM.

Safety-related concerns are routinely identified through review of crash data and from staff of the area road agencies and Battle Creek Transit. Typical safety-related projects are largely intersection related, but may also deal with signal progression and other operational issues along corridors, and usually are implemented as short-term operating improvements not specified in long-range plans. One prominent safety-related concern in the BCATS area is the high level of vehicle/deer crashes, which unfortunately are almost impossible to mitigate.

Pavement rehabilitation projects are considered preservation on the project list for specific improvements and are not considered expansion in nature. The road agencies use pavement management assessment to develop schedules for pavement rehabilitation.

Public transit projects are listed in the project list and represent on-going funding for transit operations, security projects, vehicle replacement, and other types of capital improvements.

OPERATIONAL AND MANAGEMENT STRATEGIES

Federal requirements dictate that BCATS include "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." To this end, BCATS has identified a number of transportation strategies that it participates in and/or promotes which will achieve these objectives. These strategies include: asset management, capital preventative maintenance, general maintenance, safety projects, intelligent transportation system activities, access management, pedestrian and non-motorized improvement, and optimization of public transit services.

FINANCIAL PLAN

The federal regulations require a review of the financial feasibility of the improvements included in the long range plan. The BCATS 2045 Metropolitan Transportation Plan must be financially constrained, which means that there must be sufficient and reasonably available funds to carry-out the projects included in the Plan. Adequate funding necessary to maintain the existing transportation system must also be shown to exist so that the existing system is preserved. The regulations also require that all revenues and costs be inflated to "year of expenditure dollars" to most accurately reflect the validity of the financial constraint calculated. BCATS has completed the process to meet this requirement. Costs for operations and maintenance of the existing system have been developed and projected over the life of the Plan. Based on all of the analysis completed, tables were developed which summarize available revenue and projected costs over the life of the Plan. For detail about the development of any of information in the following tables, please see Chapter 15 of the full 2045 MTP document.

Summary of Available Revenues for the BCATS 2045 Transportation Plan

Projected Capital Revenues	Total $
Federal Transportation Funds for Construction of Local Roads	**48,238,200**
Federal and State Funding for State Controlled Roadways in BCATS area	**353,800,000**
Federal/State/Local Transit Funding (operating and capital)	**130,333,000**
State funding for Operations/Maintenance of State Controlled facilities	**241,000,000**
State and Local Funding for Construction and Operations/Maintenance of Federal-Aid Eligible Local Primary/Secondary Roads	**411,118,000**
TOTAL (total federal, state, and local revenues estimated to be available for road related construction, transit capital/operating and road related operations and maintenance of the major street/primary road system and state roadway system within the BCATS area)	**1,184,489,200**

Summary of 2045 Transportation Plan Operations/Maintenance and Capital Expenditures 2022-2045

Operations/Maintenance Expenditures for Local & State Roads	Total $
Estimated Expenditures for Operations/Maintenance of Local Roads	173,557,000
Estimated Expenditures for Operations/Maintenance of State Roads	241,000,000
Planned Capital Expenditures	**Total $**
Local Road Projects	92,832,675
Transit Projects	162,210,216
State Projects	336,424,628
TOTAL CAPITAL EXPENDITURES	591,467,519

The total expenditures identified in the BCATS 2045 Metropolitan Transportation Plan are within the total federal, state and local revenues estimated to the Plan. As shown in the following table, there is projected to be adequate revenue available for capital expenditures, as well as for operations and maintenance expenditures for the transportation system. Therefore, the BCATS 2045 Metropolitan Transportation Plan is financially constrained.

Demonstration of Financial Constraint for the 2045 Transportation Plan for the Battle Creek Area Transportation Study

Total federal, state, and local revenues estimated to be available for road related construction, transit capital/operating and road related operations and maintenance of the major street/primary road system and state roadway system within the BCATS area	**$1,184,489,200**
Expenditures for Operations/Maintenance of Local & State Roads	**($414,557,000)**
Expenditures for Local Road Improvement Projects	**($92,832,675)**
Expenditures for Transit Improvement Projects	**($162,210,216)**
Expenditures for State Improvement Projects	**($336,424,628)**
REMAINING BALANCE	**$178,464,681**

ENVIRONMENTAL MITIGATION

Federal regulations require that BCATS include in its long range plan "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 goal of this process is to eliminate or minimize environmental impacts from the planned projects in the MPO's transportation plan. This applies primarily to the "improve and expand" type projects not within the existing footprint of the facility. However, addressing this issue in the transportation plan is not intended to be project specific. The owners of any future project are still required to meet all of the necessary requirements of the National Environmental Policy Act (NEPA) process.

In September, 2007, BCATS' Policy Committee adopted a set of guidelines for "Considering Environmental issues in the Transportation Planning Process" for use by BCATS and the area's transportation agencies. The guidelines include areas of concern specifically identified by some of the agencies that are traditional "Consultation" agencies. This includes: farmlands, wetlands, drainage, flood plains, threatened and endangered species, impaired streams and other water bodies, air quality, and noise.

BCATS' review of these issues led to the identification of environmental and cultural factors in the BCATS area which were reviewed relative to future transportation projects. The projects which have a specific location identified for them were accessed as to whether they may be in an area that might impact any of the noted areas of concern. "Expansion" projects involving the location of a new roadway or widening of existing roads have the greatest potential for impacting multiple resource or cultural areas. There are currently no projects qualifying as "Expansion" in the 2045 MTP.

The environmental guidelines and the assessment material related to this issue are included in Chapter 16 of the 2045 MTP.

AIR QUALITY CONFORMITY

The Clean Air Act Amendments of 1990 (CAAA) established the mandate for better coordination between air quality and transportation planning. The CAAA requires that all transportation plans and transportation investments in non-attainment and maintenance areas be subject to an air quality conformity determination. The purpose of such a determination is to demonstrate that the metropolitan transportation plan and the Transportation Improvement Program conform to the intent and purpose of the State Implementation Plan (SIP).

Effective July 20, 2013, the United States Environmental Protection Agency (USEPA) revoked the 1997 8-hour 0.080 parts per million (ppm) ozone standard for the purposes of regional transportation conformity. On July 20, 2013, the USEPA also issued designations for a new 8-hour 0.075 ppm ozone standard. This change resulted in the Kalamazoo/Battle Creek air quality area being designated attainment under that standard. Therefore, the BCATS 2016 MTP and 2017-2020 TIP did not require air quality conformity determination.

However, on February 16, 2018, the United States Court Appeals for the Disrtrict of Columbia Circuit ruled in SouthCoast Air Quality Mgmt. District v. EPA ("South Cost II, 882 F.3d 1138) that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone National Ambient Air Quality Standards (NAAQS) and attainment

for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. It was required that conformity determinations on any new long range plans and TIP amendments be made after February 16, 2019. Based on the status of the Kalamazoo/Battle Creek air quality area at the times in question, the provisions of the South Coast II decision now require a conformity determination for the 1997 ozone NAAQS on long range plans and TIP/TIP amendments. The Kalamazoo/Battle Creek air quality area is now considered a "Limited Orphan Maintenance Area" which requires a conformity determination but no regional emission analysis and no emissions model, budget, or tests. Further discussion of this topic is provided in Chapter 19 of the MTP document.

ENVIRONMENTAL JUSTICE

In accordance with federal guidelines on Environment Justice (EJ) that amplify Title VI of the Civil Rights Act, attention has been placed on the need to incorporate environmental justice principles into the processes and projects of transportation planning. Therefore, it is a regular component of the BCATS' MTPs and TIPs to evaluate the potential of planned transportation improvements relative to negative impacts on areas with racial minorities, Hispanic populations, and populations with incomes below the poverty level.

The analysis completed for this component, which is included in detail in Chapter 18 of the MTP, generally shows that there will be impacts to non-minority as well as minority and low-income populations as a result of the projects included in the 2045 MTP. However, none of the included projects involve residential displacements. Other construction related project impacts, such as noise, dust and access inconvenience, will be short-lived and confined to the traditional construction season. When looking at the most directly impacted residents (those within .10 mile of the stated improvement) it is generally found that there are no glaring disproportional impacts to any of the identified groups as compared to the area as a whole.

2045 METROPOLITAN TRANSPORTATION PLAN - RECOMMENDED IMPROVEMENTS

Nearly, $591.5 million in "year of expenditure dollars" would be expended through implementation of the improvement "projects" recommended in the Plan. The projects at specific locations where improvements are recommended are listed on a table and displayed on a map at the end of this Executive Summary. The BCATS 2045 MTP ID project numbers correspond to the mapped locations for the selected projects to be mapped.

Other road projects not on the list of site-specific recommended improvements, as proposed in this MTP, include annual general projects to address pavement preservation on both local and state trunkline facilities. Specific work for the various preservation strategy projects at the end of the project list are typically identified two to three years in advance and are programmed accordingly in the BCATS Transportation Improvement Program (TIP) for implementation.

Both operating and capital expenditures for public transit are listed as "projects" in this MTP. Battle Creek Transit's (BCT's) annual operating cost, annual State Specialized Services Operating Assistance funds (passed through BCT to local social service agencies), and an annual transit security capital improvement project (required by the Federal Transit Administration), are recommended as "projects" in each Plan year. Other BCT capital projects over the years of the MTP include, replacement of vehicles for BCT and social service agencies, periodic upgrades of the

electronic farebox system, maintenance equipment upgrades and replacement, and new office equipment, to name a few.

“Illustrative” projects are also referenced in the 2045 MTP, and are listed in Chapter 13 - Transportation Deficiencies/Limitations & Alternatives. “Illustrative “ projects are generally less developed and without cost estimates or likely funding. They are identified in the Plan as options to be further developed over the next few years for possible inclusion in the next MTP update. They identify needs for which the current funding levels are not adequate to address. The “Illustrative” projects are not included in the main project list, nor the financial plan.

CONCLUSION

This Executive Summary provided a very cursory review of the contents of the Battle Creek Area Transportation Study’s 2045 Metropolitan Transportation Plan in an effort to have a succinct summary for interested individuals and the general public at-large. The full 2045 Plan is a lengthy document. Specifics regarding any of the information contained in this Executive Summary can be found in the complete MTP document.

In the final version of the 2045 MTP, this Executive Summary is included at the beginning of, and as part of, the full Plan document. It is also a stand alone report. The full, final Plan document will be available, once approved, as a pdf document online at BCATS’ website *https://www.bcatsmpo.org.* The document can also be obtained by contacting the BCATS staff office at 601 Avenue A, Springfield, MI 49037, phone (269)963-1158, or by contacting BCATS by e-mail at *bcats@bcatsmpo.org.* A fee may be charged for a paper copy of the full document.

Battle Creek Area Transportation Study (BCATS)

2045 Metropolitan Transportation Plan

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2022	1	Battle Creek	**Clark Rd**	River Rd southward to M-96 (Dickman Rd W)	0.84	Road Capital Preventive Maintenance	$ 436,000	**215056**	CON
2022	2	Battle Creek	**Washington Ave**	from Goodale Ave southward to Michigan Ave (M-89)	1.15	Mill & Resurface	$ 590,552	**207347**	CON
2022	3	Calhoun County	**Areawide Tree Removal**	along H Dr S from 6 Mile Rd eastward to 7.5 Mile Rd; along 7 Mile Rd from K Dr S southward 0.5 mi to to Newton/Burlington twps boundary; along 12 Mile Rd from B Dr S southward to I Dr S.	5.39	Tree removal	$ 439,776	**211856**	CON
2022	4	Calhoun County	**Beadle Lake Rd**	from B Dr N northward to exit/entrance ramps south of I-94	1.42	Resurfacing	$ 290,422	**213043**	CON
2022	5	Calhoun County	**F Dr N**	from Wattles Rd eastward ~0.81 mi to Flex-n-Gate driveway	0.81	Crush & shape and asphalt resurfacing	$ 359,875	**207408**	CON
2022	6	Calhoun County	**K Dr S, Phase II**	from 6 Mile Road eastward to 7.5 Mile Road	1.54	Crush & shape and asphalt resurfacing	$ 789,048	**207425**	CON
2022	7	Calhoun County	**Main St, full resurfacing, Emmett Twp**	from M-96 (Columbia Ave) to City limits (~180' south of Kingman)	0.30	HMA mill & resurface (3") with ADA ramp upgrades	$ 167,792	**207496**	CON
2022	8	Calhoun County	**Raymond Road N bridge**	Raymond Road North over Michigan Department of Transportation Railroad	0.00	Bridge Rehabilitation	$ 1,129,000	**209858**	CON
2022	9	Calhoun County	**Signal Upgrade - 6.5 Mi Rd @ Harper Village Dr**	Signalized intersection of 6.5 Mi Rd and Harper Village Dr	0.00	Upgrade/modernize existing signals, including video detection system	$ 285,000	**207465**	CON
2022	10	Calhoun County	**U Dr N**	U Drive N at 1 Mile Road, Calhoun County	0.25	Install overhead flashing beacons	$ 27,372	**211886**	CON
2022	11	MDOT	**I-194/M-66 bridges**	over I-94	0.00	Full Paint, Substr Horizontal Surf Coating, Elas Bearing Repl, Joint Reseal	$ 1,754,437	**204349**	CON
2022	12	MDOT	**I-194/M-66 Corridor PEL Study**	Glenn Cross Road to Capital Avenue	6.79	Planning Environmental Linkage (PEL) study to consider alternative configurations of existing freeway in advance of reconstruction expected necessary before 2030.	$ 650,000	**200566**	EPE
2022	13	MDOT	**I-94**	from I-94BL/M-96 (Michigan Ave) overpass eastward ~1.1 mi to Emmett/Marshall townships line (BCATS area eastern boundary). Part of larger project extending eastward to 17.5 Mile Rd (excluding thru I-69 interchange).	1.10	Milling and one course asphalt overlay	$ 867,219	**210837**	CON
2022	14	MDOT	**I-94 bridges**	over Riverside Drive	0.00	Thin Epoxy Ovly, Sleeper Slab Repl, Approach Repl, Expansion Joint Repl	$ 906,000	**204348**	CON
2022	15	MDOT	**I-94 E**	I-94 Existing Dynamic Message Signs (DMS)	0.00	Install seventeen (17) CCTV cameras on existing DMS.	$ 12,393	**207433**	PE
2022	16	MDOT	**I-94 Rebuilding Michigan (RBMP) project**	from west of Helmer Rd eastward to east of F Dr N [including bridges & interchanges at Capital Ave and M-294 (Beadle Lake Rd), and bridges at Kalamazoo River, 6.5 Mi Rd, 9 Mi Rd, and F Dr N]	8.13	Milling and two course asphalt resurfacing, bridge replacement, temporary widening, bridge railing repair and interchange reconstruction.	$ 50,000	**210073**	ROW
2022	17	MDOT	**I-94 Rebuilding Michigan (RBMP) project**	from west of Helmer Rd eastward to east of F Dr N [including bridges & interchanges at Capital Ave and M-294 (Beadle Lake Rd), and bridges at Kalamazoo River, 6.5 Mi Rd, 9 Mi Rd, and F Dr N]	8.13	Milling and two course asphalt resurfacing (to 6.5 Mi Rd), bridge replacement, temporary widening, bridge railing repair and interchange reconstruction.	$ 114,660,892	**210073**	CON
2022	18	MDOT	**I-94 Road & Bridge Scoping**	I-94 from Kalamazoo County line east to 3000' west of Helmer Road. And M-37 (Columbia Ave) over the GTW RR	6.43	Road and Bridge Scoping FY2022	$ 360,000	**214331**	EPE
2022	19	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 797,500	**214871**	PE
2022	20	MDOT	**I-94BL (Michigan Ave) bridge**	over I-94	0.00	Barrier Repl, Deck Patching, H/S, Latex Bm Repr, Substr Patching, CSC	$ 930,000	**201957**	CON
2022	21	MDOT	**M-311 (11 Mile Rd) bridge**	M-311 over I-94	0.00	Shallow overlay with barrier replacement.	$ 959,814	**212581**	CON
2022	22	MDOT	**M-37 (Bedford Rd N), M-66 (Capital Ave NE), & M-78**	entireties of M-37 in Bedford Twp and M-66 & M-78 in Pennfield Twp	8.94	Single course chip seal with fog seal	$ 30,000	**213288**	PE
2022	23	MDOT	**M-37 (Helmer Rd/Bedford Rd)**	Dickman Road (M-96) to Creekview Drive in Calhoun County	2.87	Milling and two course asphalt resurfacing	$ 6,820,000	**210067**	CON
2022	24	MDOT	**M-66**	L Drive South to D Drive South in Leroy Township, Calhoun County	4.02	Milling and one course asphalt overlay	$ 1,215,000	**208374**	CON
2022	25	MDOT	**M-96 (Dickman Rd)**	from county line just west of Armstrong Rd eastward to M-37 (Helmer Rd) west junction	4.45	Milling and one course asphalt overlay with sidewalk ramp improvements. Additional depth repairs at designated locations.	$ 45,000	**213296**	PE
2022	26	MDOT	**Regionwide bridge inspections**	1199-M-66 ober Battle Creek River,1200-I-194 over Kalamazoo River,1413-M-37 (Bedford Rd) over Kalamazoo River	0.00	Underwater Inspection of Bridges	$ 32,813	**204289**	OPS
2022	27	MDOT	**Regionwide intersection traffic detection for signal actuation**	M-37 (Bedford) at Jackson Street M-89 (Washington Ave) at Hamblin Ave	0.00	Installation of detection for actuation	$ 86,000	**200693**	CON
2022	28	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	1.31	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207328**	PE
2022	29	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	1.31	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207328**	CON
2022	30	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.83	Special pavement marking application on trunklines in Southwest Region	$ 900	**207329**	PE
2022	31	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.83	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**207329**	CON
2022	32	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.65	Pavement mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**207341**	CON
2022	33	MDOT	**Trunkline Non-Freeway Signing**	Various trunkline non-freeway routes in the BCATS MPO area	137.12	Non-freeway signing replacement/upgrade,	$ 168,500	**202655**	PE

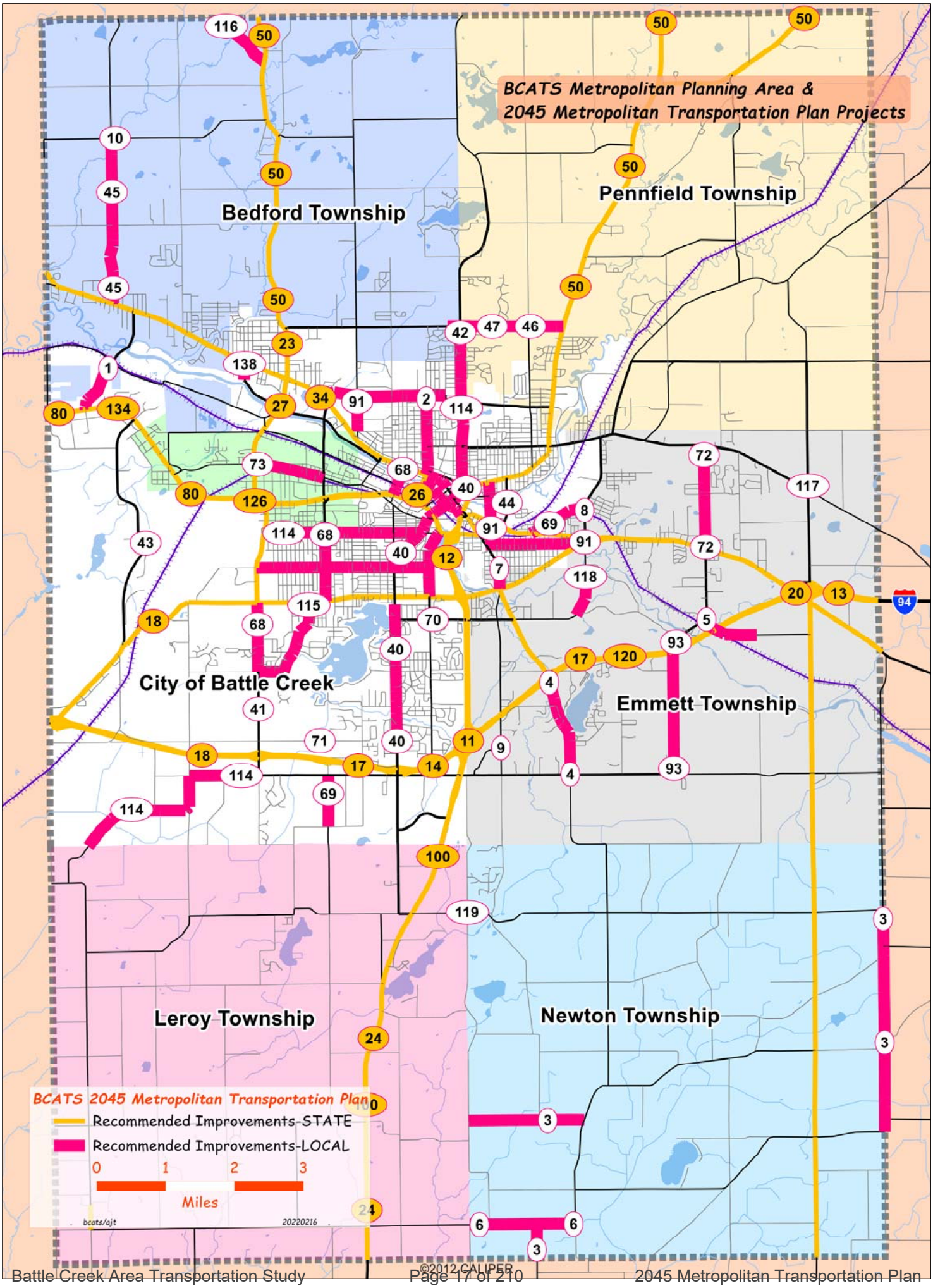
YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2022	34	MDOT	**Trunkline Signal Modernization**	4 intersections: M-89 (Michigan) @ Stringham Rd; M-89 (Michigan) @ VanBuren; I-94BL (Michigan) @ Charlton (fire station); M-89 (Michigan) @ Kimber (fire station).	0.00	Traffic Signal Modernization; connected vehicle installations	$ 774,092	**206134**	CON
2022	35	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Farebox System Replacement**	Areawide - Battle Creek Transit	0.00	Farebox upgrade (qty up to 25)	$ 178,406	**208237**	Non-Infrastructure (NI)
2022	36	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 82,500	**212168**	Non-Infrastructure (NI)
2022	37	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries. JNs 212946 & 212169 for FY22.	$ 459,990		Non-Infrastructure (NI)
2022	38	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,223,990		Non-Infrastructure (NI)
2022	39	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY22**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY22 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2023	40	Battle Creek	**Capital Ave SW+NE, four segments**	Dickman--Fairfield, Weeks--Rebecca, Dickman--Michigan, Michigan--Cherry	3.74	HMA mill & resurface with ADA ramp upgrades	$ 1,152,000	**207416**	CON
2023	41	Battle Creek	**Helmer Rd S at Potters Dr**	Helmer Road S at Potters Dr, city of Battle Creek	0.07	Installation of overhead flashing beacon	$ 30,000	**214633**	CON
2023	42	Battle Creek	**North Ave (6 Mile Rd)**	E Roosevelt Ave northward to Morgan Rd	1.11	Mill & Resurface, ADA ramps as necessary. Joint City BC & CCRD project, CCRD section north of Coolidge.	$ 413,573	**215397**	CON
2023	43	Battle Creek	**Roundabout - Skyline Dr and Hill Brady Rd**	at intersection of Skyline Dr and Hill Brady Rd, also with Logistics Dr to southeast and planned new entrance to Air National Guard base to the northeast		In connection with the ANG base entrance upgrades, the existing signalized "T" intersection will be changed to a two lane 4-leg roundabout, increasing level of service & safety, and reducing delay & emissions.	$ 2,000,000		CON
2023	44	Battle Creek	**Union Street S bridge**	Union Street S, Str #1408 over the Battle Creek River, City of Battle Creek	0.00	Bridge Rehabilitation	$ 2,483,000	**212288**	CON
2023	45	Calhoun County	**1 Mile Rd (Uldriks)**	1 Mile Road from M-89 to U Drive N, Calhoun County	2.43	Tree removal and clearing	$ 173,000	**214629**	CON
2023	46	Calhoun County	**Morgan Rd (O Dr N)**	from North Ave (6 Mile Rd) eastward to M-66 (Capital Ave NE)	1.50	Mill & Resurface	$ 405,964	**207393**	CON
2023	47	Calhoun County	**Morgan Rd (O Dr N)**	O Drive N from 6 Mile Road to M-66, Calhoun County	1.50	Installation of recessed wet reflective centerline & edgeline pavement markings	$ 52,669	**214631**	CON
2023	48	Calhoun County	**Signal Upgrade - Morgan Rd @ North Ave**	Signalized intersection of Morgan Rd and North Ave	0.00	Upgrade/modernize existing signals, including video detection system	$ 285,000	**207469**	CON
2023	49	MDOT	**I-94, Calhoun County**	I-94 Existing Dynamic Message Signs (DMS)	0.00	Install seventeen (17) CCTV cameras on existing DMS.	$ 60,264	**207433**	CON
2023	50	MDOT	**M-37 (Bedford Rd N), M-66 (Capital Ave NE), & M-78**	entireties of M-37 in Bedford Twp and M-66 & M-78 in Pennfield Twp	8.94	Single course chip seal with fog seal	$ 830,000	**213288**	CON
2023	51	MDOT	**M-66 northbound**	from Beckley Rd to I-94	0.28	Construct auxiliary lane on M-66 NB between Beckley Rd. and I-94.	$ 115,000	**210822**	PE
2023	52	MDOT	**M-89 (Washington Ave) bridge**	over GTW RR & Kalamazoo River	0.00	Epoxy Overlay, Dk Patch, Full depth patch, substructure Repr, Jts, Appr	$ 995,000	**203293**	CON
2023	53	MDOT	**M--96 (Columbia Ave) bridges**	over I-194	0.23	Full Depth Deck Patching, Concrete Deep Overlay, Full Paint, Beam Repairs	$ 2,657,000	**208435**	CON
2023	54	MDOT	**M-96/M-37/I-94BL (Helmer Rd)**	Helmer Rd between Territorial and Dickman	0.96	Convert 4 lanes to 5 lane section.	$ 395,125	**210823**	PE
2023	55	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	0.98	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207365**	PE
2023	56	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	0.98	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207365**	CON
2023	57	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	1.19	Special pavement marking application on trunklines in Southwest Region	$ 900	**207367**	PE
2023	58	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	1.19	Special pavement marking application on trunklines in Southwest Region	$ 50,400	**207367**	CON
2023	59	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.72	Pvmt marking retroreflectivity readings on trunklines in Southwest Region	$ 990	**207378**	CON
2023	60	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 340,217	**214181**	PE
2023	61	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Farebox System Replacement**	Areawide - Battle Creek Transit	0.00	Farebox upgrade (qty up to 25) (combined with FY 2022)	$ 178,406	**208238**	Non-Infrastructure (NI)
2023	62	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 85,000		Non-Infrastructure (NI)
2023	63	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek		New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2023	64	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,280,170		Non-Infrastructure (NI)
2023	65	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY23**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY23 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2023	66	Community Action	**Transit Capital - Community Action (CA), Sec5310**	Computer equipment at CA central office to support areawide transit service for elderly & individuals w/disabilities	0.00	Purchase 3 computers and 9 monitors	$ 6,000	**215195**	Non-Infrastructure (NI)
2023	67	Community Inclusive Recreation	**Transit Capital - Community Inclusive Recreation (CIR), Sec5310**	Areawide/Calhoun County	0.00	Purchase 1 (one) replacement bus	$ 79,000	**210666**	Non-Infrastructure (NI)

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2024	68	Battle Creek	**City BC CPM (Helmer, Kendall, 20th, Hamblin, Territorial)**	Helmer Rd from Gethings Rd to Columbia Ave (M-96); Kendall St from Dickman Rd (M-96) to Michigan Ave (M-89); 20th St from Columbia Ave (M-96) to Goguac St; Hamblin Ave from Washington Ave (M-89) to Division St (I-194/M-66); Territorial Rd from Helmer Rd (M-37) to Riverside Dr.	5.67	Single chipseal w/ fog seal	$ 400,000		CON
2024	69	Battle Creek	**City BC Rehab (Michigan, Porter, Sonoma)**	Michigan Ave from Washington Ave to State St; Porter St from Michigan Ave to Raymond Rd; Sonoma Rd from Minges Rd to Beckley Rd.	2.17	HMA mill and resurface with ADA ramp upgrades and associated items	$ 450,000		CON
2024	70	Battle Creek	**CMAQ Signal Modernization - GOLDEN @ RIVERSIDE**	intersection of Golden Ave and Riverside Dr		Remove and replace signal with modernized box span configuration	$ 280,700		CON
2024	71	Battle Creek	**Watkins Rd bridge**	Watkins Rd bridge over Minges Brook		Bridge Rehabilitation	$ 660,000		CON
2024	72	Calhoun County	**Wattles Rd N**	Michigan Ave to Verona	1.51	Mill (1.5") & resurface (3") existing travel lanes, bike lanes, and non-motorized paths. New signage & pavement markings.	$ 830,515		CON
2024	73	Springfield	**Avenue A**	from Helmer Rd eastward to 20th St	1.00	2-inch Mill & Fill overlay resurfacing, possibly in conjunction with water main improvements.	$ 326,206		CON
2024	74	MDOT	**I-194 bridges**	over Kalamazoo River, Calhoun County	0.00	Bridge Replacement, Approaches	$ 17,620,000	**210024**	CON
2024	75	MDOT	**I-94 Battle Creek Rest Area - Building Reconstruction**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97	0.00	Reconstruct the Battle Creek Rest Area Building. $520,000 PE phase obligated 06/03/2021.	$ 4,500,000	**212098**	CON
2024	76	MDOT	**M-66**	M-66 from Glenn Cross Rd south to Athens Twp Border	13.72	Fixed Object Removal	$ 73,226	**211892**	PE
2024	77	MDOT	**M-66 northbound**	from Beckley Rd to I-94	0.28	Construct auxiliary lane on M-66 NB between Beckley Rd. and I-94.	$ 670,000	**210822**	CON
2024	78	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 727,381	**213719**	PES
2024	79	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 74,419	**213719**	PE
2024	80	MDOT	**M-96 (Dickman Rd)**	from county line just west of Armstrong Rd eastward to M-37 (Helmer Rd) west junction	4.45	Milling and one course asphalt overlay with sidewalk ramp improvements. Additional depth repairs at designated locations.	$ 2,709,000	**213296**	CON
2024	81	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.88	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207391**	PE
2024	82	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.88	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207391**	CON
2024	83	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	3.82	Special pavement marking application on trunklines in Southwest Region	$ 900	**207392**	PE
2024	84	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	3.82	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**207392**	CON
2024	85	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.69	Pavement mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**207403**	CON
2024	86	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Three mini-vans.**	Areawide - Battle Creek Transit		Three 6-passenger mini-vans, accessible with ramp	$ 178,406		Non-Infrastructure (NI)
2024	87	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 87,550		Non-Infrastructure (NI)
2024	88	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2024	89	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,337,474		Non-Infrastructure (NI)
2024	90	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY24**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY24 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2025	91	Battle Creek	**City BC Rehab (Limit, Elm, Riverside, Cliff)**	Limit St from Parkway Dr to Goodale Ave; Elm St from Cliff St to Capital Ave NE; Riverside Dr from Columbia Ave to Dickman Rd; Cliff St from Main St to Raymond Rd.		HMA mill and resurface with ADA ramp upgrades and associated items. CCRD section of Cliff St included in this City BC project.	$ 823,152		CON
2025	92	Battle Creek	**CMAQ Signal Modernization - MCCAMLY @ VANBUREN**	intersection of McCamly St and VanBuren St		Removal and replacement of mast arm signal components	$ 370,000		CON
2025	93	Calhoun County	**Wattles Rd S**	B Dr N to G Dr N	2.02	Pulverize existing roadway and resurface over the graded and compacted crushed asphalt. Roadway to be trenched and widened to provide a 6 foot shoulder (3 foot paved & 3 foot gravel). No non-motorized component to this project.	$ 1,221,750		CON
2025	94	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 91,301	**213631**	PES
2025	95	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 43,219	**213631**	PE
2025	96	MDOT	**I-94 Battle Creek Rest Area - Landscaping**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 92 and Capital Ave exit 95	0.00	Battle Creek Rest Area Landscaping after Rebuild	$ 25,000	**212773**	PE
2025	97	MDOT	**I-94 Battle Creek Rest Area - Landscaping**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97	0.00	Battle Creek Rest Area Landscaping after Rebuild	$ 65,000	**212773**	CON
2025	98	MDOT	**I-94 Crash Investigation Sites**	Design two crash investigation sites in Calhoun county.	4.07	Construct crash investigation sites on I-94	$ 74,290	**211804**	PE
2025	99	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 25,000	**214871**	ROW
2025	100	MDOT	**M-66**	M-66 from Glenn Cross Rd south to Athens Twp Border	13.72	Fixed Object Removal	$ 286,871	**211892**	CON
2025	101	MDOT	**M-96/M-37/I-94BL (Helmer Rd)**	Helmer Rd between Territorial and Dickman	0.96	Convert 4 lanes to 5 lane section.	$ 2,446,596	**210823**	CON
2025	102	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.79	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**209623**	PE

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2025	103	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.79	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**209623**	CON
2025	104	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.84	Special pavement marking application on trunklines in Southwest Region	$ 900	**209624**	PE
2025	105	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.84	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**209624**	CON
2025	106	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	2.03	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**209634**	CON
2025	107	MDOT	**Trunkline Non-Freeway Signing**	Various trunkline non-freeway routes in the BCATS MPO area	137.12	Non-freeway signing replacement/upgrade,	$ 1,046,500	**202655**	CON
2025	108	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 7,500	**214181**	ROW
2025	109	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Equipment replacement.**	Areawide - Battle Creek Transit		Replace 5 complete office suites, dispatch funiture, and related computer equipment, including computers, monitors, and computer accessories.	$ 178,406		Non-Infrastructure (NI)
2025	110	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 90,176		Non-Infrastructure (NI)
2025	111	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2025	112	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,395,924		Non-Infrastructure (NI)
2025	113	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY25**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY25 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2026	114	Battle Creek	**City BC CPM (Carver, Stone Jug, Beckley, North Ave, Goguac)**	Carver from City limits to Stone Jug Rd; Stone Jug Rd from Carver to Beckley Rd; Beckley Rd from Stone Jug Rd to Helmer Rd; North Ave from Capital Ave to Roosevelt Ave; Goguac St from Helmer Rd to Capital Ave.	6.68	Single chipseal w/ fog seal	$ 324,604		CON
2026	115	Battle Creek	**City BC Rehab (Goodale, 24th, Gethings)**	Goodale Ave from Michigan Ave to Roosevelt; 24th St from Columbia Ave to Windamere Blvd; Gethings Rd from Helmer to Windamere Blvd.	3.34	HMA mill and resurface with ADA ramp upgrades and associated items	$ 650,000		CON
2026	116	Calhoun County	**Banfield Rd**	M-37 (Bedford Rd N) to Baseline Rd	0.96	Overlay existing roadway with 3 inches of HMA. Roadway to be trenched and widened to provide a 3 foot paved shoulder. No non-motorized component to this project. Signage & pavement markings to be updated.	$ 416,922		CON
2026	117	Calhoun County	**CMAQ Signal Modernization - 11 MILE RD @ VERONA**	intersection of 11 Mile Rd and Verona Rd		Signal modernization, including new poles and signal heads installed on a box span, and vehicle detection system.	$ 280,700		CON
2026	118	Calhoun County	**Raymond Rd**	Golden Ave to E River Rd	0.77	Pulverize existing roadway and resurface over the graded and compacted crushed asphalt. Roadway to be trenched and widened to provide a 6 foot shoulder (3 foot paved & 3 foot gravel). No non-motorized component to this project.	$ 693,083		CON
2026	119	Calhoun County	**Roundabout - B Dr S and 6 Mile Rd**	Existing 2-way stop controlled intersection of B Dr S and 6 Mile Rd on Newton/Leroy twps boundary (6 Mile Rd)		Construct a mini-roundabout with a fully mountable center island, splitter islands at approaches, and traffic calming geometry to reduce entering speeds.	$ 945,000		CON
2026	120	MDOT	**I-94 Crash Investigation Sites**	Along I-94, one site eastbound & one site westbound between Exit 100 and 9 Mi Rd bridge	4.07	Construct two crash investigation sites in Calhoun county	$ 517,710	**211804**	CON
2026	121	MDOT	**Regionwide longitudinal pavement markings**	All trunkline routes in BCATS MPO	3.61	Application of longitudinal pavement markings on Southwest Region trunkline	$ 900	**213341**	PE
2026	122	MDOT	**Regionwide longitudinal pavement markings**	All trunkline routes in BCATS MPO	3.61	Application of longitudinal pavement markings on Southwest Region trunkline	$ 187,200	**213341**	CON
2026	123	MDOT	**Regionwide special pavement markings**	All trunkline routes in BCATS MPO	2.97	Application of special pavement markings on Southwest Region trunkline	$ 900	**213342**	PE
2026	124	MDOT	**Regionwide special pavement markings**	All trunkline routes in BCATS MPO	2.97	Application of special pavement markings on Southwest Region trunkline	$ 34,650	**213342**	CON
2026	125	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	19.43	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**213371**	CON
2026	126	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 2,248,509	**214181**	CON
2026	127	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Miscellaneous Shop Equipment.**	Areawide - Battle Creek Transit		Miscellaneous shop equipment (vehicle hoist, diesel tools, etc.)	$ 178,406		Non-Infrastructure (NI)
2026	128	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 92,883		Non-Infrastructure (NI)
2026	129	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2026	130	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,455,542		Non-Infrastructure (NI)
2026	131	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY26**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY26 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2027	132	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 1,289,150	**213631**	CON
2027	133	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 4,730,000	**213719**	CON

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2027	134	MDOT	**M-96 (Dickman Rd) Trail**	along north side of M-96 from Fort Custer National Cemetary (in Kalamazoo County) eastward ~ one mile crossing Armstrong Rd into Calhoun County (and City BC) to old Avenue A intersection/connector path to Evergreen Rd/American Legion Dr in Springfield	3.20	Rehabilitate existing 8'-12' wide asphalt path, add & update ADA ramps as necessary. Approximately 2.1 miles in Calhoun County and 1.1 miles in Kalamazoo County.	$ 650,000		Non-Infrastructure (NI)
2027	135	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	28.35	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**213379**	CON
2027	136	Battle Creek Transit	**Large Bus Replacements (4), 2027**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)
2028	137	Battle Creek Transit	**New Transit Facility Build**	rebuild BCT central offices & garage at location TBD		replace/relocate BCT central offices & garage	$ 13,100,000		Non-Infrastructure (NI)
2029	138	Battle Creek	**Stringham Rd Non-motorized Connector**	from W Jackson Rd northward to M-89 (Michigan Ave)	0.26	Reconfigure four-lane roadway to accommodate pedestrian and non-motorized travel from M-89 to connect to BC Linear Park at Jackson/Stringham intersection adjacent to Kalamazoo River	$ 450,000		Non-Infrastructure (NI)
2029	139	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 7,177,500	**214871**	CON
2029	140	Battle Creek Transit	**Small Bus Replacements (2), 2029**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2034	141	Battle Creek Transit	**Large Bus Replacements (4), 2034**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)
2034	142	Battle Creek Transit	**Small Bus Replacements (2), 2034**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2039	143	Battle Creek Transit	**Small Bus Replacements (2), 2039**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2041	144	Battle Creek Transit	**Large Bus Replacements (4), 2041**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)
2044	145	Battle Creek Transit	**Small Bus Replacements (2), 2044**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2022-2045	146	Battle Creek Transit	**Annual Transit Security (total expected over 2022-2045 average $17,800/year)**	for Battle Creek Transit		Security related improvements (1% of Federal operating assistance annually)	$ 427,200		Non-Infrastructure (NI)
2024-2045	147	Local Human Services Agencies	**Annual Specialized Services Transit CAPITAL Assistance (total expected over 2024-45, average $120,000/year)**	for local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center.		Fed Sec 5310 (with match from State) transit capital assistance "passed thru" Battle Creek Transit to local human services agencies,	$ 2,640,000		Non-Infrastructure (NI)
2027-2045	148	Local Road Agencies	**Annual Local (non-trunkline) Bridge Replacement & Preservation (total estimated over 2027-45, average $1.2M/year)**	Local (non-trunkline) bridges in the BCATS area		Bridge replacement & preservation	$ 22,800,000		CON
2027-2045	149	Local Road Agencies	**Annual Local CMAQ, Safety, & Non-Pavement Preservation STUL Projects (total planned over 2027-45, average $1.1M/year)**	on Federal-aid eligible roadways under jurisdiction of Battle Creek, Calhoun County, Springfield		CMAQ ~ $300,000/yr, Safety ~ $300,000/yr, STUL ~ $500,000/yr. (specific projects for 2022-26 that are in the current TIP, or to be amended or included in the next TIP thru 2026, are included separately in this list)	$ 20,900,000		CON
2027-2045	150	Local Road Agencies	**Annual Pavement Preservation Strategy Local Agencies (75% of STP Urban Local (STUL) Allocation+Local share) (total planned over 2027-45, average $1.5M/year)**	Capital Preventive Maintenance (CPM) on Federal-aid eligible roadways under jurisdiction of Battle Creek, Calhoun County, Springfield		Resurfacing, rehabilitation, and limited reconstruction (specific CPM projects for 2022-26 that are in the current TIP, or to be amended or included in the next TIP thru 2026, are included separately in this list)	$ 28,500,000		CON
2027-2045	151	Battle Creek Transit	**Annual Transit Capital - Battle Creek Transit, Sec5339. Miscellaneous Equipment & Small Vehicles (total expected over 2027-45, average $217,100/year)**	Areawide - Battle Creek Transit		Farebox system, office furniture, computer equipment, shop equipment/tools, mini-vans, cutaway buses, bus stop shelters, bus stop & route signage.	$ 4,124,900		Non-Infrastructure (NI)
2027-2045	152	Battle Creek Transit	**Annual Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310 (total expected over 2027-45, average $118,300/year)**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 2,247,700		Non-Infrastructure (NI)
2027-2045	153	Battle Creek Transit	**Annual Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom (total expected over 2027-45, $459,990/year)**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 8,739,810		Non-Infrastructure (NI)
2027-2045	154	Battle Creek Transit	**Annual Transit Operating Assistance (total expected over 2027-45, average $4.98M/year)**	for Battle Creek Transit		Federal, State, & Local Operating Assistance. Local $ includes "farebox revenue" from fares, tokens/tickets, passes, misc transp contracts, Auxiliary Trans Revenues (i.e.advertising), NonTrans Revenues, and contribution from City of Battle Creek general fund.	$ 94,620,000		Non-Infrastructure (NI)
2027-2045	155	Battle Creek Transit & Local Human Services Agencies	**Annual Specialized Services Transit OPERATING Assistance (total expected over 2027-45, $108,434/year)**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.		State transit operating assistance to BCT and "passed thru" Battle Creek Transit to local human services agencies	$ 2,060,246		Non-Infrastructure (NI)
2028-2045	156	MDOT	**Annual MDOT Bridge Replacement & Preservation (total estimated over 2028-45, average $3.0M/year)**	State trunkline bridges in the BCATS area		Bridge replacement & preservation	$ 54,000,000		CON
2030-2045	157	MDOT	**Annual MDOT Road CPM, Rehabilitation, & Reconstruction (total estimated by BCATS for period over 2030-45, average $6.1M/year)**	Capital Preventive Maintenance (CPM), road rehabilitation, & reconstruction of State trunkline system roadways		Road CPM, rehabilitation, & reconstruction. Specific MDOT projects for 2022-29 that are programmed in JobNet to-date are included separately in this list. FY22 I-94 RBMP project (JN-210073, $114.7M) excluded from calculation of annual average.	$ 97,600,000		CON
						(Planned Capital Expenditures for Financial Plan & Constraint) TOTAL	**$591,467,519**		

BCATS



BCATS

CHAPTER 2
INTRODUCTION

BCATS ORGANIZATION

The purpose of the Battle Creek Area Transportation Study (BCATS), as the Metropolitan Planning Organization (MPO) for the greater Battle Creek area, is to establish and maintain a continuous, cooperative, and comprehensive transportation planning process. While meeting the appropriate Federal and State requirements, this process promotes the development of a safe, effective, efficient, and environmentally sensitive multi-modal transportation system for moving people and goods in the metropolitan area, while promoting livability, sustainability, reliability and resiliency.

The Study lies in the northwest corner of Calhoun County, Michigan (Figure 2-1). The Study area (or Metropolitan Planning Area (MPA)) is comprised of a land area of approximately 216 square miles and includes the Cities of Battle Creek and Springfield, the Charter Townships of Bedford, Emmett and Pennfield and the non-charter Townships of Leroy and Newton. The study area, shaded in Figure 2-2, includes areas anticipated to have the potential to become urbanized over the time period covered by this long range Plan. The population trends from the 2000 U.S. Census resulted in extensions of the “urbanized area” that showed growth primarily to the south of the pre-2000 urbanized area. Results of the 2010 U.S. Census showed very little growth over the previous decade. However, the 2010 Census urbanized area boundary extended the Battle Creek urbanized area along an unpopulated corridor for approximately two miles to the west to include some of the Village of Augusta and a very small portion of Ross Township. However, since Augusta is located within Kalamazoo County and has political and social ties to the Kalamazoo area, a Memorandum of Understanding (MOU) was developed with the Kalamazoo Area Transportation Study (KATS) regarding transportation planning responsibilities for the urbanized area associated with the Village of Augusta and the immediately surrounding land. While this area is in the KATS countywide MPA, it is not located within the Kalamazoo urbanized area. Since the recession of 2008, urban growth in the metropolitan area has been near non-existent. Housing starts remain very sluggish in 2020, although affordable housing stock is lacking in the Battle Creek area. The results of the 2020 U.S. Census have not yet been released. BCATS will evaluate the need for any expansion or contraction of its Metropolitan Planning Area after the results of that census are available.

Relative to the development and adoption of the BCATS 2045 Metropolitan Transportation Plan, the decision-making body of BCATS is the Policy Committee. The Policy Committee, an Intermunicipality Committee formed under Act 200 of the Michigan Public Acts of 1957, has final local approval and authority on all major transportation decisions, policies, and programs of BCATS.

BCATS also maintains a Technical Committee which provides advice to the Policy Committee and staff on technical methods, procedures, and standards that are used in the development of transportation plans and programs. The coordination and management of

BCATS' activities is the responsibility of the BCATS staff. The staff also conducts the majority of the technical studies of the BCATS program. Listings of the current Committee memberships and staff are included in Appendix A of this document.

LONG RANGE PLAN BACKGROUND

The first long range transportation plan (LRTP) for the BCATS area was developed in the late 1970's and early 1980's and was adopted by the BCATS Policy Committee in June, 1983. The Plan contained specific recommendations for improvements to the highway system which addressed safety-related and capacity deficiencies. Other modes of transportation, such as public transportation and parking, were dealt with in a cursory manner in the Plan and were addressed in subsequent separate studies to determine the optimal role for each in the transportation network.

The 1983 LRTP listed 30 major roadway improvements in three phases of implementation. Many of these improvements had been completed by the time an updated planning process was utilized to develop the 2015 Long Range Transportation Plan. This totally new Plan was adopted by the BCATS Policy Committee in 1995. The 1995 Plan contained recommendations for approximately sixty-eight (68) projects for both highways and transit. Of the forty-five (45) projects scheduled from 1995 to 1999, thirty-five (35) were completed on-time. The completion of these projects was beneficial to the transportation network and to the mobility of the community as a whole.

The "Intermodal Surface Transportation Efficiency Act" (ISTEA) which was signed into law on December 18, 1991 changed many aspects of the way transportation plans were to be developed and dramatically influenced the preparation of the 2015 Plan. ISTEA added many more factors and facets to the long range planning process. Specifically, the Federal Highway Administration regulations implementing ISTEA (October 28, 1993) stated:

> *"The metropolitan transportation planning process shall include the development of a transportation plan addressing at least a twenty-year planning horizon. The plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated intermodal transportation system that facilitates the efficient movement of people and goods...."*

In addition, the regulations identified eleven specific areas that were to be addressed within the plan process. It also provided for public involvement and air quality conformity requirements. The next federal legislation, titled “Transportation Equity Act for the 21st Century” (TEA-21), distilled the “factors” to seven.

In 1999, BCATS undertook an update of the 2015 long range plan. The resulting 2025 Plan was adopted by the BCATS Policy Committee in September, 2000.

Figure 2-1
Location of BCATS Metropolitan Area in Calhoun County, Michigan

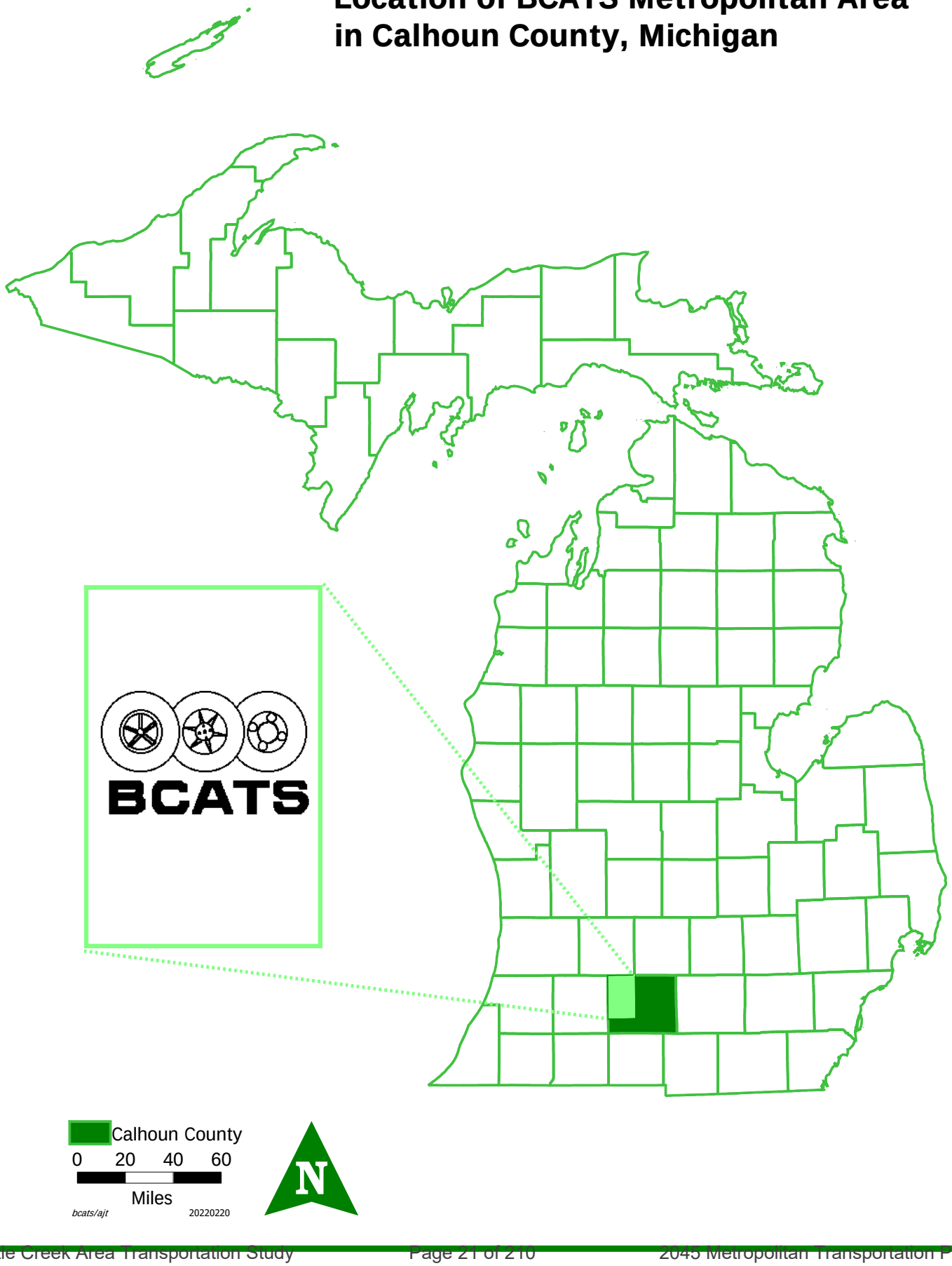
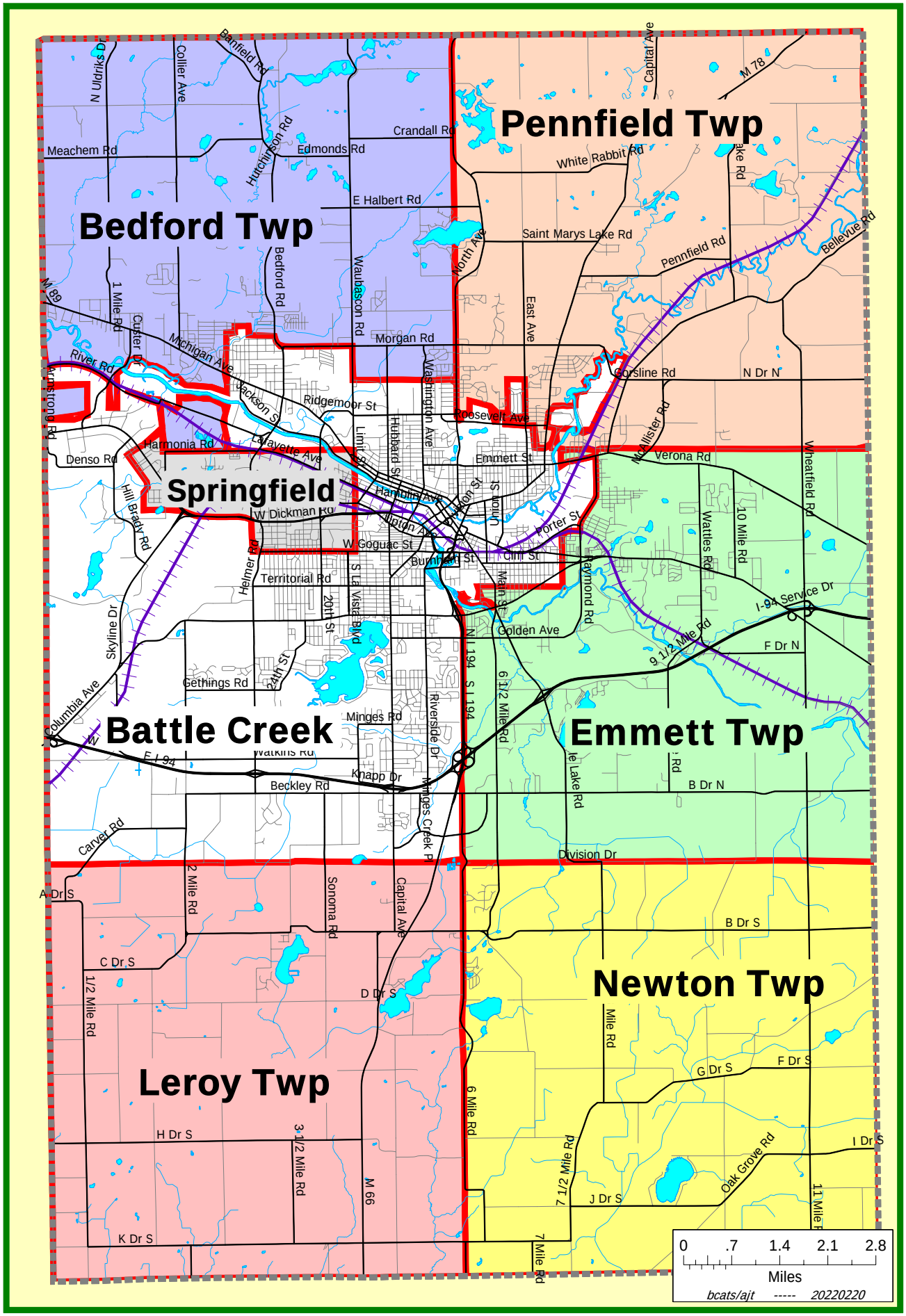


Figure 2-2
BCATS Metropolitan Area & Jurisdictional Boundaries



The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) federal legislation was passed by Congress and signed into law by President Bush on August 10, 2005. New final rules to implement the SAFETEA-LU legislation were published by FHWA and FTA on February 14, 2007. The new regulations still required a 20-year horizon for the long range plan. The stated goal of such plans was modified slightly as follows:

> *"The transportation plan shall include both long-range and short-range strategies/actions that lead to the development of an integrated multi-modal transportation system to facilitate the safe and efficient movement of people and goods in addressing current and future transportation demand.*

The regulations set the time for updating a long range plan at a minimum of every four to five years (depending upon air quality status) to confirm the plan's continuing relevance to actual developments. At the time of any update, the plan horizon is to be extended to again cover at least a 20-year period into the future.

SAFETEA-LU expanded the planning factors back to eight by breaking out "security" as its own factor.

The eight considerations were consistent with the goals for the long range plans that were adopted subsequently by BCATS. The Plan components still had to meet a financial constraint requirement first prescribed under ISTEA. For the first time, the SAFETEA-LU legislation allowed for the identification of "illustrative projects" which did not have to meet the strict fiscal constraint requirements. However, these projects were not considered available for programming until funding was identified and they were programmed into the constrained portion of the Plan. This option remains currently.

BCATS updated the 2025 Plan to a 2030 horizon year with adoption of a new Plan by the BCATS Policy Committee in November, 2007. The next update to a 2035 time horizon for the Plan was considered a minor update since the previous major update had been completed only three years prior. The goals and objectives were reaffirmed, and minor changes were made to reflect a federal emphasis on liveability, sustainability, and climate change. The 2035 Metropolitan Transportation Plan for BCATS was approved by the BCATS Policy Committee in June, 2011.

In July, 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law to replace SAFETEA-LU. This legislation included a specific focus on performance-based planning and the development of systems to support that planning. MAP-21 was only a 2-year bill and when it expired in 2014, it was extended until a new 5-year bill was passed in December, 2015. The new legislation was termed the Fixing America's Surface Transportation Act (FAST Act) and it continued the provisions of MAP-21 as far as the emphasis on performance-based planning. Although it took a couple of years, eventually all of the DOT regulations to implement the provisions of MAP-21/FAST Act were finalized. The planning rules were published in May, 2016, at the point that the 2040 Metropolitan Transportation Plan was nearing completion. The May, 2016 planning rules added two new

planning factors to the eight previously identified for consideration in the metropolitan planning process. The transportation planning factors now are:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
2. Increase the safety of the transportation system for motorized and non-motorized users;
3. Increase the security of the transportation system for motorized and non-motorized users;
4. Increase accessibility and mobility of people and freight;
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
7. Promote efficient system management and operation;
8. Emphasize the preservation of the existing transportation system;
9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation; and
10. Enhance travel and tourism

Most recently, in November 2021, a replacement for the FAST Act completed passage through Congress and was signed by the President. This legislation is titled the Infrastructure Investment and Jobs Act, known as IIJA. This act, while including new provisions for expanded internet access and electric vehicle charging stations, provides a substantial investment in the traditional infrastructure of roads and bridges. There are no known changes to the federal transportation planning requirements as a result of this new legislation. Therefore, the requirements for the development of a metropolitan transportation plan, as laid out in the FAST Act, will continue to be followed in this BCATS MTP update. Those requirements include the development of a System Performance Report as part of any plan update. The BCATS System Performance Report is included as an Appendix to the MTP.

CURRENT PLAN UPDATE

The April, 2010 U.S. Census data is still the most current and available data to be utilized for the travel demand forecast model analysis conducted for the 2045 plan update, which has a base year of 2016. Due to the changes that took place in the planning process regulations implementing the MAP-21/FAST Act legislation, there are many changes to this version of the Metropolitan Transportation Plan.

The results of the current Plan update will be the guide for the development of future Transportation Improvement Program (TIP) documents. The TIP is a four-year programming document for Federal transportation funds. The TIP has most recently been updated in Michigan every three years. The current TIP includes the fiscal years 2020-2022 and was adopted locally in June, 2019. All projects in the BCATS area receiving Federal transportation funds must be included in the TIP.

As of May 12, 2012, the United States Environmental Protection Agency (USEPA) revoked the 1997 8-hour 0.080 ppm ozone standard for the purposed of regional transportation conformity. On May 21, 2012, the USEPA issued designations for the new 2008 8-hour 0.075 ppm ozone standard. This resulted in the Kalamazoo-Battle Creek, MI area being designated attainment under the 2008 standard. This Attainment/Maintenance area includes the counties of Kalamazoo, Calhoun and Van Buren.

However, effective July 21, 2013, the Kalamazoo-Battle Creek, MI attainment/maintenance area was designated as a Limited Orphan Maintenance Area (LOMA) in response to EPA action to meet the directives of a federal lawsuit regarding the 1997 ozone standard. The result of this designation is the requirement that BCATS' Transportation Improvement Program and Metropolitan Transportation Plan are now required to include an air quality conformity analysis, see Chapter 19 for further discussion of this topic.

FUTURE PLAN DEVELOPMENT

It is expected that the Plan will be updated next in the 2025-2027 time period. That update will be based on the requirements of the federal legislation, and rules and regulations, in effect at that point in time.

BCATS

CHAPTER 3
GOALS AND OBJECTIVES

An important first step in any planning effort is the development of goals and objectives to support and to provide direction for the planning work to come. Goals and objectives reflect the values and desires of the individuals setting them. Goals and objectives are also valuable in measuring the effectiveness and success of the plans that are developed. Some of the objectives may compete or conflict with one another. This is to be expected, as the goals and objectives are broad in nature and designed to deal with many issues. It is the responsibility of the policy decision-makers to weigh the trade-offs between the goals and objectives when evaluating the plans and programs developed to address the needs of the community. It must be recognized that BCATS by itself cannot implement projects or improvements to directly satisfy the stated goals and objectives; however, BCATS provides a forum for coordinated decisions to be made cooperatively in the best interests of the greater Battle Creek area.

In developing goals and objectives for the Plan, and for BCATS in general, several existing plans and policy statements were considered as input, including: BCATS' previously adopted Goals and Objectives from the 2040 Long Range Transportation Plan, Michigan Department of Transportation goals for the MI Transportation Plan (see chapter 6), State of Michigan Strategic Highway Safety Plan for 2019-2022, and FHWA's FAST Act rules and regulations.

The FAST Act requires transportation plans which involve all levels of government and all surface transportation modes. The regulations implementing the Acts state that "the metropolitan planning process shall be continuous, cooperative and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will address the transportation planning factors as outlined in Chapter 2 and restated below:

(1) support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
(2) increase the safety of the transportation system for motorized and non-motorized users
(1) increase the security of the transportation system for motorized and non-motorized users
(4) increase accessibility and mobility of people and freight
(5) protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns
(6) enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
(7) promote efficient system management and operation
(8) emphasize the preservation of the existing transportation system
(9) improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
(10) enhance travel and tourism

The MPO plans are coordinated with the state plans (as noted above) and the statewide planning process.

The following updated goals and objectives were approved by the BCATS Policy Committee in March 2021 to guide this update of the 2040 Transportation Plan to a horizon year of 2045.

GOAL 1: SAFETY

To minimize the loss of life, injuries, and property damage resulting from travel on all modes within the BCATS area

OBJECTIVES:

1a: The transportation system should minimize traffic crashes and the severity of crashes

1b: Standard traffic control devices in the transportation system should be used to increase efficiency and safety whenever possible

1c: The transportation system should minimize rail/auto/transit conflicts and commercial/non-commercial vehicle conflicts

1d: The transportation system should minimize motorized/non-motorized conflicts

1e: The transportation system should maximize the safety and security of its users

1f: Safety management systems should be encouraged at all levels within the BCATS area and the outputs used in the needs assessment component of the planning process

GOAL 2: ACCESSIBILITY

To provide all travelers in the community with reasonable access to important destinations such as: residence, employment, recreation, community facilities and commercial centers

OBJECTIVES:

2a: The transportation system should provide appropriate access, via motorized or non-motorized transportation, to and from major land uses and attractions within the BCATS area and within the region as a whole

2b: The transportation system should minimize transportation barriers which put at a disadvantage the physically challenged, senior citizens, and persons who do not have automobiles available, or have limited economic means

GOAL 3: PRESERVATION

To preserve the investment in the area's transportation system

OBJECTIVES:

3a: The existing transportation infrastructure system should be preserved and maintained at the highest possible level - levels to be based on the policies and goals of all implementing jurisdictions

3b: Management systems which foster preservation should be implemented and coordinated at all levels within the BCATS area and the outputs used in the needs identification component of the planning process

GOAL 4: EFFICIENCY

To achieve maximum efficiency, utilization, and performance from the transportation system

OBJECTIVES:

4a: Transportation projects which reduce distance and time spent traveling should be promoted

4b: Intelligent Transportation System (ITS) and transportation management system techniques should be utilized to improve the operating efficiency and effectiveness of the transportation system

4c: Increasing vehicle occupancy should be encouraged for all motorized modes

4d: The movement of goods and persons should be coordinated for maximum efficiency

GOAL 5: FINANCIAL

To minimize the financial costs of the transportation system to travelers and the community as a whole

OBJECTIVES:

5a: Transportation improvements should be cost-effective and should maximize the long-term benefits by considering overall life-cycle costs whenever possible

5b: Transportation improvements, for all modes, should minimize capital and operating costs

5c: The scale and character of transportation improvements should be consistent with the ability to finance such improvements

5d: The private sector should be encouraged to invest in the transportation system and partnering projects should be encouraged

GOAL 6: COMPREHENSIVE PLANNING

To coordinate the planning and development of transportation facilities within the metropolitan area and in conjunction with countywide and statewide planning efforts

OBJECTIVES:

6a: The development of the transportation system should be consistent with area land use plans, housing plans, recreation/open space plans, other relevant plans and economic development initiatives

6b: The transportation system should be multi-modal and intermodal in nature, providing a smooth interface between different modes

6c: Local land use policies and practices should encourage appropriate access management and right-of-way preservation to meet the future needs of the transportation system

GOAL 7: PUBLIC INVOLVEMENT

To provide for public involvement in the planning and development of transportation facilities and services

OBJECTIVE:

7a: Provide maximum opportunity for the involvement of all segments of the community in the development of BCATS' plans and programs through multiple outlets

GOAL 8: ENVIRONMENTAL IMPACTS

To avoid disrupting social and economic life or creating a less attractive or less healthy living environment for Battle Creek area residents due to unintended harmful effects of transportation on the immediate and global environment

OBJECTIVES:

8a: The transportation system should minimize the energy resources consumed for, and green house gases emitted from, transportation

8b: The use of alternative fuels by all transportation modes should be encouraged

8c: Air pollutant emissions and concentrations (including greenhouse gases) should be minimized

8d: Noise emissions and concentrations should be minimized

8e: The transportation system and providers should encourage the use of public transportation and ride-sharing where feasible

GOAL 9: COMMUNITY IMPACT

To avoid and reduce conflicts between transportation facilities and land use

OBJECTIVES:

9a: Improvements to the transportation system should minimize, to the extent possible, negative effects on commercial and industrial facilities as well as recreational, cultural, religious and educational activities

9b: The transportation system should minimize, to the extent possible, interference with existing households and disruption of neighborhoods

Assessing the Plan's effectiveness in meeting these identified goals and objectives is incorporated into the performance-based planning chapter of this document.

CHAPTER 4

PUBLIC PARTICIPATION

PUBLIC INVOLVEMENT REQUIREMENTS

The March, 2007 metropolitan transportation planning rules and regulations that implemented SAFETEA-LU continued the provisions contained in the ISTEA and TEA-21 legislation that proceeded it. However, SAFETEA-LU expanded upon the process of the prior legislation in many respects relative to the participation of the public and other interested parties in the transportation planning process. Specifically:

> *"The MPO shall develop and use a documented participation plan that defines a process for providing citizens, affected public agencies, representatives of public transportation employees, freight shippers, providers of freight transportation services, private providers of transportation, representatives of users of pedestrian walkways and bicycle transportation facilities, representatives of the disabled, and other interested parties with reasonable opportunities to be involved in the metropolitan transportation planning process".*

The MAP-21/FAST Act regulations continued with specific things that the MPO should include, or do, as part of the public participation process. These include:

- provide adequate public notice and time for public review
- provide timely notice and reasonable access to information
- employ visualization techniques for conveying information about Plans and TIPs
- make information available in electronically accessible formats/means
- hold public meetings at accessible places and times
- demonstrate consideration of comments received during public input for the Plan and the TIP
- seek out and consider the needs of the traditionally under-served
- provide additional public input opportunities when plans or programs change significantly from the versions originally offered for public comment
- coordinate with statewide transportation planning public involvement and consultation efforts
- periodically review effectiveness of the transportation participation plan

Throughout the BCATS' long range plan update process, consideration was given to public participation so that citizens, affected public agencies, transportation agency employees, private providers of transportation, and other interested parties have had an opportunity to comment on the developing Transportation Plan. As of January 27, 2021, BCATS updated its Participation Plan (PP) to guide involvement of the public and

other interested parties. The PP outlines who will be notified of BCATS activities. The listing of applicable interested parties in the BCATS area, as included in the PP, is as follows:

- eight City of Battle Creek Neighborhood Planning Councils
- Urban League of Southwest Michigan
- Battle Creek NAACP
- The ARC
- Battle Creek Area Chamber of Commerce
- Battle Creek Unlimited (provides link to major employers in Fort Custer Industrial Park)
- Community Action
- Area Agency on Aging
- Battle Creek Bicycle Club (appears to be inactive at this time)
- all area schools (intermediate school district plus 5 districts, and charter and private schools)
- Community Inclusive Recreation (CIR)
- unions for Battle Creek Transit drivers, mechanics and office staff
- Battle Creek Executive Airport at Kellogg Field
- Calhoun County Parks
- North Country Trail
- Disability Resource Center
- Norfolk Southern Railroad
- Canadian National Railroad
- City of Battle Creek Police and Fire Department
- City of Springfield Fire
- City of Battle Creek Environmental Department
- Charter Township of Bedford Fire Department
- Leroy Township Fire Department
- Charter Township of Emmett Public Safety Department
- Calhoun County Sheriff Department
- Michigan State Police
- Calhoun County Human Services and Health Departments
- Calhoun County Senior Services
- Marian Burch Adult Day Care Center/Calhoun County Medical Care Facility
- Calhoun Soil Conservation District
- Battle Creek Calhoun County Visitor and Convention Bureau
- Bronson Battle Creek Health System
- Southwest Regional Rehabilitation Center
- Behnke, Inc. (trucking)
- Kellogg Corporation
- Denso Manufacturing Michigan, Inc.
- General Foods/Post
- Kellogg Community College
- Western Michigan University Kendall Center
- Western Michigan University College of Aviation
- Department of Defense Hart/Dole/Inouye Center
- Willard Public Library Central
- Willard Public Library Helen Warner Branch

The PP also provides an outline for participation activity within the context of the development of the Transportation Plan, the TIP, and for planning and corridor studies.

Various means were used to seeking public input in the development of the 2045 Transportation Plan. BCATS' newsletter, "The Signal", promoted the Plan update process at various stages of Plan completion, and highlighted the opportunity for public input. Since this was a minor update of the 2040 Metropolitan Transportation Plan completed in 2016, a full-fledged general opinion survey (such as was conducted for a prior Plan) was not deemed necessary at this time. The existence of the restrictions associated with the COVID-19 pandemic impacted the public participation opportunities during the development of this 2045 Plan. For example, some groups (such as the City of Battle Creek's Neighborhood Planning Councils) were no longer meeting. Copies of the newsletters/flyers which were distributed that had information about the 2045 Plan development are included at the end of this chapter. BCATS also made copies available of these informational pieces to the local units of government when their offices were reopened to the public. Information about the Plan development was posted to the BCATS website during the entire development time.

BCATS also utilized the public participation efforts of the Michigan Department of Transportation (MDOT) that were conducted for the state's own *Michigan Mobility 2045* long range transportation plan. MDOT's survey, conducted by MetroQuest, broke out the survey responses by areas of the state and for specific metropolitan planning organization areas. Respondents from the BCATS area ranked safety and security in the top five priorities the most times. Other identified priorities for BCATS area respondents were quality of service followed by transportation system maintenance and quality of life. The MDOT survey also presented a "tradeoffs" table offering the respondent a choice between two investment areas. The results for the BCATS area showed a strong preference for more improvements for cars and trucks versus for bikes, pedestrians, or transit. This was the strongest such preference between the two choices of any planning region of the state.

On February 7, 2022, BCATS published a formal notice of "request for comments" on the draft of the 2045 Metropolitan Transportation Plan. This update requires an air quality statement and a resolution (which are included in later sections of this document), so the public notice addressed both topics. The formal notice about the Plan was published in the general circulation daily newspaper, the *Battle Creek Enquirer*. The public notice listed the dates of the BCATS' Committee meetings in February, 2022 as opportunities to comment as well. A copy of the notice is included at the end of this section. BCATS made the draft Plan available to the public for review on its website as a pdf document at the time the public notice was published.

No public comments were received about the draft BCATS 2045 Metropolitan Transportation Plan.

REQUEST FOR COMMENTS ON 2045 METROPOLITAN TRANSPORTATION PLAN AND AIR QUALITY TRANSPORTATION CONFORMITY DETERMINATION REPORT

1. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the final draft of the BCATS 2045 Metropolitan Transportation Plan (MTP), as part of a public comment period extending from February 7, 2022, 12:00 pm until the Battle Creek Area Transportation Study Policy Committee meeting scheduled for February 23, 2022 at 1:30pm. The MTP identifies the Battle Creek metropolitan area's transportation needs, forecasts future traffic, and provides a guide for identifying and selecting future transportation projects in the BCATS area over the more than twenty-year time frame of the Plan.

2. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo - Battle Creek Limited Orphan Maintenance Area for air quality. This required Report, which includes the BCATS area, was drafted by the Kalamazoo Area Transportation Study (KATS) in September 2021 and has been updated by BCATS to reflect changes in the BCATS information since September. The Report is available for a public comment period in the BCATS area from February 7, 2022 until February 23, 2022, in conjunction with the comment period for the BCATS' 2045 MTP, noted above. The air quality conformity analysis includes the KATS metropolitan planning area, the BCATS metropolitan planning area, and the rural areas of Calhoun, Kalamazoo and Van Buren Counties.

The BCATS public meetings in February (Technical Committee 2/9/22 and Policy Committee 2/23/22), as well as this published comment period, are your opportunity to review and comment on the two items described above.

The draft FY 2045 Metropolitan Transportation Plan and the Transportation Conformity Determination Report will both be available on the BCATS website homepage for review at https://www.bcatsmpo.org as of February 7, 2022 after 12:00 pm. Further details about either of these items can be provided by BCATS staff at the bcats@bcatsmpo.org e-mail address. BCATS Committee meetings are being held in-person at the City of Springfield City Hall Council Chambers at 601 Avenue A, Springfield, MI. Comments may be provided to: BCATS, 601 Avenue A, Springfield, MI 49037; phone 269/963-1158, fax 269/963-4951, or e-mail bcats@bcatsmpo.org (e-mail is the preferred option).

(Public notice as it appeared in the Battle Creek Enquirer and on the BCATS website on February 7, 2022)

New platforms give refuge to right

Gab envisioned as future 'free speech Internet' base

David Klepper and Barbara Ortutay
ASSOCIATED PRESS

Philip Anderson is no fan of online content moderation. His conservative posts have gotten him kicked off Facebook, Twitter and YouTube. Two years ago, Anderson organized a "free speech" protest against the big tech companies. A counterprotester knocked his teeth out.

But even Anderson was repulsed by some of the stuff he saw on Gab, a social media platform that has become popular with supporters of former President Donald Trump. It included Nazi imagery, racist slurs and other extreme content that goes beyond anything allowed on major social media platforms.

"If you want Gab to succeed then something has to be done," Anderson, who is Black, wrote in a recent Gab post. "They are destroying Gab and scaring away all the influential people who would make the platform grow."

The responses were predictable – more Nazi imagery and crude racial slurs. "Go back to Africa," wrote one woman with a swastika in her profile.

A year after Trump was banned by Facebook, Twitter and YouTube, a rowdy assortment of newer platforms have lured conservatives with promises of a safe haven free from perceived censorship. Although these budding platforms are mounting some ideological competition against their dominant counterparts, they have also become havens for misinformation and hate. Some experts are concerned they will fuel extremism and calls for violence, even if they never replicate the success of the mainstream sites.

App analytics firm SensorTower estimatedParler's app has seen about 11.3 million downloads globally on the Google and Apple app stores, and Gettr has reached roughly 6.5 million. That growth has been uneven. Parler launched in August 2018, but it didn't start picking up until 2020. It saw the most monthly installs in November 2020, when it hit 5.6 million.

The platform Gab says it saw a huge jum n sign-ups following the Capitol riot, which prompted Facebook, Twitter and Y Tube to crack down on Donald Trump and others who they say incited violence. HN MINCHILLO/AP, FILE

Although new platforms might be good for consumer choice, they pose problems if they spread harmful misinformation or hate speech, said Alexandra Cirone, a Cornell University professor who studies the effect of misinformation on government.

"If far-right platforms are becoming a venue to coordinate illegal activity – for example, the Capitol insurrection – this is a significant problem," she said.

Falsehoods about the 2020 election fueled the deadly attack on the U.S. Capitol last year, and research showed far-right groups are harnessing COVID-19 conspiracy theories to expand their audiences.

Although Facebook and Twitter serve a diverse general audience, the far-right platforms cater to a smaller slice of the population. The loose-to-nonexistent moderation they advertise can also create hothouse environments where participants ramp each other up, and where spam, hate speech and harmful misinformation blooms.

Gab launched in 2016 and now claims to have 15 million monthly visitors, though that number could not be independently verified. The service said it saw a huge jump in signups following the Jan. 6, 2021, riot, which prompted Facebook, Twitter and YouTube to crack c wn on Trump and others who they s d had incited violence.

y comparison, Facebook has 2.9 billio monthly users and 211 million peo ple se Twitter daily.

e tolerate 'offensive' but legal spe h," site creator Andrew Torba wro n an email to Gab subscribers recent "We believe that a moderation polic which adheres to the First Amer ment, thereby permitting offensive c tent to rise to the surface, is a valuab and necessary utility to society."

Mem rs of far-right groups like the Proud B s? They're on Gab. So is the Georgia ongresswoman kicked off Twitter f spreading COVID-19 misinformation Steve Bannon, banned from Twitter fo uggesting the beheading of Dr. Anthon Fauci, has 72,000 followers on Gab.

Torba wr e in an email to the AP that he envision Gab will someday be "the backbone of e consumer free speech Internet" an ival Facebook and Google.

Gettr, a mo recent arrival, is aiming for a slightly ore moderate product. Helmed by forn r Trump senior adviser Jason Miller, Ge r launched in July and now has 4.5 mil n users. Although the site is dominated y conservative voices now, Miller said he welcomes all viewpoints.

Gettr's growing user base in Brazil includes President Jair Bolsonaro, who has been cited by Facebook for breaking rules regarding COVID-19 misinformation and the use of fake accounts.

"I think there's plenty of room for all of our platforms," Miller said when asked about competition with other new sites. "It's much more about us taking away market share from Facebook and Twitter than competing amongst ourselves."

Another mainstream platform popular with Trump supporters is Telegram, which has a broad global user base. Trump has said he plans to launch his own social media platform.

There is no indication that far-right users have left Facebook or Twitter in droves. Users can keep their old Facebook account to stay connected with friends while using Telegram or Parler for unmoderated content.

"So now social media companies are effectively vying for screen time across users," said Cirone, the Cornell professor.

Anderson, the Texas Trump supporter, said he doesn't know why he was kicked off Facebook and Twitter. He was outside the Capitol during the Jan. 6 attack, and has supported the Proud Boys. Twitter declined to comment publicly on Anderson; Facebook did not respond to messages seeking comment.

Although Facebook, YouTube and Twitter have taken steps to remove extremist material, Cirone said some groups are still evading moderation. And as Facebook whistleblower Frances Haugen revealed in leaked internal documents last year, the company has struggled to moderate non-English language content. There are also limits to content moderation.

"Content will travel, and ideas will evolve. Content moderation has political consequences," said Wayne Weiai Xu, an expert on disinformation and social media at the University of Massachusetts Amherst. "It plays right into the far-right talking point that the big tech is censoring speech and that the liberal elite is forcing the so-called 'cancel culture' onto everyone."

Nonprofit's Super Bowl parties help the homeless

Teresa M. Walker
ASSOCIATED PRESS

What started with a simple invitation to a few homeless people to watch the Super Bowl together in New York City has turned into quite a party.

And it just keeps growing.

Super Soul Party, a nonprofit started by filmmaker and social media influencer Meir Kay, will have Super Bowl parties in 35 cities when the Cincinnati Bengals and Los Angeles Rams meet Feb. 13. Parties will be held in sites from Washington to Los Angeles and from Bozeman, Montana, to New Orleans.

All inspired by a conversation Kay had with a homeless man just wanting someone to talk to him.

"It just sort of connected like, 'Oh my God, this is like an unofficial holiday in the U.S.,' " Kay said of the Super Bowl. "People who don't have family or friends may feel even more lonely. So how can I help with that?"

Kay threw his first party in 2017, inviting homeless people in the neighborhood. A year later, people asked Kay how they could help, so parties were held in both New York and Los Angeles. Interest grew so quickly Kay founded the nonprofit to better organize to meet demand and seek corporate sponsors.

"I never thought myself as a founder of a nonprofit," Kay said. "I just thought, 'I'm a guy who likes to do good through video, a filmmaker.' But it was really through people saying, 'Hey, how are we going to get involved?' I just sort of stepped up."

Super Soul Party has five sponsors helping cover the costs for this year's parties that are much more than just food and football. Guests can get haircuts from barbers, clothing and personal hygiene items. Mental health counselors and people who can help with housing and jobs have been added as well. Kay said the food and watching the game are important.

"Then we're able to tackle on a deeper essence of the person, to build them back up," Kay said. "And so the bigger picture from day one was to really bring back a connection to people who do not have it so they could go on and to rebuild their own lives."

Women look through donated clothes during the 2019 Super Bowl party by nonprofit Super Soul Party in New York City. BENJI WEINTRAUB VIA AP

Super Soul Party works with existing nonprofits. Expanding beyond New York has been accomplished through volunteer coordinators connecting with homeless shelters and other groups in their own towns.

Erika Harsanyi in Orlando, Florida, saw one of Kay's videos from an early party and wanted to host one in her city. She too often felt helpless as a trauma nurse seeing homeless people needing more help than what an emergency room could provide.

Now Orlando is about to host its first party with approximately 500 people expected at Exploria Stadium, a space big enough to feel safe in these COVID-impacted times. Harsanyi said the Super Bowl offers homeless people an experience most people take for granted.

"We don't think how lucky we are whereas that's something that ... maybe they may not have ever been able to experience," Harsanyi said.

Kay has big dreams to keep growing the nonprofit's reach with more events held throughout the year. But he also sees tying them in with big sporting events such as soccer's World Cup.

"I find people are thirsty to connect even more so through the pandemic, and people want to give what they can," Kay said.

TODAY IN HI TORY

Today is Monday, b. 7, the 38th day of 2022. There are 7 days left in the year.

On this date in:

1857: A French cou acquitted author Gustave Flaube of obscenity for his serialized nove Madame Bovary."

1943: The governme abruptly announced that wartim rationing of shoes made of leather ould go into effect in two days, limi g consumers to buying three pai per person per year. (Rationing was ted in October 1945.)

1948: Gen. Dwight D. Eise hower resigned as U.S. Army chief staff; he was succeeded by Gen. O ar Bradley.

1962: President John F. Ke edy imposed a full trade embargo Cuba.

1964: The Beatles arrived t New York's John F. Kennedy Inte tiona Airport to begin their fi tour.

1971: Women in S the right to vote thr referendum, 12 years a attempt failed.

1984: Space shuttle Challe tronauts Bruce McCandless Robert L. Stewart went on the first untethered spacewalk, which lasted nearly six hours.

1985: U.S. Drug Enforcement Administration agent Enrique "Kiki" Camarena was kidnapped in Guadalajara, Mexico, by drug traffickers who tortured and murdered him.

1991: Jean-Bertrand Aristide was inaugurated as the first democratically elected president of Haiti (he was overthrown by the military the following September).

2009: A miles-wide section of ice in Lake Erie broke away from the Ohio shoreline, trapping about 135 fishermen, some for as long as four hours before they could be rescued (one man fell into the water and later died of an apparent heart attack).

2014: The Sochi Olympics opened with a celebration of Russia's past greatness and hopes for future glory.

0: Two days after his acquittal in his t Senate impeachment trial, Presi ent Donald Trump took retribution gainst two officials who had delivered damaging testimony; he ousted Lt. Col. Alexander Vindman, a national security aide, and Gordon Sondland, his ambassador to the European Union.

ASSOCIATED PRESS

REQUEST FOR COMMENTS ON 2045 METROPOLITAN TRANSPORTATION PLAN AND AIR QUALITY TRANSPORTATION CONFORMITY DETERMINATION REPORT

1. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the final draft of the BCATS 2045 Metropolitan Transportation Plan (MTP), as part of a public comment period extending from February 7, 2022, 12:00 pm until the Battle Creek Area Transportation Study Policy Committee meeting scheduled for February 23, 2022 at 1:30pm. The MTP identifies the Battle Creek metropolitan area's transportation needs, forecasts future traffic, and provides a guide for identifying and selecting future transportation projects in the BCATS area over the more than twenty-year time frame of the Plan.

2. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo - Battle Creek Limited Orphan Maintenance Area for air quality. This required Report, which includes the BCATS area, was drafted by the Kalamazoo Area Transportation Study (KATS) in September 2021 and has been updated by BCATS to reflect changes in the BCATS information since September. The Report is available for a public comment period in the BCATS area from February 7, 2022 until February 23, 2022, in conjunction with the comment period for the BCATS' 2045 MTP, noted above. The air quality conformity analysis includes the KATS metropolitan planning area, the BCATS metropolitan planning area, and the rural areas of Calhoun, Kalamazoo and Van Buren Counties.

The BCATS public meetings in February (Technical Committee 2/9/22 and Policy Committee 2/23/22), as well as this published comment period, are your opportunity to review and comment on the two items described above.

The draft FY 2045 Metropolitan Transportation Plan and the Transportation Conformity Determination Report will both be available on the BCATS website homepage for review at https://www.bcatsmpo.org as of February 7, 2022 after 12:00 pm. Further details about either of these items can be provided by BCATS staff at the bcats@bcatsmpo.org e-mail address. BCATS Committee meetings are being held in-person at the City of Springfield City Hall Council Chambers at 601 Avenue A, Springfield, MI. Comments may be provided to: BCATS, 601 Avenue A, Springfield, MI 49037; phone 269/963-1158, fax 269/963-4951, or e-mail bcats@bcatsmpo.org (e-mail is the preferred option).

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LJ-0100409349

Newsletter of the
Battle Creek Area
Transportation Study

"The Signal" BCATS 2045 Transportation Plan

BCATS
February, 2021

601 Avenue A, Springfield, MI 49037 (269) 963-1158
fax (269) 963-4951 e-mail: bcats@bcatsmpo.org
website: https://www.bcatsmpo.org

Remember: All BCATS Committee meetings are open to the public. Contact the staff office for details.

BCATS Works to Develop 2045 Long Range Transportation Plan

The Battle Creek Area Transportation Study (BCATS) is moving forward with the updating of its 20-year long range transportation plan. The current plan, approved in 2016, has a horizon year of 2040. The updated plan will have a horizon year of 2045. The 2045 Plan is an update of the 2040 Plan. The Plan includes anticipated and expected improvements to the roads, transit, bicycle and pedestrian facilities, safety related projects (such as traffic signal upgrades), and other transportation related areas.

The development of the 2045 Plan document from now until the fall of 2021 will result in the new 2045 Metropolitan Transportation Plan for the Battle Creek metropolitan area. The BCATS Policy Committee will be reassessing the current plan's goals in March to guide the next steps of the long range plan update, as follows:

1. **Safety** - to minimize the loss of life, injuries, and property damage resulting from travel on all modes within the BCATS area.
2. **Accessibility** - to provide all travelers in the community with reasonable access to important destinations such as: residence, employment, recreation, community facilities, and commercial centers
3. **Preservation** - to preserve the investment in the area's transportation system
4. **Efficiency** - to achieve maximum efficiency, utilization, and performance from the transportation system
5. **Financial** - to minimize the financial costs of the transportation system to travelers and the community as a whole
6. **Comprehensive Planning** - to coordinate the planning and development of transportation facilities within the metropolitan area and in conjunction with countywide and statewide planning efforts
7. **Public Involvement** - to provide for public involvement in the planning and development of transportation facilities and services
8. **Environmental Mitigation** - to avoid disrupting social and economic life or creating a less attractive or less healthy living environment for Battle Creek residents due to unintended harmful effects of transportation on the immediate and global environment
9. **Community Impact** - to avoid and reduce conflicts between transportation facilities and land use.

Since the last Plan update was adopted in 2016, almost all of the 2017-2020 projects that were identified in the Plan have been implemented. This includes road, transit, non-motorized, bridge and safety projects in the BCATS area. During those years, a total of approximately $56 million in federal funding, which was matched with state and local funding, was committed to projects within the metropolitan area (see the annual "Obligated Projects Report" for each year on the BCATS' website).

Public input is welcomed in the development of the updated 2045 Plan. CHECK OUT THE BCATS WEBSITE: **https://www.bcatsmpo.org** for further information. Given the current national health crisis, public input is being sought through virtual means.

The purpose of this newsletter is to provide the public with information regarding the activities of the Battle Creek Area Transportation Study (BCATS). The public is encouraged to contact BCATS at the above address or telephone (269) 963-1158, fax (269) 963-4951 or e-mail: bcats@bcatsmpo.org concerning issues in *The Signal* or other transportation matters.

2045 Plan - Progress To-Date

Feb. 2021

The process of updating the Metropolitan Transportation Plan includes assessing current conditions related to transportation facilities and projecting how those conditions may change in the future. The current, called base year, data involving population, employment and traffic count information has been collected so far for the greater Battle Creek area

From current conditions, projections are made about the same data groups - population, employment, and traffic levels. This data will indicate future conditions requiring the need for certain investments in the transportation system over time. At present, the future needs are being formulated using a computer model incorporating the future condition data.

A large part of the Plan update process is also evaluating what level of funding may be available in the future to fund transportation projects and deciding priorities for those funds.

Also, BCATS has updated its Participation Plan in the early stages of this Metropolitan Transportation Plan process. The Participation Plan was approved by the BCATS Policy Committee in January 2021 and can be found on the home page of BCATS' website - https://www.bcatsmpo.org.

Continuing Development of the 2045 Transportation Plan

The process for developing this update to the BCATS Metropolitan Transportation Plan transportation plan will continue until fall 2021. All of the information included in the Plan is being updated as needed from the 2040 version of the Plan. Since the last Plan was developed, several new requirements have been instituted for these plans.

A major change from the 2040 Plan is the addition of a plan section dealing with performance measures for the transportation system, a requirement from the U.S. Department of Transportation contained in federal legislation. This involves assessing such items as road condition, bridge condition, safety statistics, transit status, and other categories. When a draft list of projects for the Plan is developed, another outreach effort to the public will be made by BCATS. The list of projects will also undergo an assessment related to air quality impacts. Additional evaluation will be done in relation to environmental impacts of the proposed project list, both from a natural environment and environmental justice standpoint. A financial chapter will meet federal requirements that the Plan show "financial constraint" (that project costs will not exceed expected revenues). Once a final draft is completed, the BCATS Policy Committee will act on the Plan, taking into consideration any public comments received.

Nov. 2021

Reminder: Public input is welcomed in the development of the updated Plan document. Please see the BCATS website for ongoing information about the Plan update. During the continuing COVID-19 health crisis, comments can to provided to BCATS through BCATS' e-mail at bcats@bcatsmpo.org or by sending comments to the BCATS office at BCATS, 601 Avenue A, Springfield, MI 49037.

BCATS

Newsletter of the
Battle Creek Area
Transportation Study

BCATS

July, 2021

"The Signal" BCATS' 2045 Metropolitan Transportation Plan

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BCATS Provides Update on 2045 Long Range Transportation Plan

The Battle Creek Area Transportation Study (BCATS) is moving forward with the updating of its 20-year long range transportation plan. The current plan, approved in 2016, has a horizon year of 2040. The updated plan has a horizon year of 2045. The 2045 Metropolitan Transportation Plan (MTP) is an update to the 2040 Plan. The Plan includes anticipated and expected improvements to the roads, transit, bicycle and pedestrian facilities, safety related projects (such as traffic signal upgrades), and other transportation related areas.

BCATS has looked at the Plan's goals and objectives, developed projections of future population, employment, and traffic levels, and is determining what levels of funding may be available to address future transportation needs. The development of a final 2045 Plan document over the next several months will complete the update process. In March 2021, the BCATS Policy Committee officially reaffirmed the goals to guide the development of the long range plan update, as follows:

1. **Safety** - to minimize the loss of life, injuries, and property damage resulting from travel on all modes within the BCATS area.
2. **Accessibility** - to provide all travelers in the community with reasonable access to important destinations such as: residence, employment, recreation, community facilities, and commercial centers
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9. **Community Impact** - to avoid and reduce conflicts between transportation facilities and land use.

In the last newsletter it was noted that almost all of the 2016-2020 projects that were identified in the previous Plan have been implemented. FY 2021 projects are underway this construction season as well. This includes road, transit, non-motorized, bridge and safety projects in the BCATS area.

Public input is welcomed in the development of the updated 2045 MTP. CHECK OUT THE BCATS WEBSITE at **https://www.bcatsmpo.org** for further information.

The purpose of this newsletter is to provide the public with information regarding the activities of the Battle Creek Area Transportation Study (BCATS). The public is encouraged to contact BCATS at the above address or telephone (269) 963-1158, fax (269) 963-4951 or e-mail: bcats@bcatsmpo.org concerning issues in *The Signal* or other transportation matters. The best contact method currently is using the e-mail address.

2045 Plan - Proposed Projects

Major Road, Transit, Non-Motorized, and Other Projects included in the proposed listing for the 2045 Metropolitan Transportation Plan update at the present time are as follows (this listing only reflects the major projects of a larger project list and is subject to change in the final Plan document - see the BCATS website for a more extensive draft list):

2022 - **Washington Avenue** (from Goodale Ave. southward to Michigan Ave. - mill and resurface)
Beadle Lake Road (from B Drive N northward to exit/entrance ramps at I-94 - resurface)
F Drive North (from Wattles Road east to approx. Flex-n-Gate drive - crush and shape and asphalt resurfacing)
K Drive S (from 6 Mile Road eastward to 7 1/2 Mile Road—crush and shape and asphalt resurfacing)
Raymond Road N Bridge (bridge over MDOT rail line - bridge rehabilitation)
6 1/2 Mile Road @ Harper Village Drive (signalized intersection upgrade/modernization, including video detection system)
I-194/M-66 Bridges (over I-94—full paint and other rehabilitation efforts)
I-94 Rebuilding Michigan Project (west of Helmer Rd. east to 6 1/2 Mile Rd. resurface; bridge replacement and interchanges at Capital Avenue and M-294; bridge replacement at 6 1/2 Mile Rd., 9 Mile Rd., and over Kalamazoo River; and bridge rehab at F Drive N)
I-94 (from Exit 104 to BCATS boundary at 12 Mile Road - asphalt mill and overlay as part of a larger project to 17 1/2 Mile Rd.)
I-94 Bridges (over Riverside Dr. - bridge rehabilitation)
M-37 (Helmer/Bedford Road) (from Dickman Road to Creekview Dr. - resurface)
I-94BL (Michigan Avenue) Bridge and M-311 (11 Mile Rd.) Bridge (both over I-94 - barrier replacement and other maintenance work)
M-66 (from L Drive South north ot D Drive South - mill and asphalt overlay)

2023 - **Capital Avenue SW and NE** (multiple segments mill and asphalt resurface)
Skyline Drive and Hill Brady Road Intersection (change "T" intersection to roundabout in conjunction with Air National Guard project)
Union Street Bridge (over the Battle Creek River - bridge rehabilitation)
Morgan Road (from North Ave. east to M-66 (Capital Avenue NE - mill and asphalt resurface)
I-194 Bridges over the Kalamazoo River (bridge replacements, including approaches)
M-89 (Washington Avenue) Bridge (over the Grand Trunk Western RR and Kalamazoo River - bridge rehabilitation)
M-96 (Columbia Avenue) Bridges (over I-194 - major bridge rehabilitation)

2024 - **I-94 Battle Creek Rest Area** (southside of I-94 eastbound between exits 95 and 97 - reconstruct rest area building)
M-66 (from Beckley Road north to I-94 - construct auxiliary lane on M-66 northbound for traffic from Beckley Road)

2025 - **M-66** (from Glenn Cross Road south to Athens Township border - fixed object removal)
M-96/M-37/I-94BL (Helmer Road) (from Territorial Road north to Dickman Road - convert a less than 1 mile segment from 4 lanes to 5 lanes to add a center left-turn lane)
Trunkline Non-Freeway Signing (various non-freeway routes in the BCATS area - signing replacement/upgrade)

2026 - **I-94 Crash Investigation Sites** (construct crash investigation sites eastbound and westbound between Exit 100 and the 9 Mile Rd. bridge)

2022-2045 **Numerous transit capital projects** (to replace transit vehicles and equipment as items are eligible for replacement)
2022-2045 **Annual Operating Assistance for transit** (federal, state and local amounts for transit operating assistance)
2022-2045 **MDOT Annual Pavement Preservation Projects** (capital preventative maintenance type projects - resurfacing and reconstruction)
2022-2045 **Annual Transit Security Projects** (for Battle Creek Transit - security related projects of at least 1% of federal operating assistance)
2022-2045 **Annual Specialized Services Transit Operating Assistance** (for local human service agencies - state operating assistance)
2022-2045 **Annual Specialized Services Transit Capital Assistance** (for local human service agencies - federal w/ state match capital assistance)
2024-2045 **Local Road Agency Annual Pavement Preservation Projects** (capital preventative maintenance type projects - resurfacing and reconstruction) (**NOTE:** project specifics for the 2024 to 2026 time frame will be identified within the development of the next Transportation Improvement Program (TIP) cycle, which is to begin in the fall of 2021, with new TIP approval in May 2022)

July 2021

Oct. - Nov. 2021

Remaining Schedule for Development of the 2045 Transportation Plan

The process for developing an update to the BCATS long range transportation plan has extended over the past year. Since conditions in the BCATS area have not changed dramatically, this update did not involve a total "start from scratch" process for the Plan update. Information was updated as needed, and the new federal requirements associated with Plan updates have been incorporated. BCATS also needs to develop a System Performance Report as part of the new requirements. That report will be completed in association with the new MTP. The list of projects in the MTP will undergo an assessment related to air quality impacts based on the Kalamazoo/Calhoun County status as a Limited Orphan Maintenance Area, or LOMA, which resulted from a court case involving the Environmental Protection Agency. Local approval of the final 2045 Metropolitan Transportation Plan is expected this fall. The BCATS Technical and Policy Committees meet the second and fourth Wednesdays, respectively of each month - the meeting schedules, as well as details about participating in those meetings, are available on the BCATS website.

Reminder: Public input is welcomed in the development of the updated Plan document. Please contact the BCATS office for further details (269) 963-1158 or email: bcats@bcatsmpo.org

BCATS

The Newsletter of the Battle Creek Area Transportation Study

BCATS

February, 2022

"The Signal"

BCATS 2045 Transportation Plan

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BCATS Wraps Up 2045 Long Range Transportation Plan

The Battle Creek Area Transportation Study (BCATS) is entering the final phases of updating its 20-year long range transportation plan. The draft 2045 Metropolitan Transportation Plan (MTP) is an update of the current 2040 Metropolitan Transportation Plan. As of February 7, 2022, the final draft of the 2045 MTP can be reviewed on the BCATS website at https://www.bcatsmpo.org. The Plan includes forecasted improvements to federal-aid eligible roads, transit, bridges, non-motorized facilities, safety related projects (such as traffic signal upgrades), and other transportation related areas, all within the limits of reasonably expected revenues. The Plan covers the geographic area served by BCATS, including: the Cities of Battle Creek and Springfield, the Charter Townships of Bedford, Emmett and Pennfield, and the Townships of Leroy and Newton.

Public input is welcomed throughout the development of the 2045 Plan. CHECK OUT THE BCATS WEBSITE AT: **https://www.bcatsmpo.org**

The Goals the Plan seeks to support for the BCATS area are:

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2045 Plan - Early Year Highlights

EARLY YEARS OF THE MTP -

Michigan Avenue bridge over I-94, major rehabilitation, estimated cost $1.2 million (2022)

I-94 - Replace nine bridges, including some roadwork and interchange work on I-94 between Helmer Road and F Drive North, estimated cost $119 million (2023-2025)

Columbia Avenue bridges over I-194, major rehabilitation, estimated cost $2.7 million (2023)

M-89 (Washington Ave.) bridge over Kalamazoo River and RR, major rehabilitation, estimated cost $1.0 million (2023)

Traffic Signal Upgrade at Golden Avenue and Riverside Drive, estimated cost $281 thousand (2024)

I-94 - Rebuild Rest Area west of Exit 97, estimated cost $4.5 million (2024)

I-94BL (Helmer Road) from Territorial Road north to Dickman Road, add center turn lane, estimated cost $2.4 million (2025)

S. Wattles Road from Michigan Avenue to Verona Road, pulverize existing road and resurface, provide 6 foot shoulder, estimated cost $1 million (2025)

Pavement Rehabilitation of multiple segments (Limit, Elm, Riverside, Cliff), estimated cost $674 thousand (2025)

Traffic Signal Upgrade at McCamly Street and Van Buren Street, estimated cost $281 thousand (2025)

I-94 - Crash Investigation Sites on interstate eastbound and westbound between Exit 100 and the 9 Mile Road bridge, estimated cost $518 thousand (2026)

Raymond Road from Golden Avenue to E. River Road, pulverize existing road and resurface, provide 6 foot shoulder, estimated cost $567 thousand (2026)

Pavement Rehabilitation of multiple segments (Goodale, 24th St., Gethings), estimated cost $532 thousand (2026)

M-89 (Washington Ave.) bridge over the Battle Creek River, superstructure replacement, est. cost $4.7 million (2027)

Phased replacement of transit buses and vans from FY 2021 grant award will take place through FY 2028

IN THE OUT-YEARS of the MTP -

Transit will be applying for discretionary federal funding for projects such as: farebox system replacement, facility replacement, vehicle replacement, equipment and technology upgrades, and maintenance equipment.

All road agencies will be carrying out various levels of capital preventative maintenance on their respective roadways to maintain condition and safety.

The MTP is required to be updated again on a 4-year cycle. Four years from the current Plan adoption would be February of 2026.

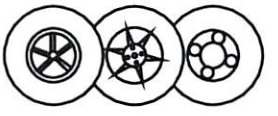
Approving the 2045 Metropolitan Transportation Plan

Feb. 2022

Local approval of the final 2045 Metropolitan Transportation Plan (MTP) is scheduled for the February, 2022 meetings of the BCATS Committees. The BCATS Technical Committee will meet at 1:30pm on February 9, 2022 and the BCATS Policy Committee will meet at 1:30pm on February 23, 2022 to take action on the final document. BCATS Committee meetings are currently held in the Council Chambers at the Susan Anderson Municipal Building (City of Springfield City Hall), 601 Avenue A, Springfield, MI and are open to the public.

There is a designated public comment time at the beginning of the BCATS Policy Committee meeting on February 23, 2022 when comments on the MTP can be offered. Advance comments are encouraged and can be directed to BCATS staff. A public notice about the final draft document being available for review on the BCATS website will be noticed in the local general circulation newspaper, the *Battle Creek Enquirer*, and posted on the BCATS website and at the BCATS staff office.

Reminder: Public input is welcomed in the development of the updated Plan document. Please contact the BCATS office for further details (269) 963-1158 or email: bcats@bcatsmpo.org



BCATS

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BCATS Battle Creek Area Transportation Study

The Metropolitan Planning Organization for the Greater Battle Creek Area

ABOUT | MEETINGS & NOTICES | ACTIVITIES | PARTICIPATE | RESOURCES

The staff office for BCATS is located in the Susan L. Anderson Municipal Building, Springfield City Hall,
601 Avenue A
Springfield, MI 49037
Get Directions

269-963-1158
fax: 269-963-4951

email: bcats@bcatsmpo.org

THE STAFF OFFICE IS CURRENTLY STAFFED MOST, BUT NOT ALL, NORMAL HOURS DUE TO THE COVID-19 VIRUS PANDEMIC THAT IS ONGOING. BCATS STAFF CAN ALWAYS BE CONTACTED USING THE GENERAL OFFICE E-MAIL at bcats@bcatsmpo.org - thank you for your understanding during this time.

Click here for an audio version of the above information about the staff office

The BCATS area includes: the Cities of Battle Creek and Springfield; Charter Townships of Bedford, Emmett and Pennfield; and townships of Leroy and Newton

BCATS is an Equal Opportunity Employer

If you require translation of any BCATS documents, please contact the BCATS office, see above for contact information.

AREA OF INTEREST - PERFORMANCE MEASURES

To view information about BCATS' actions regarding the federally identified performance measures for the transportation system, click on the Activities header in the orange bar on the homepage and then on the Performance Measures selection along the left side of that page.

PUBLICATIONS

What's New

A Final Newsletter about the 2045 Metropolitan Transportation Plan (MTP) has been published and can be viewed here. See more MTP news below.

To view the Draft 2045 MTP Document - go to the Activities Header above and click on the 2045 MTP selection in the left-hand column

BCATS is requesting comment on its DRAFT 2045 Metropolitan Transportation Plan see below:

REQUEST FOR COMMENTS ON 2045 METROPOLITAN TRANSPORTATION PLAN AND AIR QUALITY TRANSPORTATION CONFORMITY DETERMINATION REPORT

1. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the final draft of the BCATS 2045 Metropolitan Transportation Plan (MTP), as part of a public comment period extending from February 7, 2022, 12:00 pm until the Battle Creek Area Transportation Study Policy Committee meeting scheduled for February 23, 2022 at 1:30pm. The MTP identifies the Battle Creek metropolitan area's transportation needs, forecasts future traffic, and provides a guide for identifying and selecting future transportation projects in the BCATS area over the more than twenty-year time frame of the Plan.

2. THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public comment on the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo - Battle Creek Limited Orphan Maintenance Area for air quality. This required Report, which includes the BCATS area, was drafted by the Kalamazoo Area Transportation Study (KATS) in September 2021 and has been updated by BCATS to reflect changes in the BCATS information since September. The Report is available for a public comment period in the BCATS area from February 7, 2022 until February 23, 2022, in conjunction with the comment period for the BCATS' 2045 MTP, noted above. The air quality conformity analysis includes the KATS metropolitan planning area, the BCATS metropolitan planning area, and the rural areas of Calhoun, Kalamazoo and Van Buren Counties.

The BCATS public meetings in February (Technical Committee 2/9/22 and Policy Committee 2/23/22), as well as this published comment period, are your opportunity to review and comment on the two items described above.

The draft FY 2045 Metropolitan Transportation Plan and the Transportation Conformity Determination Report will both be available on the BCATS website homepage for review at https://www.bcatsmpo.org as of February 7, 2022 after 12:00 pm. Further details about either of these items can be provided by BCATS staff at the bcats@bcatsmpo.org e-mail address. BCATS

BCATS Calendar

February, 2022

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

2045 Metropolitan Transportation Plan Info

July 2021 Newsletter

February 2021 Newsletter

BCATS Participation Plan

January 2021 Update

FY 2022 Unified Work Program

COVID-19 Preparedness and Response Plan June 2020

FY 2020-2023 Transportation Improvement Program (TIP) Document

FY 2020-2023 TIP Newsletter #2, April 2019

FY 2020-2023 TIP Newsletter #1, January, 2019

JANUARY 2017 GUIDE TO CITIZEN INVOLVEMENT with BCATS

Calendar 2022 Policy and Technical Committee Meeting Schedules

2021 Annual Listing of Obligated Projects

PAST ANNUAL LISTINGS OF OBLIGATED PROJECTS

2020 2019 2018 2017
2016 2015 2014 2013
2012 2011

Non-Motorized Transportation Plans & Resources

FY 2020-2023 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

FY20-23 TIP complete document

Up-to-date TIP Project List

BCATS' TIP Amendment Schedule for FY 2022 (Oct2021--Sep2022)

Committee meetings are being held in-person at the City of Springfield City Hall Council Chambers at 601 Avenue A, Springfield, MI. Comments may be provided to: BCATS, 601 Avenue A, Springfield, MI 49037; phone 269/963-1158, fax 269/963-4951, or e-mail bcats@bcatsmpo.org (e-mail is the preferred option).

The next meeting of BCATS' Technical Committee is scheduled for Wednesday, February 9, 2022, beginning at 1:30pm. The format for the meeting will be in-person at the Springfield City Hall Council Chambers. Any questions about the meeting format should be addressed to the BCATS' staff office.

FY 2020-2023

Transportation Improvement Program (TIP)

Click here for the Current Approved TIP project list, in the JobNet report format.

Amendment #14

BCATS' FY20-23 TIP was approved by BCATS' Technical and Policy Committees in January 2022 to be amended with the changes listed below numbered 1-9. Following BCATS Policy Committee formal approval on 1/26/22, the amendment is in the process of being transmitted to MDOT for review and then on to the Federal Highway Administration for final approval hoped for by mid-February.

1) Increasing the 2022 construction phase (CON) total estimated cost, by 27.4%, of Michigan Dept of Transportation (MDOT) bridge rehabilitation on the I-94BL (Michigan Ave) bridge over I-94, due to refined cost estimates. Updated total CON budget $1,185,000 [90% Fed Interstate Maintenance (IM), 10% State of Michigan Betterment "M" funds];

2) Increasing the 2022 CON total estimated cost, by 25.2%, of MDOT Capital Preventive Maintenance (CPM) on the I-94 bridges over Riverside Dr, due to refined cost estimates. Updated total CON budget $1,134,000 (90% Fed IM, 10% State "M");

3) Increasing the 2022 CON total estimated cost, by 39.6%, of MDOT CPM on the I-194/M-66 bridges over I-94, due to refined cost estimates. Updated total CON budget $2,449,366 (90% Fed IM, 10% State "M");

4) Abandoning the $50,000 right-of-way (ROW) phase (due to elimination of any real estate work), and changing the primary job scope of CON to Bridge Replacement (from Road Rehab), for MDOT's 2022-25 bridge replacements and milling & asphalt resurfacing on I-94 from Helmer Rd eastward to M-311. Total CON budget $118,950,020 [$9,000,000 Fed IM, $109,950,020 State Rebuilding Michigan Program (RBMP)];

5) Adding 2023 CPM by MDOT on road segments of M-37 in Bedford Twp, and of M-66 and M-78 in Pennfield Twp. Total CON budget $830,000 (81.85% Fed Surface Transportation (ST), 18.15% State "M");

6) Adding 2023 tree removal & clearing along 2.4 miles of 1 Mile Rd from M-89 northward to U Dr N, by the Calhoun County Road Dept (CCRD). Total CON budget $173,000 [90% Fed Highway Safety Improvement Program (HSIP), 10% CCRD];

7) Adding 2023 installation of recessed wet reflective centerline & edgeline pavement markings on 1.5 miles of Morgan Rd from North Ave eastward to M-66, by CCRD. Total CON budget $52,669 (90% Fed HSIP, 10% CCRD);

BCATS Battle Creek Area Transportation Study

The Metropolitan Planning Organzation for the Greater Battle Creek Area

Public Notices

REQUEST FOR COMMENTS ON 2045 METROPOLITAN TRANSPORTATION PLAN AND AIR QUALITY TRANSPORTATION CONFORMITY DETERMINATION REPORT

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REQUEST FOR COMMENTS ON PARTICIPATION PLAN

THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for the general public and interested parties to comment on a draft update of its Participation Plan (PP). The draft document is available for review online at the BCATS' website, https://www.bcatsmpo.org. A discussion of the PP update is featured on the homepage of BCATS' website as of December 9, 2020, along with a link to the document. BCATS will accept comments on the draft PP through Tuesday, January 26, 2021. Action regarding the adoption of the updated PP is anticipated at the January meeting of the BCATS' Policy Committee. The

BCATS

CHAPTER 5
CONSULTATION

PROCESS

MAP-21 and the FAST Act require that BCATS consult with federal, state and local entities that are responsible for the following:

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

The goal of this process is to eliminate or minimize conflicts with other agencies' plans and programs that impact transportation, or for which transportation decisions may impact them.

Since the intent of the consultation, according to FHWA, is to exchange information, and not just ask for comments on the BCATS Plan or TIP, BCATS began the consultation process for its overall program with the distribution of a general letter to the involved parties many years ago with a letter making contact in January 2007. The letter was provided to the following agencies making them aware of the consultation requirement for transportation (a copy of the letter is included at the end of this chapter).

- Fish and Wildlife Service
- US EPA Region 5
- Michigan EGLE/DEQ - Kalamazoo District
- Michigan EGLE/DNR- Plainwell
- National Trust for Historic Preservation
- Office of State Archaeologist
- Calhoun Soil Conservation District
- USDA - Michigan State Office
- Michigan Department of Agriculture
- W.K. Kellogg Airport
- Michigan Department of Community Health
- Michigan Economic Development Corporation
- Disability Resource Center

- Calhoun County MSU Extension
- USGS - Lansing District
- SW Michigan Land Conservancy
- Calhoun County Farm Service Agency
- Natural Resources Conservation Service
- Consumers Energy
- Calhoun County Drain Commissioner
- BC/CAL/KAL Inland Port Development Corporation
- Friends of the Kal-Haven Trail
- Region III Area Agency on Aging
- State Representatives
- State Senator
- City of Battle Creek Planning Department
- Charter Township of Bedford
- Charter Township of Pennfield
- Charter Township of Emmett
- Leroy Township
- Newton Township
- Battle Creek Unlimited
- Community Action Agency of Southcentral Michigan
- Burnham Brook Center
- Marian E. Burch Adult Day Care Center and Rehab. Center
- Behnke, Inc. (trucking)
- Kellogg Corportation
- Kraft Foods - Post Division
- Canadian National Railroad
- Battle Creek Area Chamber of Commerce
- State Historic Preservation Office

Subsequent to these initial contacts, BCATS also contacted the Nottawaseppi Huron Band of Potawatomi Indians (Tribal Chairperson and tribal planner).

BCATS has been maintaining information about the plans and programs of these other entities on an on-going basis since the initial contacts were made back in 2007. This includes: Southwest Michigan Non-Motorized Plan (Oct. 2020), updates to the W.K. Kellogg Airport Plan (2010), to the Calhoun County Coordinated Public Transit Human Service Agency Plan (2015). Michigan MPOs were advised of planning updates being conducted by the National Forest Service in about 2016.

The Consultation list receives the same newsletter information about the Plan update process as those on the public participation list. Once the Plan update is adopted, the agencies will be advised that, should they wish to consult BCATS' Plan, it is available on the BCATS website. BCATS received one comment from the DNR Fisheries Division acknowledging receipt of the BCATS newsletter and that the plans

were reviewed. The comment provided a contact person for the Division but stated that they had “no major issues” with the Plan. Informal comments were also provided to BCATS from several MDOT staff persons during the development of the MTP relative to narrative and verbage used in the text. These comments were addressed to the extend possible in the final document.

RESPONSES/COMMENTS (general) from prior Consultation Efforts

BCATS received the following responses to its initial January 23, 2007 letter:

- Michigan Department of Agriculture (MDA) - primarily concerned with properties enrolled under Part 361 of NREPA (formerly the Farmland and Open Space Preservation Act) and indicating that any projects that will impact land outside of existing rights-of-way would want to be reviewed by MDA. The response also encourages contact with the County Drain Commissioner (the Drain Commissioner is on the BCATS consultation list).
- Michigan DEQ - Kalamazoo District Office - provided a helpful list of contact persons for various different types of environmental issues handled by the DEQ. Also included was a copy of the response provided to the Kalamazoo Area Transportation Study (KATS) by the Chief of the Transportation and Flood Hazard Unit of the Land and Water Management Division of the DEQ regarding the KATS 2030 Transportation Plan. The correspondence to KATS provided additional contact persons and website resources for water/ wetlands/floodplain related issues. A contact was also provided for issues related to threatened and endangered species.
- A contact person for then State Senator Mark Schauer’s office was identified
- The airport manager for W.K. Kellogg airport provided information regarding some changes to roadway operations in the immediate vicinity of the airport which have since been implemented.
- U.S. EPA - Chicago office - responded with some general information about the availability of information at EPA websites, a specific contact person and a willingness to review specific projects. Types of projects they are primarily interested in include: new alignments, new river crossings, and other capacity increasing project that require additional right-of-way. The key environmental aspects which were pointed out to BCATS include: wetlands, floodplains, impaired streams and other waterbodies, environmental justice, hazardous waste sites, endangered species, and air quality.
- U.S. Department of the Interior-Fish and Wildlife Service (East Lansing, MI office) - responded with a listing of Endangered Species information for the BCATS area (of particular interest are the Indiana bat, bald eagle, copperbelly water snake, and eastern massasauga rattlesnake). The

protection of wetlands, in general, was also noted in the correspondence (these issues remain constant for the BCATS area).

The comments/issues generated by the 2007 letter that were still relevant were considered in the update of the 2035 Plan to a 2040 horizon. They were also taken into consideration with the current update to a 2045 horizon.

TREATMENT OF RESPONSES/COMMENTS

Since the responses to the January 23, 2007 letter were not specific to any project, BCATS staff used the information that was still relevant to do a cursory review of the projects included in the draft listing of projects for the 2045 Plan, regarding the issues mentioned by the respondents. The majority of the comments were related to general environmental issues and will be addressed by the project owners within the context of their development of individual projects. Given the high percentage of 2045 Plan projects that are reconstruction, resurfacing, or maintenance related, there are very few projects which would impact the environmental issues noted. For those that may have modest impacts, all guidance material provided by the consulting agencies will be made available to the project owners for use in developing those projects. BCATS' adopted environmental "Best Practice Guidelines" (Policy Committee September 26, 2007) which have already been provided to potential project owners for their reference. The guidelines are being re-issued to the units of government as part of the 2045 Plan update process.

Response to current MTP comments received - BCATS staff replied to the individual at the DNR Fisheries Division and thanked that person for the comment and for providing a contact for future consultation efforts.

CHAPTER 6

INTERMODAL CONSIDERATIONS

AVIATION, RAIL, TRUCKING

To the extent possible from available information, this chapter describes the services, facilities, and condition of air, rail, and trucking as components of the transportation system. These three intermodal areas have an impact on the factors to be considered in plans and project strategies, such as economic vitality, safety and security, accessibility, integration, and connectivity.

Although the Intermodal Surface Transportation Efficiency Act (ISTEA) legislation of 1991 was superseded by subsequent legislation, up to and including the FAST Act in 2015, the process that ISTEA outlined still provides good guidelines for the consideration of intermodal interests:

1. *Connections:* The convenient, rapid, efficient, and safe transfers of people and goods among modes that characterize comprehensive and economic transportation services.
2. *Choices:* Opportunities afforded by modal systems that allow transportation users to select their preferred means of conveyance.
3. *Coordination and cooperation:* Collaborative efforts of planners, users, and transportation providers to resolve travel demands by investing in dependable, high-quality transportation service either by a single mode or by two or more modes in combination.

A discussion of the aviation, rail, and trucking modes in the Greater Battle Creek area will address these considerations to the extent possible.

AVIATION

There is one airport facility within the BCATS area. This is the Battle Creek Executive Airport at Kellogg Field (BTL), located approximately three miles west of downtown Battle Creek and immediately southwest of the City of Springfield. The last planning effort BTL completed was an upate of its original *Airport Layout Plan* in 2003. The update graphically depicts future facilities for the Airport. As part of the *Airport Layout Plan Update*, projections of aviation activity for the Airport were developed through the year 2020. The report inventories the existing airport facilities and forecasts levels of activity at the airport through the year 2020. The *Airport Layout Plan Update* developed recommendations for future facilities for the Airport needed to accommodate existing and projected aviation needs. Airport staff are currently seeking funding from the Federal Aviation Administration to conduct a full master plan. If funding can be obtained, the project would take place over a 24-month period and result in a comprehensive master plan for BTL.

In 2015-2016, the Airport developed an Airport Strategic Business Plan which to set out the mission, vision, values, goals and objectives, and action plans necessary to continue being good stewards of the airport's assets. The majority of the goals and objectives in that Plan have been accomplished.

Characteristics and Classification - KBTL is situated on 1,260 acres on the west side of the City of Battle Creek which are zoned for industrial use. The airport is owned and operated by the City of Battle Creek. The City recently contracted with Steven Baldwin Associates to perform a Governance Study to determine if there is a more efficient form of governance for the airport. The airport is

considered a regional general aviation airport with an Airport Reference code on the Airport layout Plan of D-111, indicating that this airport is capable of accommodating aircraft with approach speeds less than 166 knots (Aircraft Approach Category D) and wingspans under 118 feet (Airplane Design Group III).

BTL is also classified as a Tier 1 airport in the 2017 Michigan Aviation System Plan (MASP). Tier 1 airports (as defined in the MASP) "respond to essential/critical state airport system goals and objectives. These core airports should be developed to their full and appropriate level."

The primary runway (5L-23R) at BTL is 10,004 feet long by 150 feet wide, allowing it to serve a variety of users and nearly all aircraft types. The crosswind runway is 4,835 feet long by 100 feet wide, and a third parallel runway (5R-23L) is 4,100 feet long by 75 feet wide and provides for additional operating capacity. The airport operates 24-hours/day. An on-site Air Traffic Control Tower (ATCT), operated under FAA contract with Midwest Air Traffic Control Service, Inc., is in use from 7:00 am to 11:00 pm. After the BTL air traffic control tower hours, FAA Great lakes Approach Control (11:00 pm -12:00 am and 5:30 am to 7:00 am) and Chicago Center (12:00 am - 5:30 am) manage the airspace of the airport.

Utilization - There are 56 airport-owned and one privately owned hangars on-site. There are currently two fixed base operators (FBOs) providing services to the public such as fuel sales, aircraft maintenance, airplane sales, etc. Duncan Aviation is the largest privately owned MRO in the world and provides aircraft refurbishment and overhaul (MRO) services to corporate jet aircraft.

Waco Classic Aircraft Corporation manufactures the Waco YMF-5 and assembles the Great Lakes 2T-1A-2. Waco is planning to introduce two new additional aircraft into production in the next 12 months and is the only FAA certified fixed wing aircraft manufacturer in Michigan. In 2020, Waco began a $22 million expansion that included a new FBO, restaurant, and two large hangars.

In 2021, Western Michigan University (WMU) finished a $24 million expansion of the original education aviation center that was just over 16,000 square feet. With the new improvements to the building, and the additions to the building, the education aviation center is now over 60,000 square feet. The expansion provided the addition of seven additional classrooms beyond the original four rooms. The project included an improved simulator bay and a plane paint lab, something few aviation programs in the country offer. The WMU College of Aviation is the third largest post-secondary aviation education program in the United States and offers four-year degrees in Flight, Aviation Management, and Aircraft Maintenance.

There are additional buildings on the airport grounds that house the Air National Guard and the FAA Regional Flight Inspection Field Office.

BTL remains one of the busiest airports in the State of Michigan. In 2020, the BTL was the third-busiest towered airport in the state. The facility is utilized on a regular basis by both itinerant and local aviation traffic. Tenants basing aircraft at the airport include approximately 50 private individuals, two fixed based operators (FBOs), one government agency, and the Western University College of Aviation.

At the present time, the Air National Guard does not have a flight mission out of Battle Creek. However, this could change in the future. Scheduled commercial passenger service has not been provided at the airport since 1987. Passenger service is provided at the Kalamazoo/Battle Creek International Airport located 23 miles to the west in Kalamazoo, Michigan. Table 6-1 below summarizes operations (including itinerant and local traffic) at the airport from 2016-2020.

TABLE 6-1
BATTLE CREEK EXECUTIVE AIRPORT - OPERATIONS SUMMARY 2016-2020

OPERATIONS TYPE	YEARS					PERCENT CHANGE YEAR to YEAR			
	2016	2017	2018	2019	2020	2016-17	2017-18	2018-19	2019-20
Air Taxi/Air Carrier	1,181	1,370	1,289	1,114	918	14.0%	-6.0%	-16.0%	-21.0%
Military	2,933	1,807	1,499	1,138	707	-62.0%	121.0%	-32.0%	-61.0%
General Aviation	77,201	82,950	81,674	84,023	71,192	7.0%	-2.0%	3.0%	-18.0%
TOTAL	81,315	86,127	84,462	86,275	72,817	5.9%	-1.5%	2.9%	-15.3%

TABLE 6-2
MICHIGAN TOWERED AIRPORTS - 2020 OPERATIONS RANKINGS

FAA ATADS : Tower Operations : Ranking Report

From 01/2020 To 12/2020 | State=MI

Ranked by : Tower Operations

#	Facility	Tower Operations
1	DTW - Detroit Metro	240,872
2	PTK - Oakland Pontiac	126,393
3	**BTL- Battle Creek Executive**	**75,311**
4	ARB- Ann Arbor	62,743
5	GRR - Ford Airport	58,958
6	TVC - Traverse City	57,838
7	DET - Detroit Coleman	53,495
8	YIP - Ipsilanti	50,460
9	AZO - Kalamazoo	38,812
10	FNT - Flint	34,206
11	JXN - Jackson	28,432
12	LAN -Lansing	26,344
13	MKG - Muskegon	25,120
14	SAW - Sawyer	17,017
15	MBS - Midland Bay Saginaw	12,181

Tables 6-1 and 6-2 (Operations Data and Tower Operations information) provided by BTL staff

Aviation activity declined in 2020 due to the COVID-19 pandemic, which had an impact across all sectors of the economy.

Other Considerations - The use of BTL as a cargo facility peaked in 1979 and was then associated with the provision of passenger service from the airport. However, in 2020, 106 tons of freight was handled at the airport through Duncan Aviation. Any freight ground movements are accommodated via South Airport Road to W. Columbia Avenue/Skline Drive (I-94BL) and on to I-94 for travel east (to Detroit) or west (Kalamazoo/Chicago). Cargo can also be transported north to Lansing and Grand Rapids via I-94BL/M-96 (Helmer Road) to M-37 (Helmer Rd north of I-94BL).

U.S. Customs clearance services are provided in conjunction with Battle Creek Unlimited (BCU), the marketing arm of the Fort Custer Industrial Park. BCU is the operator of the Foreign Trade Zone #43, located west of the airport where the customs offices are located. These services are provided on an "on-call" basis for arriving aircraft. There are no customs facilities at the airport.

There are no rental car operations on airport property.

The airport has a “Fly Quiet Program” to address issues of noise abatement. The airport property is bounded by areas of industrial zoning; however, there are areas east and southeast of the airport which are zoned for single family residential use and these areas will continue to show incompatibility with an airport function into the future. Currently, there are specific height and use restrictions imposed by the City of Springfield and the City of Battle Creek for areas within the flight paths of the airport's runways.

Access into the airport is primarily from I-94BL (W. Columbia Avenue) on the south side of the airport and I-94BL/M-96 (Helmer Road), a four-lane roadway along the eastern edge of the airport property. These roadways were assigned the I-94 Business Loop (BL) designation in 2015 due to the closure of a portion of I-94BL (Skyline Drive) on the west side of the airport property. The closure was done in order to accommodate the needs of the U.S. military.

There is public parking at the Airport Administration Building, Duncan Aviation, Waco Aircraft and Western Michigan University. The access from I-94BL (Columbia Avenue) is via South Airport Road. This road serves the airport administration office, the airport operations and maintenance facilities, the ATCT tower, the FAA Flight Inspection Area Office, Duncan Aviation, Centennial Aircraft Services and Waco Aircraft Corporation.

The Air National Guard has an entrance to its facilities from M-96 (Dickman Road) to the north and is designing a new entrance on the west side of the base that will be served from Skyline Drive. Access to the airport from the west has been precluded by the Grand Trunk Western Railroad rail line. However, over the course of the last few years, BCU has acquired the land needed for the construction of an overpass above the railroad tracks which would provide vehicular access to the west side of the airport. Additionally, the design of the overpass is 90% complete, as of the summer of 2021.

Future Forecasts and Needs - A $6 million project to rehabilitate the main runway at the airport (10,004 feet) was completed in the fall of 2015. The new surface was grooved and is expected to last for the next 10-15 years. Taxiway C, the parallel taxiway to the primary 10,004 foot runway was reconstructed in three phases and finished in 2020.

Westside Development and I-94BL/M-96 (Helmer Road) - The airport activity noted above has the potential to impact the adjacent roadways, I-94BL/M-96 (Helmer Road), I-94BL (Columbia Avenue), and South Airport Road. Only Helmer Road and Columbia Avenue are on the transportation modeling network. Since Helmer Road is a four-lane facility, it can accommodate additional traffic volume without the need for significant upgrading, however, increased turning movements on the corridor have been reviewed for possible changes. The Michigan Department of Transportation has preliminary plans to make the section of I-94BL/M-96 (Helmer Road) from Territorial Road north to Dickman Road a 5-lane section (currently 4-lanes), providing for a turn-lane for Territorial Road traffic and traffic at the Western Michigan University College of Aviation entrance. The project is currently slated for 2025 construction.

Columbia Avenue, west of Helmer Road, is a two lane roadway that is being evaluated for its adequacy now that it has been designated as the I-94BL (Business Loop). The Michigan Department of Transportation is responsible for evaluating Columbia Avenue, Helmer Road and the intersection at Columbia Avenue/Helmer Road for any necessary updates resulting from the change in the Business Loop routing. Improvements that were completed to the South Airport Road/I-94BL (Columbia Avenue) intersection involved adding a traffic signal with dedicated left-turn lanes at the intersection.

At this time, there are no additional roadway projects to address airport needs for inclusion in BCATS' 2045 Plan update.

RAIL

Rail facilities meet a significant portion of the freight transportation needs, and to a lesser extent some of the passenger needs, in the greater Battle Creek area. There are three major operators involved: Amtrak, Norfolk Southern, and Canadian National - North America.

Freight issues facing rail operators include piggyback services, double-stack car clearances, co-existence with high speed passenger services, and abandonments. A rail issue facing the local community revolves around the noise impacts of train service, especially in the downtown area during the evening hours. That prompted the City of Battle Creek to investigate the requirements for creating a rail "Quiet Zone" in Battle Creek. The City moved ahead with such a project in 2016. In January, 2016, the City of Battle Creek filed a "Notice of Intent" to create an approximately three-mile Quiet Zone through its downtown area. There were eleven (11) crossings originally included in the Quiet Zone area: Spencer Street, two on East Michigan Avenue, Elm Street, Main Street, South Avenue, Division Street, Fountain Street, Capital Avenue SW, McCamly Street and South Kendall Street. A significant cost was incurred to implement all of the necessary safety improvements to the crossings to allow for no train horns sounding in the area where hotels, other venues, and residents find the noise associated with passing trains to negatively impact their businesses and homes. Therefore, three of the eleven crossings listed above were identified for total closure and have been

closed (at Fountain, Division and Spencer Streets). Other safety treatments were carried out for the remaining impacted crossings. Those treatments included: installation of “four-quadrant” gates on South Avenue and Capital Avenue SW; and “two-quadrant” gates with supplemental safety measures or alternative safety measures at the other crossings. The City of Battle Creek completed all of the necessary steps to implement the “Quiet Zone”, which is still in effect in Battle Creek.

Passenger service issues previously identified in Michigan are extensions of service to areas of growing population in southeast Michigan, construction of new stations along existing lines, and upgrades at stations and crossings to accommodate higher-speed rail service.

TABLE 6-3
AMTRAK SERVICE FROM BATTLE CREEK
DAILY (as of 6/30/21)

Destination	Departure Times
DEARBORN (eastbound)	5:11 pm
CHICAGO (westbound)	8:45 am 10:00am
EAST LANSING/ PORT HURON (northbound)	7:33 pm

Source: Amtrak fare and schedule website

Amtrak provides passenger services on the former Norfolk Southern owned tracks that enter the area from the east, coming from Detroit. The tracks pass by the downtown Battle Creek intermodal terminal and leave the area headed west to Chicago. The State of Michigan purchased the Dearborn to Kalamazoo section of track from Norfolk Southern in 2013. This is the Wolverine line of service. Service is also provided along the Blue Water line, which runs from Port Huron to Chicago, coming to Battle Creek from the East Lansing station. Amtrak is now able to travel at higher speeds for an extended area in the Battle Creek/Kalamazoo area due to track and crossing upgrades. The goal for the overall service is to be able to achieve higher-speed rail service up to 100 miles per hour. The annual number of boardings and alightings at the Battle Creek station was 40,258 in 2019, down from a recent high of 48,321 in 2013, as reported by Amtrak (Source: National Association of Railroad Passengers fact sheets). Rail passengers are also afforded an opportunity to “single ticket” an intercity bus connection to certain destinations through Indian Trails, an intercity bus operator, upon their arrival in Battle Creek. Amtrak reports that the Battle Creek station handled 2,931 passengers to/from sixteen (16) cities on the connecting Thruway bus service in 2019. Daily train service from Battle Creek, as of June 30, 2021, are shown in Table 6-3. In 2019, the top two city pairs for trips from the Battle Creek station are Chicago, Illinois and Detroit, MI.

Improvements in the form of faster service to and from the east, service extensions, and new or upgraded stations may result in increased ridership and more trains operating in and out of Battle Creek's intermodal center. The implementation of higher-speed passenger rail over more of the rail corridor at some point in the future may require changes to the intermodal facility. Changes to some crossings have already taken place in the BCATS area. Significant work at the Battle Creek intermodal facility to implement some of the needed changes, and to update the facility in general, was completed in 2011 as a result of federal funds provided to upgrade the Battle Creek intermodal facility. However, as the facility ages, additional work now needs to be completed in order to keep the intermodal facility in good condition. The Michigan Department of Transportation (MDOT) has been working on long range plans for higher-speed passenger rail for some time and has identified changes to existing at-grade highway/rail crossings in the categories of separated, gated, and closed crossings.

MDOT has identified a listing of at-grade crossings to be modified in some manner to accommodate higher-speed rail along the entire Detroit to Chicago corridor. The possible actions associated with upgrading the corridor include: upgrading warning devices from flashing lights to gates; maintaining gates; provide for a grade-separation of roadways and rail tracks; and closure of crossings at some locations. Most of the crossings in the BCATS area have been included in the listing for maintaining the gated crossing devices. However, the "Quiet Zone" project discussed above resulted in additional closings and upgrades outside of MDOT's previous listings. Originally, MDOT recommended three crossings for grade separation (see listing on the next page). However, due to the costs involved to implement a grade separation, it is not anticipated that any projects of that magnitude will take place in the foreseeable future in the BCATS area. There is a project currently to separate the passenger rail line and the freight rail lines in downtown Battle Creek on either side of the intermodal terminal. Proposals for the that project for preliminary engineering and environmental analysis have been received by MDOT. That initial work is expected to be completed by the spring of 2023.

Rail Freight Operators - Norfolk Southern and CN North America operate freight trains through the BCATS area. Battle Creek is sited along one the busiest rail corridors in the State of Michigan which goes from Port Huron to Chicago. The two rail companies' lines run parallel for approximately 1.3 miles in downtown Battle Creek. Canadian National maintains a large switching yard and a maintenance facility on the northeast side of Battle Creek, west of Raymond Road, north and south of Emmett Street.

As of the latest figures available from MDOT's rail records, approximately freight train movements come through Battle Creek on an average day and multiple switching activities occur as well. Statewide, the use of rail for transporting containers, especially truck trailers loaded on rail flatcars, has increased dramatically in the last several years. Rail moved 17% of all freight tonnage in 2021. However, between 2014 and 2019, the weight of rail freight moved throughout Michigan decreased by 15%. These figures are expected to rebound with a 27% increase by 2045. The value of the rail freight is expected to increase even more , up 50% from 2019 totals by 2045. Coal, chemicals, transportation equipment, and metallic ores are the top commodities moving by rail in Michigan. Transportation equipment is by far the most valued commodity moving by rail, at $91 billion in 2019. Continued increases in freight movement are expected to have an impact on the total number of trains passing through Battle Creek and on all at-grade crossings in the BCATS area. This is independent of the rail passenger route through the BCATS area.

TRUCKING

Background - Whether the criteria is weight or value, commodity movement in Michigan is handled overwhelmingly by truck transport; 65% and 74% respectively in 2021, according to a *Fun Facts 2021* worksheet developed by MDOT. The trucking industry is a key employment sector for Michigan residents as well, with one in every eleven residents employed in some facet of the industry. The increasing use of trucks for movement of goods has an effect on many areas of transportation that are key components of consideration for transportation planning including congestion, safety, pavement life, and air quality.

Characteristics - There are approximately 820 miles of public roadways within the BCATS area. However, not all of these roads are expected to provide the same types of service, nor are any of them expected to operate totally independent of the remaining roadway system. A tiered and "classified" roadway system provides a means of determining the optimal routes for accommodating truck traffic in urban and rural areas. There are many different types of trucks operated on Michigan's roadways. The "heavy" truck category, those with six or more tires meeting the road, are generally the type targeted with "truck routing restrictions." The total number of heavy trucks registered in Michigan in 2019 was 206,000. The Cities of Battle Creek and Springfield have existing truck route ordinances and street designations. A listing of the streets designated as truck routes is maintained by the City of Battle Creek and updated regularly. The Charter Township of Pennfield has also enacted truck restrictions on some of its non-trunkline roadways.

There are approximately fifteen trucking operations of varying size in the BCATS area. They account for several hundred truck movements in the area each day. In addition, there are several major businesses/corporations which generate truck traffic at their facilities. The most significant generators are the cereal producers, Kellogg's and General Foods/Post, and the auto company suppliers, most of which are located in the Fort Custer Industrial Park on the west side of the BCATS area. The largest of these is Denso Manufacturing. Several area businesses, such as the cereal producers, also have a major impact on the volume of rail traffic in the BCATS area.

Issues - Based on a May 2021 review of the website of the American Trucking Association (ATA) (www.trucking.org/policy-issues), there are many areas that are considered significant issues for the trucking industry. In addition to the traditional issues of congestion and access impacting trucks, the Association has broad areas of concern which include the following topics which can impact transportation planning (from the ATA website):

- agriculture and food
- autohaulers
- crossborder
- energy and environment
- engineering
- government freight
- hazardous materials
- highway infrastructure and funding
- intermodal
- labor and workforce
- regional carriers
- risk management
- safety
- security
- tax and registration
- technology and engineering

These concerns are considered to the extent feasible within the development of this 2045 Transportation Plan update.

CHAPTER 7
INTERMODAL CONSIDERATIONS
PEDESTRIAN & OTHER NON-MOTORIZED

There are several related areas of interest in the provision of transportation facilities to meet the needs of pedestrian and other non-motorized modes of travel. These include adequate pedestrian crossings on the roadway network, provision of safe, efficient travel for utilitarian and recreational bicyclists, preservation of future trail corridors for recreational uses, and implementation of a comprehensive non-motorized system for the entire study area.

Passage of "Complete Streets" legislation by the Michigan legislature added additional planning and development requirements to transportation projects to adequately consider all users of the roadway system, especially for projects implemented by the Michigan Department of Transportation (MDOT).

PEDESTRIAN

Pedestrian movement is generally accommodated by the presence of sidewalks (or non-motorized paths) combined with the use of pedestrian crossing signals at major intersections in the BCATS area. Some recently completed roadway projects in the urban area have included sidewalks or multi-use paths to enhance pedestrian activity. It is recommended that future projects include adequate provisions for pedestrian movement and that special categories of funding, such as Transportation Alternatives Program (TAP) grants (administered by MDOT), be sought whenever possible to broaden the funding possibilities for non-motorized facilities in conjunction with roadway projects or as uniquely identified transportation improvements. The City of Battle Creek has implemented some pedestrian "countdown signals" which provide pedestrians with the number of seconds left on the walk signal. This helps the pedestrian decide whether or not to attempt to cross the road during that signal phase. The City of Battle Creek also periodically tests other new pedestrian oriented technology, such as "flashing eyes" pedestrian signals and in-pavement or overhead pedestrian crossing warning lights for motorists. The City of Battle Creek has also installed pedestrian signals with audible indicators at three downtown intersections to aid those with vision disabilities. The locations are Michigan Avenue at McCamly Street, Michigan Avenue at Capital Avenue, and Washington Avenue at Champion Street.

For some time now, the Americans with Disabilities Act (ADA) requirements include the installation of not only sidewalk ramps at crosswalks, but also of a detectable warning surface within the sidewalk ramp as well. These surfaces, with a pattern of raised domes on them, can be detected by persons with vision disabilities. The raised surface is required at areas of possible hazards, which include not only crosswalks, but also at edges of train platforms. The road agencies are required to install the ramps with

detectable warning surfaces on all streets which are reconstructed, resurfaced or have other specific lesser treatments.

NON-MOTORIZED (linear parks, bikeways, bicycle lanes)

Bicycling is permitted on all highways, roads, and streets in Michigan except limited access freeways. However, just because it is permitted does not necessarily mean that it is safe or advisable to do so along many of the busy thoroughfares and narrow rural roads that make up the transportation network. While the responsible road agencies (state and local) have delineated bicycle lanes and provided non-motorized paths (as may be represented in this document), it is the responsibility of the user of the facilities to exercise the good sense of a reasonable person in conjunction with the use of any provided facility. Personal safety is the responsibility of the user.

(Disclaimer: Since BCATS does not maintain the roads or paths referred to in this Plan, it makes no express or implied guarantee as to the condition or safety of existing or planned facilities. The condition of facilities will change over time and should be assessed for suitability depending upon one's skills and abilities. BCATS shall not be answerable or held accountable in any manner for loss, damage, or injury that may result from the use of the identified non-motorized facilities in this Plan.)

In addition to traditional shared auto/bike corridors, there has been an interest in developing non-motorized travel corridors along abandoned rail rights-of-way under the auspices of the Michigan Trails and Greenways Alliance (formerly the Rails-to-Trails Conservancy Program). Nationally, there have been over 550 rails-to-trails conversions representing over 6,800 miles in 45 states. In Michigan, currently 1,200 miles of such trails connect a variety of destinations.

Nationally, the designated North Country National Scenic Trail (NST) will be traversing Calhoun County in its route from North Dakota to New York. The NST links areas of historic, natural, cultural, and scenic importance along its route. When completed, the NST will be the longest continuous trail in the nation, covering over 4,000 miles. The NST effort is expected to be jointly signed along with some of Battle Creek's Linear Park and Calhoun County's trailway as it makes its way through the county.

The Michigan Department of Transportation (MDOT) Southwest Region Office has developed a reference map for non-motorized routes and trails which exist in each of the counties in its region. The map was prepared by the Southwest Michigan Planning Commission and is available through the MDOT Transportation Service Center offices. The map provides a more regional perspective of the non-motorized trails that currently exist. The map was recently updated for distribution in 2021.

In the BCATS area, the City of Battle Creek developed a Linear Park system many years ago with 16 miles of non-motorized trails, primarily located in the area surrounding downtown Battle Creek. In 2002, the system was expanded by an additional mile with a connection to Irving Park on Battle Creek's northwest side by utilizing a federal Transportation Enhancement grant. Pennfield Charter Township's

master plan includes a recommendation for development of a trailway to extend a non-motorized facility from the City of Battle Creek's Linear Park northward along the Battle Creek River and/or Wanondoger Creek. There is also a recommendation to develop a bike route along Pennfield, McAllister and Brigden Roads in Pennfield Township, in coordination with the Calhoun County Road Commission (CCRC).

The CCRC has identified a corridor across the whole county for a trailway, mostly in the eastern section of the BCATS area and extending east into the remainder of the county. Some components of this trailway have already been constructed, including a portion around the Ott Biological Preserve in 2014. Calhoun County has a Calhoun County Parks and Recreation Master Plan detailing planned development of its trails county-wide. Emmett Charter Township has proposed bike lanes along several roadways in its jurisdiction. Some of these lanes have been included as part of recent roadway projects. MDOT and the City of Springfield completed a vital connection to the City of Battle Creek's Linear Park along M-37 (Helmer Road) on the west side of the metropolitan area in 2008. MDOT added a sidewalk along M-37 (Helmer Road) from the end of the Springfield path, south to connect with the City of Battle Creek's sidewalk and paths along Helmer Road south of Columbia Avenue.

The City of Battle Creek has developed an extensive *Non-Motorized Transportation Network Master Plan*, which was adopted by the Battle Creek City Commission in March, 2006 and which is revised on a periodic basis. This Plan is a 20-year vision for the City's non-motorized system and is currently undergoing an update. The existing Plan was prepared with the assistance of consulting firm Wade Trim and incorporated an extensive amount of public involvement in its development. Several short-term actions were identified in the Plan that are designed to implement a connected non-motorized system for not only Battle Creek, but Calhoun County and the region. These efforts included:

- incorporating the *Non-Motorized Transportation Network Master Plan* into the City of Battle Creek's Comprehensive Master Plan
- installing bike racks on Battle Creek Transit line-haul buses
- development of a citywide bike rack program targeting not just City of Battle Creek parks, schools and the library but also major employers, the downtown, hospitals, the industrial park, the retail mall, and Binder Park zoo
- expanding opportunities for water travel on the area's rivers (an effort has been underway for several years to explore opportunities for white water rafting along sections of the rivers in downtown Battle Creek)
- public education/media campaign to encourage safe and proper use of the non-motorized system
- establish a maintenance program and financial support for the expanding non-motorized system
- development of a coordinated signage and way-finding program for the non-motorized system

In reviewing the status of non-motorized facilities within the BCATS area, the local agencies have had an aggressive program to expand the areawide non-motorized system. Battle Creek Transit has completed installation of bike racks on its entire fleet of large buses, as called for in the listing above. BCATS plans to support the plans of the local agencies within the programming of its own long range transportation plan. There continues to be no need to recreate the excellent processes used by the local units of government for determining non-motorized needs.

The City of Battle Creek's update process for the 2006 Plan is undergoing a refresh of the process and is expected to be ongoing through 2022. The City of Battle Creek has entered into an agreement with Bird electric scooters to add another option for mobility within the City that lands between the motorized and non-motorized options. The non-motorized update so far has currently identified a significant amount of "needs" in regard to this system. The listing has not been prioritized, but includes approximately about 80 identified road segments, as well as several linkage and crosswalk recommendations. Table 7-1 lists the highest priority non-motorized improvements currently being considered for inclusion in the Plan update. The projects within the listing have not been prioritized.

TABLE 7-1
City of Battle Creek
HIGH PRIORITY IMPROVEMENTS - NON-MOTORIZED

Road	Limits	Length (miles)	Recommendation (Primary)	Recommendation (Secondary)
Golden Avenue	Capital Ave. SW to M-66 (both sides of the street)	1.0	Bike lanes	Wide paved shoulder
28th Street S	Columbia Ave. to Hupp Road	0.4	Multi-use path on west side of street	Wide paved shoulder on both sides of street
Blackhawk Drive	Chalmers to 24th Street S (both sides of the street)		Bike lanes	---
24th Street S	Hupp Road to Gethings (both sides of the street)		Bike lanes	Wide paved shoulder
Glenn Cross Road	Capital Ave. SW to M-66 (both sides of the street)	0.8	Buffered bike lanes; Road diet	Bike lanes; Road diet
Minges Creek Place	Glenn Cross Road to Beckley Road (both sides of the street)	0.5	Bike Lanes	Wide paved shoulder
Highland Blvd. W	End of Highland Blvd. to Helmer Road N		Multi-use path to connect side along Helmer Rd. to end of Highland Blvd.	---
26th Street S	Iroquois St. to Columbia Ave.	0.25	Sidewalk	Wide paved shoulder
Linear Park/Capital Ave. NE	Intersection	---	Add refuge island	---
Linear Park/ McCamly Street	Intersection	__	Add refuge island	---
Linear Park/ N. Division Street	Intersection	---	Add refuge island	---
Parkway Drive	Washington Ave. To Helen M. Montgomery Ave. (both sides of the street)	0.5	Bike lanes	Sharrows and signage
Hamblin Avenue	S. Washington Ave. to E. Michigan Ave. (both sides of the street)	0.9	Buffered bike lanes	Bike lanes
Willard Ave. E	Eldredge St. To Fell Park	---	Complete sidewalk gaps	---
Claude Evans Park	N. Washington Ave. to the Linear Park	---	Connect sidewalk between limits listed	---

CHAPTER 8

INTERMODAL CONSIDERATIONS

TRANSIT, TAXICAB, INTERCITY BUS AND RIDESHARING

TRANSIT

Public transportation service in the area encompassed by BCATS is currently provided by Battle Creek Transit (BCT). According to BCATS' 2010 population estimates, approximately 75% of the BCATS area population resides within ¼ mile of the fixed-route line-haul service (transportation service operated over fixed-routes on a regular schedule). BCT's demand response service operates throughout the City of Battle Creek, City of Springfield, and the charter townships of Bedford, Pennfield, and Emmett.

From 1932 to 1967, transit service was privately operated by the Battle Creek Coach Company, without any local government support. From 1967 to 1972, the Coach Company provided service under contract with the City of Battle Creek, which subsequently purchased the Coach Company. In July, 1977, public transportation service became a complete City of Battle Creek function known as Battle Creek Transit (BCT). BCT is currently located in a downtown Battle Creek facility which houses the administrative, dispatching, maintenance, and bus storage functions in three separate buildings. These BCT facilities are located separately from the downtown transfer station for its buses and the intermodal center which is near the transfer station and provides for connectivity between multiple modes of transportation.

TABLE 8-1
BATTLE CREEK TRANSIT BUS STOP AMENITIES

ROUTE	MILES	STOPS	BENCHES	SHELTERS
1W - West Michigan	9.5	84	5	4
2E - Emmett-East Ave	6.4	46	6	4
2W - Columbia-Territorial	12.7	48	3	2
3E - Main-Post	5.8	37	6	3
3W - Kendall-Goodale	7.0	53	7	4
4N - NE Capital	6.7	39	4	2
4S - SW Capital	14.1	67	6	3
5W - Ft Custer-VA Hosp	20.0	69	4	4
SYSTEM TOTALS	**82.2**	**443**	**41**	**26**

BCT operates its line-haul service on eight (8) fixed-routes, at thirty to sixty minute intervals - depending on the route - between the hours of 5:15 am and 6:45 pm on weekdays and from 9:15 am to 5:15 pm on Saturdays. No Sunday service is provided. BCT's fleet currently consists of thirteen (13) traditional large buses for its line-haul service and seven (7) van-type vehicles for demand-response operations. As of July 2021, the average age of BCT large buses was 11 years. Federal guidelines dictate that large buses can be replaced at 10-12 years of age, or at 350,000 miles. In 2020, BCT received a grant to replace up to fourteen (14) vehicles. The plans for the next 25 years call for replacement of any remaining large and small buses and vans based on the allowed life

expectancy. BCT has established an ongoing vehicle replacement program that is primarily dependent on discretionary federal monies for implementation. Replacement buses are required to be wheelchair accessible. Bus shelters and benches are provided and maintained by BCT along its routes (see Table 8-1). BCT plans to rotate replacement of shelters on an on-going basis as funding is available, addressing those in the worst condition first. Funding has been allocated for a shelter replacement project with fiscal year 2021 and 2022 funds. As new destinations develop, BCT evaluates the need for service and service amenities for those locations.

BCT will be replacing its existing mobile data computers (MDC), automatic vehicle locators (AVL), and gobal positioning system (GPS), as well as other intelligent transportation systems (ITS). This replacement will not only help optimize fleet performance, but will also provide transit riders with a safe, quality experience thereby delivering greater livability to the community.

BCT will be updating its communication equipment, as its current technology has met its useful life. This replacement equipment will include bus radios, base units, and handheld radios, along with any other equipment necessary to bring the technology up to date.

BCT also plans to update its farebox system as technological advances dictate changes in the way farebox revenues are collected and administered. Each year, BCT allocates a prescribed amount of its federal funding to address safety and security needs of its operation. Examples of safety projects BCT has implemented inlcude: improved facility security equipment; replacement of security cameras on the buses; cameras at the Transit Transfer Station; and cameras on the exterior of the BCT administrative building

A schedule of capital improvements for BCT has been provided to BCATS. The schedule is the basis for the recommended Plan projects for transit.

BCT has successfully implemented its goals in meeting the requirements of the Americans with Disabilities Act, (ADA), to provide for the accessibility of persons with disabilities. Details may be obtained from BCT by calling (269) 966-3474. Some senior service agencies, social service organizations and private non-profits in the BCATS area offer smaller-scale transit services for their clients. These agencies are eligible for certain categories of funding that are "passed through" BCT and which are included, as applicable, in the BCATS Transportation Improvement Programs. This represents a very small portion of the program as these agencies typically apply for one small demand-response vehicle at a time.

In 2020, BCT, in collaboration with Community Action and through a Michigan Department of Transportation Service Initiatives grant, piloted BCGo (which is a Calhoun County Coordinated Mobility Pilot). This pilot is designed to demonstrate the feasibility of coordinated transportation throughout Calhoun County utilizing an on-demand platform. This is a "shared ride" service that is available to take users to any location within the County during operating hours, as availability permits. It is BCT's desire that this program continue, dependent upon the availability of funding. There are on-going discussions about a single county-wide transit system. This is a topic for consideration in the next MTP update.

With the services of a consultant firm, BCT completed a study in 2019 which developed a comprehensive transit master plan designed to improve the effectiveness and responsiveness of public transit to the Battle Creek service area. The study included evaluation of the transit operations of the City of Battle Creek, through Battle Creek Transit. This encompassed the financial implications of service changes, a comprehensive asset management plan (fleet, facilties, security and equipment) and a route and ridership analysis. The Plan identified gaps in transit travel needs within the existing service area. Although financial considerations have slowed the implementation of the Master Plan, BCT is working toward its implementation.

TAXICAB SERVICES - There currently no taxicab services licensed to operate transportation in the BCATS area. In the 2025 Transportation Plan, there were five cab operators and in the 2040 MTP there was still one operator. There are also several limousine operators licensed in the City of Battle Creek to provide specialty service. Cab and limousine services are licensed and are regulated by the City of Battle Creek in order to operate within the City Limits. There is also a service called "Mobility Transport LLC" that provides accessible vehicle transportation. It is unknown if that service has become licenced to operate in the City of Battle Creek.

INTERCITY AND CHARTER BUS SERVICES - There are two intercity bus companies operating regularly-scheduled services in and out of Battle Creek. These companies are Greyhound Bus Lines and Indian Trails Motorcoach. These operators utilize the Intermodal Terminal in downtown Battle Creek as their transfer center. Service is provided once or twice a day coming into and leaving Battle Creek, generally bound for other Michigan cities. As noted in the Rail section of Chapter 6, Indian Trails is partnering with Amtrak on some connecting service for Amtrak passengers. Other bus companies provide charter service on an on-call basis to the greater Battle Creek area.

RIDESHARING - The BCATS area has traditionally been included within the Kalamazoo Local Ridesharing Office (LRO), which encompassed the counties of Barry, Branch, Calhoun, Kalamazoo, and St. Joseph. The Kalamazoo LRO function is performed by Kalamazoo Metro Transit, the urban transit provider in Kalamazoo, MI. However, the ridesharing program is somewhat dormant at present, although Kalamazoo Metro Transit still maintains the LRO phone number. Ridesharing remains an alternative to the single person commute and benefits air quality, congestion, and safety as the number of vehicles using the system is reduced.

MDOT maintains two carpool lots within the BCATS area for use by commuters. They are located at the I-94 Exit 100 at Beadle Lake Road and at I-94 Exit 92 at Skyline Drive. These lots have been expanded as demand for carpooling spots increases. The Beadle Lake Road lot currently has 53 spaces and the Skyline Drive lot has 69 spaces. Both lots are utilized extensively. The paved lots are maintained by MDOT. Future programing will focus on the on-going preventative maintenance work needed at these carpool lots and if any additional lot locations need to be identified. A new carpool lot has just been added by MDOT at the newly redesigned Exit 88 on I-94. This is located just to the west of the BCATS area, approximately four miles west of the Calhoun County/City of Battle Creek boundary.

Further information about ridesharing can be obtained from the Kalamazoo LRO, Office of the Special Projects Coordinator, at Kalamazoo Metro Transit, 530 N. Rose Street, Kalamazoo, MI, (269) 337-8394. The LRO has an informative web page at www.KMetroRide.com (see Figure 8-1).

FIGURE 8-1

LOGIN REGISTER

METRO TRANSIT

Commute Smart. Be Rewarded.

(../Public/Home.aspx?CustomSubSite=None)
Find Commuting Partners Log My Trips Carpool Transit Biking

Employer Information (../Public/PublicPage.aspx?ItemName=Employer+Information&FileType=HTML)

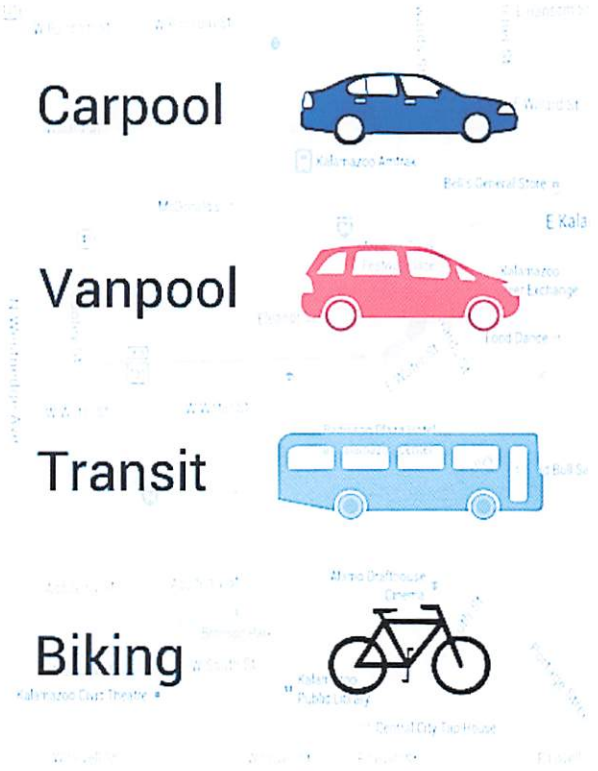
About Us (../Public/PublicPage.aspx?ItemName=AboutUs&FileType=HTML)

(269) 342-RIDE Toll-Free
1-877-951-POOL

Kalamazoo Metro Ridesharing is a ride matching service that allows commuters to find carpool, vanpool, transit, or bike options to get around Kalamazoo County and Southwest Michigan.

Signing up has its benefits, including **FREE** carpool and vanpool matching services, transit information, and tips on how to save money on commuting to and from work or around town.

Employers can offer smart commuting options to employees to help get them to work. By helping with providing carpool, vanpool, bus and bike options, employees can get back and forth to work with others while saving money!



For more information on Kalamazoo Metro Ridesharing's services: (269) 342-7433 Toll-free 1-877-951-POOL

Contact us by email to receive more information.

You must be 18 or older to participate in this program.

Looking for Metro Connect, Metro's countywide curb to curb service? Call 337-8477 or visit www.kmetro.com/metro-connect.

This service is available to anyone in Kalamazoo County and travels around Kalamazoo County and to Veteran's Hospital in Battle Creek.

COMMUTING SMART AROUND KALAMAZOO PAYS OFF! Since June 1, 2015 ....

16,221 miles of shared commutes	**$2,569 money saved**	**508 gallons fuel saved**
8 lbs NOx saved	**100.1 lbs CO saved**	**9,988 lbs green house gases saved**

Helpful Resources:

Carpooling
Carpool Lots
Rideshare Offices
MiDrive Traffic Information

Vanpooling
Enterprise Vanpools
MichiVan vRide Vanpools

Transit & Trains
Kalamazoo Metro Transit
Amtrak
Indian Trails & Greyhound

Other Information
Bike Friendly Kalamazoo
Kalamazoo Air Quality

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Information
Carpool / Vanpool Tips (../Public/PublicPage.aspx?ItemName=Carpooling+Tips&FileType=HTML)
Carpool / Vanpool CheckList (../Public/PublicPage.aspx?ItemName=Discussion+Points&FileType=HTML)

FAQ
Carpools (../Public/PublicPage.aspx?ItemName=Carpooling+FAQs&FileType=HTML)
Rides to Work (https://www.kmetroride.com/PublicPage.aspx?ItemName=Employer+Information&

Commute Cost Calculator (../Public/PublicPage.aspx?ItemName=CommuteCost&FileType=ASCX)

Contact Us

CHAPTER 9

COORDINATION with the STATE LONG RANGE PLAN, LONG RANGE PLANNING, AND OTHER STATE PLANS

The MAP-21/FAST Act legislation maintains the requirements of prior legislation for a statewide long range transportation plan (SLRP). The state plan must cover a minimum twenty-year time frame at the time of adoption and provide for the development and implementation of the multi-modal transportation system in the state. The state plan must also be developed in cooperation with the Metropolitan Planning Organizations (MPOs) for the areas of the state where there are MPOs. Upon completion of the plan, future transportation improvements need to be consistent with the plan. For that reason, the State of Michigan's Long Range Plan (SLRP) is a broad policy-oriented document which can be used to guide transportation investment decisions at all levels of government. There are "Corridors of Highest Significance" but no specific projects identified. Broad, policy strategies are given for each of these multi-modal corridors. The plan is designed to be flexible enough to accommodate the rapidly changing transportation demands of people operating in a competitive global economy.

STATE OF MICHIGAN LONG RANGE TRANSPORTATION PLAN

The Michigan Department of Transportation recently completed an update of its long range transportation plan. The *Michigan Mobility 2045 (MM2045)* transportation plan was approved by the State Transportation Commission in the fall of 2021. The vision for transportation in Michigan is identified in the Plan as:

> *"In 2045, Michigan's mobility network is safe, efficient, future-driven, and adaptable. This interconnected multimodal system is people focused, equitable, reliable, convenient for all users and enriches Michigan's economic and societal vitality. Through collaboration and innovation, Michigan will deliver a well-maintained and sustainably-funded network where strategic investments are made in mobility options that improve quality of life, support public health, and promote resiliency."*

The vision is then defined in some measure of detail by "Guiding Principles" and further by "Goals and Objectives" to provide guidance for planning and implementing future investments. Six goal areas are identified for the MM2045 Vision. These are: safety and security; network condition; mobility; quality of life; economy and stewardship; and partnership.

The MM2045 outlines utilizing eight (8) implementation strategies to implement the plan. These strategies include:

1. Prioritizing safety
2. Managing resources responsibly
3. Providing access and mobility for all
4. Supporting Michigan's health
5. Building resilience
6. Working together
7. Technology
8. Economic vitality

The Michigan Department of Transportation utilized an extensive public involvement process in the development of the MM2045 plan

BCATS' goals for its 2045 Metropolitan Transportation Plan (MTP) are consistent with the State's goals.

The *MM2045* plan continues the identification of "Corridors of Highest Significance" when determining how to achieve the goals of the MM2045. The corridors, designated now as Strategic Multimodal Corridors, have been re-designed to provide consistency with the federal requirements, emphasizing the National Highway System (NHS) within the state's required Transportation Asset Management Plan (TAMP). The portion of Interstate 94 (I-94) which traverses the BCATS area is included in this listing. The national/international and statewide corridors in Michigan carry a high percentage of the state's entire movements across all modes of transportation. These corridors move an increasing number of people, and an increasing amount of freight as well.

MDOT also identifies how the MM2045 will also address the federal planning requirements and planning factors associated with federally required state long-range plans.

METROPOLITAN PLANNING ORGANIZATION PLANS

MAP-21/FAST ACT legislation, as well as its predecessor (SAFETEA-LU), require development of long range transportation plans in each of Michigan's urban areas with over 50,000 population by the Metropolitan Planning Organizations (MPOs). Each of the MPOs in Michigan is responsible for developing its own plan based on expected revenues over a minimum twenty-year time frame. Unlike the statewide plan, the MPO plans are required to be financially constrained and identify specific projects wherever possible, rather than simply corridors. MPO plans must also undergo air quality conformity testing, if applicable, before approval is granted. BCATS periodically reviews the long range transportation plans of other MPOs along the 1-94 corridor, since there are common interests dealing with that "Corridor of Highest Significance."

STATE HIGHWAY SAFETY PLAN

Federal legislation also requires states to develop a state Strategic Highway Safety Plan (SHSP). In Michigan, the "Governor's Traffic Safety Advisory Commission" (GTSAC) prepared the initial SHSP and has completed subsequent updates to the Plan. The latest SHSP covers the 2019-2022 time-period and was published in December 2019. The 2019-2022 State of Michigan SHSP, addresses four categories of interest and specific emphasis areas under those headings with the goal of reducing Michigan's fatalities from 974 in 2018 to 945 in 2022. There is also a goal to reduce serious injuries in Michigan by 10.6%.

The SHSP identifies four (4) broad emphasis areas where resources should be focused. They are:

- high-risk behaviors
- at-risk road users
- engineering infrastructure
- system administration

Eleven (11) action teams are now operating to provide targeted guidance for meeting the overall goals. The action teams fall under the emphasis areas as follows:

High-Risk Behaviors
- Distracted Driving
- Impaired Driving
- Occupant Protection

At-Risk Users
- Commercial Motor Vehicle Safety
- Motorcycle Safety
- Pedestrian and Bicycle Safety
- Senior Mobility and Safety
- Drivers Age 20 and Younger

Engineering Infrastructure
- Traffic Safety Engineering

System Administration
- Traffic Incident Management
- Traffic Records and Information Systems

The strategies from each of these teams, plus the data used to measure success in reaching the overall targets for fatalities and serious injuries, were considered in developing projects for BCATS' 2045 Metropolitan Transportation Plan.

As part of the federal planning requirements noted earlier in this chapter, the state is required to set specific, non-aspirational safety targets each year regarding overall fatalities and serious injuries. In addition, targets must be identified related to non-motorized fatalities and injuries. The targets that MDOT sets impact the metropolitan planning organizations. Each MPO must either agree to support the state targets or set targets of its own in regard to the various target categories. BCATS has consistently supported the state targets as it relates to this discussion of safety. Further information about safety targets can be found in Chapter 10.

OTHER STATE PLANS

Governor's Executive Directive 2020-10 Building a Carbon-Neutral Michigan
Governor's Executive Order 2020-182: Council on Climate Solutions

With the change in administration within the Michigan Governor's office since the last BCATS MTP was adopted in 2016, there have been new developments related to climate and energy.

A significant development was action taken by Michigan's Governor Whitmer to sign Executive Directive 2020-10 on September 23, 2020. This Executive Directive formally sets a goal of economic decarbonization in Michigan by 2050. To ensure progress toward that goal, the Executive Directive provides that Michigan will seek to reach a 28% reduction below 1990 levels of greenhouse gas emissions by the year 2025. The Executive Directive also tasks the Department of Environment,

Great Lakes and Energy (EGLE) in having its Office of Climate and Energy develop a “MI Healthy Climate Plan” which is to serve as an action plan for the state to reduce greenhouse gas emissions. The plan is to provide near-term objectives that can be achieved in five years. This “MI Healthy Climate Plan” was to be completed by December 31, 2021. An annual report to the Governor’s office detailing the implementation of the Plan is due by December 31st each year after completion of the initial document.

Also on September 23, 2020, the Governor signed Executive Order 2020-182 to create an advisory Council on Climate Solutions, organized under the EGLE Office of Climate and Energy, to provide guidance to the Department in the development of the required MI Healthy Climate Plan. The 23 member Council is to have 9 members representing various state departments and 14 residents of the state appointed by the governor representing a range of “sectors, experiences, and expertise relevant to this issue”, as stated in the Executive Order.

Once the Plan is completed and accepted by the Governor, impacts from the Plan on the MPO transportation planning process will be better able to be evaluated.

State Freight and Rail Plans

The Michigan Mobility 2045 (MM2045) effort has incorporated the state’s freight plan and the state’s rail plan within its development activities.

CHAPTER 10
PERFORMANCE-BASED PLANNING

A key feature of the Fixing America's Surface Transportation (FAST) Act of December, 2015 was the establishment of a "performance and outcome based" program, originally introduced through the Moving Ahead for Progress in the 21st Century (MAP-21) Act. The objective of a performance based program is for states and MPOs to invest resources in projects that collectively will make progress toward the achievement of nationally set goals. 23 CFR 490 outlines that the national performance goals for the federal-aid highway program are required to be established in seven (7) areas: safety, infrastructure condition, congestion reduction, system reliability, freight movement, environmental sustainability, and reduced project delivery delay.

PERFORMANCE MEASURES

The regulations required the U.S. Department of Transportation/Federal Highway Administration to establish final rules on performance measures to address the seven areas in the legislation, resulting in the following areas being identified as measures for the system:

- pavement condition on the Interstate system and on the remainder of the National Highway System (NHS)
- performance (system reliability) of the Interstate system and the remainder of the NHS
- bridge condition on the NHS
- fatalities and serious injuries, both number and rate per vehicle mile traveled, on all public roads, plus bicycle and pedestrian fatalities and serious injuries
- traffic congestion
- on-road mobile source emissions
- freight movement on the Interstate system

In addition, the Federal Transit Administration (FTA) was charged with developing a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their life cycle. The Transit Asset Management Final Rule 49 CFR part 625 became effective October 1, 2016 and established four performance measures. The performance management requirements outlined in 49 CFR 625 Part D are a minimum standard for transit operators and involve measuring and monitoring the following:

- Rolling stock - vehicles used for providing public transportation, revenue and non-revenue
- Equipment - articles on non-expendable, tangible property with a useful life of at least one year
- Facilities - building or structure used in providing public transportation

- Infrastructure - means the underlying framework or structures that support a public transportation system

The time-line for implementation of the national performance measures was determined upon when the final rule was published for each measure, which then established an effective date for that measure.

Table 10-1: National Performance Measures - Time line for Implementation

Final Rule	Effective Date	States Set Targets by (1 yr)	MPOs Set Targets by	MTP and TIP Inclusion
Safety Performance Measures	April 14, 2016	August 31, 2017	Up to 180 days after the states set targets, but not later than Feb. 27, 2018	Updates or amendments on or after May 28, 2018
Pavement/Bridge Performance Measures	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) set target or by November 16, 2018	Updates or amendments on or after May 20, 2019
System Performance Measures	May 20, 2017	May 20, 2018	May 27, 2018	Updates or amendments on or after May 20, 2019
Statewide non-metropolitan and metropolitan planning	May 20, 2017	No targets, MPO planning process to be complaint with planning regulations of MAP-21/FAST Act by May 27, 2018		
State Asset Management Plan	October 2, 2017	By April 30, 2018, State DOTs submit initial plans describing asset management plan processes. By June, 2019, State DOTs submit fully compliant asset management plan		
Transit Asset Management Plan	October 1, 2016	January 1, 2017	Optional reporting year for 2017, mandatory for 2018 - State sets targets for rural transit providers/urban providers will set own targets, updated annually - Asset Management Plans due October 1, 2018	

Final Rule	Effective Date	States Set Targets by (1 yr)	MPOs Set Targets by	MTP and TIP Inclusion
Transit Safety Plan **(dates extended due to pandemic)**	July 19, 2018	Rule effective July 19, 2019 - by July 20, 2020 transit providers to have Public Transportation Agency Safety Plan in place with a requirement for an annual update		

On July 19, 2018, FTA published the Public Transportation Agency Safety Plan (PTASP) Final Rule, which requires certain operators of public transportation systems that receive federal funds under FTA's Urbanized Area Formula Grants to develop safety plans that include the processes and procedures to implement Safety Management Systems (SMS). The Plan must include safety performance targets. Transit operators also must certify they have a safety plan in place, originally meeting the requirements of the rule by July 20, 2020. The deadlines for the PTASP were extended due to the COVID-19 pandemic. The plan must be updated and certified by the transit agency annually.

PERFORMANCE TARGETS

State Targets

Within one year of the U.S. DOT final rule on performance measures, states were required to set performance targets in support of those measures. States could set different performance targets for urbanized and rural areas. To ensure consistency, each state must, to the maximum extent practicable:

- coordinate with an MPO when setting performance targets for the area represented by that MPO; and
- coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO [§1202; 23 USC 135(d)(2)(B)]

The Statewide Transportation Improvement Program (STIP), state asset management plans under the National Highway Performance Program (NHPP), and state performance plans under the Congestion Mitigation and Air Quality Improvement Program are required to include performance targets. Additionally, state and MPO targets should be included in statewide transportation plans.

MPO Targets

Within 180 days of the state, and/or providers of public transportation, setting performance targets, the regulations require that MPOs set performance targets in relation to the performance measures (where applicable). To ensure consistency, each MPO must, to the maximum extent practicable, coordinate with the relevant state and public transportation providers when setting performance targets. MPO Metropolitan Transportation Plans (MTPs) and TIPs are required to include State and MPO targets.

Table 10-2: Performance Measures and Status of BCATS' Action on Target Setting

Area	Measures	MPO Target Setting Status
Safety Performance	Number of fatalities; Rate of fatalities Number of serious injuries; Rate of serious injuries Number of non-motorized fatalities and non-motorized serious injuries	Approved adoption/support of 2022 statewide targets Sept. 22, 2021 (MPO approves updated targets annually).
Pavement and Bridge Asset Management	Percent NHS Bridges in good and poor condition Percent Interstate pavement in good and poor condition Percent Non-Interstate NHS pavement in good and poor condition	Approved adoption/support of state targets for pavement Oct. 24, 2018 and updated bridge Jan. 27, 2021
System Performance and Freight	Interstate travel time reliability Non-Interstate travel time reliability Truck travel time reliability	Approved adoption/support of state targets for system performance and freight (October 24, 2018)
Congestion Mitigation and Air Quality	Peak hour excessive delay per capita Percent of non-single occupancy vehicle travel Total emissions reduction	This performance measure will not apply to BCATS as a MPO under 200,000 population
Public Transportation	Transit Asset Management (TAM) Plans (rolling stock, equipment, facilities, and infrastructure) Public Transportation Agency Safety Plan (fatalities, injuries, safety events, system reliability)	Most current local State of Good Repair Targets (2022) adopted/supported Jan. 26, 2022; TAM Plan by transit agency completed in Sept., 2018; Transit Safety Plan completed by transit agency June, 2020 , BCATS action July 15, 2020.

PERFORMANCE-BASED PLANNING IN THE BATTLE CREEK, MI URBANIZED AREA

The Battle Creek Area Transportation Study (BCATS) has several systems in place to address the mandated performance measures and targets. BCATS maintains a traffic count program which has partially been integrated into a traffic count database system. This system is projected to facilitate improved data for the travel demand model which forecasts future traffic congestion. The MDOT sponsored collection of pavement condition data on federal-aid eligible roadways, through the statewide Asset Management program, provides BCATS with data (both current and historic) to address the status of pavement conditions in the BCATS area. MDOT also collects data through the Highway Performance Monitoring System (HPMS). BCATS has access to detailed traffic crash data for its area through its subscription to the Traffic Crash Analysis Tool (TCAT) program of the Transportation Improvement Association (TIA) of Michigan and through the Crash Facts program of the Michigan State Police/Office of Highway Traffic Safety.

Most of the performance targets are directed at the National Highway System, which is almost totally under the jurisdiction of MDOT in the BCATS area. Therefore, BCATS has coordinated with MDOT (as set forth in the federal regulations) in the development of targets for roadways in the BCATS area subject to the NHS-based performance targets and has chosen to "support the state targets" as its official response for these categories. Any

roadways designated as NHS which are under local jurisdiction are to be assessed in conjunction with the responsible local road agency. The issue of separate targets for the MPO at any future time will be decided by the BCATS Policy Committee based on recommendations from the Technical Committee and staff.

In the process of developing this 2045 Metropolitan Transportation Plans (MTPs) and future Transportation Improvement Programs (TIPs), BCATS will assess the impact of proposed projects on the performance measure areas (and targets), as noted at the beginning of this chapter. This will be done using the best available data at the time of assessment. Projects providing a high level of benefit in meeting identified performance targets may be considered for priority in programming, based on the goals and objectives and performance measures of the MTP.

MPO TARGET SETTING

Safety

The first performance measure for which specific targets were required was the safety category. On August 31, 2017, the Michigan Department of Transportation (MDOT) reported to Michigan's metropolitan planning organizations (MPOs) that it had set safety targets for calendar year 2018. MDOT and Michigan's MPOs had been meeting prior to this announcement over a period of several months to discuss the setting of these performance measures. The state establishment of safety targets set in motion the clock for MPOs to decide upon their MPO safety targets within 180 days after that date, or by February 27, 2018. On January 24, 2018, the BCATS Policy Committee voted to exercise its option to "support the state targets" for the 5 categories of safety information. Since that time, MDOT has set its subsequent years of safety targets and BCATS has continued to opt to "support" the state targets each year within the time allowed for MPO action. Safety targets will continue to be developed by the state and responded to by the MPOs each year. The MTP and TIP will not be updated each year with new targets, but BCATS' action relative to the targets will be known through the action of BCATS' Committees and will be reported to MDOT.

The following tables provide Michigan Crash Trends (10-3) and the Michigan State Safety Targets for Calendar Year 2022 (10-4):

Table 10-3: Michigan State Crash Trends - 2016 - 2020

	2016	2017	2018	2019	2020
Fatalities	1,065	1,031	974	985	1,083
Serious Injuries	5,634	6,084	5,586	5,629	5,433
Non-Motorized Fatalities & Serious Injuries	740	798	740	794	742

Table 10-4: Michigan State Safety Targets - Calendar Year 2022

Safety Performance Measure	Baseline through Calendar Year 2020	Calendar Year 2022 State Safety Target
Fatalities	1,028.2	1,065.2
Fatality Rate	1.051	1.098
Serious Injuries	5,673.2	5,733.2
Serious Injury Rate	5.778	5.892
Non-motorized Fatalities & Serious Injuries	762.8	791.6

The MDOT state safety targets for calendar year 2022 were set by the state at the end of August 2021 and the MPOs had 180 days following that date to set their 2021 targets. BCATS acted to "support" the state targets on September 22, 2021.

BCATS has limited access to federal safety funds provided to the state. As a non-Transportation Management Area (TMA) MPO, BCATS' local agencies apply annually for consideration of funding for safety projects from a statewide pool of safety funds. The criteria for project selection at the state level is heavily weighted toward projects impacting fatality and serious injury crash locations. Fortunately for the BCATS area, the fatality number is low and random in nature. BCATS supports the local agencies when they decide to apply for safety funding and will add any selected projects to the current TIP as soon as a positive funding determination has been made by MDOT.

A regional traffic safety plan was completed for a five county region of southwest Michigan in 2017 by a consultant retained by MDOT. One result of the Southcentral Regional Traffic Safety Plan was the recommendation that safety projects target certain emphasis areas. The identification of the emphasis areas was based on an analysis of regional and local safety conditions, historical trends, and stakeholder input. The four highest priority emphasis areas were: lane departure, intersection safety, pedestrian and bicycle safety, and drivers age 24 years and younger. The results of the regional review were reported by county. Therefore, it is not possible to break-out the BCATS data individually for the provided data sets since the BCATS area is only equivalent to a six township area within Calhoun County. However, BCATS will evaluate the identification of potential high risk areas, segments, and intersections identified in the appendices of the Southcentral Plan as locations potentially needing further evaluation.

In the Southcentral Regional Traffic Safety Plan, the consultant identified intersection and segment data that had an excess of "expected" fatal and injury crashes on an annual basis when examining the 2010-2014 crash data. The locations were ranked as low, medium, and high for this criteria. The number of excess crashes to be expected for each of the categories was identified as: high = greater than 5, medium = 3 to 5, and low = 1 to 3.

For the intersection category, there were no high locations noted in the BCATS area. Intersection locations in the medium category included: M-89 (Michigan Avenue) at M-37 (Bedford Road), M-96 (Columbia Avenue) at Capital Avenue SW, and Capital Avenue SW at Beckley Road. Locations in the low category included: M-37 (Bedford Road) at Morgan Road, M-37 (Bedford Road) at Jackson Street, North Avenue at Emmett Street, I-94BL/M-96 (Helmer Road) at M-96 (Columbia Avenue), M-96 (Columbia Avenue) at Riverside Drive, I-94BL (Dickman Road) at Capital Avenue SW, M-89 (N. Washington Avenue) at Michigan Avenue, and Capital Avenue SW at Hamblin Avenue. The majority of these intersections include state jurisdiction trunklines that will require joint review with MDOT.

In the segment category, no segments were identified in the BCATS area, or in any location within Calhoun County, as qualifying for an excess of "expected" fatal and injury crashes on an annual basis when examining the 2010-2014 crash data. It is realized that this data is now somewhat dated and specifics for the BCATS area will be investigated for future project proposals.

The 2040 MTP included a list of safety related projects that were included in the FY 2017-2020 TIP. Eight (8) of the nine (9) projects in fiscal years 2017-2019 have been completed and one project was delayed until 2022 . FY 2020-2021 projects are reflected in the FY 2020-2023 TIP and are included in Table 10-5 beginning below, with the status of those projects noted in red. The projects on the TIP list for FY 2022-2023, as well as other future projects, are also included in the MTP. Only projects which indicate a year of construction are included in the listing.

Table 10-5: Safety Related Projects: FY 2020-2023 TIP & Future MTP Projects

Year	Project	Description	Safety Benefit
2020	Signal Upgrade project at Capital Avenue and Van Buren Street - DELAYED	Upgrade and modernize the traffic signal and interconnect to nearby signals and the City's Traffic Management Center	Provide better traffic flow, thereby reducing the potential for crashes at the intersection
2020	Intersection Signalization at Cliff Street and Raymond Road Intersection - COMPLETED	Upgrade and modernize equipment at this intersection	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2020	D Drive S at 4 Mile Road, and H Drive S at 2½ Mile Road, and D Drive N at 9 Mile Road - COMPLETED	Install overheard flashing beacons	Increase driver awareness of intersections and reduce potential for crashes
2020	Banfield Road from M-37 to Baseline Road, and N Drive N from 9½ Mile Road to 12 Mile Road - COMPLETED	Tree removal along roadside right-of-way along segments	Reduce the potential for K and A crashes along these road segments

Year	Project	Description	Safety Benefit
2020	11 intersections in the BCATS area - COMPLETED	Install dual “Stop Ahead” signs at these intersections	Increase driver awareness of the stop signs and reduce potential for crashes at the intersections
2020	Capital Avenue from the south City Limits to Beckley Road - REDUCED PROJECT SCOPE	Resurfacing project that incorporates spot sidewalk and ramp replacement	Provide enhanced, protected access for pedestrians
2020	Signal Upgrade project at Capital Avenue and Van Buren Street - DELAYED	Upgrade and modernize the traffic signal and interconnect to nearby signals and the City’s Traffic Management Center	Provide better traffic flow, thereby reducing the potential for crashes at the intersection
2020	I-94 Westbound Entrance Ramp to I-94 (from M-311) - COMPLETED	Cold mill and hot mix asphalt resurfacing of ramp	Provide a better surface for traffic utilizing the ramp to gain speed to merge onto the freeway
2020,2021, 2022,2023, 2024,2025	MDOT Southwest Regionwide Pavement Markings on Various State Trunklines - 2020 COMPLETE, 2021 ONGOING	Retroreflectivity readings, special marking application, and longitudinal marking application	Increase driver awareness of lane designations and pavement markings
2021	MDOT Southwest Regionwide on Various State Trunklines - ONGOING	Durable Pavement Marking Application	Increase driver awareness of lane designations and pavement markings
2021	D Drive S at 4 Mile Road, and H Drive S at 2½ Mile Road, and D Drive N at 9 Mile Road - COMPLETED	Install overheard flashing beacons	Increase driver awareness of intersections and reduce potential for crashes
2021	North Avenue at Emmett Street Intersection - PROJECT CANCELLED DUE TO NEGATIVE PUBLIC REACTION	Signal removal, roundabout installation, ADA improvements	Provide enhanced access for pedestrians, provide for better traffic flow with reduced severity of potential crashes,
2021	Countywide in Calhoun County (some segments in the BCATS area) - WAITING FOR TREE REMOVAL WINDOW OCT-MAR	Tree removal and clearing along roadside right-of-way for various segments	Reduce potential for K and A crashes along the road segments
2022	Morgan Road at North Avenue Intersection	Upgrade/modernize existing signals, including video detection system	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2022	U Drive N at 1 Mile Road Intersection	Install overhead flashing beacons	Increase driver awareness of intersections and reduce potential for crashes

Year	Project	Description	Safety Benefit
2022	Calhoun County Road Department - Areawide in the BCATS Area	Multiple Routes - Various Locations - tree removal	Reduce potential for K and A crashes along the road segments
2022	MDOT Southwest Region Various Locations	Installation of detection mechanisms	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2022	MDOT Marshall Transportation Service Center Various Locations	Traffic signal modernization: connected vehicle installations	Prepare traffic system to deal with future technology that will enhance safety
2022	I-94 Eastbound in Calhoun County	Install 17 additional CCTV cameras on existing dynamic message signs (DMS)	Provide traffic information to traffic management center for emergency service response time and display of safety related messages on the DMS
2023	6 ½ Mile Road at Harper Village Drive	Upgrade/modernize existing signals, including video detection system	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection
2023, 2025	MDOT Project in Calhoun County	Non-freeway signing replacement	Maintain driver awareness of necessary traffic control signing
2025	M-66 from Glenn Cross Road south to the Athens Township border	Fixed object removal	Reduce potential for K and A crashes along this segment
2026	I-94 in Calhoun County	Construct two crash investigation sites on I-94	Create ability to move incidents to a safe location out of the freeway travel lanes
2021	Intersection Signalization at Cliff Street and Raymond Road Intersection - COMPLETED	Upgrade and modernize equipment at this intersection	Provide for better traffic flow, thereby reducing the potential for crashes at the intersection

Other safety projects proposed by the local agencies for the new FY 2023-2026 TIP may not be reflected in the above listing.

Pavement

Federal regulations require that states measure, monitor, and set goals for pavement performance based upon a composite index of metrics. The four pavement condition metrics are: International Roughness Index (IRI), Cracking Percent, Rutting, and Faulting as reported by each state to the Highway Performance Monitoring System (HPMS) database. IRI and cracking percent are metrics for all road types. Rutting is only applicable to asphalt pavements and faulting is only measured for jointed concrete pavements. The rule applies

to the entire National Highway System (NHS), which includes Interstate and Non-interstate NHS. MDOT is responsible for approximately 6,080 through-lane miles of interstate in Michigan, as of 2017. The Non-Interstate portion of the system includes MDOT trunkline routes (M-routes) (about 12,082 through lane miles in 2017) and local government owned non-trunkline roads (about 4,271 through lane miles in 2017). Local agencies are responsible for 19% of the NHS route mileage in Michigan. In the BCATS' area, MDOT has a total of 160.5 through lane miles of NHS roadways and the local units are responsible for 16.93 through lane miles of the NHS system. According to MDOT's 2017 data, 11.8% of the NHS Interstate pavement thru miles in the BCATS area are in poor condition and 26.4% of the NHS Non-Interstate pavement thru miles in the BCATS area are in poor condition.

In May 2018, MDOT established 2-year and 4-year targets for a 4-year performance period for pavement condition on the National Highway System (NHS) in response to the federal regulations. The 4-year performance period includes January 1, 2018 to December 31, 2022. In addition, biennial progress reports are to be submitted to FHWA. There are a total of three progress reports due within the 4-year performance period: a Baseline Performance Report due October 1, 2018; a Mid-Performance Period Progress Report due October 1, 2020; and a Full Performance Period Progress Report due October 1, 2022. FHWA will determine if significant progress has been made from report to report. Based on the metrics described above and the rating of roads along a metric value range, there are four measures being used to assess pavement condition: % of Interstate road pavement in "Good" condition; % of Interstate road pavement in "Poor" condition; % of Non-interstate NHS pavement in "Good" condition; and % of Non-interstate NHS pavement in "Poor" condition.

MPOs are required to establish four-year targets for these measures. As with the other performance measures, there is the option to agree to plan and program projects that support MDOT's targets, or establish their own targets for their Metropolitan Planning Area (MPA). MPO targets for pavement were due November 16, 2018. BCATS acted to "support" the MDOT pavement targets on October 24, 2018, see Table 10-6 below:

Table 10-6: Michigan State Pavement Targets

Pavement Performance Measure	Baseline Condition Calendar Year 2017	2-Year Targets	4-Year Targets
% Interstate Pavement in Good Condition	56.8%	N/A	47.8%
% Interstate Pavement in Poor Condition	5.2%	N/A	10.0%
% Non-Interstate NHS in Good Condition	49.7%	46.7%	43.7%
% Non-Interstate NHS in Poor Condition	18.6%	21.6%	24.6%

Pavement projects on NHS roadways in the BCATS MPA in the 2020-2023 TIP and in the years 2024 and beyond in the MTP include the following listed in Table 10-7:

Table 10-7 NHS Pavement Projects in the FY 2020-2023 TIP and Future MTP Years

Year	Project	Description	Impact on Condition
2020	I-94 WB entrance ramp at Exit 104 interchange - COMPLETED	Reconstruction of loop entrance ramp	Improve surface condition and IRI, eliminate any cracking and rutting or faulting issues
Year	**Project**	**Description**	**Impact on Condition**
2020	I-94BL (Dickman Road) from M-96/M-37 (Helmer Road) east to southbound I-194/M-66 entrance ramp- COMPLETED	Road rehabilitation - mill and two course asphalt resurfacing	Improve surface condition and IRI
2021	M-96 (Columbia Ave.) from Helmer to Riverside - COMPLETED	Milling and one course asphalt overlay with sidewalk improvements	Improve surface condition and IRI
2022	I-94 E & W from west of Helmer Road to M-311	Milling and two course asphalt overlay resurfacing	Improve surface condition and IRI
2022	I-94W from 100' east of I-94BL east to Emmett Township boundary (as part of a larger project)	Milling and one course asphalt overlay resurfacing	Improve surface condition and IRI

Bridge

The federal performance measures require that state DOT's establish 2-year and 4-year targets for a 4-year performance period for the condition of infrastructure assets. State DOT's established their first statewide targets by May 20th, 2018. As with the pavement condition reporting, state DOTs are required to submit three performance reports to FHWA within the 4-year performance period: a Baseline Performance Report by October 1, 2018; a Mid-Performance Period Progress Report by October 1, 2020; and a Full Performance Period Progress Report by October 1, 2022. The two performance measures for assessing bridge condition are: % of National Highway System (NHS) bridges in "Good Condition"; and % of NHS bridges in "Poor Condition".

The MPOs were to establish targets by either supporting MDOT's statewide target(s), or defining a target unique to the metropolitan area each time MDOT sets a target. As part of the Full Performance Period Progress Report, the MPOs will report their established targets, performance, progress, and achievement of the targets to MDOT in a manner that is agreed upon by both parties and documented in the Metropolitan Planning Agreement. MPOs are not required to report separately to FHWA.

In May, 2018, MDOT adopted a set of bridge performance measures for the NHS bridges in the state. BCATS acted to "support" the state targets on October 24, 2018. BCATS supports the maintaining of NHS and local bridges within its area. However, bridge funding is administered at the state level by MDOT. MDOT evaluates bridges on interstate and state trunkline routes for necessary projects and funding. A statewide Local Bridge Advisory Board allocates funds for the Michigan Local Bridge Program based on available funds and weighted ratios. Non-NHS bridges are not included in the target setting process.

In 2018, MDOT was projecting "condition improvement" for the NHS bridges in the state based on projects programmed through the MDOT and local bridge programs described above. Deterioration was estimated based on comparing network wide deterioration rates to the age and condition of each major component of each structure. Since that time, four big bridges on the state's NHS system deteriorated from good condition to fair condition faster than expected during the two-year performance period. The four bridges in question total just under 4% of the statewide NHS deck area, which has a significant impact on the overall percent rates.

The targets are highly dependent on the deck area of bridges that fall to poor, and so the smaller the inventory considered, the higher potential for a single bridge to skew results. The statewide targets are assumed to be less variable than for an individual MPO. Therefore, it was prudent for BCATS to support the state bridge targets, as noted above.

In 2020, MDOT was tasked with the process of evaluating the mid-performance period for actual performance in 2020 for bridges. As of March 2020, approximately 2.3 million square feet of state and locally owned NHS bridges in Michigan fall into the poor condition category. This translates to the local agencies in Michigan having 14% of NHS bridge deck area and 17% of the total number of NHS bridges under their jurisdictions in poor conditions. There is a penalty threshold of no more than 10% of NHS bridges, measured by deck area, being classified as structurally deficient. However, since the local NHS deck area is only 6% of the statewide total deck area, the total system is below the penalty threshold. MDOT's NHS bridge condition by deck area is under the 10% threshold, at 6% poor condition. As part of the mid-performance period reporting process, MDOT was allowed to adjust the targets for 2022, which was done by the Department. On October 1, 2020, MDOT released adjusted 4-year bridge targets for consideration by the MPOs. BCATS acted to support MDOT's adjusted bridge targets on January 27, 2021. The updated table for bridge targets is shown in the following Table 10-8.

Table 10-8: Michigan State NHS Adjusted Bridge Targets 2020

Bridge Performance Measure	Baseline Condition Calendar Year 2017	2-Year Target (ended 10/1/20)	4-Year Targets
% National Highway System Deck Area in Good Condition	32.7%	27.2%	23.0% (adjusted from the previous 4-year target of 26%)
% National Highway System Deck Area in Poor Condition	9.8%	7.2%	8.0% (adjusted from the previous 4-year target of 7%)

Bridge projects included in the BCATS FY 2020-2023 TIP and for future years of the MTP are shown in Table 10-9.

Table 10-9 All Bridge Projects in the FY 2020-2023 TIP and Future MTP Years

Year	Project	Description	Bridge Impact
2021 (Local Bridge)	Emmett Street Bridge over the CN Railroad multiple tracks - COMPLETED	Bridge capital preventative maintenance (CPM) - which can include joint replacement, cleaning and sealing joints, deck ovelays barrier railing maintenance, substructure patching, pier joint replacements and patching of sidewalk	Maintenance to maintain bridge and extend its useful life
2021 (Local Bridge)	Hamblin Avenue Bridge over the Battle Creek River - COMPLETED	Bridge CPM (same list of work types as above)	Maintenance to maintain bridge and extend its useful life
2021 (Local Bridge)	Michigan Avenue Bridge over the Battle Creek River - COMPLETED	Bridge CPM (same list of work types as above)	Maintenance to maintain bridge and extend its useful life
2022 **(NHS Bridge)**	I-194/M-66 Bridges over I-94	NB and SB bridges over I-94, bridge CPM including: full paint, substructure horizontal surface coating, elastomeric bearing replacement, and joint reseal	Maintenance to maintain bridge and extend its useful life
2022 **(NHS Bridge)**	I-94 Bridges over Riverside Drive	Bridge CPM including: thin epoxy overlay, sleeper slab replacement, approach replacement, expansion joint replacement, end joint reseal, silane waterproofing barrier	Maintenance to maintain bridge and extend its useful life

Year	Project	Description	Bridge Impact
2022 (Local Bridge)	Raymond Road over MDOT RR	Bridge Rehabilitation	Work which will extend the useful life of the bridge
2022 **(NHS Bridge)**	I-94 (M-311 bridge over I-94)	Bridge Rehabilitation - shallow overlay with barrier replacement	Work which will extend the useful life of the bridge
2022-2025 **(NHS Bridges)**	I-94 Bridges, multiple	Bridge Replacement, nine bridge sets on I-94 within the limits of a road rehabilitation project (from Helmer Road east to M-311)	New bridges to replace aging structures and allow for future growth
2023 (Local Bridge)	Union Street over the Battle Creek River	Bridge Rehabilitation	Work which will extend the useful life of the bridge
2023 **(NHS Bridge)**	I-194 Bridge under M-96 (Columbia Avenue)	Bridge Rehabilitation incluidng full depth deck patching, concrete deep overlay, full paint and beam repairs	Work which will extend the useful life of the bridge
2023 **(NHS Bridge)**	I-194 Bridge over the Kalamazoo River	Bridge Replacement, including approaches	New bridge to replace aging structure
2023 **(NHS Bridge)**	M-89 (Washington Avenue Bridge over the Kalamazoo River and the GTW RR tracks	Bridge CPM including: epoxy overlay, deck patching, full depth patching, substructure repair, joints and approaches	Work which will extend the useful life of the bridge

There are no bridge projects identified outside of the current TIP time frame for which funding has been secured.

Bridges identified for future bridge funding applications by the local road agencies are included in the Plan's illustrative project listing. The Calhoun County Road Department has identified six (6) bridge replacements in the BCATS area for which it will apply for local bridge funding in the future. The City of Battle Creek has indicated nine (9) bridges for future replacement, rehabilitation, or capital preventative maintenance, along with five (5) future culvert projects (see the illustrative project list for all unfunded bridge needs).

System Performance of the NHS and Freight

Federal regulations require states and MPOs to use three performance measures for assessing travel time reliability. Travel time data used to calculate each measure is purchased by the Federal Highway Administration (FHWA) and made available for use by states and MPOs. This vehicle probe data set used for the federally required measures is called the National Performance Management Research Data Set (NPMRDS). The data is

processed through an analytical software tool know as Regional Integrated Transportation Information System (RITIS). The travel time reliability measures, as defined in the federal rule are:

- Level of Travel Time Reliability on the Interstate: % of person-miles traveled on the Interstate that are reliable
- Level of Travel Time Reliability on the Non-Interstate National Highway System (NHS): % of person-miles traveled on the Non-Interstate NHS that are reliable
- Freight Reliability Measure on the Interstate: Truck Travel Time Reliability Index

The 2017 and 2018 data shows that Michigan's Interstate highways and Non-Interstate NHS highways have been between 85 and 86 percent reliable, meaning that greater than 85% of the person-miles traveled on the NHS system are meeting the reliability thresholds established by the federal regulations (the ratio between the 50th percentile and the 80th percentile being below 1.5). For trucks, due to the higher federal threshold of comparing the 95th percentile to the 50th percentile, the overall truck travel time index on the Interstates has remained near 1.5.

MDOT set targets in May, 2018 for these measures conservatively for the first reporting cycle as shown below in Table 10-10. BCATS acted to "support" the state targets for travel time reliability and freight on October 24, 2018.

Table 10-10: Michigan State Travel Time Reliability Targets

Travel Time Reliability Performance Measure	Baseline from Jan. 2017 to May 2018 (Source: NPMRDS-RITIS)	Recommended 2-Year Target(s) CYE 12/31/2019	Recommended 4-Year Target(s) CYE 12/31/2021
Interstate Travel Time Reliability	2017 - 85.2% 2018 - 84.9%	75%	75%
Non-Interstate Travel Time Reliability	2017 - 86.1% 2018 - 85.7%	-	70%
Freight Reliability	2017- 1.38 2018 - 1.50	1.75	1.75

The previously noted MDOT Pavement and Bridge projects will serve to support the travel time reliability targets on interstate and non-interstate NHS routes.

Congestion Mitigation and Air Quality

This measure applies to urbanized areas containing NHS mileage and having a population over 200,000 (Phase 1 population over 1 million). The BCATS area does not qualify for inclusion in this measure under either phase of its implementation.

National Highway System (NHS) Asset Management Plan

MDOT is required to develop an Asset Management Plan for the NHS that includes:

- pavement and bridge inventory and conditions on the NHS
- objectives and measures
- performance gap identification
- life-cycle cost and risk management analysis
- a financial plan
- investment strategies

The USDOT has set minimum standards for states to use in developing and operating bridge management systems and pavement management systems.

Related to this state requirement, a Metropolitan System Performance Report is required as part of the long range Metropolitan Transportation Plan (MTP) update process. That Report is included as an appendix in this document, and will be available annually as required as a stand-alone document.

Transit Performance Measures and Targets

There is one urban transit provider in the BCATS area, Battle Creek Transit (BCT), a department of the City of Battle Creek. BCT is a direct recipient of funds from the Federal Transit Administration. As such, BCT is identified as a Tier II recipient under the current federal legislation and has developed state of good repair targets. The BCT reported its 2019 state of good repair targets within its completed Transit Asset Management (TAM) Plan (September 2018). BCATS has acted to "support" BCT's each year as they are updated by BCT. The most recently available targets were supported by BCATS on January 26, 2022 and are shown in the following Table 10-11:

Table 10-11: Transit State of Good Repair Targets for 2022

Asset Category - Performance Measure	Asset Class	2022 Target
REVENUE VEHICLES % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	BU - Bus MB - Mini-bus MV - Mini	76.92% 57.14% 0%
EQUIPMENT % of vehicles/equipment that has met its Useful Life Benchmark (ULB)	Non-revenue/Service Automobile Trucks & Other Rubber Tire Vehicles Maintenance Equipment	100% 75% 0%
FACILITIES % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration Maintenance Passenger Facilities	50% 50% 100%

Also required of transit agencies is a Public Transit Agency Safety Plan (PTASP). Federal requirements for the Safety Plan were released in a final rule on July 19, 2018. The rule became effective on July 19, 2019 and transit agencies were required to certify that they had a safety plan meeting the requirements of the rule in place by July 20, 2020. However, due to the COVID-19 pandemic, the deadline for the PTASP document to be in place was extended. However, Battle Creek Transit decided to complete its Plan in June 2020 regardless of the extended deadline. BCATS accepted the BCT PTASP in July 2020.

The following Table 10-12 lists the capital projects in the current TIP and those included in the MTP which will support BCT's efforts to meets its State of Good Repair Targets into the future.

Table 10-12 Transit Capital Projects in the FY 2020-2023 TIP and Future MTP Years

Year	Project	Description	Condition Impact
2021-2022	Transit vehicle replacement	Replace 14 vehicles, various sizes	Replace vehicles past their ULB
2021-2022	Shelter upgrade	Up to 30 new shelters	Replace shelters past their useful life
2022-2023	Farebox upgrade	Up to 25 units replaced over two years	Equipment upgrade
2024	Transit vehicle	One 5-passenger accessible mini-van	Add to fleet for BC Go service
2025	Transit vehicle	One 5-passenger accessible mini-van	Add to fleet for BC Go service
2026	Shop equipment	Replace/update misc. shop equipment	Upgrade equipment
2027	Bus Stop signage	New bus stop signage complete with latest technology	Upgrade signage
2028	Wash bay replacement	Replace equipment in bus wash bay	Upgrade equipment
2029	Shop equipment	Replace/update misc. shop equipment	Upgrade equipment
2029	Transit vehicle	One 5-passenger accessible mini-van replacement	Replace vehicle past its ULB

Year	Project	Description	Condition Impact
2030	Transit vehicle	Replace two 35' buses	Replace vehicle past its ULB
2030	Transit vehicle	Replace one Cutaway bus	Replace vehicle past its ULB
2022-2045	Annual Security related improvements	Vehicle and facility improvements	Enhance transit assets
2022-2045	Capital improvements for specialized services agencies	Replacement vehicles as determined by ULB	Replace vehicles as they become eligible

CONSIDERATION OF PERFORMANCE MEASURES IN THE *2045 METROPOLITAN TRANSPORTATION PLAN*

For the development of the FY 2020-2023 TIP, BCATS utilized a Project/Program nomination form for submittal of potential TIP projects to BCATS. This same format, with the form enhanced for performance measure information, and ties to the goals of the MTP, is currently being used for the development of the FY 2023-2026 TIP.

There are separate forms for road/street projects, transit projects, and projects that fall into an “other” category (such as pedestrian, non-motorized, or other non-traditional projects). Each submittal form asks for specifics as to how the project is expected to address the various performance measures outlined in this chapter. As noted above, the forms for the next TIP also ask how the project will support the goals of the MTP. Since many of the specific road projects in the MTP are derived from the current and developing TIPs, the information collected about performance measure impacts as part of that process strengthens the link between the listed projects and the performance-based planning process.

Another component of the performance-based planning process is the federal requirement for the preparation of a System Performance Report (SPR) (and subsequent updates) evaluating the condition and performance of the transportation system with respect to the performance targets outlined earlier in this chapter. Since this is the first update of the Metropolitan Transportation Plan in the BCATS area since the new regulations went into effect, a System Performance Report has been prepared as an Appendix for the 2045 MTP. The SPR will be updated on an annual basis moving forward.

CHAPTER 11
SOCIO-ECONOMIC DATA

Current and future deficiencies in capacity of BCATS' road network are identified with the assistance of a computerized Travel Demand Forecast Model (TDFM), prepared and maintained jointly by the staff of MDOT's Bureau of Transportation Planning, in Lansing, and BCATS. The model distributes traffic onto the BCATS street network to simulate traffic volumes and conditions. The street network used in this simulation includes existing major streets plus improvements for which construction has been committed by a city, county road commission, or the state. The socio-economic data, consisting of population, number of households, vehicle availability, and employment, serves as the foundation for the simulation.

For the modelling process, the socio-economic data is allocated to small subdivisions of the BCATS area, referred to as Traffic Analysis Zones (TAZs). TAZs are defined by similarity of land use, municipal and Census divisions, major street frontages, natural boundaries, and other geographic characteristics. The current TAZ structure for the BCATS area is comprised of 292 TAZs, covering the entireties of the Cities of Battle Creek and Springfield and the Townships of Bedford, Pennfield, Emmett, Newton, and Leroy, in northwestern Calhoun County. (see Figures II-1 & II-2 in Chapter II - Introduction)

The computer model estimates the number and type of trips ("trip generation") based on the socio-economic characteristics for each TAZ. For instance, a primarily residential TAZ can be expected to generate a certain number of trips per each household, with various percentages of the trips traveling to/from work, shopping, or other places. The traffic is distributed onto the street system according to expected travel patterns between various areas, using current patterns and known traffic volumes as a base, along with the relative "attractiveness" of each TAZ as a destination. The model can anticipate a strong attraction between residential areas and shopping or employment centers, and direct appropriate traffic volumes accordingly. A more technical discussion of the TDFM is presented in the next chapter.

The computer simulation can be used with projected socio-economic data to identify corridors expected to have significant congestion if the existing roadway system is not improved (i.e. capacity deficiencies where traffic volumes will exceed the volumes the corridor can accommodate without serious congestion and long delays). This *2045 Metropolitan Transportation Plan* process then can prioritize capacity deficient corridors, provide improvement recommendations, and suggest an implementation program to address identified capacity deficiencies.

The methodology for developing the socio-economic data is outlined in Chapter 12.

On the following page Table 11-1 provides a summary of 2020 and 2045 population and employment figures calculated for each local unit of government in the BCATS' metropolitan area.

Table 11-1 – 2020 & 2045 Estimated Population & Employment by Local Government Unit

	Local Govt Unit	2020 Population in Households	2045 Population in Households	Pop % Chg 2020--2045	Pop # Chg 2020--2045	% of BCATS Area Change
POPULATION	CITY OF BATTLE CREEK	49,669	49,723	0.11%	54	2.4%
	BEDFORD TOWNSHIP	9,458	9,526	0.72%	68	3.1%
	EMMETT TOWNSHIP	11,302	11,381	0.70%	79	3.6%
	LEROY TOWNSHIP	3,835	4,893	27.59%	1,058	47.8%
	NEWTON TOWNSHIP	2,428	2,624	8.07%	196	8.9%
	PENNFIELD TOWNSHIP	9,134	9,594	5.04%	460	20.8%
	CITY OF SPRINGFIELD	5,142	5,439	5.78%	297	13.4%
	BCATS Metropolitan Area	*90,968*	*93,180*	*2.43%*	*2,212*	*100.0%*
	Local Govt Unit	**2020 Total Employment**	**2045 Total Employment**	**Empl % Chg 2020--2045**	**Empl # Chg 2020--2045**	**% of BCATS Area Change**
EMPLOYMENT	CITY OF BATTLE CREEK	39,125	42,980	9.85%	3,855	56.0%
	BEDFORD TOWNSHIP	2,564	3,209	25.16%	645	9.4%
	EMMETT TOWNSHIP	7,927	9,424	18.88%	1,497	21.8%
	LEROY TOWNSHIP	793	961	21.19%	168	2.4%
	NEWTON TOWNSHIP	350	398	13.71%	48	0.7%
	PENNFIELD TOWNSHIP	2,149	2,566	19.40%	417	6.1%
	CITY OF SPRINGFIELD	2,686	2,936	9.31%	250	3.6%
	BCATS Metropolitan Area	*55,594*	*62,474*	*12.38%*	*6,880*	*100.0%*

CHAPTER 12

TRAVEL DEMAND FORECAST MODEL (TDFM)

The Travel Demand Forecasting and Modeling process for the BCATS MPO was developed in cooperation with Urban Travel Analysis unit within the MDOT. MDOT was the lead role in the development, calibration, validation, and application of the Travel Demand Forecast Model (TDFM or “model”). The BCATS MPO acted as the liaison among members of the public, local agencies, the BCATS Technical Committee, and the BCATS Policy Committee. BCATS and MDOT collaborated on the development schedule of the model, as well as dissemination and distribution of model input and output data for review, comment, and subsequent approval.

Travel Demand Forecast Models are used to identify and evaluate the capacity demands of a region’s federal-aid road network. Identification of roadway capacity deficiencies and analysis of the system as a whole, for the base year through and up to the horizon year of the plan. The purpose of roadway capacity deficiency identification and analysis is to determine where future congestion is projected to occur and where safety deficiencies related to a roadway's capacity might develop.

In essence, the roadway capacity deficiency analysis, and the plan (prepared by the MPO with input from the MDOT) are "snapshots in time, “reflecting the conditions and trends at the time of development. As economic conditions, transportation system trends, financial outlooks, and land use environments change, it is important that the plan be updated to reflect and account for these changes. The plan, following federal laws and regulations, is reevaluated and/or updated every five years to reassess the travel demands on the federal-aid transportation system. Along with the plan update, the TDFM is also redeveloped or updated to include the changes associated with the new plan. Socio-economic trends and forecasts are also reexamined, which alters travel behavior and demand on the federal-aid road network and may potentially change strategies of the BCATS MPO.

The TDFM results are useful in aiding the decision-making process. The identification and analysis of capacity deficient corridors and links is intended to serve as the basis for forming decisions regarding system improvement, expansion, or for other roadway capacity changes. This chapter of BCATS MTP 2045 describes the base, interim, and horizon years Travel Demand Forecast Model development process for BCATS area.

Model Process Description

The travel demand forecast model (TDFM) is a computer simulation of current and future traffic conditions and uses the TransCAD Transportation Planning Software Package, provided by Caliper. The BCATS TDFM is a regional-level transportation planning model, focusing on long term transportation planning concerns and regional travel characteristics. Model results provide road link traffic volumes (known in the modeling tool as “traffic flow”) for AM Peak (7:00am – 9:00am), Mid-Day (9:00am – 3:00pm), PM Peak (3:00pm - 6:00pm), Off Peak (6:00pm – 7:00am) periods as well as for the 24-hour time period. The traffic flows are then compared to the 24-hour capacity

allowance of the road links providing a volume over capacity ratio which is used to calculate the level of relative congestion on the road links.

The urban TDFM development process for BCATS consists of the inter-related steps below. The traditional “Four-Step” trip-end based model structure consist of steps 2 through 5. The output from each step is used as the input in the following step.

Step 1. Data Development, Collection, and Organization
Regional socio-economic data (SE-data) and the transportation system characteristics are collected. This step also includes the development of the model road network and the Travel Analysis Zone (TAZ or “zone”) structure.

Step 2. Trip Generation
Calculates the number of trips produced in or attracted to a TAZ by trip purpose based on land-use, household demographics, employment, and other SE-data characteristics.

Step 3. Trip Distribution
Determines how much travel occurs between TAZs, based on the "attractiveness" of the other zones.

Step 4. Mode Choice and Time of Day
Distributes trips across the model network into modes of travel as auto, non-motorized and transit. After the split into modes the auto trips are distributed into one of the time periods.

Step 5. Traffic Assignment
Assigns auto trips between zones to a route/path to the transportation system.

Step 6. Model Calibration/Validation
Involves adjusting the model and verifying that the volumes simulated in traffic assignment replicate (as closely as possible) actual, observed traffic counts within a set of established validation criteria.

Step 7. System Analysis and Model Applications
Involves test alternatives and analyze changes to improve the transportation system. The calibrated and validated model is used in the development of the metropolitan transportation plan, Air Quality conformity analysis, project identification and prioritization, and / or impact analysis.

Data Development, Collection and Organization

There are two main modeling components that are required to be constructed prior to model development: model road network and traffic analysis zone.

The model road network includes various roadway attributes and generally contains only links of the "collector" functional classification and higher. “Local” roads are

included in the model network only to maintain continuity, for connectivity purposes or if they are regionally significant.

The traffic analysis zones (TAZ or “zones”) are geographic areas determined based on similarity of land use and human activity, compatibility with jurisdictional boundaries, presence of physical boundaries, and the links that make up the road network. The TAZs layer contains SE and employment information for each one of the model zones.

The model road network and the TAZs are mutual. Each TAZ is represented on the model road network as a node called centroid. The TAZ centroid is located at the center point of activity within the TAZ area. All trips that use the model road network start or end at a TAZ centroid. Trips “produced” from or “attracted” to each centroid are connected to the main road system via special model road links called “centroid connectors.” These “hypothetical” connections carry the trips produced from and/or attracted to the respective TAZ. Special development criteria are used to ensure centroid connectors meet the main road network system at realistic locations.

Both TAZ and network files contain information required to run the model and were developed for the base year 2016, then for the interim years 2020, 2025, 2035 and the horizon year 2045. After the development, TAZ and network layers were provided to the BCATS MPO staff and BCATS Technical Advisory Committee members for review and comment.

Model Road Network

The model road network consists primarily of the federal-aid road system within BCATS MPO and was obtained from Version 16 of the Michigan Geographic Framework (MGF). Aerial image, site visits and old BCATS model networks were also used in the process when needed.

The network layer contains fields required to the model runs as well as informational fields as: Road Names, Federal-Aid Status, Facility Type Classification, Area Type, Number of Thru-Lanes, Road Direction, Posted Speed Limit, Lane Width, parking availability, Prohibited Turns, Center-Left Turn Lanes, link capacity, free-flow speed, traffic counts, among others.

The BCATS 2016 calibrated/validated network includes approximately 362 miles of roadway network (excluding centroid connectors) with the following classifications:

- 33 miles of Freeways (trunklines)
- 9 miles of Ramps (trunklines)
- 38 miles of Principal Arterials
- 92 miles of Minor Arterials
- 107 miles of Major Collectors
- 83 miles of Minor Collectors and Locals

The base network plus committed projects on the Transportation Improvement Plan (TIP) were accounted for the develop of interim and future year model road networks.

Traffic Analysis Zones (TAZs)

Travel Analysis Zones (TAZ or “zone”) are geographic divisions of the model area and provide the structure for housing the Socio-Economic data approved by the MPO. The SE data associated with each TAZ represents the activity within TAZ and is used to the generate the trips that are modeled across the road network.

The 2016 TAZ structure development started by using the TAZ structure from the most recent TDFM, which was used in the 2040 MTP. Adjustments to the structure were made based on previous recommendations, changes in socio-economic conditions, and to account for changes in traffic loading to the model road network. The 2045 MTP BCATS TDFM has a total of 357 TAZs, 29 of which are used as External Stations.

Socio Economic Data

Socio-economic data (SE-data) is comprised of demographic and employment information. The SE-datasets were collected and processed for the model base year of 2016, and then forecasted out to the MTP horizon year of 2045.

In order to reflect demographic conditions for the MTP base year 2016 American Community Survey (ACS) 5-year datasets were used. Characteristics as population, household, number of workers per household, number of K12 students per household, vehicle availability, income levels, among others were used in the model. Enrolment data is also using in the model and were collected from the Michigan School Data website.

As with demographic data, employment for the BCATS MPO was developed to reflect employment as of 2016. The raw form of employment data was derived from a list of businesses residing within the BCATS MPO in 2016. This “master list” of data is purchased by MDOT from two database sources: Claritas (a Nielson Company) and Hoovers (a Dunn-Bradstreet Company). The employment data is geocoded using Geographic Information System (GIS) tools, which can be used in the TDFM. Once geocoded, each business location is combined to the respective TAZ, and divided into various employment sectors.

After the initial collection of SE-data is completed, a thorough review by BCATS MPO staff and BCATS Technical Advisory Committee were conducted. Once reviewed, changes were incorporated into the employer dataset, and then formally provided to the various MPO committees for approval. BCATS MPO committees approved the use of this data for inclusion into the TDFM in October of 2019.

After the base year SE data is formally approved by the MPO committees, the demographic and employment datasets are forecasted for the interims and horizon years. Using a series of intricate economic and demographic variables as well as incorporating projected changes in alignment with overall trends, a forecast is developed by the Regional Economic Models, Incorporated (REMI) TranSight Model. The initial REMI results, which are provided at the County level, are further stratified so

that more detailed and geographic-specific growth factors can be applied to the model TAZs.

As with the plan base year data, the forecast demographic and employment datasets are provided to BCATS staff and BCATS Technical Advisory committee members for review,

and subsequent approval. The BCATS MPO committees approved the use of this forecasted data for inclusion into the TDFM in January of 2021.

The table below show the approved totals for BCATS population, households, and employment by sectors for the base, interims, and horizon years.

Table 1 – BCATS TDFM Socio-Economic data

Data type	2016	2020	2025	2035	2045
Population	91,084	90,968	91,068	92,240	93,180
Households	36,894	36,937	37,224	38,618	39,675
Retail Employment	7,920	7,746	7,733	6,763	6,390
Services Employment	28,414	25,631	28,767	32,486	35,037
Other Employment	24,346	22,217	23,386	21,751	21,047
Total Employment	60,680	55,594	59,886	61,000	62,474

Trip Generation

Trip generation is the process by which the TDFM translates the socio economic data into numbers of person trips. In this step, internal person trip productions and attractions are calculated for each TAZ, for various trip purposes, based on the relative SE-data available for the TAZ. Generally, the households produce trips, and the employment places attract trips. The five trip purposes used in the BCATS model are home based work (HBW), home-based retail (HBR), home-based school (HBS), home based other (HBO), and non home based (NHB).

Several Trip Generation methods exist, each having its own strengths and weaknesses. In this model, cross-classification methods were used to develop the trip productions. Cross-classification is used to combine two different data variables, such as household size and household income for example, to develop the zonal trip productions. Trip attractions for this model used a simple regression equation. After calculated, trip productions and trip attractions were balanced so that the total productions and attractions were equal for the entire model area – each trip produced is attracted somewhere.

The methods described above apply to person trips that are generated for TAZs that are within the model area, called internal trips. Trips that originate or end outside the model area are called external trips. External trips that originate inside the model area and travel outside the model area are identified as “internal to external” (I E) trips, and vice versa, trips from outside the model area (external) into the model area are referred to as “external to internal” (E I) trips. Trips that pass through the model area without stopping are “external to external” (E E) trips. External travel and the type of external travel are

originally provided from the Michigan Statewide model. The information is then further processed to develop an estimate of the number of EI and IE trips for the model area. Person trips calculated during the trip generation step includes Non-Motorized (NM) trips. However, NM trips are relatively minor for this model area as it related to the total amount of trips being generated in the model area and were not distributed, nor assigned to the road network, but simply taken out of the total person trips being produced.

The trip production rates, trip attraction equations and the non-motorized factors for each trip purpose were developed by MDOT Statewide and Urban Travel Analysis Section based on the most recent household travel survey data available – the 2015 *Comprehensive Household Travel Data Collection Program / MI Travel Counts III.* The output of this step is a balanced trip table, which is used as an input into the next step of the traditional four-step TDFM, Trip Distribution.

Trip Distribution

The second step of the four-step TDFM process is called Trip Distribution. In this step, the balanced trip table from the Trip Generation stage (balanced productions and attractions, by trip purpose) along with the model road network, are used to determine how many trips produced in a zone will be attracted to each of the other zones.

Travel time between zones and a mathematical model called “gravity model” based on the attractiveness of each zone and how far people are willing to travel for different purposes are used in this step to best replicate the potential travel along the model road network and to show a reasonable interaction between one TAZ to another TAZ.

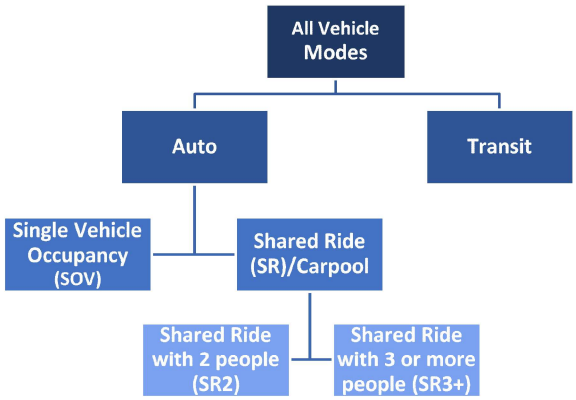
The gravity model assumes that a destination zone attracts trips based on the activity in that zone (number of employees and/or households) and the proximity to the zone of origin. Using the gravity model, trips produced in one zone are "distributed" to all other zones. The gravity model is calibrated using successive friction factor adjustments to produce model travel time trip lengths distributions for each trip purpose that are consistent with the travel time observed on the most recent household travel survey data available – the 2015 *Comprehensive Household Travel Data Collection Program / MI Travel Counts III.*

The results of the Trip Distribution step are a matrix that provides a breakdown of relative TAZ to TAZ interactions by the various trip purposes and trip modes. The results of Trip Distribution are used for the next step, Mode Choice.

Mode Choice and Time of Day

Mode Choice is the third step of the four-step TDFM process. At this stage in model development, all trip data, except for external travel data, are in “person-trip” format. The trips must be allocated to distinct vehicular modes, which are auto and transit trips.

The chart below provides a brief overview of the types of vehicle modes that are used to allocate the person-trips for this model.



Transit trips, differently than auto trips, are not assigned to the TDFM road network due to the complex nature of the trip interactions and socio-economic conditions related with transit ridership. The TDFM used for MTP purposes is to analyze regional transportation patterns, and not necessarily micro-level or individual trip characteristics. As such, mode choice for this model used a "simplified" approach where transit trips are initially calculated prior to auto trips, and then subtracted from the total vehicular trips. The resulting trip total is then broken into various auto shares: Single Occupancy Vehicles (SOV), Shared Rides with two people (SR2), and Shared Rides with three or more people (SR3+). Shared Rides may alternatively be referred to as "carpooling" or "High Occupancy Vehicles (HOV)." The final result of the mode choice component is a series of person-trip tables by vehicular mode and trip purpose for each TAZ Origin-Destination pair.

The mode choice step also includes an Auto Occupancy and a Time-of-Day sub steps. In the auto occupancy sub step formulas are applied by each purpose to convert the person trips to vehicle trips. Once the personal trips become vehicle trips Time of Day (TOD) modeling factors are applied to split these vehicle mode trips into one of the four TOD periods (AM, MD, PM and NT). The finalized product from the Mode Choice step is a number of tables representing vehicle mode trip categories by time periods.

Mode Choice, along with auto occupancy and Time-of-Day modeling, factors, and parameters are based on data provided in part by the *2004-2005 Comprehensive Household Travel Data Collection Program/MI Travel Counts* program and the *Urban Model Improvement Program (UMIP)*, both were conducted by MDOT.

Traffic Assignment

Traffic (or "Trip") Assignment is the final step in the traditional four-step TDFM and is the process of route selection between zones. Traffic assignment takes the trips distributed in the previous phase and assigns them a path on the roadway using the underlying principle of a TDFM that trip makers will use the "best" route, based on travel time.

Different methods and supporting functions can be used on the traffic assignment step. The traffic assignment method used for this model was the "User Equilibrium (UE)" algorithm, which is commonly used in TDFMs. This method also considers volume and

capacity of the road during the assignment process. For example: a roadway that is reaching or has reached its maximum capacity will result in reduced travel time. As such, the assignment routine will include these time reductions when choosing the "best" path. If the delay is significant, an alternative road may be used to accommodate that traffic. This continues until the system reaches equilibrium.

The final product of Traffic Assignment is a series of vehicle-trip (modeled traffic volume or "traffic flow") tables, by vehicular mode, and separated into TOD, for each model road link within the model road network. TDFMs used for MTP purposes do not include human-related factors when assigning trips, such as road geometrics (hills, tight curves, etc.), road condition, and other considerations.

Post processes sum all the 4 periods assignment volumes creating a volume that represents the number of vehicles that travel on that link (road) over a typical twenty four-hour day. The "assigned" 24-hour link traffic volumes are then compared with "observed" traffic data (i.e. traffic counts) as part of the model calibration, validation, and reasonability review.

Model Calibration/Validation

The most important, and ultimate goal, for the TDFM is to have base year assigned volumes within a reasonable level of traffic counts used for the model base year. Traffic counts on the federal-aid road system from all respective maintaining road agencies within the MPO are crucial for the calibration of a TDFM. Without this information, the effectiveness of the model is limited. MDOT Transportation Data Management System (TDMS) provided traffic counts for BCATS MTP2045 TDFM calibration. Local road agencies within the BCATS MPO also provided traffic count data to MDOT for use in this TDFM.

To achieve this goal several calibration adjustments may be performed to have the model outputs as closely as possible, or within predefined thresholds. If issues are discovered during the calibration process, then it is necessary to return to a previous step in the modeling process to calibrate the input and/or output data. Model calibration is applied for each step of the TDFM development process and for the entire model system to adjust the model to achieve statistically valid model outputs. When validation is complete, the base year model is considered validated or statistically acceptable.

Application of the Validated Travel Demand Forecast Model

Once model validation verifies that the base year assigned volumes simulate actual base year traffic counts the process can proceed to future socio economic data being substituted for existing (base) data and base road network being substitute by a road network accounting for changes finalized or committed on the TIP. Then the trip generation, trip distribution and traffic assignment can be repeated, and future trips can be simulated as part of the plan process. The assumption is that model formulas and relations developed for the base year model structure remain constant over time, as to provide an unbiased forecast. For this *2045 Metropolitan Transportation Plan* five

scenarios were developed: Base year 2016 (Calibrated), Interim year 2020, Interim year 2025, Interim year 2035, and Horizon year 2045.

The model results for base year and future year scenarios are discussed in more detail in the *Transportation Deficiencies and Alternatives* chapter of the plan. Different scenarios can be prepared & tested anytime for any significant developments of housing or employment, or for changes to the transportation network.

The BCATS TDFM can also be used for additional transportation system analysis outside of the planning process, which includes, but is not limited, to the following:

- Impact analysis for planned roadway improvements, expansions, or other capacity-altering alternatives
- mpact analysis of land use changes on the network (e.g., what are the impacts of a new major retail store being built).
- New accessibility, such as a proposed bridge, can be tested to identify traffic flows to and from the new roadway and for adjacent roadway links. Limiting factors, such as closure of a bridge can also be tested.
- Road closure, road restriction, and / or detour evaluation studies can be conducted to determine the effects of closing a roadway, and / or restricting capacity, and detouring traffic during construction activities, which are useful for construction management and are also referred to as “Work zone testing”.
- Individual links can be analyzed to determine which TAZs are contributing to traffic flow on that particular link. The results can be shown as a percentage breakdown or by raw volumes. This analysis is referred to as selected link analysis.
- Potential improvements to relieve congestion can also be tested. Future traffic can be assigned to the existing network to show what would happen in the future if no improvements were made to the present transportation system. From this, improvements can be planned that would alleviate demonstrated capacity problems.
- Model runs as part of air quality conformity analysis, if required.

BCATS

CHAPTER 13
TRANSPORTATION DEFICIENCIES/LIMITATIONS & ALTERNATIVES

Detailed analysis of observed and forecast roadway capacity deficiencies in the transportation network, using results from an areawide travel demand forecast model (TDFM), has traditionally been the basis for development of solutions to deficiencies within a long-range plan. Details of the implementation of the TDFM for this 2045 MTP are presented in the preceding Chapter 12. The TDFM is the primary analytical tool of the process to identify roadway capacity deficiencies.

However, in the Battle Creek metropolitan area, as expected likely in most similar small metropolitan areas (population under 200,000) with stable population and well-established roadway networks, the TDFM has not revealed forecast capacity deficiencies significant enough to warrant new roadways or additional thru lanes on existing roads, over the past twenty-plus years and three BCATS long-range transportation plans. Consequently, while Federal transportation planning legislation continues an emphasis on resolution of roadway capacity deficiencies, identified thru a TDFM, in BCATS' Plan the process has been focusing on several more categories of transportation limitations as listed below.

Roadway Capacity concerns	*Public Transit & Intermodal Transportation
Safety-Related concerns	Non-Motorized Transportation
Pavement Condition	Security, Reliability, & Resiliency
Bridges Capacity & Condition	Needs Related to Economic Development

This chapter discusses limitations/concerns in each of those categories, and specific projects and alternatives proposed to address those issues that are either recommended in this *Plan*, or proposed as "Illustrative" projects.[1] The capacity, safety, pavement, and bridge categories align many of the projects indirectly with requirements to address transportation performance measures discussed in Chapter 10 - Performance Based Planning, as well as in the System Performance Report (in Appendix of this document). The list of

[1] **Recommended** projects have updated cost estimates and sources of expected funding, allowing them to be included in the "Demonstration of Financial Constraint" presented in Chapter 15 - Financial Plan. In this *2045 MTP,* recommended projects include those programmed for 2022 or 2023 implementation in BCATS' current *FY2020-2023 Transportation Improvement Program (TIP)*, tentatively programmed projects planned for 2024-2026 implementation in the next *TIP*, two proposed roundabouts (one in 2023, one in 2026), several MDOT projects beyond 2026 identified in the JobNet database, specific major vehicle & facility capital projects beyond 2026 for Battle Creek Transit, and non-motorized trail projects in 2027 and 2029. Instead of identifying numerous other future projects beyond 2026 individually, twelve project lines representing averaged annual expenditures, summed to the MTP 2045 horizon year, are shown at the end of the 2045 MTP Recommended Improvement list in Chapter 17. **"Illustrative"** projects are generally less developed, without cost estimates or likely funding, but are identified in the *Plan* as options to be further developed over the next five years for possible recommendation in the next *Plan,* to provide alternatives for situations considered areas of concern now or into the future, and to highlight conditions to be more closely monitored. The "illustrative" projects listed in this 2045 MTP were not included in the "Demonstration of Financial Constraint" presented in Chapter 15 - Financial Plan, nor represented on any maps or included in analyses for Chapter 16 - Environmental Mitigation or Chapter 18 - Environmental Justice.

recommended improvements is presented in Chapter 17, while a compilation of “illustrative” projects referenced in the following discussions is provided at the end of this chapter.

*A comprehensive list of areawide public transit needs over the next twenty years was provided directly by Battle Creek Transit, and projects to meet those needs were incorporated into this Plan’s list of recommended improvements presented in Chapter 17. Transit needs and other long-range intermodal needs are discussed in Chapters 6-8.

ROADWAY CAPACITY DEFICIENCIES/LIMITATIONS

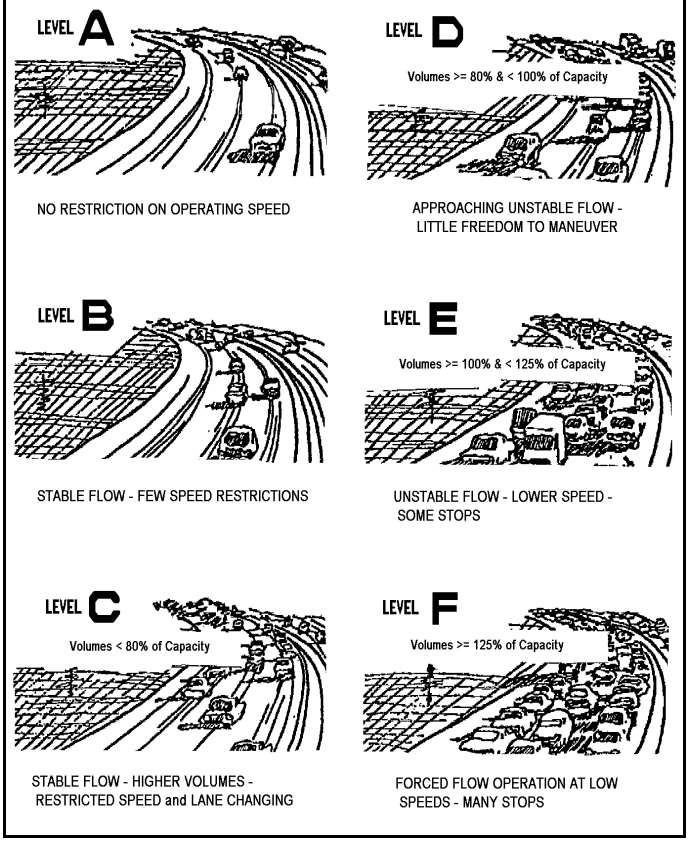
The BCATS areawide Travel Demand Forecast Model (TDFM), discussed in Chapter 12, was utilized to locate road segments where traffic congestion is probable by 2045. The intent of this effort is to identify potential solutions (needed improvements) to any recognizable future roadway capacity deficiencies. These solutions assist state and local government decision-makers in the development and prioritization of transportation improvement projects, programs, and studies for inclusion in BCATS' *2045 Metropolitan Transportation Plan (MTP)*.

Traditionally, the “alternatives” of this chapter’s title refers to different alignments, additional lanes, or other treatments to mitigate a capacity deficiency identified in the TDFM. In a future year "build" alternative the inclusion of road widening or capacity increasing projects will prompt different preferred travel paths and traffic volumes on all the network roads, as compared to the "no-build" alternative. Logically, where a proposed project directly increases capacity, the deficiency on that segment should be resolved or at least mitigated; other deficiencies might be resolved by fewer "trips" choosing to take the deficient route where faster, more efficient travel paths were created by the proposed improvements. Revised configurations and roadway attributes, particularly capacity, can also produce greater, even new, capacity deficiencies within the future "build" network.

Capacity deficiencies are often described by “Level-of-Service”, abbreviated “LOS”, and demonstrated in Figure 13-1 on the following page. Past BCATS plans have defined two Level-of-Service categories, LOS E (V/C >= 1.00 & < 1.25) and LOS F (V/C >= 1.25) as capacity deficient. In part due to improvements within the TDFM process, especially calculated capacities, fewer forecast capacity deficiencies have been identified with each update of BCATS’ long-range plan. The TDFM for both the 2040 MTP and this 2045 MTP show no segments where forecast horizon year traffic exceeds the base year capacity [volume to capacity (V/C) >100%].

Accordingly, and with emphasis on operations & maintenance improvements to existing roadways, no capacity increasing projects have been necessary to be tested as part of a “build” alternative. Only segments of I-94 and M-96 (Michigan Ave E) are at LOS D in 2045, with traffic volumes forecast to be over 80% of current capacity. Those segments and a few others with a forecast V/C of 75-100% are highlighted in orange in Figure 13-2 on a following page. On the back side of that page is Figure 13-3 that lists the roadway segments with significant V/C values greater than 50%, and in most cases exceeding 75% in at least one of the AM peak (7-9am), mid-day (9am-3pm), or PM peak (3-6pm) periods.

FIGURE 13-1
ROADWAY "LEVEL-OF-SERVICE" (LOS) BY VOLUME/CAPACITY RATIO



The one corridor in metropolitan Battle Creek routinely considered capacity challenged, both at present and certainly in the future, is interstate highway I-94 across the entirety of the BCATS area. According to the TDFM however, it generally operated at LOS C in the 2016 TDFM base year, and in horizon year 2045 at LOS D, with forecast 2045 V/C approaching 100% only during the PM peak hours (3:00-6:00pm) on I-94 segments east of M-294 (Beadle Lake Rd).

While no additional thru-lanes for I-94 can be recommended (with expected funding) at this time, under requirements for financial constraint, a long-term vision to mitigate congestion and improve safety by widening I-94 to three mainline thru-lanes in each direction across the BCATS area is the foremost “illustrative” project to be included in this *2045 MTP.* In the list at the end of this chapter the regional goal for six-lane I-94 from Kalamazoo eastward to I-69 is expressed.

Other I-94 capacity-related projects that are presented as “illustrative” in this Plan include an option to remove both the I-94 Exit 104 loop ramps intersecting M-311 (11 Mile Rd) and replace them with straight-line ramps directly to/from I-94BL/M-96 (Michigan Ave E). The suggested modification is part of a reconfiguration of the interchange proposed in the late-2000's in anticipation of the increased traffic at the interchange from the then imminent Firekeepers’ Casino, and was detailed in both BCATS previous 2035 and 2040 Plan documents.

The suggested relocation of the westbound I-94 entrance ramp, to extend from the I-94BL/M-96 (Michigan Ave) intersection with Wheatfield Parkway westward down to I-94, would be complemented by the designation of Wheatfield Parkway as westbound I-94BL from M-311 (11 Mile Rd) westward to existing I-94BL/M-96 (Michigan Ave). Wheatfield Parkway, under the road jurisdiction of the Calhoun County Road Department (CCRD), was added to the National Highway System (NHS) several years ago as an integral part of the I-94/I-94BL/M-311 interchange; it’s conversion to State trunkline and I-94BL designation is offered as a separate “illustrative” project with or without the relocated westbound I-94 entrance ramp. Promotion of the official I-94BL on Wheatfield Parkway may attract additional users in turn helping to further mitigate congestion on the M-311 bridge and thru the existing I-94BL (Michigan Ave) at M-311 (11 Mile Rd) intersection.

Additional “illustrative” work at the I-94 Exit 104 interchange to be suggested in this *2045 Plan* is improved lane delineation, with widening and added turn lanes as necessary, on M-311 (Wheatfield/11 Mile Rd), from M-96 (Michigan Ave) northward to the intersection with Wheatfield Parkway and the westbound I-94 exit & entrance ramps. This segment includes the 2-thru lane bridge over I-94, which is addressed later in this chapter under “Bridges Capacity & Condition”. Furthermore, M-96 (Michigan Ave E) running southeastward from the interchange area, passing by the Firekeepers’ Casino, is also considered appropriate for an “illustrative” project, in part relative to a 2045 forecast V/C of 100% in the PM peak on several segments of M-96 (Michigan Ave E) from 11 Mile Rd to 12 Mile Rd, passing by the casino main entrance, but mostly in the event significant traffic-generating commercial development materializes in the vicinity.

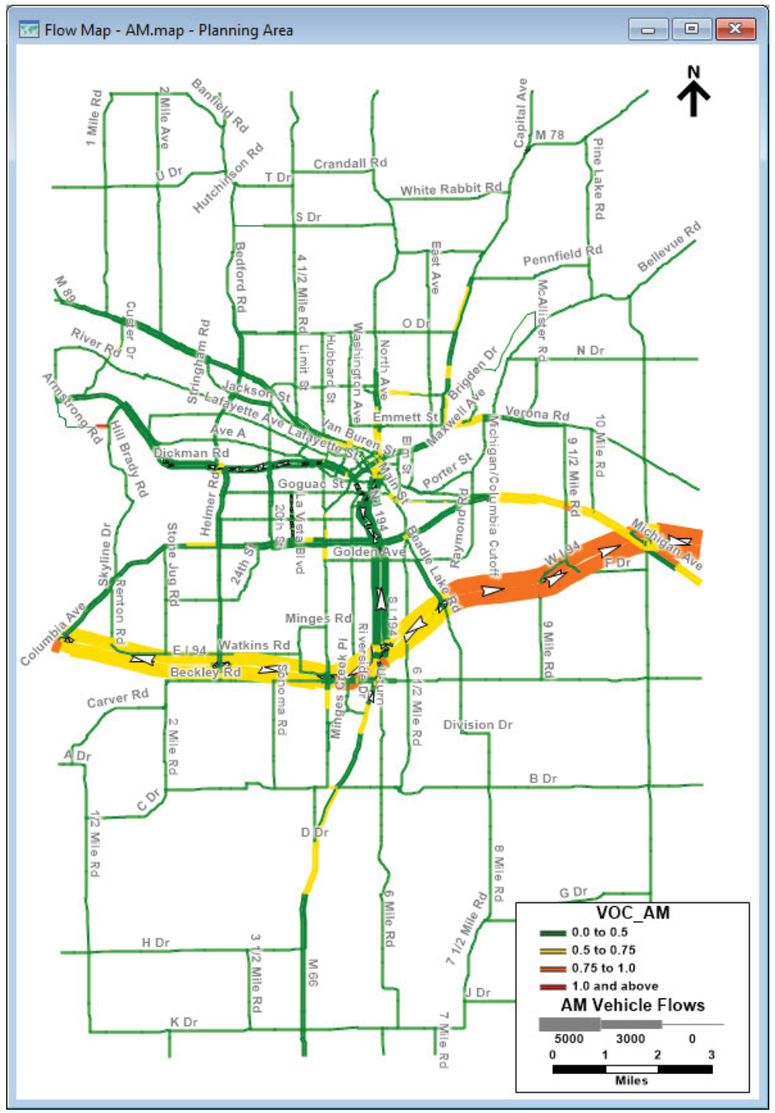
The remaining two segments listed in Figure 13-3, M-96 (Michigan Ave E) from Columbia Ave to 11 Mile Rd, and Beckley Rd from 6 Mile Rd to Riverside Dr, demonstrate 2045 V/C values greater than 50% and just exceeding 75% on a few segments, prompting their display in orange for the “Approaching Capacity” classification. Given that marginal status in that classification, and still in LOS C by BCATS’ standards, no “illustrative” project for either those roadway segments is presented in this 2045 MTP.

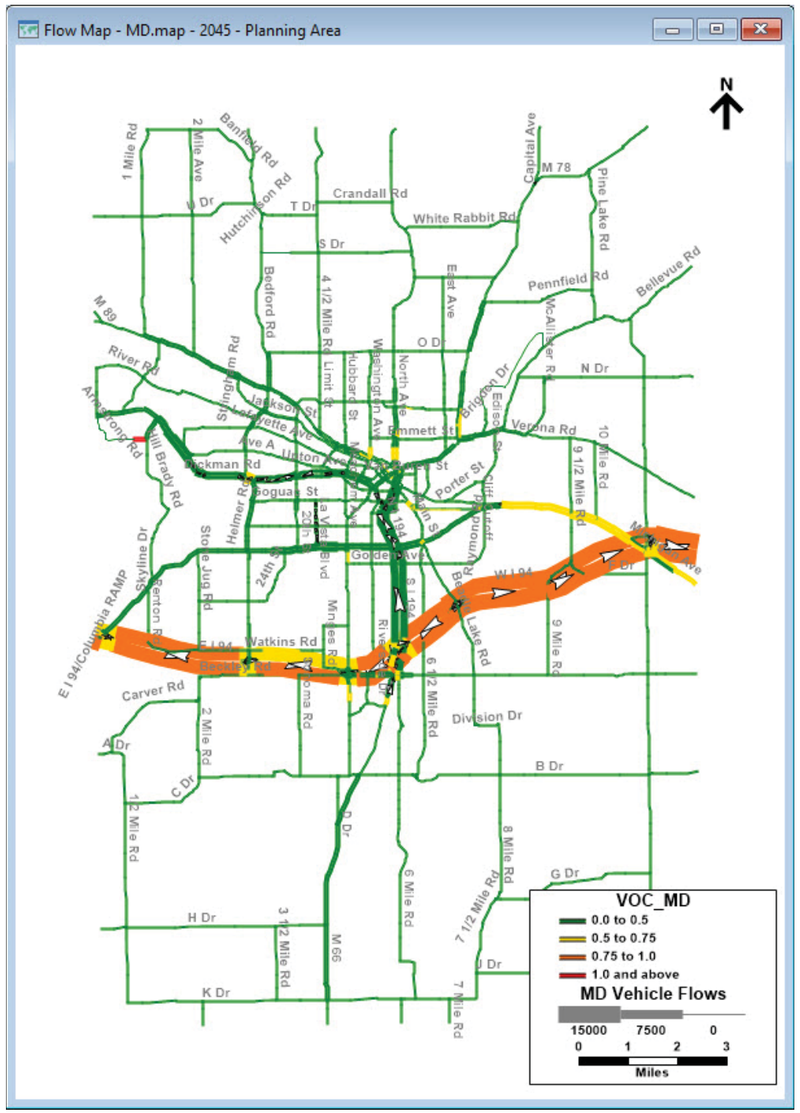
Besides the limited number of congestion issues currently disclosed by the TDFM process, several corridors and intersections are clearly recognized, thru local knowledge/experience and “professional judgement”, as capacity challenged. Typically, these corridors endure peak hour congestion thru signalized intersections spaced less than ¼ mile apart; such congestion is not reflected in segment or corridor based V/C calculations of the TDFM. Using Congestion Mitigation Air Quality (CMAQ) funding, these locations have been and continue to be improved with modernized traffic signals and interconnections to facilitate better signal timing progression, and to improve safety.

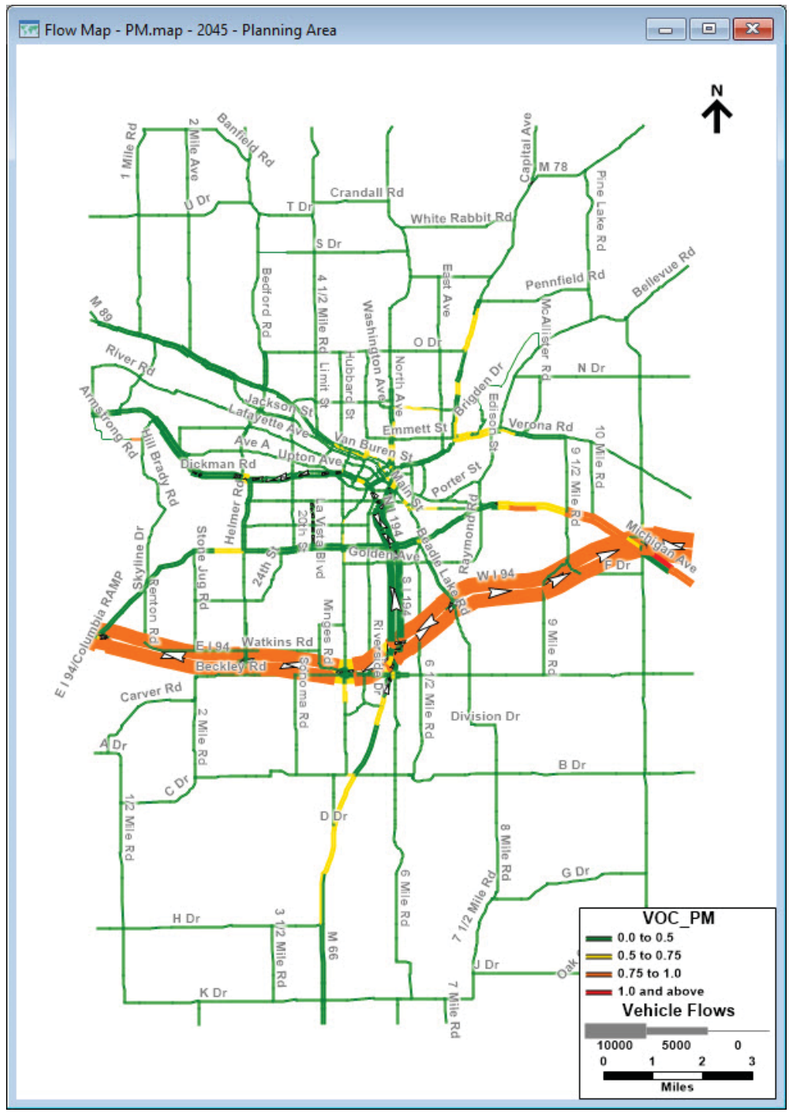
On an areawide basis, a “Traffic Management Center" (TMC) has been developed at the City of Battle Creek’s Dept of Public Works. The TMC operates to monitor and coordinate traffic signals on major corridors throughout the metropolitan area. Along the area’s main suburban commercial corridor, Beckley Rd-B Dr N from Capital Ave eastward to 6½ Mile Rd, there are numerous traffic signals that are suggested to be better interconnected and subsequently coordinated, and connected to the TMC, as part of an “illustrative” project in this 2045 MTP. This effort will entail cooperation amongst the City for its signals on the Beckley Rd portion of the corridor (west of 6 Mile Rd), and the Calhoun County Road Department for its signals on B Dr N, and most important MDOT for the signals on M-66 at Beckley Rd and at the crossover on M-66 south of Beckley Rd.

FIGURE 13-2

2045 Horizon year Model Outputs – Flow Maps







0.0<V/C<0.50 Free Flow	0.50 < V/C < 0.75 Unstable flow- restrictions starts	0.75 < V/C < 1.00 Approaching Capacity	V/C > 1.00 Over Capacity

FIGURE 13-3

Volume/Capacity Ratio – Corridors

Road Name	Extent	Base year 2016 - TDFM V/C				
		AM Peak (7:00am-9:00am)	MD (9:00am-3:00pm)	PM Peak (3:00pm-6:00pm)	OP (6:00pm-7:00am)	Daily (24h)
EB I-94	Mercury Dr. to Beadle Lk Rd	0.50 - 0.60	0.50 - 0.64	0.59 - 0.77	0.39 - 0.49	0.44 - 0.56
EB I-94	Beadle Lk Rd to Emmet Twp east limit	0.58 - 0.70	0.57 - 0.66	0.58 - 0.84	0.44 - 0.53	0.51 - 0.61
WB I-94	Beadle Lk Rd to Mercury Dr.	0.48 - 0.60	0.50 - 0.60	0.58 - 0.71	0.38 - 0.46	0.43 -0.53
WB I-94	Emmet Twp east limit to Beadle Lk Rd.	0.59 - 0.70	0.58 - 0.66	0.70 - 0.84	0.45 - 0.53	0.52 -0.61
Michigan Ave	Columbia Ave to 11 Mile Rd	0.57 - 0.76	0.50 - 0.63	0.59 - 0.76	0.37 - 0.48	0.46 - 0.60
Michigan Ave EB	11 Mile Rd to 12 Mile Rd	0.40 -0.59	0.32 - 0.46	0.40 - 0.69	0.23 - 0.39	0.30 - 0.48
Michigan Ave WB	11 Mile Rd to 12 Mile Rd	0.59 - 0.70	0.46 - 0.64	0.69 - 0.87	0.39 - 0.46	0.48 -0.62
Beckley Rd.	6 Mile Rd. to Riverside Dr.	0.35 - 0.82	0.36 - 0.88	0.40 - 0.87	0.20 - 0.43	0.31 - 0.71

Road Name	Extent	Horizon year 2045 - TDFM V/C				
		AM Peak (7:00am-9:00am)	MD (9:00am-3:00pm)	PM Peak (3:00pm-6:00pm)	OP (6:00pm-7:00am)	Daily (24h)
EB I-94	Mercury Dr. to Beadle Lk Rd	0.65 - 0.81	0.69 - 0.81	0.73 - 0.92	0.55 - 0.65	0.56 - 0.69
EB I-94	Beadle Lk Rd to Emmet Twp east limit	0.72 - 0.85	0.74 - 0.85	0.81 -0.97	0.59 - 0.68	0.62 - 0.73
WB I-94	Beadle Lk Rd to Mercury Dr.	0.63 -0.74	0.68 - 0.77	0.72 - 0.83	0.53 - 0.61	0.55 - 0.64
WB I-94	Emmet Twp east limit to Beadle Lk Rd.	0.73 - 0.85	0.74 - 0.85	0.82 - 0.97	0.60 - 0.68	0.63 - 0.73
Michigan Ave	Columbia Ave to 11 Mile Rd	0.63 - 0.76	0.53 -0.68	0.68 - 0.83	0.39 -0.51	0.51 - 0.64
Michigan Ave EB	11 Mile Rd to 12 Mile Rd	0.47 - 0.66	0.37 - 0.52	0.45 - 0.78	0.27 - 0.44	0.36 - 0.54
Michigan Ave WB	11 Mile Rd to 12 Mile Rd	0.65 - 0.80	0.51 -0.74	0.76 - 1.00	0.43 - 0.53	0.54 - 0.71
Beckley Rd.	6 Mile Rd. to Riverside Dr.	0.32 - 0.74	0.32 - 0.76	0.36 - 0.78	0.18 - 0.39	0.28 - 0.62

V/C = Volume/Capacity	
0.0<V/C<0.50	Free Flow
0.50 < V/C < 0.75	Unstable flow- restrictions starts
0.75 < V/C < 1.00	Approaching Capacity
V/C > 1.00	Over Capacity

SAFETY-RELATED AREAS OF CONCERN

In June 2021 the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) released preliminary estimates of crash fatalities in 2020 involving motor vehicle occupants, motorcyclists, and people walking and biking. While Americans drove less in 2020 due to the pandemic, NHTSA's early estimates show that an estimated 38,680 people died in motor vehicle traffic crashes-the largest projected number of fatalities since 2007. This represents an increase of about 7.2 percent as compared to the 36,096 fatalities reported in 2019. Preliminary data from the Federal Highway Administration (FHWA) shows vehicle miles traveled (VMT) in 2020 decreased by about 430.2 billion miles, or about a 13.2-percent decrease. The fatality rate for 2020 was 1.37 fatalities per 100 million VMT, up from 1.11 fatalities per 100 million VMT in 2019. NHTSA's analysis shows that the main behaviors that drove this increase include: impaired driving, speeding, and failure to wear a seat belt.

The BCATS area typically mirrors national trends in numbers of traffic crashes. The majority of crashes are property damage crashes at almost 84% of the total in 2020. The following table depicts data for crashes in the BCATS area for 2020.

Table 13-1 – BCATS Area Crash Data for 2020

City or Township	Total Crashes	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Persons Killed	Persons Injured
Battle Creek	1,318	8	230	1,080	8	303
Springfield	108	1	14	93	1	18
Bedford	103	2	19	82	2	25
Emmett	351	2	43	306	2	65
Leroy	92	0	15	77	0	20
Newton	72	0	8	64	0	11
Pennfield	128	0	15	113	0	20
BCATS Area Total	**2,172**	**13**	**344**	**1,815**	**13**	**462**
Calhoun County Total	3,422	20	467	2,935	20	630
Michigan Total	245,432	1,010	44,417	200,005	1,083	60,986

Review of crash data by crash type at given locations typically can prompt development of an improvement to the roadway that might mitigate the likelihood of such crashes re-occurring. Unfortunately, deer involved crashes remain a significant crash type in the BCATS area that is difficult, if not impossible, to remedy. The annual number of deer involved crashes in metropolitan Battle Creek averages around 400. Over the five-year period 2016-2020 deer involved crashes were 14.5% of the total crashes in the BCATS area, although the range from 6-9% in the cities to over 58% in the rural townships is notable.

Other prominent crash types and safety issues that warrant increased attention in planning transportation improvements include crashes involving senior age drivers (with “senior” defined as persons over 59 years old), crashes involving drunk/drugged (impaired) & distracted drivers, child passenger restraint, and safety belt use. BCATS actively promotes awareness of these issues, often in conjunction with state & national campaigns, and encourages its participating agencies to incorporate whatever might be applicable relative to these issues into development of their transportation improvement projects.

It is likely that every transportation improvement project provides safety benefits somehow within its scope of work, although the project may be categorized as “pavement preservation”, “bridge reconstruction”, or something other than “safety-related”. Of the projects recommended in this 2045 MTP, projects that emphasize improved “traffic safety/operations” with “safety-related” work include intersection improvements (both geometric improvements and signal modernizations), fixed object (i.e. tree) removal, flashing beacons at one intersection, and two roundabouts, one by the Calhoun County Road Department at the B Dr S/6 Mile Rd intersection, and the other by the City of Battle Creek at the Skyline Dr/Hill Brady Rd intersection.

The proposed Skyline/Hill Brady roundabout also links with Logistics Dr to the southeast and a planned new entrance to the Air National Guard base to the northeast. The existing signalized "T" intersection will be changed to a two lane 4-leg roundabout, increasing level of service & safety, and reducing delay & emissions. Initial discussion of the project came to the City from the Air National Guard, which is expected to provide a substantial funding share to implement the estimated $2.0M project.

For future safety-related activity, the identification of high-crash rate intersections is often the essential first step in the development of projects to remediate perceived safety issues at the intersection itself or on the adjacent roadway corridors. Review of online media rankings of high crash intersections in Calhoun County, and analysis of crash data, coupled with local knowledge/experience and “professional judgement”, helped to recognize a number of intersections that regularly have high numbers of crashes each year. The following list of BCATS-area high crash intersections, in no particular order, is a compilation of intersections for focused study by crash type and intersection characteristics, increased monitoring, and possible project development, as well as to suggest corridors connecting these intersections be considered for more detailed study.

– Beckley Rd @ M-66
– Beckley Rd @ Capital Ave
– Columbia Ave (M-96) @ Capital Ave
– Main St/6½ Mile Rd/Beadle Lake Rd (M-294) @ Columbia Ave (M-96)
– Bedford Rd (M-37) @ Michigan Ave (M-89)
– Columbia Ave (I-94BL/M-96/M-37) @ Helmer Rd (I-94BL/M-96/M-37)
– Helmer Rd (M-37/I-94BL/M-96) @ Dickman Rd (M-96)
– Capital Ave @ Dickman Rd (I-94BL)
– Columbia Ave (M-96) @ 20th St
– Columbia Ave (M-96) @ I-194 exit 2 ramps
– Columbia Ave (M-96) @ Riverside Dr
– Hill Brady Rd @ Dickman Rd (M-96)
– Bedford Rd (M-37) @ Jackson St
– Beckley Rd @ Minges Creek Pl
– Beckley Rd @ 6 Mile Rd
– Emmett St @ North Ave

Review by BCATS staff and discussions at BCATS Technical and Policy Committee meetings indicate that of the high-crash rate intersections listed, that Columbia Ave (M-96) @ Capital Ave, Main St (M-294) @ Columbia Ave (M-96), and Helmer Rd (M-37) @ Columbia Ave (M-96) seem to be priorities for signal modernization and consideration of possible geometric re-configuration. An “illustrative” project to promote such work at those three intersections is included in this Plan.

The Emmett St @ North Ave intersection was slated for a 2021 project to replace the signalized standard 4-way intersection with a roundabout, partly in response to a pedestrian fatality there in 2018. After securing a combination of adequate funding from the Federal Congestion Mitigation Air Quality program and the Highway Safety Improvement Program, and having completed most of the design work, the City of Battle Creek opened the project for an active and extended public hearing/comment period, given much of that public opportunity had been deferred due to COVID-19 related restrictions. Public opposition to the roundabout was significant, and the City Commission responded by cancelling the project. The roundabout concept for the Emmett St/North Ave intersection is being maintained as an “illustrative” project in this 2045 MTP.

Within the BCATS metropolitan area, other safety-related "illustrative" projects for this 2045 MTP have been identified, based in part on capacity & traffic flow results from the Travel Demand Forecast Model (TDFM), aforementioned local knowledge/experience and “professional judgement”, and having been suggested as “illustrative” projects in past BCATS’ long-range metropolitan transportation plans. These additional safety-related "illustrative" intersection projects include:

- M-89 (Michigan Ave) @ Augusta Dr, and M-89 (Michigan Ave) @ VanBuren St. At both these intersections on the State trunkline system, the M-89 trunkline traffic must yield to thru traffic on the intersecting non-trunkline road. Also at each intersection, the M-89 trunkline meets the non-trunkline thru road at an acute angle, potentially impacting sight distance and turning movements. The awkward geometric at these locations prompts their consideration here as safety-related projects, although undue delay on the State trunkline system could suggest these intersections also be considered congested.
- M-96 (Dickman Rd W) @ Armstrong Rd. Observed A.M. peak hour traffic movements and P.M. peak hour congestion suggest possible improvements to this intersection that provides access northward to the Veterans’ Affairs Medical Center (VAMC), with approximately 1,500 employees, and to possible future employment centers in Fort Custer Industrial Park (FCIP) property north & east of the VAMC along River Rd and Clark Rd. Extending the right-turn approach lanes on westbound M-96 and on southbound Armstrong Rd, and adding a center left-turn lane on the eastbound M-96 approach could be evaluated as a means to address the potential safety-related & capacity issues of this intersection. Depending on success in developing nearby FCIP property, the Dickman/Armstrong intersection may eventually warrant consideration for full signalization and related geometric improvements. Armstrong Rd itself, from M-96 (Dickman Rd) northward to River Rd, is also recommended as an “illustrative” project for pavement rehabilitation and as a need related to economic development in this Plan.
- 20th St @ I-94BL (Dickman Rd). Currently travel from westbound Dickman Rd to southbound 20th St utilizes a diagonal crossover in the southeast quadrant of this intersection instead of making the typical left-turn movement at the intersection itself. The crossover also serves travel from northbound 20th St to eastbound Dickman Rd. The removal of the crossover has been proposed occasionally over the past twenty years not only to open up the southeast corner parcel to commercial development, but also to provide for more efficient left-turn movements onto southbound 20th St as traffic volumes at the intersection increase.

PAVEMENT CONDITION

Each of the road agencies in the BCATS area has, to varying degrees, pavement management systems in place to facilitate evaluation and prioritization of improvements to pavement/roadways under their respective jurisdictions. Along with Pavement Surface Evaluation& Rating (PASER) data collected by BCATS and road agency staff for the Michigan Transportation Asset Management Council (TAMC), the pavement management systems support the identification and development of needed pavement preservation projects. Both the City of Battle Creek and the Calhoun County Road Department have approved Asset Management Plan documents on file with the TAMC as required for road agencies with more than 100 miles of Federal-aid eligible roadway.

Specific major pavement projects planned thru 2026 (local) and thru 2029 (MDOT) have been included as Recommended Improvements in this Plan and will proceed to implementation in BCATS' *FY 2023-2026 Transportation Improvement Program (TIP)*. For local road agency pavement projects beyond 2026 in this Plan, funding for an "Annual Pavement Preservation Strategy Local Agencies" is recommended as a project each year thru 2045; for MDOT projects to be determined, an "Annual MDOT Road CPM, Rehabilitation, & Reconstruction" project funding is recommended beginning in 2030 and running thru 2045.

BRIDGES CAPACITY & CONDITION

The condition of all bridges is closely monitored and routinely reviewed by both MDOT and the local road agencies. The City of Battle Creek has twenty (20) non-trunkline bridges under its jurisdiction. The City of Springfield has no bridge structures within its boundaries for which it is the responsible road agency. There are twenty-two (22) bridge structures under the jurisdiction of the Calhoun County Road Department (CCRD) that are located within the BCATS area in the townships of Bedford, Pennfield, Emmett, Leroy, and Newton. MDOT assists the local agencies with evaluation, monitoring, and prioritizing needs to receive critical bridge funding for repairs and replacement.

The bridge improvements recommended in this Plan overall consist of nine individual bridge projects by MDOT, and two local bridge rehabilitation projects: Raymond Rd over the railroad tracks just south of Porter St in 2022; and Union St over the Battle Creek River in 2023. In addition, MDOT is replacing bridges at five locations along I-94 from Capital Ave eastward to F Dr N, within a $114.7M Rebuilding Michigan Bond Program (RMBP) project to be under construction from late 2022 to mid-2025.

It is expected that the extensive MDOT RMBP I-94 project will reflect the recognition that the design of bridge improvements along I-94 consider accommodations for maintenance of traffic during construction to widen I-94 across the BCATS area at some point in the future. It is emphasized that any replacement or major rehabilitation of bridges along I-94 should at least consider the long-term desire for widening of I-94 to three thru mainline lanes in each direction.

Rehabilitation of the M-311 bridge over I-94, in 2022, is one of the nine individual MDOT bridge projects recommended in this Plan. The 2022 project does not include any widening, as suggested in the designation of an M-311 bridge project as a priority "illustrative" bridge project previously in BCATS' *2040 Plan.* This 2-thru lane bridge at I-94 exit 104 was referenced earlier in this chapter under "Roadway Capacity Deficiencies/Limitations" and discussion of an "illustrative" capacity project to improve lane delineation, with widening and added turn lanes as necessary, on M-311 (Wheatfield/11 Mile Rd), from M-96 (Michigan Ave) northward to the intersection with Wheatfield Parkway and the westbound I-94 exit & entrance ramps, a segment including the bridge over I-94. MDOT officials have indicated that widening of the existing bridge to add lanes is precluded by the bridge's design, and that to add lanes will require full bridge replacement. Into the future, a wider M-311 bridge over I-94, with minimum 4-thru lanes, remains a priority "illustrative" project in anticipation of future development at the interchange, along Wheatfield Parkway, and along M-96 (Michigan Ave) across from Firekeepers' Casino.

Another MDOT bridge to be designated as an "illustrative" project in past BCATS' long-range Plans is Helmer Rd over I-94, at I-94 exit 95. Resurfacing of each ramp at the interchange is part of the 2022-25 I-94 RMBP project mentioned previously, but no work on the bridge itself. While the Helmer Rd corridor forecast volume/capacity figures in this and past Plans does not indicate a need to add lanes to the bridge over I-94, development of the proposed "illustrative" project should include detailed evaluation of the existing bridge condition for possible replacement with additional capacity. Geometric changes to improve sight lines at the bridge approaches' intersections with both I-94 exit ramps should also be considered, along with accommodations for non-motorized travel over the bridge.

The F Dr N bridge over I-94 is also part of the 2022-25 I-94 RMBP project mentioned previously, with the planned work to include replacement of the bridge barrier railing and resurfacing the bridge deck. An "illustrative" project to add a non-motorized facility to this bridge when it is ultimately wholly replaced is being presented in this Plan.

MDOT's 2022-25 I-94 RMBP project also includes replacement of the Capital Ave bridge over I-94. In advance of design work, MDOT convened local road, transit, and emergency service officials, and representatives of businesses in the vicinity of the bridge, to gather input on possible re-configurations of I-94 exit & entrance ramps at the interchange and other changes that could be incorporated into the bridge replacement, to address perceived issues with the current interchange. Suggestions included adding a dedicated right-turn lane on Beckley Rd for traffic to northbound Capital Ave, relocating the I-94 eastbound exit ramp intersection with Beckley Rd westward farther from traffic queuing up to Capital Ave and also not directly opposite business entrances across Beckley Rd, and a roundabout on the north end of the bridge to handle the I-94 exit & entrance ramps and nearby Knapp Dr. After review of comments, a thorough traffic analysis, and travel demand forecast modeling review, it was determined not to be feasible at this time to include any additional work with the bridge replacement but to maintain the current "footprint". However, as a reminder of those discussions, this Plan is including an "illustrative" project for the City of Battle Creek and MDOT to jointly continue monitoring conditions and pursue funding opportunities for any future improvements deemed necessary at the I-94/Capital Ave interchange.

Another MDOT bridge project that may be modified is a $17.6M replacement of the I-194/M-66 bridges over the Kalamazoo River, a 2024 recommended improvement in this Plan. A

Plan-recommended 2022 “I-194/M-66 Corridor PEL Study”, described in the 2045 MTP Recommended Improvements project list (Chapter 17, Table 17-1) as a “Planning Environmental Linkage (PEL) study to consider alternative configurations of the existing freeway in advance of reconstruction expected necessary before 2030" will offer options that could impact the bridge replacement design. As stated by MDOT in the PEL study’s justification recorded in Michigan’s JobNet transportation project programming database, the PEL “... *is being used to determine the appropriate configuration of I-194 reconstruction. Traffic has decreased with manufacturing activity and it is desirable to identify other options to carry the 22,000 AADT (2020), 27,000 AADT (2015) that could add benefits of improved accessibility for local users and lower future road and bridge costs. Converting I-194 from an interstate freeway to a non-freeway will be considered in this study. Job 210204 is approximate $20M RBMP I-194 bridge replacement over the Kalamazoo River that is in the process of being delayed to allow I-194 to operate during I-94 design build RBMP work in 2023 and 2024 and have the replacement concept fit the planning being done in this PEL. The proposed $650,000 EPE for planning is justified to make the approximate $60M road and bridge investment the highest benefit it can be for all users and choose the correct amount of infrastructure to be rebuilt.*” BCATS expects to participate in the PEL as it proceeds and to incorporate any resulting suggested improvement projects along the I-194/M-66 corridor into its short-term programming and long-term planning processes.

The City of Battle Creek and the Calhoun County Road Department each provided a list of their future potential & priority bridge projects for the next 5-10 years as reference material for this Plan development, and to assist in forecasting bridge expenditures. With that information, an “Annual Local (non-trunkline) Bridge Replacement & Preservation” is recommended as a project each year 2026-2045 in this Plan. A similar annual project from 2028-2045 for MDOT bridges is also a Plan recommended improvement.

Other known bridge limitations in the BCATS area may be addressed as preservation projects with general preventive maintenance funding. There are no other imminent significant bridge needs that are perceived to justify recommendation in this Plan of a specific future bridge project, with funding, in part due to uncertainty regarding the availability and acquisition of dedicated bridge funding.

NON-MOTORIZED TRANSPORTATION

Over twenty years ago, as part of BCATS’ *2025 Transportation Plan,* a future non-motorized transportation network was defined to help guide improvement and expansion of non-motorized facilities in the metropolitan area. Since then, numerous plans and/or projects have been completed by local government agencies and non-profit organizations to advance opportunities for non-motorized transportation. Chapter 7, "Intermodal Considerations - Pedestrian & Other Non-Motorized", presents details of the planning & implementation of non-motorized transportation improvements in the BCATS area. It is hoped that in the short term BCATS can participate closely with the City of Battle Creek’s update of its 2006 non-motorized plan currently underway as referenced in Chapter 7. From that point, an effort can commence to assemble the area’s many projects and plans for non-motorized transportation into a unified vision, and also map an updated comprehensive non-motorized transportation network for the BCATS metropolitan area. Future non-motorized projects will

be reviewed to ensure compatibility among the plans of all interested local, regional, and state government entities, as well as non-government and non-profit organizations.

Frequently improvements for non-motorized transportation can be incorporated into projects addressing capacity and/or pavement condition. Road widening with paved shoulders, and pavement resurfacing with modified lane striping are two such examples that can provide for the addition of designated bike lanes. Intersection signal and geometric projects now include sidewalk improvements (i.e. ADA ramps), and consideration of pedestrian signals, as standard practice. The potential for non-motorized improvements to be implemented concurrent with adjacent road work should be recognized early in any project's development, especially if additional right-of-way will be needed and/or available .

Two non-motorized projects that have been identified as "illustrative" priorities in BCATS' last two long-range Plans have moved on to the "Recommended Improvements" list for this 2045 Plan. It is believed that funding through the Transportation Alternatives Program (TAP), Federal Surface Transportation Program (STP) Small MPO/Urban Local, or air-quality mitigation funds i.e. CMAQ can and will be available for these projects:

- Rehabilitation of existing shared-use asphalt path off-road along north side of M-96 (Dickman Rd), from Evergreen Rd/American Legion Dr intersection (just north of M-96 near former location of Avenue A intersection with M-96) westward into Kalamazoo County, to Fort Custer National Cemetery, and from there extension of new path along M-96 (on- or off-road to be determined) thru Augusta & Galesburg to meet the existing Kalamazoo River Valley Trail (www.krvtrail.com) near 35th St just north of the Kalamazoo River.
- Modify four-lane (with no sidewalks) Stringham Rd from Jackson St north to M-89 (Michigan Ave) to accommodate shared-use off-road path, connecting Linear Park (on north bank of Kalamazoo River) to M-89.

No other non-motorized transportation projects have emerged in recent years to be recommended in this Plan; despite many suggestions and ideas for projects in other existing plans, none have been developed with any valid expectation of funding or commitment. Based on discussions at BCATS' Technical & Policy Committee meetings, review of other agencies' plans, observation of existing conditions, and recent local news, the following were suggested as "illustrative" projects in BCATS' 2040 MTP, and again in this 2045 MTP.

- Enhancement of the Battle Creek Linear Park (www.bcparks.org/134/Linear-Park) west trailhead on the north side of M-96 (Dickman Rd) at Brady Rd, and improvement of signing along Linear Park.
- Develop non-motorized facility along east-west Watkins Rd corridor to connect existing north-south non-motorized facilities along Helmer Rd & Capital Ave SW.
- Develop non-motorized facilities in Pennfield Township to connect southward to existing City of Battle Creek non-motorized facilities.
- Provide for non-motorized access over I-94 on Helmer Rd (also part of "illustrative" project suggested under "Bridges Capacity & Condition" to widen/replace the Helmer Rd bridge over I-94).

One "illustrative" non-motorized project new to this 2045 MTP is the addition of a non-motorized facility to the F Dr N bridge over I-94, as noted earlier in the "Bridges Capacity & Condition" section of this chapter. Additionally the proposed non-motorized improvements listed in Chapter 7, Table 7-1, City of Battle Creek - HIGH PRIORITY IMPROVEMENTS - NON-MOTORIZED can be considered "illustrative" projects in this 2045 MTP.

SECURITY, RELIABILITY, & RESILIENCY

Security

One of the MAP 21/FAST Act planning factors requires that the planning process provide for consideration and implementation of projects, strategies, and services that will "increase security of the transportation system for motorized and non motorized users" as a specific stand alone consideration. The Federal Highway Administration (FHWA) generally defines "security planning" as "that related to an event that is beyond the ability of local authorities to handle and respond to, and that outside resources will be necessary to assist." (Source: Summary Report: MPO Peer Workshop on Addressing Security Planning and Natural and Manmade Disasters, February 2008) However, no"checklist" exists that defines "security"in the context of MPO planning. FHWA encourages each MPO to create its own definition that fits local needs in addressing this planning factor. Different levels of incidents require different levels of response and involve different requirements of the transportation system. As the level of significance of an incident rises from something "local" to "regional", then to "state", and ultimately "national", the scale of public preparedness for such an event declines at the same time that the coordination complexity level rises. Obviously, the security response system needs to expand with the magnitude of the event.

Based on FHWA's definition of "security planning" noted above, incidents that are regional in nature, up to and including those that are national in impact, are those incidents needing to be addressed within security planning. Valuable assets of particular interest in the BCATS area include:

- Hart Doyle Inouye Federal Center which houses the Defense Logistics Information Service, Defense Re-Utilization Notation, and General Services Administration of the Department of Defense (approx. 1,200 employees)
- Battle Creek Executive Airport (formerly known as W.K. Kellogg Airport), which has a presence of the Air National Guard, and has a 10,000 foot runway which can accommodate many types of aircraft
- Veterans' Affairs Medical Center (approx. 1,150 employees)
- Fort Custer Industrial Park (approx. 7,500 employees)
- Firekeepers Casino (approx. 1,600 employees)
- Battle Creek Health System (approx. 1,500 employees)
- Kellogg Community College (approx. 500 employees)
- Western Michigan University College of Aviation
- Duncan Aviation (approx. 650 employees)
- City of Battle Creek wastewater treatment plant
- Verona well fields
- Battle Creek Transit (local transit operator)
- Enbridge oil pipeline
- Interstate I-94 and its associated bridges
- Norfolk-Southern and Canadian-National rail lines throughout the BCATS area
- Canadian National Rail Yard (approx. 500 employees)
- ITS message system on I-94 (and just outside the BCATS area on I-69)
- Traffic Management Center at the City of Battle Creek Department of Public Works

The Michigan SARA Title III Program established the formation of a Local Emergency Planning Committee (LEPC) in each county in Michigan. The head of Calhoun County's Emergency Management is the contact person for the LEPC. The LEPC has been active in Calhoun County for many years. Calhoun County has an Emergency Action Guide that serves as its blueprint for dealing with emergency events. It is not made available for public

review. The City of Battle Creek has its own Emergency Services Department which maintains the City's Comprehensive Emergency Management Plan. The City's Emergency Services Department is responsible for the regional response SWAT team. Since the transit operator, Battle Creek Transit (BCT) is a city department, the City's Comprehensive Plan includes emergency planning for BCT as well. The Battle Creek Executive Airport (formerly the W.K. Kellogg Airport), also run by the City of Battle Creek, has its own emergency plan which is developed separately. However, its plan is signed off on by the head of the City's Emergency Services. The Hart Doyle Inouye Federal Center also has its own emergency/security plans. Firekeepers Casino maintains its own security forces and contracts with local law enforcement for additional services.

Michigan Mobility 2045 (MM2045) is the latest version of the Michigan Department of Transportation's 25-year long range plan. The State Transportation Commission approved the MM2045 Plan in November 2021. This was too late in the development process for BCATS' 2045 Plan for much of the MM2045 Plan's content to be included in BCATS' Plan. MDOT did include Safety and Security as one of the six MM2045 Goals highlighted in the Executive Summary for the Plan. MDOT actively participates in the protection of critical infrastructure by participating in the development and implementation of the Michigan Emergency Management Plan and the Michigan Homeland Security Strategy with state and federal partners. While some details are provided relative to the programs, strategies, and activities MDOT has identified, for security reasons, some details of the strategies and plans will not be released to the public.

Within the last decade, there has been one incident impacting the BCATS area that has had regional or greater impact on the transportation system. In January, 2015, white out conditions on I-94, in Kalamazoo County just west of the Calhoun/Kalamazoo County border (mile marker 90) resulted in a series of vehicle crashes both eastbound and westbound on the interstate that ultimately involved 193 vehicles, and resulted in, amazingly, only one fatality and twenty two injured motorists. The event was weather related, but shown to be exacerbated by driver error (58 drivers were cited for driving too fast for conditions, including 30 commercial drivers). A major fire erupted in the eastbound lanes involving a tractor trailer hauling 40,000 pounds of fireworks and another commercial vehicle transporting formic acid. The situation was compounded by the fact the temperatures that day hovered around 6 degrees Fahrenheit, with significant wind chill as well. The fire and hazardous materials resulted in an evacuation order for an area within three miles of the crash for a short period of time. Altogether, it took two days to bring the scene under control. I-94, in both directions, was shut down for those two days and detours had to be put into place. Motorists were notified of the closure as far away as Indiana and Detroit and discouraged from using the facility.

The incident strained the local emergency services resources. Three police agencies, a dozen fire departments, nine ambulance companies, seven wrecker services, and transit vehicles from Battle Creek Transit and Kalamazoo Transit were all involved in the initial response and clean up that followed. The transit vehicles were called in to take persons from vehicles involved in the crash to safe locations at area schools, due to the severe weather conditions and wind chill factors. A portion of the roadway on the eastbound portion of I-94 was so severely damaged due to the fire that it ultimately required a new overlay to be done.

BCATS' role in security planning has been providing data to other agencies, as requested, and including road and transit related security projects in the long range Metropolitan Transportation Plan and Transportation Improvement Program. Battle Creek Transit is required to spend at least 1% of its federal assistance on projects which address security. MDOT has implemented projects related to intelligent transportation systems (ITS) deployment along the I-94 corridor to offer security enhancement in the BCATS area. Changeable message signs, weather monitoring stations and cameras have all been installed by MDOT along I-94 in the BCATS area. Upgrades to these ITS systems are planned in the foreseeable future.

Following the major I-94 traffic crash cited above, local law enforcement and road agencies held debriefing sessions to evaluate the response to the incident. Additionally, an "Evaluation of the I-94 Corridor from the Indiana State Line to US 127 South" report was prepared by MDOT, the Michigan State Police and the Federal Highway Administration in response to a request from then State Senator Margaret O'Brien of the Kalamazoo area. Potential improvements for several locations along I-94 within the BCATS area were included in that report and are MDOT's responsibility to implement in the future.

Reliability & Resiliency

Procedures for incorporating "transportation performance management" (TPM) into the planning process, as outlined in the MAP 21/FAST Act, added "reliability" and "resiliency" as planning factors required to be addressed. Like the prescription to add security, the instructions to add reliability and resiliency to the list of essential concerns came with little explicit guidance for metropolitan planning organizations (MPOs) like BCATS.

In the context of BCATS' processes,"reliability" is being interpreted to specifically mean "travel time reliability", defined as "the consistency or dependability in travel times, as measured from day to day and/or across different times of the day". (Source: Travel Time Reliability: Making It There On Time, All The Time; prepared for FHWA by Texas Transportation Institute with Cambridge Systems, Inc.;January 1, 2006.) Travel time reliability measures the extent of unexpected delay or any transportation system users, whether they are vehicle drivers, transit riders, freight shippers, or even air travelers. The delay can be caused by a major crash, like the January 2015 incident on I-94 described previously in this section as a "security "issue, or by other non-recurring events such as disabled vehicles on shoulders, traffic signal malfunctions, bus passenger incidents, and extreme weather conditions. Reliability information for the BCATS area is included in this Plan within Chapter 10 Performance Based Planning and in the System Performance Report, included as an Appendix.

Within transportation planning, "resilience" has come to focus on extreme weather and climate change. The FHWA defines "resilience" as "the ability to prepare for changing conditions and withstand, respond to, and recover rapidly from disruptions". (Source: Transportation System Resilience to Extreme Weather and Climate Change; US Department of Transportation, FHWA; November 2015. Among the many possible impacts of extreme weather and climate change on the transportation system are pavement stress under high temperatures, increased pavement damage from more

severe freeze/thaw cycles, flooded roadways due to inadequate stormwater management, and roadside environmental damage from runoff of more frequently used de-icing materials. There is also guidance for transit operations on the resilience topic in the form of TCRP Document 70 “Improving the Resilience of Transit Systems Threatened by Natural Disasters Vol. 1: A Guide.”

At present the requirements, and possible penalties for non-compliance, for suitably addressing reliability & resiliency in the transportation planning process apply only at the State level. MDOT’s transportation performance management (TPM) techniques for consideration of all the planning factors is an ongoing activity.

NEEDS RELATED TO ECONOMIC DEVELOPMENT

There are some concerns for the future transportation system, such as those related to plans in place for future development of industrial and commercial areas, that do not specifically fall neatly into the capacity, safety, pavement, bridge, or non-motorized categories.

In the previous 2040 MTP, only one such future development was identified as possibly imminent, that might necessitate appropriate transportation improvements, during both its construction and its operation. Several “illustrative” projects were identified in that 2040 MTP to serve a site at the Fort Custer Training Center (FCTC) being considered by the US Dept of Defense Missile Defense Agency (MDA) for a ground-based Continental Interceptor Site (CIS). Since completion of that 2040 MTP, the Battle Creek site has been dropped from consideration for that future missile base.

BCATS’ 2025 and 2035 long-range transportation plans identified the following two projects as “illustrative” needs related to economic development, but in the 2040 MTP it was stated the projects “are no longer considered viable, even as “illustrative” projects, given no foreseeable changes to the situations that precluded their implementation.”

Morgan Rd Extension - this project would have extended Morgan Rd eastward from M-66 (Capital Ave NE) across the Battle Creek River and the GTW railroad to the intersection of Gorsline Rd (N Dr N) and Cooper/Bellevue Rd. Relative to economic development, this new roadway would have enhanced access to a retail, office, and residential complex, based on a new Wal-Mart “superstore”, at one time expected to open late 2012 but dropped during the national economic downturn. The proposed Wal-Mart was to be on the east side of M-66 (Capital Ave NE), on the north side of the planned extension of Morgan Rd. The completion of a continuous east-west route across the north edge of the “built-up” urban area, including another crossing of the Battle Creek River, was also foreseen to be a significant benefit to the overall transportation system.

Glenn Cross Rd Extension - this project would have extended Glenn Cross Rd from M-66, eastward across 6 Mile Rd, then northward to meet B Dr N between Harper Village Dr and 6½ Mile Rd. Property south of B Dr N along this new road would have been made accessible and available for development, while the new road itself was expected to alleviate congestion at the M-66/B Dr N (Beckley Rd) intersection, as a “bypass” route. The project could not be implemented due to inability to acquire suitable right-of-way to access B Dr N between existing businesses.

In recent years however, there has been a renewed interest from Emmett Township officials in the Glenn Cross Rd extension, possibly running due east straight to 6½ Mile Rd instead of northward to meet B Dr N in between major commercial facilities. Accordingly the project is being added back to BCATS' long-range Plan "illustrative" list.

Addressing capacity and safety-related concerns of the M-96 (Dickman Rd W) @ Armstrong Rd intersection, and pavement rehabilitation of Armstrong Rd from M-96 (Dickman Rd) northward to River Rd have been recommended as "illustrative" projects previously in this chapter under the appropriate groupings. Depending upon success in developing nearby Fort Custer Industrial Park property, the Dickman/Armstrong intersection may eventually warrant consideration for full signalization and related geometric improvements. The current conditions at the intersection with M-96 (Dickman Rd), and of Armstrong Rd itself, qualify work there to be "illustrative" as a need related to attracting economic development.

2045 MTP "ILLUSTRATIVE" PROJECTS

The following list includes "illustrative" projects identified in this chapter, grouped by project type category and in the order that they were first identified. Note these "illustrative" projects may have no estimated costs or years of implementation, and were not included in the financial plan and determination of fiscal constraint presented in Chapter 15. Also note the "illustrative" projects were not represented on any maps or included in analyses for Chapter 16 - Environmental Mitigation or Chapter 18 - Environmental Justice.

Roadway Capacity Projects

A. **I-94 widening** (one additional thru lane in each direction), from Sprinkle Rd (I-94 exit 80 in Kalamazoo County) eastward across the BCATS metropolitan area to I-69 at I-94 exit 108 near Marshall.
B. **I-94 eastbound loop exit ramp to M-311 & I-94 westbound loop entrance ramp to I**-94, remove both I-94 Exit 104 loop ramps intersecting M-311 (11 Mile Rd) and replace with straight-line ramps directly to/from I-94BL/M-96 (Michigan Ave E).
C. **Wheatfield Parkway**, designate as I-94BL from M-311 (11 Mile Rd) westward to existing I-94BL/M-96 (Michigan Ave). Wheatfield Parkway is part of the National Highway System (NHS) as an integral part of the I-94/I-94BL/M-311 interchange; it's conversion to State trunkline and I-94BL designation is offered as a separate "illustrative" project with or without the relocated westbound I-94 entrance ramp from preceding item B.
D. **M-311 (Wheatfield/11 Mile Rd)**, from M-96 (Michigan Ave) northward to the intersection with Wheatfield Parkway & the westbound I-94 exit & entrance ramps; improve lane delineation, with widening & added turn lanes as necessary, including the 2-thru lane bridge over I-94 (listed as a separate "illustrative" bridge project).
E. **M-96 (Michigan Ave E)**, from M-311 (Wheatfield/11 Mile Rd) eastward past Firekeepers' Casino to metropolitan planning area (MPA) boundary (12 Mile Rd), and further towards Marshall as warranted. Add thru lanes & turn lanes pending nearby future commercial development & increased traffic.
F. **Beckley Rd-B Dr N Signal Interconnection & Coordination,** from Capital Ave eastward to 6½ Mile Rd, including MDOT signals on M-66 at Beckley and at crossover south of Beckley. Include improved, comprehensive connection to City of BC Traffic Management Center.

Safety-Related Projects

G. **Columbia Ave (M-96) @ Capital Ave, Main St (M-294) @ Columbia Ave (M-96), and Helmer Rd (M-37) @ Columbia Ave (M-96) Intersections**, optimize/modernize/upgrade traffic signals, consider geometric re-configurations as appropriate.
H. **Emmett St @ North Ave,** replace existing standard 4-way signalized intersection with a roundabout.
I. **M-89 (Michigan Ave) @ Augusta Dr**, reconfigure geometry & traffic control signing to favor southeast-bound thru traffic on state trunkline M-89.
J. **M-89 (Michigan Ave) @ VanBuren St**, reconfigure geometry & traffic control signing to favor northwest-bound thru traffic on state trunkline M-89.
K. **M-96 (Dickman Rd W) @ Armstrong Rd.** Extend the right-turn approach lanes on westbound M-96 and on southbound Armstrong Rd, add center left-turn lane on the eastbound M-96 approach. Consider full signalization & related geometric improvements pending possible economic development of nearby Fort Custer Industrial Park property, discussed in this chapter under "Needs Related to Economic Development". Also rehabilitate Armstrong Rd pavement from M-96 (Dickman Rd) northward to River Rd.

L. **20th St @ I-94BL (Dickman Rd).** Remove southwest-bound diagonal crossover in the southeast quadrant of this intersection to shift travel from westbound Dickman Rd to southbound 20th St to the intersection itself.

Bridges - Capacity & Condition

M. **M-311 (Wheatfield/11 Mile Rd) bridge over I-94**, at I-94 exit 104. Replace 2-thru lane bridge with wider bridge aligned with widened approaches suggested as part of an "illustrative" capacity project.

N. **Helmer Rd bridge over I-94**, at I-94 exit 95. Replace 2-thru lane bridge with wider bridge to add non-motorized access and capacity as warranted, and consider geometric changes to improve sight lines at the bridge approaches' intersections with both I-94 exit ramps.

O. **F Dr N bridge over I-94,** widen to add non-motorized facility, at replacement of bridge structure or before then as possible concurrent with maintenance or rehabilitation work. Also a non-motorized "illustrative" project.

P. **Capital Ave Bridge over I-94 & Interchange,** encourage & support City of Battle Creek and MDOT to jointly continue monitoring conditions, develop practical long-term options, and pursue funding opportunities for signal and geometric improvements at the I-94/Capital Ave interchange, as warranted, including the Capital/Beckley intersection, I-94 exit & entrance ramp intersections with Beckley Rd and Capital Ave, and the Capital Ave/Knapp Dr intersection.

Non-Motorized Transportation

Q. **Battle Creek Linear Park**. Enhance Linear Park (www.bcparks.org/134/Linear-Park) west trailhead on the north side of M-96 (Dickman Rd) at Brady Rd, and improve signing along Linear Park.

R. **Watkins Rd Corridor Non-Motorized Connector**. Develop new non-motorized facilities aligned along Watkins Rd corridor to connect existing non-motorized facilities on Helmer Rd & Capital Ave SW.

S. **Pennfield Township Non-Motorized Connections**. Identify & develop non-motorized facilities in Pennfield Township to connect southward to existing City of Battle Creek non-motorized facilities.

T. **Helmer Rd Non-Motorized Crossing over I-94**. Provide non-motorized access over I-94 on Helmer Rd (also part of "illustrative" bridge project to replace the Helmer Rd bridge over I-94).

U. **F Dr N bridge over I-94,** widen to add non-motorized facility, at replacement of bridge structure or before then as possible concurrent with maintenance or rehabilitation work. Also a bridge "illustrative" project.

V. **City of Battle Creek - 2006 Non-motorized Plan, High Priority Improvements,** listed in Table 7-1, Chapter 7 - Non-Motorized Modes, of this 2045 MTP document.

Needs Related to Economic Development

W. **Glenn Cross Rd Extension,** from M-66 eastward across 6 Mile Rd, then northward to meet B Dr N between Harper Village Dr and 6½ Mile Rd; or from M-66 due east straight to 6½ Mile Rd.

X. **M-96 (Dickman Rd) @ Armstrong Rd**. Add new signalization & turn lanes at M-96 (Dickman Rd)/Armstrong Rd (identified previously as an illustrative project). Also rehabilitate Armstrong Rd pavement from M-96 (Dickman Rd) northward to River Rd.

CHAPTER 14

OPERATIONAL & MANAGEMENT STRATEGIES

INTRODUCTION

Federal legislation required that BCATS include "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" (USDOT, Metropolitan Transportation Planning: Final Rule FHWA, Sec. 450.322.(f)(3), effective 3/14/07) in the development of its long range transportation plan. The requirement did not change under the MAP-21/FAST Act rules and regulations published May 27, 2016. No new federal regulations have been promulgated since that time.

The intent of identifying and utilizing operational and management strategies is not only to improve performance of the system but to reduce the number of costly widening projects and the frequency of total roadway reconstruction projects on the area's roadways. To this end, BCATS participates in, and promotes, a wide variety of transportation strategies that seek to reduce congestion, prolong the life of the facilities, and maximize the safety and mobility of people and goods. These strategies also support the BCATS' 2045 Plan goals of safety, accessibility, preservation, efficiency, financial constraint, comprehensive planning, and environmental impacts. These strategies are discussed below.

ASSET MANAGEMENT

BCATS is actively involved in the process of asset management for federal-aid roadways in the greater Battle Creek area. One of the goals of the statewide roadway asset management program, overseen by MDOT, is to maximize pavement life by applying the correct "fix" at the right time. All federal-aid eligible roads are assessed on a rotating schedule in the BCATS area by a trained team of field surveyors (including BCATS' staff) to determine deterioration levels. Each of the local agencies has access to the PASER rating system and the RoadSoft software to utilize the results of the field data. Both the City of Battle Creek and the Calhoun County Road Department choose to survey their local roads on a periodic basis as well, to ascertain the health of the local road systems and to provide a means for scheduling of maintenance projects. Each road agency is responsible for its own pavement management program.

BCATS supports this activity with its involvement in training, field surveying, equipment maintenance, assistance to the local agencies, and reporting to MDOT. MDOT maintains an Asset Management program that supports this local effort through the Michigan Transportation Asset Management Council.

CAPITAL PREVENTATIVE MAINTENANCE (CPM)

This strategy is one of the implementation steps that can result from the efforts of the asset management activity. BCATS promotes the timely resurfacing, re-paving, repainting, re-decking, signal upgrading, and other preventative maintenance activities which will extend the life of the existing transportation system infrastructure. Many of these projects can be smaller in scope. Many are not significant enough to be identifiable projects within the context of BCATS' long range plan. MDOT develops its schedule for these types of activities and BCATS identifies which projects may be significant enough to be included in the TIP. The local road agencies have periodically conducted these types of activities jointly under an Areawide Preventative Maintenance project programmed in the TIP. BCATS has promoted the activities of all of its implementing agencies through its support of the asset management program, its safety studies, and the inclusion of MDOT projects in the TIP, as appropriate.

GENERAL MAINTENANCE

By maintaining existing facilities in the best possible condition, the transportation system is sustained, its useful life extended, and it functions better and more safely for users. Activities considered general maintenance include: minor resurfacing, crack sealing and chip and seal type applications, winter maintenance (ice and snow removal), traffic signal maintenance, pot-hole filling, sign and pavement marking upkeep and replacement, street cleaning and debris removal, and landscaping activities (mowing, tree trimming, etc.)

Some of these types of activities are supported by BCATS through sign upgrade projects, safety projects, certain enhancement projects, certain minor resurfacing prjects, and through its participation in the asset management program.

SAFETY

While many of the activities in the CPM and maintenance categories result in improved safety, safety can be an ancillary benefit that is not the identified goal of the activity. However, there are some activities that are specifically directed toward improved safety which also improve the operation of the transportation system. These activities include developing projects to address high crash locations, adding specific safety features to existing roadways and bridges, improving geometrics or design, constructing round-abouts, and promoting public education programs.

BCATS will continue to support safety activities through local safety studies, selection and funding of periodic projects under the statewide local safety program, and promoting national safety awareness promotions (such as National Drunk and Drugged Driving Prevention in December each year).

INTELLIGENT TRANSPORTATION SYSTEMS (ITS)

Intelligent Transportation Systems (ITS) activities involve the addition of facilities, services, and/or technological enhancements designed to improve mobility and safety. Such activities in the BCATS area include: computerized signal control, automated transit fare collection systems, transit vehicle locator systems, and a traffic management center with fiber connected optimized road corridors. In addition, a regional system of changeable message signs and traffic monitoring sensors has been installed by MDOT along I-94 and at the I-94/I-69 interchange in Calhoun County. Future MDOT ITS projects are expected to add to and upgrade these systems within the BCATS area.

Many years ago, BCATS participated in the development of the regional ITS architecture by the MDOT Southwest Region office that has led to the current I-94 ITS implementation. Updating of the regional ITS is currently being undertaken by a consultant for MDOT. BCATS has also funded several traffic signal interconnect projects over the years (with a variety of funding sources), funded transit fare equipment upgrades and vehicle locator systems, and funded development of a local traffic management center at the City of Battle Creek with CMAQ funding. BCATS will continue to direct funding to appropriate projects which support the ITS foundation that is in place in the BCATS area.

TRAFFIC MANAGEMENT CENTER

As noted above, a Traffic Management Center (TMC) has been established at the City of Battle Creek's Public Work Department facility that can monitor traffic signals on several City corridors and one joint corridor with City, County and MDOT jurisdictions all being involved. Future projects may include additional phases of TMC development, including the addition of more upgraded signal locations that tie into the TMC system.

ACCESS MANAGEMENT

Access Management involves establishing policies and implementing projects which will reduce or eliminate driveways, roadway access points, or at-grade intersections with the intention of improving safety, reducing congestion, and enhancing traffic mobility by reducing conflict points. Success with access management requires that many players be involved in the process including (but not limited to): MDOT, local road agencies, property owners, developers, and local planning commissions. MDOT is actively engaged in access management studies to preserve access along its state highway corridors. This involves a process of bringing together all of the stakeholders to develop an access control plan and associated land use and zoning changes. Other access management activities include: driveway consolidation and shared use, use of medians and/or turning restrictions, construction of frontage roads and development of educational materials for the public, planning commissions and developers.

BCATS supports access management through its development of access management studies for area corridors, when appropriate, and by its participation on steering teams for MDOT access management studies within the BCATS area. Access management is a strategy that BCATS promotes relative to all roadway projects in the BCATS area.

COMPLETE STREETS (formerly Pedestrian and Non-Motorized)

The "Complete Streets" legislation in the State of Michigan has many provisions for effective accommodation of pedestrians and users of the wide variety of non-motorized transport devices available today. The goal of the legislation is the inclusion of all possible users of the transportation network. In the BCATS area in the past, this has involved activities such as the "Safe Routes to School" program (now part of the Transportation Alternatives Program), shared use paths, and bicycle lanes on roadways. BCATS expects these projects to continue, along with new ways of addressing the "Complete Streets" goals. The local agencies and MDOT are actively involved in planning, designing, and implementing these types of projects.

BCATS supports these activities through coordination with the City of Battle Creek's non-motorized plan and activities of the Calhoun County Trail Alliance..

OTHER

BCATS promotes optimization of operation and management functions for public transit in the area's of shelters and amenities, and route optimization. The Master Plan for Battle Creek Transit that was developed in 2018 seeks to optimize the fixed route system and is being implemented over time as funding allows. BCATS also promotes the development and expansion of carpool/rideshare parking lots within the BCATS area
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CHAPTER 15

FINANCIAL PLAN

INTRODUCTION

The function of the MTP Financial Plan is to represent available federal-aid highway and transit resources as related to planned future transportation improvements. Specifically, the Financial Plan details:

1. Available highway and transit funding (federal, state and local)
2. Fiscal constraint (cost of projects cannot exceed the reasonably expected funding to be available)
3. Expected rate of change in available funding (unrelated to inflation)
4. Year of Expenditure (YOE) factor (to adjust costs for predicted inflation)
5. Estimate of Operations and Maintenance (O&M) costs for the federal-aid highway system (FAHS)

The May 27, 2016 FHWA final planning rules, which implement the MAP-21/FAST Act legislation, provide guidelines for the continuing requirement that all long range transportation plans be financially constrained documents. The MAP-21/FAST Act legislation continued the requirements of the prior legislation, SAFETEA-LU, relative to the requirements for a planning process that is realistic in terms of the financial resources available to carry out the plan. The regulations regarding establishing a financial plan are as follows:

- (I) For purposes of transportation systems 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).
- (ii) 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). 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.
- (iii) 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. The financial plan may include an assessment of the appropriateness of innovative finance techniques (for example, tolling, pricing, bonding, public private partnerships, or other strategies) as revenue resources for projects in the plan.

- (iv) 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. 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).
- (v) 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.
- (vi) For non-attainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of Transportation Control Measures (TCMs) in the applicable SIP.
- (vii) For illustrative purposes, the financial plan may 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.
- (viii) 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.

BCATS' development of this financial plan chapter is based on the outlined requirements from the regulations. The revenue and expenditure projections are presented in cost adjusted/inflated dollars, termed "year-of-expenditure" dollars. The previous 2040 MTP was also developed using this process. Past practice, historic data, and already committed funds are the major factors considered in establishing future funding estimates.

Since the majority of the funding for transportation improvements comes from federal and state dollars, actions at both these levels will impact the actual future funding available for projects at the local level. The future of both of these funding sources for the life of the 2045 Plan can not be predicted with any level of certainty at this time. Therefore, lacking any definitive information to the contrary, future estimates are based on a continuation of the historic experience with these sources and statewide standards for developing future funding estimates. Although the new Infrastructure Investment and Jobs Act (IIJA) was enacted at the end of calendar year 2021, the impact of the new funding levels associated with that Act were not available for incorporation into this financial chapter for the BCATS 2045 MTP.

Infrastructure Investment and Jobs Act, Bi-Partisan Infrastructure Law
(a summary provided by MDOT)

The Infrastructure Investment and Jobs Act, Bi-Partisan Infrastructure Law was signed by President Biden on November 15, 2021. This historic legislation provides reauthorization for the Federal-Aid Highway Program (FAHP) for FY 2022-2026 at funding levels 24% above FY 2021 funding and an additional $112 million in bridge infrastructure and $22 million in electric vehicle infrastructure annually for Michigan. Beyond the initial funding increase, IIJA includes annual 2% increases in federal aid and many new competitive grant programs. IIJA also includes two new core FAHPs, to support climate resiliency and reduce carbon emissions.

The Carbon Reduction Program, one of two new FAHP core programs, will provide Michigan with $32.4 million in FY 2022 to reduce transportation emissions. 65% of these funds are suballocated by urbanized area. Eligible projects include: traffic monitoring, management, control facilities; public transportation; non-motorized transportation; advanced transportation, congestion management; intelligent transportation systems (ITS) capital improvements; replacing street lighting and traffic control devices with energy-efficient alternatives; and development of a carbon reduction strategy. There are new federal requirements for states to develop carbon reduction plans including how the projects selected in these programs will support the state's carbon reduction goals.

The Promoting Resilient Operations for Transformative, Efficient and Cost-Saving Transportation (PROTECT) program will provide Michigan with 36.8 million in funding for FY 2022 for resiliency improvements. There is both a FAHP formula fund and additional competitive grants for these funds which are for projects that improve resiliency of natural infrastructure such as wetlands, floodplains, and aquatic ecosystems. Funds can also be used for planning to help evaluate vulnerabilities to current and future weather events or natural disasters and to enhance transportation assets such as ports and port infrastructure. Resiliency improvement grants can also be used to relocate infrastructure out of the floodplain and restore aquatic ecosystems connected to a transportation improvement.

IIJA also provides funding increases in transit funding for Michigan. It is anticipated that $200 million per fiscal year in transit funding will be provided to Michigan transit providers, an increase of $47 million per year over FY 2021 FAST Act funding. This will allow for transit agencies to plan for more sustainable transit improvements and fill gaps in service.

IIJA provides funding for other modes of transportation and infrastructure needs. Nationally, Amtrak and other passenger rail program funds will be receiving $13 billion annually. Aviation program funds of $5 billion nationally are also included in this legislation. Water infrastructure and broadband internet are also key new components of this legislation. Federal Highway Administration has developed a website for IIJA to provide a one stop location for more information please visit https://www.fhwa.gov/bipartisan-infrastructure-law/.

IIJA Impact on BCATS' 2045 MTP

At the time of the approval of the BCATS 2045 MTP, state and local transportation agencies were still waiting for additional details regarding IIJA. Federal rules for the new programs are still being developed. Uses of these new funds for local and trunkline program needs are still being discussed at the state level. Further details of the revenue increases available for the BCATS area and federally required planning document changes may need to be included in this MTP when available. Any such changes could not be provided at the time of the development of the BCATS 2045 MTP.

HISTORY OF TRANSPORTATION FINANCING

The development and maintenance of the transportation system has been, and still is, primarily financed by user fees. However, local funding, both public and private has become an increasing contributor to transportation improvements in recent years. At the state level, user fees include a per gallon tax on gasoline and diesel fuel and a per vehicle registration fee based on vehicle value. The state gas tax has been $0.19 per gallon since it was raised from $0.14 per gallon in 1997. A gas tax increase was passed in Michigan in 2015 that phases in not only an increase of $0.073 per gallon of gasoline as of January 1, 2017 ($0.11 per gallon of diesel fuel), but as of 2022, both gasoline and diesel fuel tax rates will be indexed for inflation. However, as vehicles become more fuel efficient, and alternative fuel use increases, the revenue generated from these taxes diminishes significantly. Gasoline and diesel fuels are also taxed $0.184 per gallon at the federal level. Some revenue for transportation at the state level is also generated from the sales tax on vehicle related consumer purchases, but much of this tax revenue is directed to other areas of the state budget, notably the School Aid fund and revenue sharing to local units of government.

SOURCES OF TRANSPORTATION FUNDING

Collection and distribution of gasoline and diesel fuel taxes in Michigan is regulated under State Act 51 of 1951 (commonly referred to a “Act 51"). Michigan’s fuel tax is collected at the refinery and deposited into the Michigan Transportation Fund (MTF). Federal taxes are placed into the Federal Highway Trust Fund, with the exception of one cent of the tax, which is dedicated to the clean-up of underground fuel storage tanks. Most of the tax revenues, at the federal and state levels, are earmarked to fund highway, mass transit, safety, and non-motorized improvements. The state’s MTF dollars are distributed to MDOT, the county road commissions, the cities and villages, and the Comprehensive Transportation Fund (CTF). The CTF was established to fund public transit improvements. In addition to the funding from the MTF, the CTF has received funding from the state’s general fund in the past.

Most states have vehicle registration fees that are earmarked for transportation improvements as well. In Michigan, the registration fees for automobiles and trucks are also deposited in the MTF. There is no federal passenger vehicle registration fee.

County and city allocations from the MTF generally represent for over half of locally available transportation revenues. Local units of government may provide additional funding for transportation. Typical sources for such funds include a community’s general fund, property tax millage, general obligation bonds, income tax revenues, contributions from other units of government, tax increment financing, and special assessments. Bonding for transportation improvements can also occur, with the pay back of the bonds becoming an on-going obligation. Revenue can also result from accumulated interest on unspent MTF funding that has been distributed to the local road agencies.

County road commissions/departments receive funding from their member townships for improvements to non-primary roads as county road commissions/departments are not allowed to pay for more than 50% of such improvements. Some counties, as well as cities, generate revenue by entering into maintenance agreements with MDOT to complete work on state trunkline facilities. Revenue is also sometimes generated from developers who will pay for the construction of access drives, roads, or other necessary improvements serving new developments.

At the federal level, the current federal legislation contains a myriad of programs available to fund transportation improvements. The state utilizes the Interstate and National Highway System (NHS) program for high level facilities including interstate highways. The Surface Transportation Program (STP) provides funds to the state and to local urban, small city, and rural areas for transportation improvements. A separate safety component was established under SAFETEA-LU to address projects in this category. The Transportation Alternatives Program (TAP) (formerly the Enhancement Program) includes beautification, historic preservation, and non-motorized types of projects. There are also bridge and Congestion Mitigation Air Quality (CMAQ) categories of funding that have continued under current federal legislation. All of these, as well as smaller federal highway related programs are listed in Figure 15 -1, below.

Summary of Potential Sources of Revenue for Plan Development
(not all inclusive)

Federal Funding

see Figure 15-1 below

State Funding

Motor Vehicle Tax (Act 51) Distribution
Comprehensive Transportation Fund Distribution
Transportation Economic Development Funds (TEDF)
State Bonding Programs
Other state

Local Funding

General Fund Contributions (cities)
Township Contributions
Street Improvement Assessments
Road Improvement Bonds
Tax Increment Financing
Special Assessment Districts
Dedicated Millage
Service Contracts
Fare Box Revenues
Private Industry Contributions
Foundation Contributions
In-kind Contributions
Other local

FIGURE 15-1
List of Available Federal-Aid Highway Revenues*

(This is not intended to be an exhaustive list of all potential resources or eligible activities, but rather the most likely used revenues and types of activities)

Federal Highway Resources

Source	Purpose	Examples of Eligible Activities
Surface Transportation Block Grant Program	Maintain and improve the federal-aid highway system	Construction, rehabilitation, or reconstruction of highways, bridges, and tunnels; transit capital projects; ITS projects, highway and transit safety projects, non-motorized projects
Highway Safety Improvement Program (HSIP)	Decrease highway deaths and injuries	Intersection safety improvements; pavement and shoulder widening; rumble strips or other warning devices; improvements for pedestrian or bicyclist safety; improvements for safety of person with disabilities; traffic calming features; elimination of roadside hazards; highway signage and pavement marking projects; roadside safety audits
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	Reduce emissions from transportation sources	Installation of dedicated turn lanes; signal re-timing, interconnection, or actuation; construction of roundabouts; diesel retrofits; projects to reduce single-occupant vehicle travel; transit vehicle replacement; transit new or reduced-headways routes
National Highway Performance Program (NHPP)	Maintain & improve the National Highway System (NHS) (ie; the subset of the federal-aid highway system that includes roads classified as principal arterials and above)	Construction, rehabilitation, or reconstruction of highways, bridges, and tunnels; transit capital projects; ITS projects, highway and transit safety projects, non-motorized projects - all on the NHS system
National Highway Freight Program (NHFP)	Infrastructure improvements that increase economic competitiveness and productivity; reduce congestion on the NHFP; improve safety, efficiency, and reliability of that network	Construction, reconstruction, rehabilitation, real property and equipment acquisition, and operational improvements directly related to system performance; ITS improvements; rail/highway grade separation; geometric improvements to interchanges and ramps; truck-only lanes; climbing and runaway truck lanes; adding/widening shoulders; truck parking facilities

*This table does not reflect new programs created with the 2021 IIJA legislation

DEVELOPING REVENUE FORECASTS

State and Local Revenues (for the local system (not including transit))

Local revenue projections were made utilizing the experience of the three local road agencies for the period of 2018 to 2020 as the base. The Act 51 reports submitted to the state by the agencies provided revenue and expenditure data for making future projections. The Act 51 reports break down revenues and expenditures between the major/primary road system and the minor/local road system. BCATS deals with funding for projects on the federal-aid eligible system, which mirrors almost completely the major/primary road system. Therefore, although reviewed, the information for the local street/secondary road system is not used into addressing either costs or revenues for this financial assessment.

Table 15-1
Average Per Year Major Street/Primary Road Revenues
for the Time Period 2018-2020

REVENUES	City of Battle Creek	Cal. Co. Rd. Comm. (60% of County totals)	City of Springfield	Total
MI Transport. Fund	$6,089,685	$5,610,806	$485,386	$12,185,877
MI Econ. Dev. Fund	$0	$382,174	$0	$382,174
Federal funding*	$0	$1,468,946	$0	$1,468,946
Local funding	$523,610	$91,166	$88,639	$703,415
Operating Transfers	($1,920,000)	$0	($166,666)	($2,086,666)
Metro Act & Misc.	$737,790	$1,799,639	$18,559	$2,555,988
TOTAL	$5,431,085	$9,352,731	$425,918	$15,209,734

*most federal funding is administered by MDOT and not reflected on Act 51 reports

Table 15-2
Average Per Year Local Street/Secondary Road Revenues
for the Time Period 2018-2020

REVENUES	City of Battle Creek	Cal. Co. Rd. Comm. (60% of County totals)	City of Springfield	Total
MI Transport. Fund	$1,612,447	$2,206,055	$166,475	$3,984,977
MI Econ. Dev. Fund	$0	$145,885	$0	$145,885
Federal funding*	$0	$352,444	$0	$352,444
Local funding	$1,347,719	$1,601,522	$116,943	$3,066,184
Operating Transfers	$1,920,000	$0	$166,666	$2,086,666
Metro Act & Misc.	$0	$2,533,547	$20,308	$2,553,855
TOTAL	$4,880,166	$6,839,453	$470,392	$12,190,011

*most federal funding is administered by MDOT and not reflected on Act 51 reports

The estimates of future funding for local transportation needs on the major street/primary road system are based on the presumption, lacking any better evidence, that the current funding sources will continue to be available to fund future improvements with small increases. However, revenues are still not likely to be able to keep pace with inflation. An increase of 1.9% per year is figured as the potential increase in federal STP through 2030, with the increase changed to 2.1% for years starting in 2031 and thereafter (per agreed upon statewide growth rates). Although federal funding may increase above stated rates based on the new IIJA federal legislation, no estimates of potential increases were available for use in this Plan at the time this chapter was completed. State funding is expected to increase 1.7% through 2030 and by 1.9% thereafter, again per agreed upon statewide growth rates. No increase is applied to local funds available, as local agencies will likely not be increasing their contributions - due to stagnant state revenue sharing, shrinking local tax bases, and overall resistance to tax increases of any kind. However, there has been a movement in the BCATS area to adopt local millages, or parcel fees, to fund transportation improvements in specific townships. Several townships have implemented local taxation. However, the taxes collected under these options are almost exclusively directed for improvement of local/secondary roadways that are not federal-aid eligible and not considered within the BCATS MTP or TIP.

Based on the Act 51 reports, it is estimated that the local agencies, as a group, will have revenues available for transportation investments for federal-aid eligible (major streets/primary roads) averaging the following from each of these categories, based on Table 15-1. Table 15-3, below, details these revenues by the following categories.

MI Transportation Fund (MTF)	-	starting with a combined average of $7,775,671, increasing 1.7% per year through 2030 and then increasing 1.9% each year thereafter until 2045 to reach a total of approximately $373,800,800 for the overall time period of 2022-2045
State Economic Development Categories	-	starting with a combined average of $145,885, carrying forward at the same level for 2022 to 2045 (if the category survives the on-going state budget realignment) will yield a total of approximately $9,172,000 in the category
Local Funding & Misc.	-	starting with a combined average of $703,415 for local funding, with $2,555,988 for the miscellaneous category, and carrying forward at the same level for 2022 to 2045 (due to restricted local budgets) this category will provide a total of approximately $78,225,600 combined.
Operational Transfers	-	starting with a combined average of -$2,086,666 being transferred out of the funding available for this category of roads, and carrying forward this same level of transfer over the life of the Plan, this category will reduce the funding available approximately by $50,080,000 over the life of the Plan.
Net Total	-	The net funding available from state and local sources totals, over the life of the Plan, approximately $411,118,700

Once again, it should be noted that revenues and expenditures for local streets/secondary roads are not included in the calculations above, nor shown in the remainder of this chapter.

The calculation of the total revenues by the above categories is shown in Table 15-3, below:

TABLE 15-3

Cumulative Revenue Estimates for the Period of 2022-2045 for State and Local Sources used by LOCAL AGENCIES (Source: Act 51 Reports)($ in 000's, rounded)

Year	MTF	Econ Dev.	Local + Misc.	Transfers
2022	12,603.7	382.17	3,259.4	-2,086.66
2023	12,818.0	382.17	3,259.4	-2,086.66
2024	13,035.9	382.17	3,259.4	-2,086.66
2025	13,257.5	382.17	3,259.4	-2,086.66
2026	13,482.9	382.17	3,259.4	-2,086.66
2027	13,712.1	382.17	3,259.4	-2,086.66
2028	13,945.2	382.17	3,259.4	-2,086.66
2029	14,182.3	382.17	3,259.4	-2,086.66
2030	14,423.4	382.17	3,259.4	-2,086.66
2031	14,697.4	382.17	3,259.4	-2,086.66
2032	14,976.6	382.17	3,259.4	-2,086.66
2033	15,261.2	382.17	3,259.4	-2,086.66
2034	15,551.2	382.17	3,259.4	-2,086.66
2035	15,846.6	382.17	3,259.4	-2,086.66
2036	16,147.7	382.17	3,259.4	-2,086.66
2037	16,454.5	382.17	3,259.4	-2,086.66
2038	16,767.2	382.17	3,259.4	-2,086.66
2039	17,085.7	382.17	3,259.4	-2,086.66
2040	17,410.4	382.17	3,259.4	-2,086.66
2041	17,741.2	382.17	3,259.4	-2,086.66
2042	18,078.3	382.17	3,259.4	-2,086.66
2043	18,421.7	382.17	3,259.4	-2,086.66

Year	MTF	Econ Dev.	Local + Misc.	Transfers
2044	18,771.8	382.17	3,259.4	-2,086.66
2045	19,128.4	382.17	3,259.4	-2,086.66
2022 - 2045 Total	**373,800.8**	**9,172.0**	**78,225.6**	**-50,080.0**
NET TOTAL =	**$411,118 ($000's)**			

Federal Revenues (for the local system (not including transit))

In addition to the categories reflected on the Act 51 report, BCATS programs the expenditure of funds in the following categories that are represented by projects in the Transportation Plan and the TIP (these projects are generally administered by MDOT, so the federal portion of the funding does not usually show up on the local agencies' Act 51 reports) :

Federal Funding - STP Urban funding levels are taken from the current TIP for 2022 and 2023 and the MDOT estimates for the next TIP out to FY 2026. The amount reflects an increase of 1.9% per year up through 2026. An increase of 2.1% is applied thereafter up to 2045, per the statewide adopted growth rates. This reaches a total $38,448,820 available over the life of the Plan.

CMAQ funding has been estimated by MDOT, which is $257,713 for 2022 and 2023. After 2023, the estimate is $280,716 for each of the remaining years out to 2045. No increase (inflationary or otherwise) is built into this funding category. Funding for this category may actually decrease due to new programs built into the IIJA that have yet to be defined which deal with reducing emissions. A similar level of federal funding for the state under this category will be referenced in the discussion of future state generated funding for state projects.

Local Bridge funding is now distributed by a regional bridge committee that assesses need within a multi-county area. MDOT is no longer provided estimates for a local bridge general program account. Therefore this category is not being estimated separately for future revenue projections and is being included with the several smaller funding categories noted below.

Revenue estimates for several smaller federal funding categories are being estimated together for the purposes of the 2045 Plan. The average general program account figures for local rail crossing, local bridge, local safety, and the transportation alternatives program have been used to calculate this total. As with the larger federal STP category, this estimate is increased by the same agreed to state percentages as noted above. There may be additional funding available in other miscellaneous categories that BCATS will not count toward available revenue totals at this time.

The calculation of these categories of funds over the life of the 2045 Transportation Plan is shown in Table 15-4 below:

TABLE 15-4
Cumulative Revenue Estimates for the Period of 2022-2045 for FEDERAL Revenue Sources Used by Local Agencies ($ in 000's)

Year	Federal STP	CMAQ Local	Other Misc. Federal
2022	1,242	257.7	100
2023	1,290	257.7	102
2024	1,314	280.7	104
2025	1,339	280.7	106
2026	1,365	280.7	108
2027	1,391	280.7	110
2028	1,417	280.7	113
2029	1,444	280.7	115
2030	1,472	280.7	117
2031	1,503	280.7	120
2032	1,534	280.7	122
2033	1,566	280.7	125
2034	1,599	280.7	128
2035	1,633	280.7	131
2036	1,667	280.7	135
2037	1,702	280.7	138
2038	1,738	280.7	141
2039	1,774	280.7	144
2040	1,812	280.7	147
2041	1,850	280.7	151
2042	1,889	280.7	155
2043	1,928	280.7	158
2044	1,969	280.7	162
2045	2,010	280.7	166
TOTAL	**38,449**	**6,691.2**	**3,098**

Federal and State Revenues (for state system)

MDOT has provided revenue estimates for its program for the time frame of the 2045 Plan. The estimates are divided by the major programming categories used by MDOT: preserve vs. increase capacity/new roads. A breakdown by multi-year groupings has been provided by MDOT for the entire Plan period. MDOT has also provided estimates for the "Transit Revenue" section, below.

Revenues that go toward operations and maintenance are not included in the figures provided by MDOT. However, the costs for this type of work for MDOT are included in the discussion regarding operations and maintenance, which is dealt with following the discussion of transit revenues.

MDOT Planning provided the revenue forecasts in "future dollars" as required by the current federal regulations. Additional revenue forecasts for use in developing long range plans will be developed by MDOT based on the latest federal regulations, but were not available for use with BCATS' 2045 MTP.

BCATS has not included the state portion of CMAQ funding in Table 15-5. This is due to the state CMAQ funds no longer being allocated on a per area amount, as was previously done.

Table 15-5
Revenues Available for State Facilities (in millions) (non-maintenance)

MDOT	Trunkline Capital Program (Preserve)	Rebuilding Michigan Bonds
2022-2023	13.7	112.7
2024-2028	37.4	0
2029-2033	44.1	0
2034-2038	53.1	0
2039-2045	92.8	0
TOTAL BY CATEGORY	241.1	112.7
TOTAL State Facilities Revenue =	$353.8	

Transit Revenues

A variety of revenue sources are available to support public transit services into the future. The federal government, through the Federal Transit Administration (FTA), makes funds available for both operating and capital transit expenditures with an annual allocation by formula to the local transit operator (see Figure 15-2 below). The state also makes available funds to support the operating and capital portions of the transit budget. The federal government provides discretionary funding on a sporadic basis for the purchase of major capital items, such as large fixed-route buses.

Federal funding from sources under the Federal Highway Administration (FHWA) can be "flexed" for transit use, for example STP-Urban funding. CMAQ funds can also be used for transit projects. The local government (the City of Battle Creek) provides dollars from its general fund to support some of the operating costs of the transit system (since the operator, Battle Creek Transit, is a city department). Revenues are garnered from fares paid by users of the transit service and a modest amount of revenue is recorded as income from sources like advertising.

Table 15-6 lists the estimated revenues for transit over the life of the 2045 Transportation Plan. The federal and state revenues have been provided by MDOT, which provided revenue figures by multi-year groupings, the same as for the road categories. Total funding available for transit (not including some discretionary categories) is anticipated to be approximately $120.3 million over the life of the Plan.

The "local, farebox, & other" category is modestly increased at 2% per year over the life of the Plan. Farebox receipts have not been increasing significantly in recent years.

Table 15-6
Revenues Available for Transit Services, Vehicles, and Facilities ($ in 000's)

Year	Federal Operating	State Operating	Federal & State Specialized Services	Other Federal and State*	City, Farebox & Misc**
2022-2023	2,837	2,893	217	904	3,129
2024-2028	7,604	7,232	542	2,356	7,835
2029-2033	8,396	7,232	542	2,508	7,855
2034-2038	9,270	7,232	542	2,679	7,876
2039-2045	14,620	10,125	759	4,081	11,067
TOTAL	42,727	34,714	2,602	12,528	37,762
GRAND TOTAL	$130,333 (000's)				

*Other Federal and State includes Sec. 5339, Mobility Management, and New Freedom funds
**City, Farebox & Misc. includes City BC General Fund, farebox, advertising

FIGURE 15-2
List of Available Federal Transit Revenues

(This is not intended to be an exhaustive list of all potential resources or eligible activities, but rather the most likely used revenues and types of activities)

Source	Purpose	Examples of Eligible Activities
Sec. 5307 Urbanized Area Formula Grants	Funding for basic transit capital needs of transit agencies in urban areas, also operating funding for some transit agencies	Capital projects; transit planning; projects eligible under the former Job Access Reverse Commute (JARC) program; some of the funds can also be sued for operating expenses, depending upon the size of the transit agency; one percent of funds received are to be used by the agency to improve security at agency facilities
Sec. 5310 Elderly and Person with Disabilities	Improving mobility options for seniors and those persons with disabilities	Projects to benefit seniors and those with disabilities when service is unavailable or insufficient; transit access projects for those with disabilities that exceed the Americans with Disabilities Act (ADA) requirements - incorporates the former New Freedom program
Sec. 5311 Non-Urbanized Area Formula Grants	Improving mobility options for residents of rural areas	Capital, operating, and rural transit planning activities in areas under 50,000 population
Sec. 5337 State of Good Repair Grants	Maintaining fixed-guideway transit systems in a state of good repair	Capital, maintenance, and operational support projects
Sec. 5339 Bus and Bus Facilities	Funding for basic transit capital needs of transit agencies, including construction of bus-related facilities	Replace, rehabilitate, and purchase of buses and related equipment; construction of bus-related facilities

OPERATIONS AND MAINTENANCE

The continued effective operation and maintenance of the existing transportation system is a priority and goal of the BCATS process. Therefore, estimated costs for these aspects of the transportation system over the life of the 2045 Plan are taken into consideration and are applied against the total anticipated revenues before any improvements to the system are considered.

The Act 51 reporting data from the local agencies included detail on expenditures as well as revenues. Based on an average of the last three years of expenditures for the three local road agencies, the total cost to operate and maintain the existing major street/primary road system (non-heavy maintenance, routine maintenance, traffic services, winter maintenance, and administrative services) in the BCATS area, continues to be approximately $5.705 million per year (the same amount calculated for the 2040 MTP in 2016). This includes the assumption that 60% of the Calhoun County Road Commission's total expenditures for operations and maintenance are in the BCATS area (this is the same % assumed for inclusion of revenues). BCATS covers an area which includes five of the twenty townships in Calhoun County. However, the more intense development in the BCATS area requires a significant portion of the road commission's budget. For the life of the Plan, this figure has been expanded by 2% per year (the average CPI was used since many of the components of this category of expense are more tied to personnel costs than to construction materials, and therefore the category is not inflated at the higher construction cost index used to develop the project list).

Based on this methodology, the total cost for operations and maintenance of the major street/primary road system in the BCATS area by the local agencies over the 2022 to 2045 time period of the 2045 MTP is expected to be approximately $173,557,000.

MDOT has provided figures regarding its anticipated costs for operations and maintenance (O+M) of the state system within the BCATS area over the time period of the Plan. The costs include routine maintenance performed by the Transportation Service Center (TSC) staff, low level CPM repair work, maintenance contract costs with local road agencies and administration. MDOT's estimate is based on the BCATS area having 1% of MDOT's road system within its area.

Based on the figures provided by MDOT, the statewide operations and maintenance cost for the 2022 - 2045 time period for the portion of the state system in the BCATS area is estimated at $241 million. MDOT has not provided revenue estimates for this category of costs. Therefore, BCATS estimates the revenues to be equal to the expected expenditures.

SUMMARY

Summaries of estimated available revenues and estimated expenditures over the life of the 2045 Plan are shown in Tables 15-7 and 15-8:

Table 15-7
Summary of Available Revenues for the BCATS 2045 Transportation Plan

Projected Capital Revenues	Total $
Federal Transportation Funds for Construction of Local Roads	**48,238,200**
Federal and State Funding for State Controlled Roadways in BCATS area	**353,800,000**
Federal/State/Local Transit Funding (operating and capital)	**130,333,000**
State funding for Operations/Maintenance of State Controlled facilities	**241,000,000**
State and Local Funding for Construction and Operations/Maintenance of Federal-Aid Eligible Local Primary/Secondary Roads	**411,118,000**
TOTAL (total federal, state, and local revenues estimated to be available for road related construction, transit capital/operating and road related operations and maintenance of the major street/primary road system and state roadway system within the BCATS area)	**1,184,489,200**

Table 15-8
Summary of 2045 Transportation Plan Operations/Maintenance and Capital Expenditures 2022-2045
(Individual Projects are described in a listing in Chapter 17)

Operations/Maintenance Expenditures for Local & State Roads	Total $
Estimated Expenditures for Operations/Maintenance of Local Roads	**173,557,000**
Estimated Expenditures for Operations/Maintenance of State Roads	**241,000,000**
Planned Capital Expenditures	**Total $**
Local Road Projects	**92,832,675**
Transit Projects	**162,210,216**
State Projects	**336,424,628**
TOTAL CAPITAL EXPENDITURES	**591,467,519**
Total Expenditures	**1,006,024,519**

DEMONSTRATION OF FINANCIAL CONSTRAINT

The total expenditures identified in the BCATS 2045 Transportation Plan are within the total federal, state, and local revenues estimated for the 2045 Metropolitan Transportation Plan. As shown in Table 15-9 below, there is projected to be adequate revenue available for capital expenditures as well as for operations and maintenance expenditures for the transportation system. **Therefore, the BCATS 2045 Metropolitan Transportation Plan is financially constrained.**

Table 15-9
Demonstration of Financial Constraint for the
2045 Transportation Plan for the Battle Creek Area Transportation Study

Total federal, state, and local revenues estimated to be available for road related construction, transit capital/operating and road related operations and maintenance of the major street/primary road system and state roadway system within the BCATS area	**$1,184,489,200**
Expenditures for Operations/Maintenance of Local & State Roads	**($414,557,000)**
Expenditures for Local Road Improvement Projects	**($92,832,675)**
Expenditures for Transit Improvement Projects	**($162,210,216)**
Expenditures for State Improvement Projects	**($336,424,628)**
REMAINING BALANCE	**$178,464,681**

CHAPTER 16

ENVIRONMENTAL MITIGATION

PROCESS

MAP-21/FAST Act regulations require that BCATS include in its long range plan "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." (USDOT, Metropolitan Transportation Planning: Final Rule FHWA, 23 CFR 450 Subpart C 450.324(f)(10), effective 5/27/16).

The goal of this process is to eliminate or minimize environmental impacts from the planned projects in the MPO's transportation plan. This applies primarily to "improve and expand" type projects recommended in the Plan. However, this discussion is not intended to be project specific and does not alleviate any responsibilities of the project owner relative to evaluation and meeting the National Environmental Policy Act (NEPA) processes.

To meet the requirements for developing long range transportation plans, BCATS adopted a set of guidelines for "Considering Environmental Issues in the Transportation Planning Process" in September 2007. These guidelines were based on work done by the Southeast Michigan Council of Governments (SEMCOG). SEMCOG continues to utilize these guidelines at present. BCATS distributed the adopted guidelines to the state and local road agencies and the public transit operator in the BCATS area. The adopted document is included at the end of this chapter for reference. The guidelines were originally provided to each of the road and transit agencies with projects in the Plan. The guidelines were reissued with the 2040 MTP and will be re-issued again as part of the 2045 MTP process as a reminder of the policy. The guidelines include areas of concern specifically identified by some of the agencies contacted under the "Consultation" efforts associated with prior Plan updates. These include issues with farmlands, wetlands, drainage, flood plains, threatened and endangered species, impaired streams and other water bodies, air quality, and noise.

The Consultation efforts from the 2040 Metropolitan Transportation Plan (MTP) development, as well as the current Plan update (see Chapter 5), led BCATS to information about the location of some environmental and/or cultural factors to be reviewed relative to future transportation projects. The 2045 MTP site-specific recommended improvement projects are depicted in relation to the identified issues on map Figures 16-1 to 16-6. The small black oval labels on the maps show the BCATS' 2045 MTP ID#s for MTP Recommended Improvements listed in Chapter 17's Table 17-1. A potential impact area within 1/4 of a mile of the proposed transportation projects is shown on each of the maps. The endangered species factor is not mapped due to the resources being identified for the entirety of Calhoun County. This information is displayed in Table 16-1, following the maps.

Five of the six mapped factors deal with water related resources. The BCATS area has several lakes, two major rivers and a significant system of wetlands to consider. Farmland preservation is active in Calhoun County overall. Newton Township, in the BCATS area, is particularly active in promoting the retention of its rural character through farmland preservation. All projects are noted as potentially impacting endangered species since the habitat for many of the identified plants or animals covers the entirety of Calhoun County. Since this factor was incompatible with mapping, information from the Michigan Natural Features Inventory listing plants and animals in Calhoun County is included as noted above. Michigan's State Historic Preservation Office (SHPO) provides on-line an inventory by county of locations involving historic districts and properties. This listing has not been updated by SHPO since the BCATS 2040 Plan was adopted.

ANALYSIS

Potential impact issues for each location specific Plan recommended improvement project (except signal interconnect projects) are noted on the summary table of "Potentially Impacted Environmental Resources", Table 16-2.

The purpose of Table 16-2 is to identify projects that may have the potential to impact an environmental or cultural resource. Such identification will not necessarily mean a project can not be built. However, the provided guidelines should be used to assess the process needed to mitigate as much of the impact from the project as possible.

Projects involving the location of new roadway facilities or widening of existing roads have the greatest potential for impacting multiple resource areas. Since there are no projects of this type in the 2045 Plan project list, it is not necessary to assess this type of impact at this time.

Following Table 16-2 are the "Guidelines" that have been provided to all of the road agencies in the BCATS area, and to the public transit agency, for use in developing future projects.

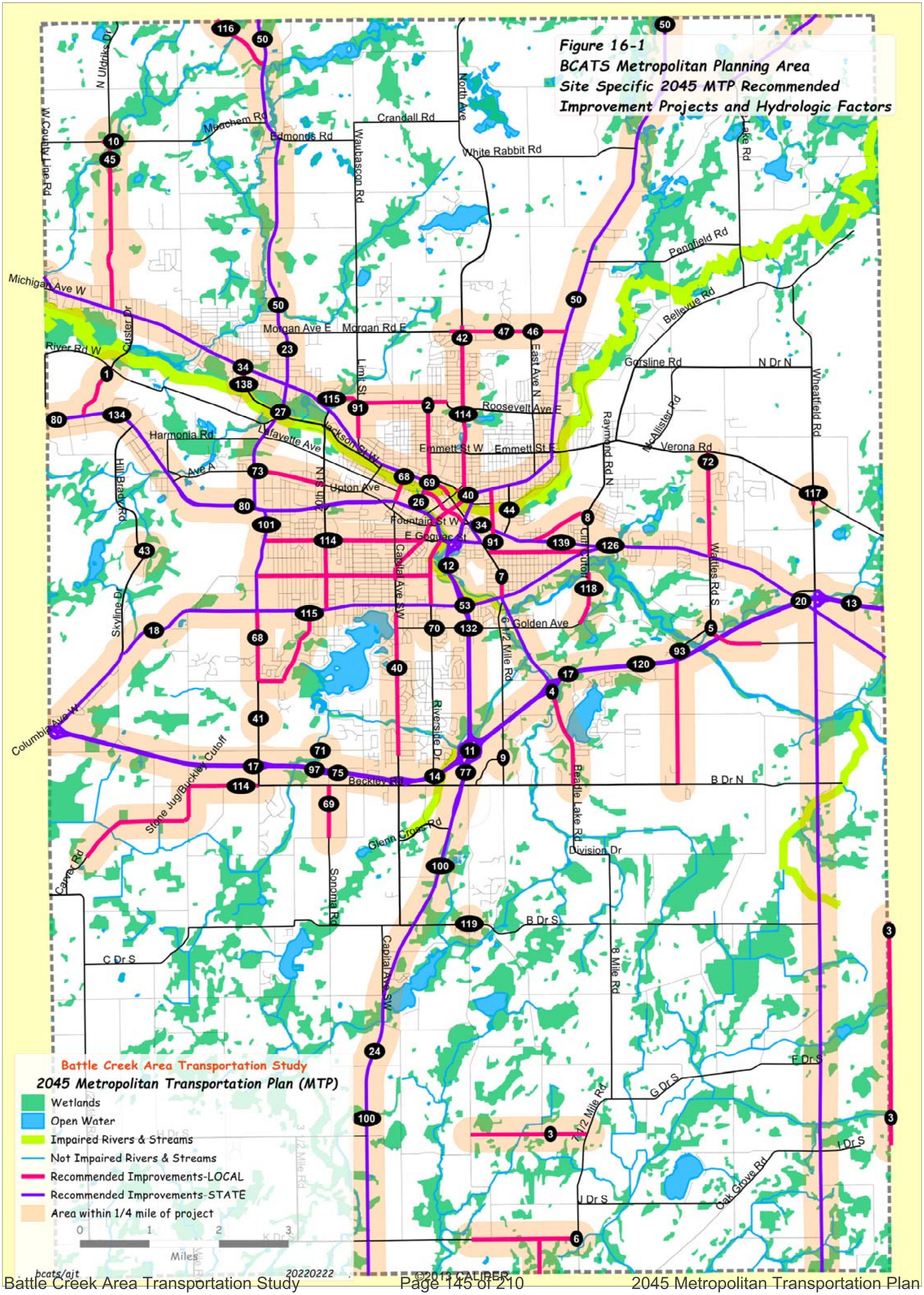


Figure 16-1
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Improvement Projects and Hydrologic Factors
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan (MTP)
Wetlands
Open Water
Impaired Rivers & Streams
Not Impaired Rivers & Streams
Recommended Improvements-LOCAL
Recommended Improvements-STATE
Area within 1/4 mile of project
0 1 2 3
Miles
bcats/ajt
20220222
©2013 CALIPER

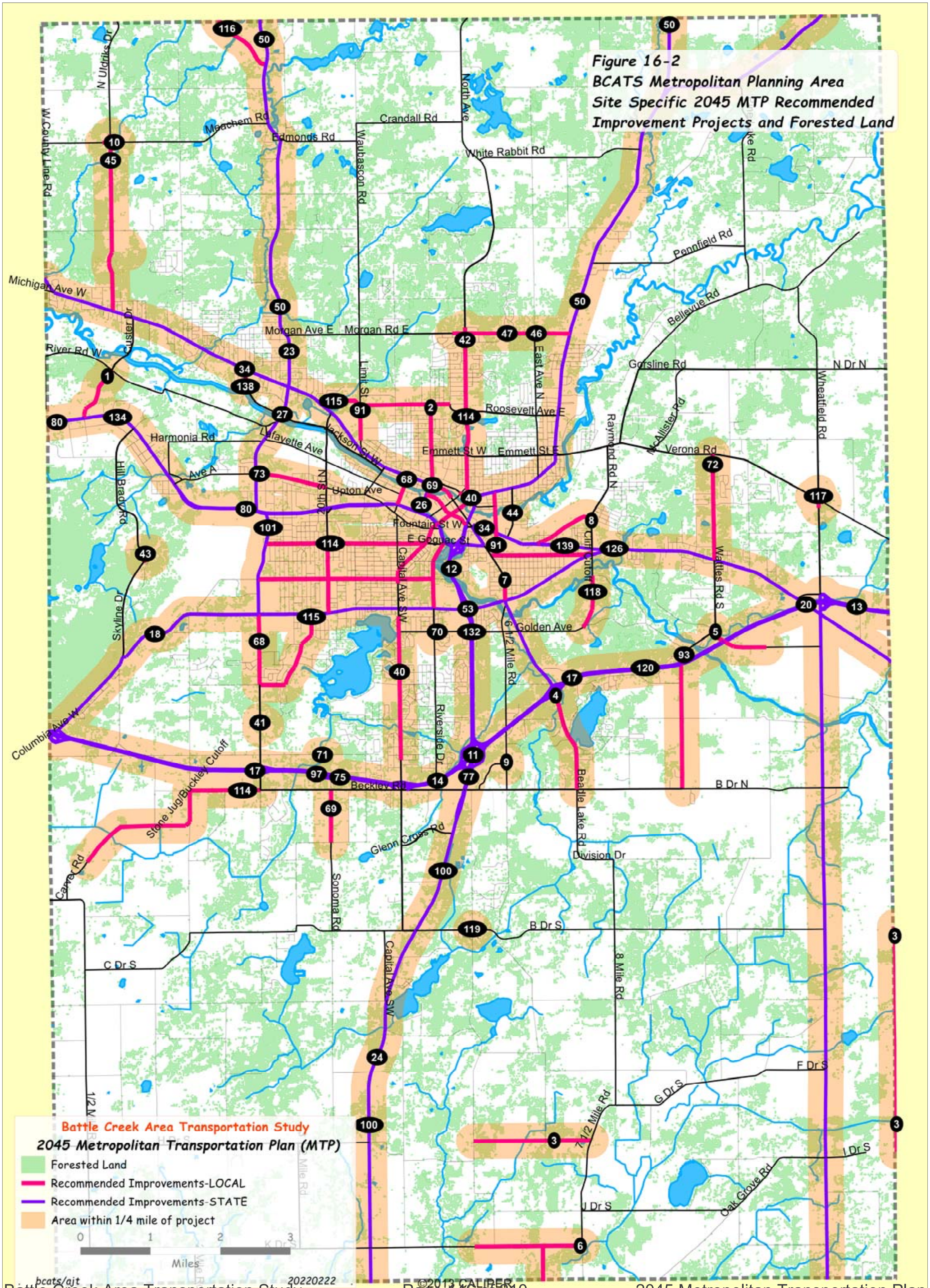


Figure 16-2
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Improvement Projects and Forested Land
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan (MTP)
Forested Land
Recommended Improvements-LOCAL
Recommended Improvements-STATE
Area within 1/4 mile of project
0 1 2 3
Miles
bcats/ajt
20220222
©2013 CALIPER
Michigan Ave W
River Rd W
Morgan Ave E
Morgan Rd E
Roosevelt Ave E
Emmett St W
Emmett St E
Verona Rd
Gorsline Rd
N Dr N
Pennfield Rd
Bellevue Rd
Crandall Rd
White Rabbit Rd
Edmonds Rd
Meachem Rd
Harmonia Rd
Lafayette Ave
Jackson St W
Upton Ave
Fountain St W
E Goguac St
Golden Ave
Columbia Ave W
Beckley Rd
B Dr N
Glenn Cross Rd
Division Dr
B Dr S
C Dr S
F Dr S
G Dr S
I Dr S
J Dr S
Oak Grove Rd
Stone Jug/Buckley Cutoff
Carver Rd
Skyline Dr
Hill Brady Rd
Custer Dr
N Uldriks Dr
W County Line Rd
Waubascon Rd
North Ave
East Ave N
Limit St
20th St N
Capital Ave SW
Riverside Dr
6 1/2 Mile Rd
Raymond Rd N
McAllister Rd
Wattles Rd S
Wheatfield Rd
Beadle Lake Rd
Sonoma Rd
8 Mile Rd
7 1/2 Mile Rd
Clinton

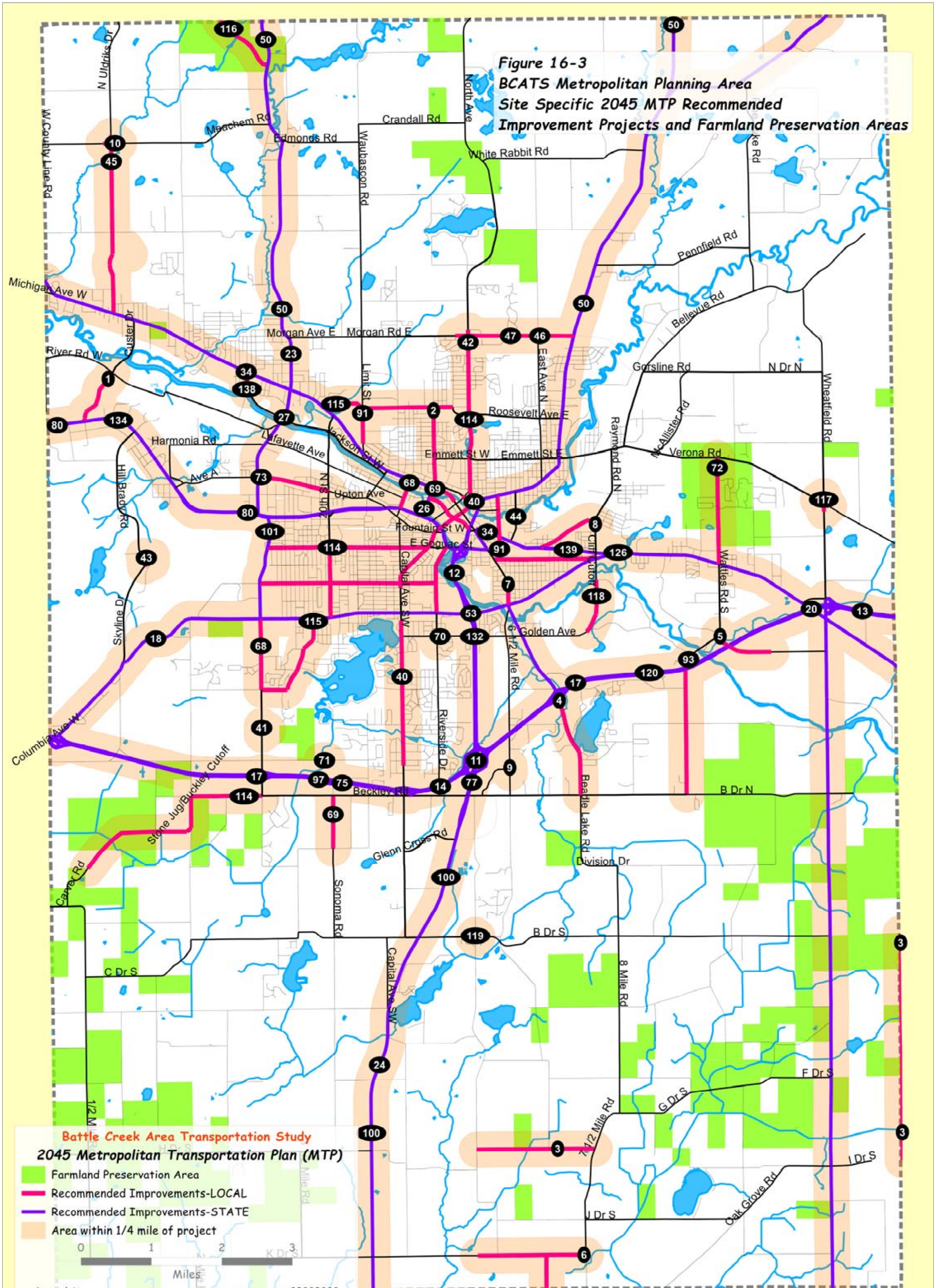


Figure 16-3
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Improvement Projects and Farmland Preservation Areas
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan (MTP)
Farmland Preservation Area
Recommended Improvements-LOCAL
Recommended Improvements-STATE
Area within 1/4 mile of project
0
1
2
3
Miles
bcats/ajt
20220222
©2013 CALIPER
N Uldriks Dr
W County Line Rd
Meachem Rd
Edmonds Rd
Crandall Rd
Waubascon Rd
North Ave
White Rabbit Rd
Pennfield Rd
Bellevue Rd
Michigan Ave W
Custer Dr
Morgan Ave E
Morgan Rd E
River Rd W
Limit St
Gorsline Rd
N Dr N
Wheatfield Rd
McAllister Rd
Roosevelt Ave E
East Ave N
Raymond Rd N
Harmonia Rd
Lafayette Ave
Jackson St W
Emmett St W
Emmett St E
Verona Rd
Ave A
Hill Brady Rd
20th St N
Upton Ave
Fountain St W
E Goguac St
Capital Ave SW
Cliff Cutoff
Wattles Rd S
Skyline Dr
Golden Ave
6 1/2 Mile Rd
Riverside Dr
Columbia Ave W
Stone Jug/Buckley Cutoff
Beckley Rd
Beadle Lake Rd
B Dr N
Glenn Cross Rd
Division Dr
Carver Rd
Sonoma Rd
B Dr S
C Dr S
8 Mile Rd
F Dr S
G Dr S
7 1/2 Mile Rd
I Dr S
Oak Grove Rd
J Dr S
K Dr S

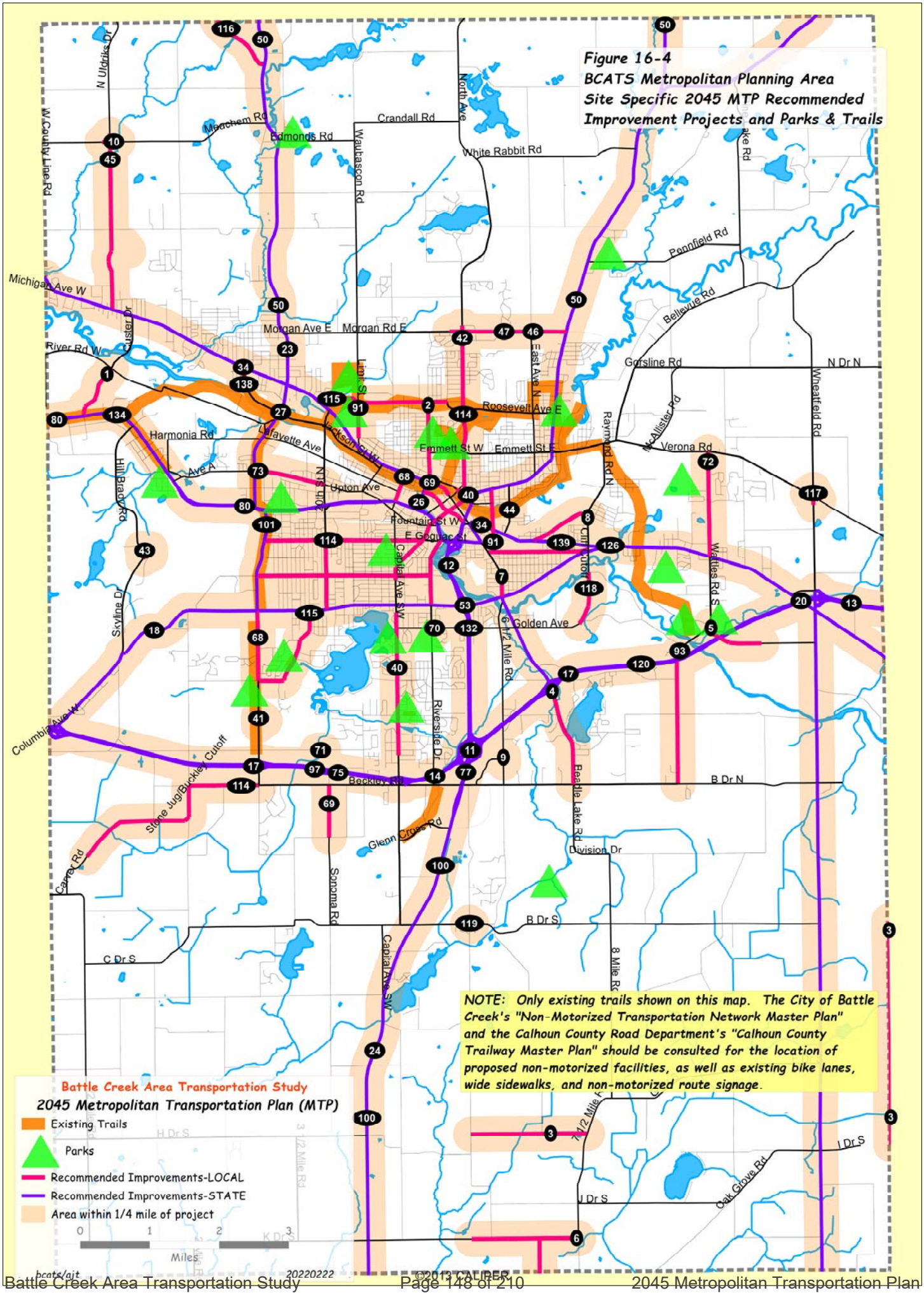


Figure 16-4
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Improvement Projects and Parks & Trails
NOTE: Only existing trails shown on this map. The City of Battle Creek's "Non-Motorized Transportation Network Master Plan" and the Calhoun County Road Department's "Calhoun County Trailway Master Plan" should be consulted for the location of proposed non-motorized facilities, as well as existing bike lanes, wide sidewalks, and non-motorized route signage.
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan (MTP)
Existing Trails
Parks
Recommended Improvements-LOCAL
Recommended Improvements-STATE
Area within 1/4 mile of project
0 1 2 3
Miles
bcats/ajt
20220222
©2013 CALIPER
Michigan Ave W
River Rd W
Harmonia Rd
Ave A
Hill Brady Rd
Skyline Dr
Columbia Ave W
Stone Jug/Buckley Cutoff
Carpet Rd
W County Line Rd
N Uldriks Dr
Custer Dr
Meachem Rd
Edmonds Rd
Waubascon Rd
Crandall Rd
North Ave
White Rabbit Rd
Morgan Ave E
Morgan Rd E
Lyon St
Lafayette Ave
Jackson St W
N 5th St
Upton Ave
Fountain St W
E Goguac St
Emmett St W
Emmett St E
Roosevelt Ave E
East Ave N
Capital Ave SW
Riverside Dr
6 1/2 Mile Rd
Golden Ave
Beckley Rd
Glenn Cross Rd
Sonoma Rd
Beadle Lake Rd
Division Dr
B Dr N
B Dr S
C Dr S
H Dr S
I Dr S
J Dr S
3 1/2 Mile Rd
7 1/2 Mile Rd
8 Mile Rd
Oak Grove Rd
Pennfield Rd
Bellevue Rd
Gorsline Rd
N Dr N
Raymond Rd N
McAllister Rd
Verona Rd
Wheatfield Rd
Wattles Rd S
Cline Rd

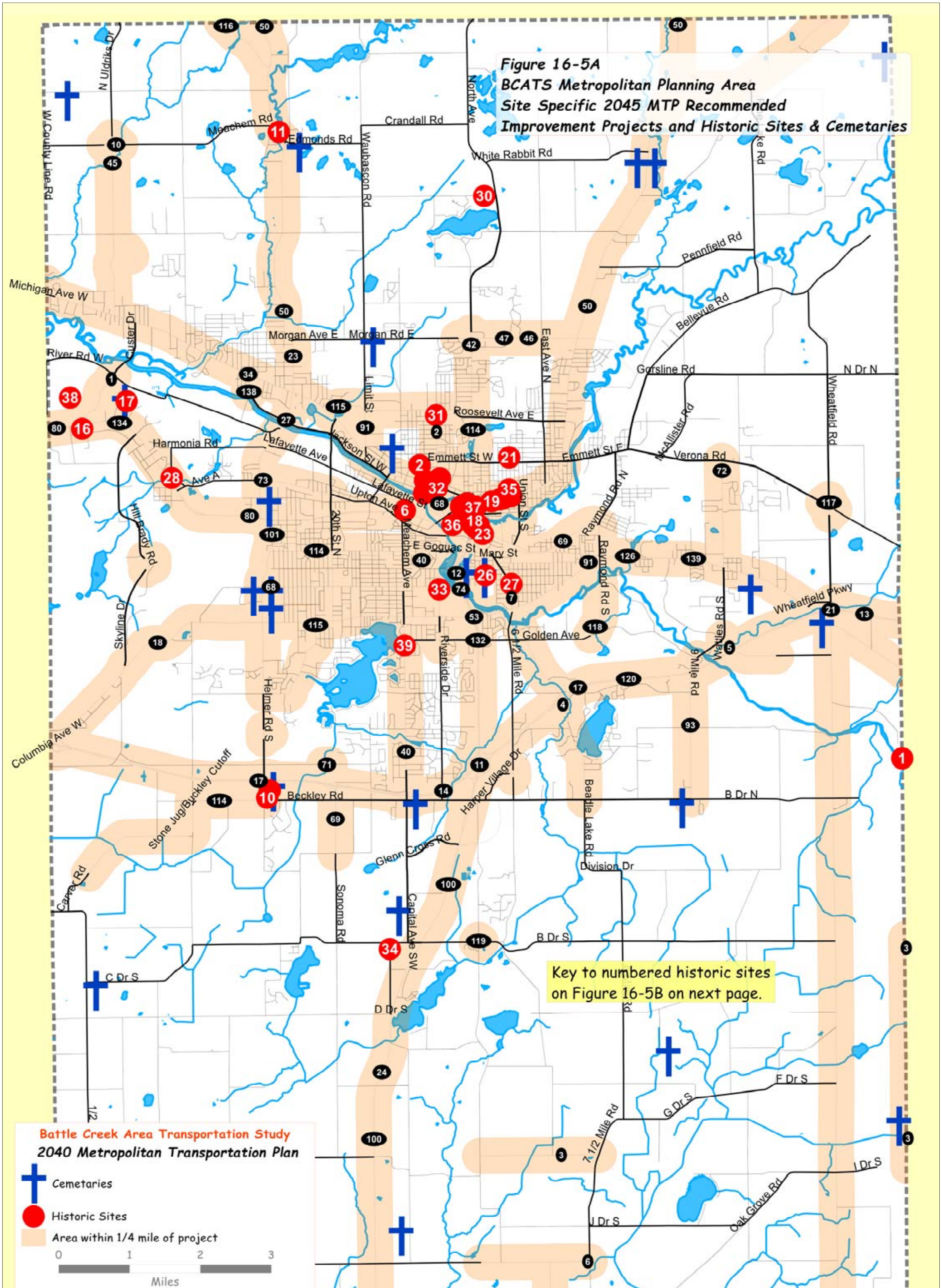
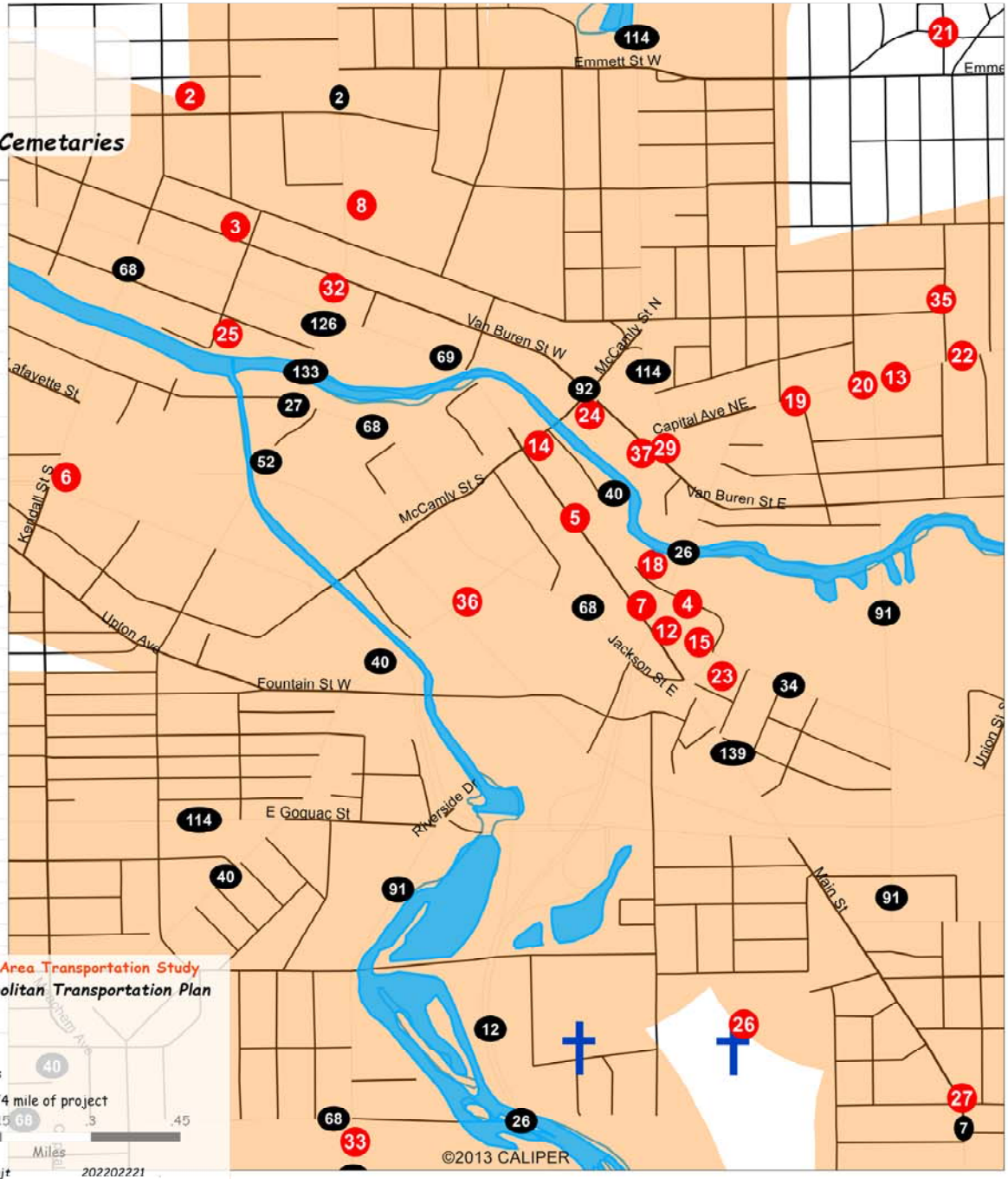


Figure 16-5A
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Improvement Projects and Historic Sites & Cemetaries
Key to numbered historic sites
on Figure 16-5B on next page.
Battle Creek Area Transportation Study
2040 Metropolitan Transportation Plan
Cemetaries
Historic Sites
Area within 1/4 mile of project
0
1
2
3
Miles
bcats/ait
20220222
©2013 CALIPER
N Uldriks Dr
W County Line Rd
Meachem Rd
Edmonds Rd
Crandall Rd
Waubascon Rd
North Ave
White Rabbit Rd
Pennfield Rd
Bellevue Rd
Michigan Ave W
Custer Dr
Morgan Ave E
Morgan Rd E
East Ave N
River Rd W
Gorsline Rd
N Dr N
Wheatfield Rd
Limit St
Roosevelt Ave E
McAllister Rd
Harmonia Rd
Lafayette Ave
Jackson St W
Emmett St W
Emmett St E
Verona Rd
Ave A
Lafayette St
Upton Ave
Union St S
Raymond Rd N
Hill Brady Rd
20th St N
Meachem Ave
E Goguac St
Mary St
Raymond Rd S
Skyline Dr
Wattles Rd S
Wheatfield Pkwy
Golden Ave
Riverside Dr
6 1/2 Mile Rd
9 Mile Rd
Helmer Rd S
Columbia Ave W
Stone Jug/Buckley Cutoff
Beckley Rd
Harper Village Dr
Beadle Lake Rd
B Dr N
Glenn Cross Rd
Division Dr
Carver Rd
Sonoma Rd
Capital Ave SW
B Dr S
C Dr S
D Dr S
F Dr S
G Dr S
7 1/2 Mile Rd
I Dr S
Oak Grove Rd
J Dr S

Figure 16-5B
Battle Creek - Central City
Site Specific 2045 MTP Recommended Improvement Projects and Historic Sites & Cemetaries

MapNum	Name
1	12 Mile Rd / Kalamazoo River Bridge
2	Adventist Village
3	African Methodist Episcopal Church
4	Battle Creek City Hall
5	Battle Creek House
6	Battle Creek No. 4 Fire station
7	Battle Creek Post Office (old)
8	Battle Creek Sanitarium (Federal Center)
9	Beckley Cemetery
10	Beckley School
11	Bedford Mill
12	City Hall Historic District
13	Cole, Seirn B. House
14	Elks Temple
15	First Baptist Church
16	Fort Custer
17	Harmonia Cemetery
18	Kellogg, W. K. House
19	Kimball House
20	Maple Street Historic District
21	Merritt Woods Historic District
22	Merritt, Charles, House
23	Methodism in Battle Creek (First United Methodist Church)
24	Michigan Central Railroad Station (Clara's Restaurant)
25	Milk Producers Company Barn
26	Oak Hill Cemetery Grave Sites (James and Ellen White)
27	Penniman Castle
28	Roosevelt Community House ("the Rotunda" at Legion Villa)
29	Saint Thomas Episcopal Church
30	Scheuch, Nelle Zinn Burt Estate
31	Second Baptist Church Commemorative Designation
32	Seventh Day Adventist Church
33	Shepard, Warren B. House
34	Sonoma United Methodist Church
35	Stevenson House
36	Union Manufacturing Company
37	Van Buren Street Historic District
38	Veterans' Hospital No. 100, Camp Custer
39	Willard, Allen and Charles House



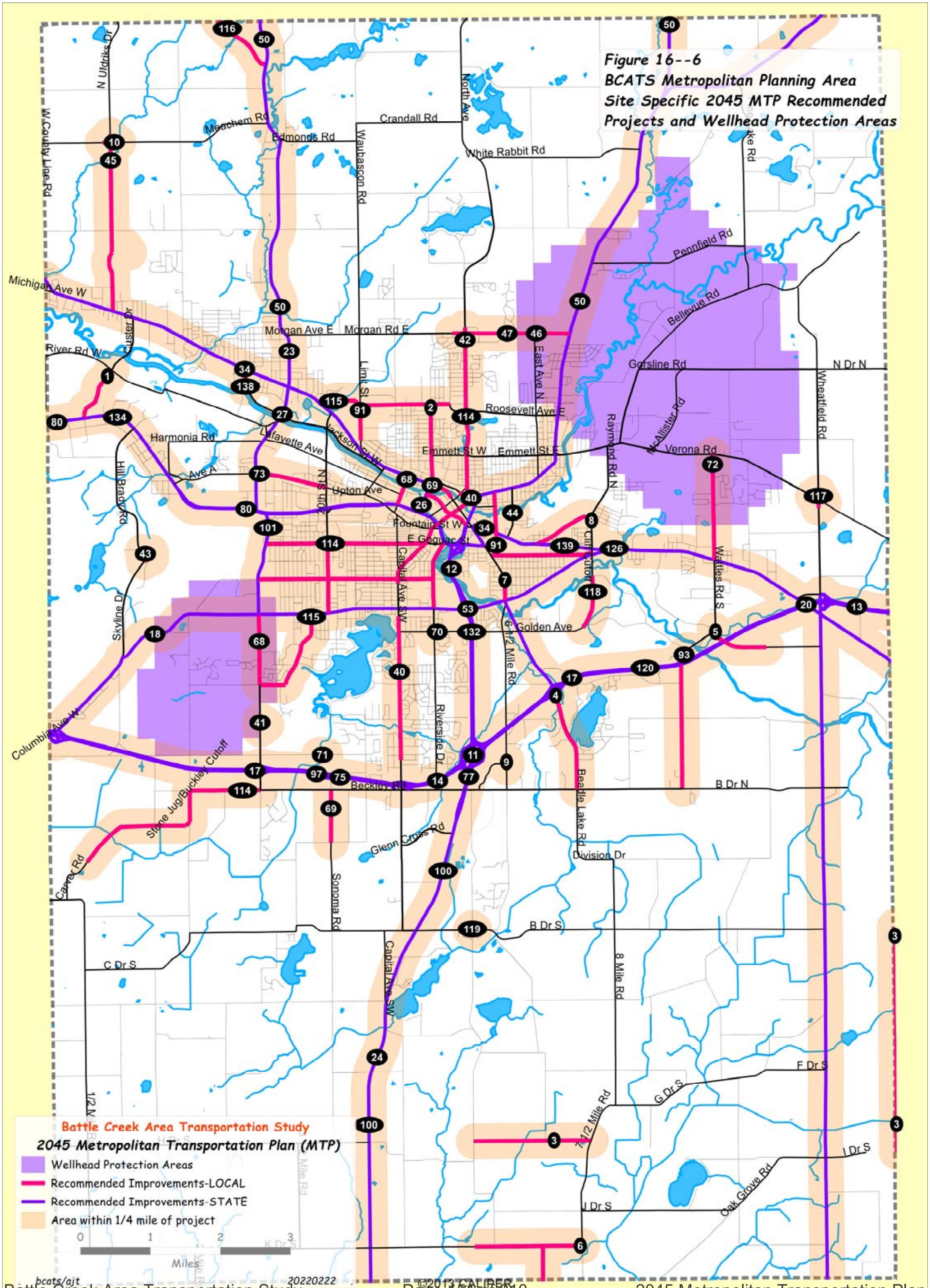


Figure 16--6
BCATS Metropolitan Planning Area
Site Specific 2045 MTP Recommended
Projects and Wellhead Protection Areas
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan (MTP)
Wellhead Protection Areas
Recommended Improvements-LOCAL
Recommended Improvements-STATE
Area within 1/4 mile of project
0
1
2
3
Miles
bcats/ajt
20220222
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TABLE 16-1 (page 1 of 2)
Michigan County Elements Lists
Calhoun County - Threatened and Endangered Species
Current as of 2/22/22

Scientific Name	Common Name	State Status	Federal Status	Occurrences in County	Last Observed in County
Acella haldemani	Spindle lymnaea	SC		1	
Acris blanchardi	Blanchard's cricket frog	T		7	2021
Agrimonia rostellata	Beaked agrimony	T		1	2020
Alasmidonta marginata	Elktoe	SC		14	2019
Alasmidonta viridis	Slippershell	T		8	2019
Ammodramus henslowii	Henslow's sparrow	E		2	2007
Ammodramus savannarum	Grasshopper sparrow	SC		3	2007
Amorpha canescens	Leadplant	SC		3	2012
Angelica venenosa	Hairy angelica	SC		1	1898
Arnoglossum plantagineum	Prairie indian-plantain	SC		1	1954
Baptisia lactea	White or prairie false indigo	SC		9	2016
Bombus auricomus	Black and gold bumble bee	SC		1	2021
Bombus borealis	Northern amber bumble bee	SC		2	1966
Bombus pensylvanicus	American bumble bee	SC		1	1927
Brickellia eupatorioides	False boneset	SC		1	2009
Carex amphibola	Narrow-leaved Sedge	SC		1	1964
Catinella protracta	A land snail (no common name)	E		2	1947
Chondestes grammacus	Lark sparrow	X		1	2015
Clemmys guttata	Spotted turtle	T		4	2010
Conioselinum chinense	Hemlock-parsley	SC		1	1949
Corydalis flavula	Yellow fumewort	T		2	2019
Cryptotis parva	Least shrew	T		1	1929
Cygnus buccinator	Trumpeter swan	T		1	2019
Cypripedium candidum	White lady slipper	T		2	2005
Dichanthelium leibergii	Leiberg's panic grass	T		1	2011
Dichanthelium microcarpon	Small-fruited panic-grass	SC		1	1984
Eleocharis compressa	Flattened spike rush	T		1	1967
Eleocharis engelmannii	Engelmann's spike rush	SC		1	1974
Eleocharis radicans	Spike rush	X		1	1905
Emydoidea blandingii	Blanding's turtle	SC		12	2021
Erimyzon claviformis	Creek chubsucker	E		1	1982
Eryngium yuccifolium	Rattlesnake-master or button snakeroot	T		2	2019
Erynnis martialis	Mottled duskywing	SC		1	1951
Eupatorium sessilifolium	Upland boneset	T		2	2020
Falco peregrinus	Peregrine falcon	E		1	2018
Faxonius immunis	Calico crayfish	SC		1	2014
Filipendula rubra	Queen-of-the-prairie	T		9	2019
Fontigens nickliniana	Watercress snail	SC		3	1947
Fraxinus profunda	Pumpkin ash	T		1	2000
Galearis spectabilis	Showy orchis	T		1	2006
Geum virginianum	Pale avens	SC		2	2020
Glyptemys insculpta	Wood turtle	SC		1	2020
Haliaeetus leucocephalus	Bald eagle	SC		3	2019
Helianthus hirsutus	Whiskered sunflower	SC		1	1914
Helianthus mollis	Downy sunflower	T		1	2010
Hydrastis canadensis	Goldenseal	T		3	2006
Isotria verticillata	Whorled pogonia	T		2	2006
Lasmigona compressa	Creek heelsplitter	SC		6	2018

State status: E= endangered -- T=threatened -- SC=special concern -- X=presumed extirpated

Federal status: LE=listed endangered -- LT=listed threatened -- LELT=partly listed endangered and partly listed threatened -- PDL=proposed delist -- E(S/A)=endanged based on similarities/appearance -- PS=partial status (only in part of range) -- C=species being considered for federal status

TABLE 16-1 (page 2 of 2)

Michigan County Elements Lists

Calhoun County - Threatened and Endangered Species

Current as of 2/22/22

Scientific Name	Common Name	State Status	Federal Status	Occurrences in County	Last Observed in County
Lasmigona costata	Flutedshell	SC		9	2018
Lechea minor	Least pinweed	T		1	1896
Lepisosteus oculatus	Spotted gar	SC		1	1863
Lepyronia angulifera	Angular spittlebug	SC		1	1927
Ligumia recta	Black sandshell	E		1	2012
Lithobates palustris	Pickerel frog	SC		6	2021
Mertensia virginica	Virginia bluebells	E		1	1888
Mesomphix cupreus	Copper button	SC		3	1947
Moxostoma carinatum	River redhorse	T		1	1987
Myotis septentrionalis	Northern long-eared bat	SC	LT	1	
Myotis sodalis	Indiana bat	E	LE	1	2005
Nerodia erythrogaster neglecta	Copperbelly water snake	E	LT	2	1992
Notropis anogenus	Pugnose shiner	E		4	1994
Notropis chalybaeus	Ironcolor shiner	X		1	1930
Notropis texanus	Weed shiner	X		3	1953
Oecanthus laricis	Tamarack tree cricket	SC		1	2005
Panax quinquefolius	Ginseng	T		1	2007
Pandion haliaetus	Osprey	SC		1	2017
Papaipema beeriana	Blazing star borer	SC		1	1968
Papaipema cerina	Golden borer	SC		1	2017
Parkesia motacilla	Louisiana waterthrush	T		1	2010
Perimyotis subflavus	Eastern pipistrelle	SC		1	2005
Platanthera ciliaris	Orange- or yellow-fringed orchid	E		2	2005
Platanthera leucophaea	Prairie white-fringed orchid	E	LT	1	1887
Pleurobema sintoxia	Round pigtoe	SC		8	2018
Protonotaria citrea	Prothonotary warbler	SC		2	1997
Rallus elegans	King rail	E		3	1960
Setophaga cerulea	Cerulean warbler	T		2	2019
Setophaga citrina	Hooded warbler	SC		2	2010
Silene stellata	Starry campion	T		1	1860
Silphium integrifolium	Rosinweed	T		2	2019
Silphium perfoliatum	Cup plant	T		2	2019
Sistrurus catenatus	Eastern massasauga	SC	LT	9	2019
Speyeria idalia	Regal fritillary	E		2	1949
Spiza americana	Dickcissel	SC		2	2007
Stenelmis douglasensis	Douglas stenelmis riffle beetle	SC		1	1971
Terrapene carolina carolina	Eastern box turtle	SC		12	2021
Utterbackia imbecillis	Paper pondshell	SC		1	
Venustaconcha ellipsiformis	Ellipse	SC		10	2018
Villosa iris	Rainbow	SC		12	2018
Viola pedatifida	Prairie birdfoot violet	T		1	1981
Zizania aquatica	Wild rice	T		5	2014

State status: E= endangered -- T=threatened -- SC=special concern -- X=presumed extirpated

Federal status: LE=listed endangered -- LT=listed threatened -- LELT=partly listed endangered and partly listed threatened -- PDL=proposed delist -- E(S/A)=endanged based on similarities/appearance -- PS=partial status (only in part of range) -- C=species being considered for federal status

Source: Michigan Natural Features Inventory, Michigan State University, MSU Extension
https://mnfi.anr.msu.edu/resources/county-element-data

NOTE: This list includes all elements (species and natural communities) for which locations have been recorded in the Michigan Natural Features Inventory (MNFI) Biological and Conservation Datasystem for each county. Information from the database cannot provide a definitive statement on the presence, absence, or condition of the natural features in any given locality, since much of the state has not been specifically or thoroughly surveyed for their occurrence and the conditions at previously surveyed sites are constantly changing. The County Elements Lists should be used as a reference of which natural features currently or historically were recorded in the county and should be considered when developing land use plans. Included in the list is the scientific name, common name, federal status, and state status for each element.

TABLE 16-2
Potentially Impacted Environmental Resources

Site Specific
2045 Metropolitan Transportation Plan
Recommended Projects

✔ = Environmental or Cultural Factor within 1/4 Mile of Proposed Project

Project #	Project/Description	Project Limits	Environmental & Cultural Factors									
			Impaired Rivers & Streams	Other Rivers & Streams	Lakes and Ponds	Wetlands	Forests	Farmland Preservation Areas	Parks and Trails	Historic Sites	Cemetaries	Wellhead Protection Areas
1	Clark Rd	River Rd southward to M-96 (Dickman Rd W)	✔			✔	✔			✔		
2	Washington Ave	from Goodale Ave southward to Michigan Ave (M-89)	✔			✔	✔		✔	✔		
3	Areawide Tree Removal	along H Dr S from 6 Mile Rd eastward to 7.5 Mile Rd; along 7 Mile Rd from K Dr S southward 0.5 mi to to Newton/Burlington twps boundary; along 12 Mile Rd from B Dr S southward to I Dr S.		✔		✔	✔	✔			✔	
4	Beadle Lake Rd	from B Dr N northward to exit/entrance ramps south of I-94		✔	✔	✔	✔					
5	F Dr N	from Wattles Rd eastward ~0.81 mi to Flex-n-Gate driveway		✔		✔	✔		✔			
6	K Dr S, Phase II	from 6 Mile Road eastward to 7.5 Mile Road		✔	✔	✔	✔					
7	Main St, full resurfacing, Emmett Twp	from M-96 (Columbia Ave) to City limits (~180' south of Kingman)	✔			✔	✔			✔		
8	Raymond Road N bridge	Raymond Road North over Michigan Department of Transportation Railroad					✔					
9	Signal Upgrade - 6.5 Mi Rd @ Harper Village Dr	Signalized intersection of 6.5 Mi Rd and Harper Village Dr				✔	✔					
10	U Dr N	U Drive N at 1 Mile Road, Calhoun County		✔		✔	✔					
11	I-194/M-66 bridges	over I-94	✔	✔		✔	✔					
12	I-194/M-66 Corridor PEL Study	Glenn Cross Road to Capital Avenue	✔	✔	✔	✔	✔		✔	✔	✔	
13	I-94	from I-94BL/M-96 (Michigan Ave) overpass eastward ~1.1 mi to Emmett/Marshall townships line (BCATS area eastern boundary). Part of larger project extending eastward to 17.5 Mile Rd (excluding thru I-69 interchange).		✔		✔	✔				✔	
14	I-94 bridges	over Riverside Drive	✔				✔		✔			
17	I-94 Rebuiilding Michigan (RBMP) project	from west of Helmer Rd eastward to east of F Dr N [including bridges & interchanges at Capital Ave and M-294 (Beadle Lake Rd), and bridges at Kalamazoo River, 6.5 Mi Rd, 9 Mi Rd, and F Dr N]	✔	✔	✔	✔	✔		✔	✔	✔	
18	I-94 Road & Bridge Scoping	I-94 from Kalamazoo County line east to 3000' west of Helmer Road. And M-37 (Columbia Ave) over the GTW RR		✔	✔	✔	✔	✔				✔
20	I-94BL (Michigan Ave) bridge	over I-94		✔			✔				✔	
21	M-311 (11 Mile Rd) bridge	M-311 over I-94		✔		✔	✔				✔	
23	M-37 (Helmer Rd/Bedford Rd)	Dickman Road (M-96) to Creekview Drive in Calhoun County	✔	✔		✔	✔		✔		✔	
24	M-66	L Drive South to D Drive South in Leroy Township, Calhoun County		✔	✔	✔	✔					
26	Regionwide bridge inspections	1199-M-66 over Battle Creek River,1200-I-194 over Kalamazoo River,1413-M-37 (Bedford Rd) over Kalamazoo River	✔	✔		✔	✔		✔	✔	✔	
27	Regionwide intersection traffic detection for signal actuation	M-37 (Bedford) at Jackson Street M-89 (Washington Ave) at Hamblin Ave	✔	✔		✔	✔		✔	✔		
34	Trunkline Signal Modernization	4 intersections: M-89 (Michigan) @ Stringham Rd; M-89 (Michigan) @ VanBuren; I-94BL (Michigan) @ Charlton (fire station); M-89 (Michigan) @ Kimber (fire station).	✔	✔		✔	✔		✔	✔		
40	Capital Ave SW+NE, four segments	Dickman--Fairfield, Weeks--Rebecca, Dickman--Michigan, Michigan--Cherry	✔	✔	✔	✔	✔		✔	✔		
41	Helmer Rd S at Potters Dr	Helmer Road S at Potters Dr, city of Battle Creek					✔	✔	✔			✔
42	North Ave (6 Mile Rd)	E Roosevelt Ave northward to Morgan Rd		✔	✔	✔	✔		✔			
43	Roundabout - Skyline Dr and Hill Brady Rd	at intersection of Skyline Dr and Hill Brady Rd, also with Logistics Dr to southeast and planned new entrance to Air National Guard base to the northeast		✔		✔	✔					

TABLE 16-2
Potentially Impacted Environmental Resources

Site Specific
2045 Metropolitan Transportation Plan
Recommended Projects

✔ = Environmental or Cultural Factor within 1/4 Mile of Proposed Project

Project #	Project/Description	Project Limits	Environmental & Cultural Factors									
			Impaired Rivers & Streams	Other Rivers & Streams	Lakes and Ponds	Wetlands	Forests	Farmland Preservation Areas	Parks and Trails	Historic Sites	Cemetaries	Wellhead Protection Areas
44	Union Street S bridge	Union Street S, Str #1408 over the Battle Creek River, City of Battle Creek	✔			✔	✔		✔			
45	1 Mile Rd (Uldriks)	1 Mile Road from M-89 to U Drive N, Calhoun County		✔		✔	✔					
46	Morgan Rd (O Dr N)	from North Ave (6 Mile Rd) eastward to M-66 (Capital Ave NE)				✔	✔					
47	Morgan Rd (O Dr N)	O Drive N from 6 Mile Road to M-66, Calhoun County				✔	✔					
48	Signal Upgrade - Morgan Rd @ North Ave	Signalized intersection of Morgan Rd and North Ave				✔	✔					
50	M-37 (Bedford Rd N), M-66 (Capital Ave NE), & M-78	entireties of M-37 in Bedford Twp and M-66 & M-78 in Pennfield Twp		✔	✔	✔	✔	✔	✔	✔	✔	✔
52	M-89 (Washington Ave) bridge	over GTW RR & Kalamazoo River	✔	✔			✔		✔	✔		
53	M--96 (Columbia Ave) bridges	over I-194	✔	✔		✔	✔					
68	City BC CPM (Helmer, Kendall, 20th, Hamblin, Territorial)	Helmer Rd from Gethings Rd to Columbia Ave (M-96); Kendall St from Dickman Rd (M-96) to Michigan Ave (M-89); 20th St from Columbia Ave (M-96) to Goguac St; Hamblin Ave from Washington Ave (M-89) to Division St (I-194/M-66); Territorial Rd from Helmer Rd (M-37) to Riverside Dr.	✔	✔		✔	✔	✔	✔	✔	✔	✔
69	City BC Rehab (Michigan, Porter, Sonoma)	Michigan Ave from Washington Ave to State St; Porter St from Michigan Ave to Raymond Rd; Sonoma Rd from Minges Rd to Beckley Rd.	✔	✔			✔		✔	✔		
70	CMAQ Signal Modernization - GOLDEN @ RIVERSIDE	intersection of Golden Ave and Riverside Dr					✔		✔			
71	Watkins Rd bridge	Watkins Rd bridge over Minges Brook		✔		✔	✔	✔				
72	Wattles Rd N	Michigan Ave to Verona			✔	✔	✔	✔				✔
73	Avenue A	from Helmer Rd eastward to 20th St				✔	✔		✔		✔	
74	I-194 bridges	over Kalamazoo River, Calhoun County	✔	✔		✔	✔				✔	
75	I-94 Battle Creek Rest Area - Building Reconstruction	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97		✔		✔	✔					
77	M-66 northbound	from Beckley Rd to I-94	✔				✔					
80	M-96 (Dickman Rd)	from county line just west of Armstrong Rd eastward to M-37 (Helmer Rd) west junction		✔	✔	✔	✔		✔	✔	✔	
91	City BC Rehab (Limit, Elm, Riverside, Cliff)	Limit St from Parkway Dr to Goodale Ave; Elm St from Cliff St to Capital Ave NE; Riverside Dr from Columbia Ave to Dickman Rd; Cliff St from Main St to Raymond Rd.	✔	✔	✔	✔	✔		✔	✔		
92	CMAQ Signal Modernization - MCCAMLY @ VANBUREN	intersection of McCamly St and VanBuren St	✔	✔			✔		✔	✔		
93	Wattles Rd S	B Dr N to G Dr N		✔		✔	✔	✔	✔		✔	
97	I-94 Battle Creek Rest Area - Landscaping	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97		✔		✔	✔					
100	M-66	M-66 from Glenn Cross Rd south to Athens Twp Border		✔	✔	✔	✔					
101	M-96/M-37/I-94BL (Helmer Rd)	Helmer Rd between Territorial and Dickman				✔	✔		✔		✔	✔
114	City BC CPM (Carver, Stone Jug, Beckley, North Ave, Goguac)	Carver from City limits to Stone Jug Rd; Stone Jug Rd from Carver to Beckley Rd; Beckley Rd from Stone Jug Rd to Helmer Rd; North Ave from Capital Ave to Roosevelt Ave; Goguac St from Helmer Rd to Capital Ave.	✔	✔	✔	✔	✔	✔	✔	✔	✔	
115	City BC Rehab (Goodale-Ridgemoor, 24th, Gethings)	Goodale-Ridgemoor from Roosevelt to Michigan Ave; 24th St from Columbia Ave to Windamere Blvd; Gethings Rd from Helmer to Windamere Blvd.		✔	✔	✔	✔		✔	✔		✔
116	Banfield Rd	M-37 (Bedford Rd N) to Baseline Rd		✔	✔	✔	✔	✔				

TABLE 16-2

Potentially Impacted Environmental Resources

Site Specific
2045 Metropolitan Transportation Plan
Recommended Projects

✔ = Environmental or Cultural Factor within 1/4 Mile of Proposed Project

Project #	Project/Description	Project Limits	Environmental & Cultural Factors									
			Impaired Rivers & Streams	Other Rivers & Streams	Lakes and Ponds	Wetlands	Forests	Farmland Preservation Areas	Parks and Trails	Historic Sites	Cemetaries	Wellhead Protection Areas
117	CMAQ Signal Modernization - 11 MILE RD @ VERONA	intersection of 11 Mile Rd and Verona Rd			✔	✔	✔					
118	Raymond Rd	Golden Ave to E River Rd		✔	✔	✔	✔					
119	Roundabout - B Dr S and 6 Mile Rd	Existing 2-way stop controlled intersection of B Dr S and 6 Mile Rd on Newton/Leroy twps boundary (6 Mile Rd)		✔	✔	✔	✔					
120	I-94 Crash Investigation Sites	Along I-94, one site eastbound & one site westbound between Exit 100 and 9 Mi Rd bridge			✔	✔	✔					
126	TSC-wide Signal Modernizations	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	✔	✔	✔	✔	✔		✔	✔	✔	✔
132	I-194/M-66 NB & SB bridges	over Golden Avenue, City of Battle Creek, Calhoun County				✔	✔					
133	M-89 (Washington Ave) bridge	over Battle Creek River, Battle Creek, Calhoun County	✔	✔			✔		✔	✔		
134	M-96 (Dickman Rd) Trail	along north side of M-96 from Fort Custer National Cemetary (in Kalamazoo County) eastward ~ one mile crossing Armstrong Rd into Calhoun County (and City BC) to old Avenue A intersection/connector path to Evergreen Rd/American Legion Dr in Springfield		✔		✔	✔		✔	✔	✔	
138	Stringham Rd Non-motorized Connector	from W Jackson Rd northward to M-89 (Michigan Ave)	✔	✔		✔	✔		✔			
139	I-94BL (Michigan Ave E)	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	✔	✔	✔	✔	✔	✔	✔	✔		

BCATS

GUIDELINES (adopted 09/26/07 Res. 07-41 by the BCATS Policy Committee)

Battle Creek Area Transportation Study (BCATS)
Considering Environmental Issues in the Transportation Planning Process

Transportation systems impact the environment, including the already built, in-place transportation systems. The environment can impact decisions about future actions to be taken on the transportation system.

SAFETEA-LU requires an areawide approach to addressing potential environmental impacts. It does not require project specific analysis at the long range plan level. MPOs are to identify environmentally sensitive resources, analyze possible impacts of transportation projects on resources, and recommend mitigation strategies to be evaluated during all project phases.

The process is not a project level analysis. It is not intended to replace NEPA. The NEPA process already analyzes impacts in detail at the project level. The process is also not a determining factor in project selection. The presence of impacts does not necessarily indicate that a project should be not selected for implementation.

The overall goal of the BCATS program is to "assist in the development and preservation of a safe, effective, well-maintained, efficient, and economical transportation system for the Battle Creek metropolitan area, which minimizes its negative impacts on the physical and social environments and related land use." This has been the goal of BCATS for several decades, and as such, the physical and social environments continue to be a prime consideration in the development of the long range plan.

This goal is augmented by goals related to the operation of the transportation system that are utilized in the development of the agency's long range transportation plan. These goals are influenced by federal emphasis areas and by the goals of the State Transportation Commission. All of these goals support having the transportation system provide the greatest benefit for the least cost. Cost is measured not only in dollars, but in safety, social, environmental, and access terms.

Overall "Best Practice" Guidelines

The following guidelines were developed by the Southeast Michigan Council of Governments (SEMCOG) and published in January, 2007. SEMCOG has made them available to other Michigan MPOs for use with their long range plan development. BCATS extends its appreciation to SEMCOG for its work in the development of these guidelines. **The BCATS' Policy Committee adopted these general guidelines for consideration of environmental issues at its meeting on September 26, 2007.** These are only guidelines and are offered to the implementing agencies to assist them in project development.

Regardless of the type of project, or the resources that may be impacted, the following guidelines are offered to assist during the planning, design, construction, and maintenance of transportation projects. The following are guidelines for best planning practices, but are not mandated for any specific project.

Planning/Design Guidelines

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

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

- Conduct an inventory to determine if any environmentally sensitive resources could be impacted by the project. (Note: not all desirable data are available for collection in a usable format at this time)

- Use the County Hazard Mitigation Plan (if available) , if impacted resources are addressed in the plan; if so, coordinate with hazard mitigation planners and remain consistent with the plan.

- Use the pre-construction meeting to involve the local community officials, contractors, and subcontractors in discussing environmental protection during the project. Communicate agreed-upon preservation goals to all involved with the project. Discuss with the local community any special requirements (for example: ordinances, site plan review).

- If possible, avoid impacts to environmental resources by limiting the project scope or redesigning the project (for example: alignment, design speed, retaining walls, etc.)

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

- Integrate stormwater management into the design of the site. If appropriate, utilize low-impact development practices that infiltrate stormwater into the ground (for example: swales, rain gardens, native plantings).

Construction/Maintenance Guidelines

- Insert special requirements addressing sensitivity of environmental resources into plans, specifications, and estimates provided to construction contractors. Be sure to note the types of activities not allowed in sensitive areas (for example: stockpiling, clearing, construction equipment, etc.).

- Confine construction and staging areas t the smallest possible footprint and clearly mark area boundaries. Confine all construction activity and storage of materials and equipment to these designated areas.

- Use the least obtrusive construction techniques and materials.

- Install construction flagged or fencing around environmental resources to prevent encroachment.

- Minimize and, where possible, avoid site disturbance. As appropriate:
  - protect existing vegetation and sensitive habitat
  - implement erosion and sediment control
  - protect water quality
  - protect cultural resources
  - minimize noise and vibrations
  - provide for solid waste disposal and work site sanitation

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

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

- Before site disturbance occurs, implement erosion control best management practices to capture sediments and control runoff:
  - minimize the extent and duration of exposed bare ground to prevent erosion
  - establish permanent vegetative cover immediately after grading is complete
  - do not stockpile materials within sensitive areas
  - employ erosion control techniques
  - prevent tracking of sediment onto paved surfaces

- Incorporate stormwater management into the construction phase:
  - prevent the direct runoff of water containing sediment into waterways - all runoff from the work area should drain through sedimentation control devices prior to entering a water body
  - during and after construction activities, sweep the streets to reduce sediment entering the storm drainage system
  - block or add best management practices to storm drains in areas where construction debris, sediment, or runoff could pollute waterways

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

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

- Keep equipment in good working condition and free of leaks. Avoid equipment maintenance or fueling near sensitive areas. If mobile fueling is required, keep a spill kit on the fueling truck. Avoid hosing down construction equipment at the site, unless the water is contained and does not get into the storm drain system or waterways.

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

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

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

(Source: SEMCOG. *Integrating Environmental Issues in the Transportation Planning Process: Guidelines for Road and Transit Agencies*. January, 2007. SEMCOG's sources are listed as: AASHTO Center for Environmental Excellence. *Environmental Stewardship Practices, Procedures, and Policies for Highway Construction and Maintenance* and SEMCOG. *Land Use Tools and Techniques. 2003.*)

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For more detailed information about preliminary evaluation of sensitive environmental resources see the Michigan Department of Natural Resources Endangered Species Assessment at http://www.mcgi.state.mi.us/esa/ This website provides a preliminary evaluation of whether endangered, threatened, or special concern species, high quality natural communities, or other unique natural features have been known to occur at, or near, a site of interest. The purpose of this site is to provide a simplified and efficient assessment of rare species and other unique natural features at user-identified locations.

Other contacts:

Endangered Species Specialist
Wildlife Division
P.O. Box Box 30444, Lansing, MI 48909
(517) 373-9418

Michigan Office of the State Archeologist
Michigan State Housing Development Authority
www.michigan.gov/mshda
(This office was merged in MSHDA in October, 2009)

Michigan Department of Environmental Quality
Remediation Division
P.O. Box 30426, Lansing, MI 48909-7926
(517) 373-9837
www.michigan.gov/deq (then go to "Inside DEQ" followed by clicking on the "Remediation Division")

Michigan Natural Features Inventory
www.web4.msue.msu.edu/mnfi/

CHAPTER 17
RECOMMENDED IMPROVEMENTS
2045 METROPOLITAN TRANSPORTATION PLAN

In this 2045 MTP recommended projects include those programmed for 2022 or 2023 implementation in BCATS' current FY2020-2023 Transportation Improvement Program (TIP), tentatively programmed projects planned for 2024-2026 implementation in the next TIP, two proposed roundabouts (one in 2023, one in 2026), several MDOT projects beyond 2026 identified in the JobNet database, specific major vehicle & facility capital projects beyond 2026 for Battle Creek Transit, and non-motorized trail projects in 2027 and 2029. At the end of the list, instead of identifying numerous other future projects beyond 2026 individually, are twelve project lines representing averaged annual expenditures, summed to the MTP 2045 horizon year, named in the list as follows:

- Annual Transit Security
- Annual Specialized Services Transit CAPITAL Assistance
- Annual Local (non-trunkline) Bridge Replacement & Preservation
- Annual Local CMAQ, Safety, & Non-Pavement Preservation STUL Projects
- Annual Pavement Preservation Strategy Local Agencies (75% of STP Urban Local (STUL) Allocation+Local share)
- Annual Transit Capital - Battle Creek Transit, Sec5339. Miscellaneous Equipment & Small Vehicles
- Annual Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310
- Annual Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom
- Annual Transit Operating Assistance
- Annual Specialized Services Transit OPERATING Assistance
- Annual MDOT Bridge Replacement & Preservation
- Annual MDOT Road CPM, Rehabilitation, & Reconstruction

Estimates of annual expenditure in each category were based as appropriate on figures tabulated from the current Transportation Improvement Program (TIP) Fiscal Constraint Demonstration; costs of proposed priority local road CPM and bridge improvements over the next 10-20 years; and forecast continuation of programming and funding for transit activities.

The collection of recommended projects forms the "package" of projects tested for fiscal constraint (Chapter 15). The results of the financial analysis supports the selection of all the recommended projects for inclusion in this Plan, as listed in the project list, Table 17-1, beginning after the text of this chapter.

The "BCATS 2045 MTP ID" project numbers correspond to the map locations depicted on Figures 17-1 and 17-2 , which follow after the project list. Since there are several MDOT projects or activities listed as recommended in this Plan that are conducted on all State trunkline road segments, such as pavement markings or signage upgrades, every trunkline segment was colored dark gold and marked on the map as a "Recommended Improvement". Other MDOT projects at specific locations or on limited sections of trunkline roadway are identified on the map by their BCATS 2045 MTP ID at their approximate locations as the map scale allowed. The non-trunkline, local road agency (City of Battle Creek, Calhoun County Road Dept, and City of Springfield) Recommended Improvements are indicated by the thick magenta-colored segments related to the projects with the corresponding BCATS 2045 MTP ID on or adjacent to the segment(s).

Numerous “illustrative” projects are also referenced in this 2045 MTP, as discussed in Chapter 13 and listed at the end of that chapter. “Illustrative” projects are generally less developed, without cost estimates or likely funding, but are identified in this Plan as options to be further developed over the next five years for possible recommendation in the next plan, to provide alternatives for situations considered “deficient” now or into the future, and to highlight conditions to be more closely monitored. The “illustrative” projects listed in this 2045 MTP were not included in the “Demonstration of Financial Constraint” presented in Chapter 15 - Financial Plan, nor represented on any maps or included in analyses for Chapter 16 - Environmental Mitigation or Chapter 18 - Environmental Justice.

In Table 17-1, 2045 Metropolitan Transportation Plan - Recommended Improvements, there appear many acronyms or abbreviations for various items. Following is a guide to deciphering those items.

Implementing Agency Codes: CBC=City of Battle Creek; CBC/BCT=Battle Creek Transit; CCRD=Calhoun County Road Department; CSPR=City of Springfield; BCATS=Battle Creek Area Transportation Study; MDOT=Michigan Department of Transportation.

Phase of Project Codes: PE=preliminary engineering; EPE=early PE; PES=Preliminary Engineering Structures (bridges); NI=Non-Infrastructure (such as Planning, Transit, Non-motorized, and some railroad work); CON=construction or purchase; ROW=right-of-way acquisition; OPS=operations.

Federal Fund Source Codes: ST=Surface Transportation any area; ST,EMRP=Surface Transportation Earmarks Repurposed; STRH=Surface Transportation Program Safety Rail-Highway and Incentive—100% federal; STUL=Surface Transportation urban local (<200,000 population); PL=STP Planning; CM=Congestion Mitigation & Air Quality Program (100% federally funded); ST=Surface Transportation; STG=Surface Transportation 100% federally funded; NH=National Highway System; HSIP=Highway Safety Improvement Program; TA=Transportation Alternatives; 5307=Federal Transit Administration (FTA) Section 5307 - UZA (urbanized areas) Formula (Operating Assistance); 5310=FTA Section 5310 - Elderly & Disabled; 5339=FTA Section 5339 - Bus and Bus Facilities.

State Fund Source Codes: TEDF=Transportation Economic Development Fund/Award Categories A thru F; CTF=Comprehensive Transportation Fund; MRR=Michigan Railroad; M=Michigan Funds Michigan Betterment; GF=General Fund (followed by year of funds utilized designation); CTFR=Comprehensive Transportation Fund Rail; RBMP=Re-Building Michigan Program.

Other Abbreviations - CPM = Capital Preventative Maintenance; JN = Job Number; MTP = Metropolitan Transportation Plan.

2045 Metropolitan Transportation Plan -- Table 17-1

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2022	1	Battle Creek	**Clark Rd**	River Rd southward to M-96 (Dickman Rd W)	0.84	Road Capital Preventive Maintenance	$ 436,000	**215056**	CON
2022	2	Battle Creek	**Washington Ave**	from Goodale Ave southward to Michigan Ave (M-89)	1.15	Mill & Resurface	$ 590,552	**207347**	CON
2022	3	Calhoun County	**Areawide Tree Removal**	along H Dr S from 6 Mile Rd eastward to 7.5 Mile Rd; along 7 Mile Rd from K Dr S southward 0.5 mi to to Newton/Burlington twps boundary; along 12 Mile Rd from B Dr S southward to I Dr S.	5.39	Tree removal	$ 439,776	**211856**	CON
2022	4	Calhoun County	**Beadle Lake Rd**	from B Dr N northward to exit/entrance ramps south of I-94	1.42	Resurfacing	$ 290,422	**213043**	CON
2022	5	Calhoun County	**F Dr N**	from Wattles Rd eastward ~0.81 mi to Flex-n-Gate driveway	0.81	Crush & shape and asphalt resurfacing	$ 359,875	**207408**	CON
2022	6	Calhoun County	**K Dr S, Phase II**	from 6 Mile Road eastward to 7.5 Mile Road	1.54	Crush & shape and asphalt resurfacing	$ 789,048	**207425**	CON
2022	7	Calhoun County	**Main St, full resurfacing, Emmett Twp**	from M-96 (Columbia Ave) to City limits (~180' south of Kingman)	0.30	HMA mill & resurface (3") with ADA ramp upgrades	$ 167,792	**207496**	CON
2022	8	Calhoun County	**Raymond Road N bridge**	Raymond Road North over Michigan Department of Transportation Railroad	0.00	Bridge Rehabilitation	$ 1,129,000	**209858**	CON
2022	9	Calhoun County	**Signal Upgrade - 6.5 Mi Rd @ Harper Village Dr**	Signalized intersection of 6.5 Mi Rd and Harper Village Dr	0.00	Upgrade/modernize existing signals, including video detection system	$ 285,000	**207465**	CON
2022	10	Calhoun County	**U Dr N**	U Drive N at 1 Mile Road, Calhoun County	0.25	Install overhead flashing beacons	$ 27,372	**211886**	CON
2022	11	MDOT	**I-194/M-66 bridges**	over I-94	0.00	Full Paint, Substr Horizontal Surf Coating, Elas Bearing Repl, Joint Reseal	$ 1,754,437	**204349**	CON
2022	12	MDOT	**I-194/M-66 Corridor PEL Study**	Glenn Cross Road to Capital Avenue	6.79	Planning Environmental Linkage (PEL) study to consider alternative configurations of existing freeway in advance of reconstruction expected necessary before 2030.	$ 650,000	**200566**	EPE
2022	13	MDOT	**I-94**	from I-94BL/M-96 (Michigan Ave) overpass eastward ~1.1 mi to Emmett/Marshall townships line (BCATS area eastern boundary). Part of larger project extending eastward to 17.5 Mile Rd (excluding thru I-69 interchange).	1.10	Milling and one course asphalt overlay	$ 867,219	**210837**	CON
2022	14	MDOT	**I-94 bridges**	over Riverside Drive	0.00	Thin Epoxy Ovly, Sleeper Slab Repl, Approach Repl, Expansion Joint Repl	$ 906,000	**204348**	CON
2022	15	MDOT	**I-94 E**	I-94 Existing Dynamic Message Signs (DMS)	0.00	Install seventeen (17) CCTV cameras on existing DMS.	$ 12,393	**207433**	PE
2022	16	MDOT	**I-94 Rebuiilding Michigan (RBMP) project**	from west of Helmer Rd eastward to east of F Dr N [including bridges & interchanges at Capital Ave and M-294 (Beadle Lake Rd), and bridges at Kalamazoo River, 6.5 Mi Rd, 9 Mi Rd, and F Dr N]	8.13	Milling and two course asphalt resurfacing, bridge replacement, temporary widening, bridge railing repair and interchange reconstruction.	$ 50,000	**210073**	ROW
2022	17	MDOT	**I-94 Rebuiilding Michigan (RBMP) project**	from west of Helmer Rd eastward to east of F Dr N [including bridges & interchanges at Capital Ave and M-294 (Beadle Lake Rd), and bridges at Kalamazoo River, 6.5 Mi Rd, 9 Mi Rd, and F Dr N]	8.13	Milling and two course asphalt resurfacing (to 6.5 Mi Rd), bridge replacement, temporary widening, bridge railing repair and interchange reconstruction.	$ 114,660,892	**210073**	CON
2022	18	MDOT	**I-94 Road & Bridge Scoping**	I-94 from Kalamazoo County line east to 3000' west of Helmer Road. And M-37 (Columbia Ave) over the GTW RR	6.43	Road and Bridge Scoping FY2022	$ 360,000	**214331**	EPE
2022	19	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 797,500	**214871**	PE
2022	20	MDOT	**I-94BL (Michigan Ave) bridge**	over I-94	0.00	Barrier Repl, Deck Patching, H/S, Latex Bm Repr, Substr Patching, CSC	$ 930,000	**201957**	CON
2022	21	MDOT	**M-311 (11 Mile Rd) bridge**	M-311 over I-94	0.00	Shallow overlay with barrier replacement.	$ 959,814	**212581**	CON
2022	22	MDOT	**M-37 (Bedford Rd N), M-66 (Capital Ave NE), & M-78**	entireties of M-37 in Bedford Twp and M-66 & M-78 in Pennfield Twp	8.94	Single course chip seal with fog seal	$ 30,000	**213288**	PE
2022	23	MDOT	**M-37 (Helmer Rd/Bedford Rd)**	Dickman Road (M-96) to Creekview Drive in Calhoun County	2.87	Milling and two course asphalt resurfacing	$ 6,820,000	**210067**	CON
2022	24	MDOT	**M-66**	L Drive South to D Drive South in Leroy Township, Calhoun County	4.02	Milling and one course asphalt overlay	$ 1,215,000	**208374**	CON
2022	25	MDOT	**M-96 (Dickman Rd)**	from county line just west of Armstrong Rd eastward to M-37 (Helmer Rd) west junction	4.45	Milling and one course asphalt overlay with sidewalk ramp improvements. Additional depth repairs at designated locations.	$ 45,000	**213296**	PE
2022	26	MDOT	**Regionwide bridge inspections**	1199-M-66 ober Battle Creek River,1200-I-194 over Kalamazoo River,1413-M-37 (Bedford Rd) over Kalamazoo River	0.00	Underwater Inspection of Bridges	$ 32,813	**204289**	OPS
2022	27	MDOT	**Regionwide intersection traffic detection for signal actuation**	M-37 (Bedford) at Jackson Street M-89 (Washington Ave) at Hamblin Ave	0.00	Installation of detection for actuation	$ 86,000	**200693**	CON
2022	28	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	1.31	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207328**	PE
2022	29	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	1.31	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207328**	CON
2022	30	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.83	Special pavement marking application on trunklines in Southwest Region	$ 900	**207329**	PE

2045 Metropolitan Transportation Plan -- Table 17-1

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2022	31	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.83	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**207329**	CON
2022	32	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.65	Pavement mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**207341**	CON
2022	33	MDOT	**Trunkline Non-Freeway Signing**	Various trunkline non-freeway routes in the BCATS MPO area	137.12	Non-freeway signing replacement/upgrade,	$ 168,500	**202655**	PE
2022	34	MDOT	**Trunkline Signal Modernization**	4 intersections: M-89 (Michigan) @ Stringham Rd; M-89 (Michigan) @ VanBuren; I-94BL (Michigan) @ Charlton (fire station); M-89 (Michigan) @ Kimber (fire station).	0.00	Traffic Signal Modernization; connected vehicle installations	$ 774,092	**206134**	CON
2022	35	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Farebox System Replacement**	Areawide - Battle Creek Transit	0.00	Farebox upgrade (qty up to 25)	$ 178,406	**208237**	Non-Infrastructure (NI)
2022	36	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 82,500	**212168**	Non-Infrastructure (NI)
2022	37	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries. JNs 212946 & 212169 for FY22.	$ 459,990		Non-Infrastructure (NI)
2022	38	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,223,990		Non-Infrastructure (NI)
2022	39	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY22**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY22 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2023	40	Battle Creek	**Capital Ave SW+NE, four segments**	Dickman--Fairfield, Weeks--Rebecca, Dickman--Michigan, Michigan--Cherry	3.74	HMA mill & resurface with ADA ramp upgrades	$ 1,152,000	**207416**	CON
2023	41	Battle Creek	**Helmer Rd S at Potters Dr**	Helmer Road S at Potters Dr, city of Battle Creek	0.07	Installation of overhead flashing beacon	$ 30,000	**214633**	CON
2023	42	Battle Creek	**North Ave (6 Mile Rd)**	E Roosevelt Ave northward to Morgan Rd	1.11	Mill & Resurface, ADA ramps as necessary. Joint City BC & CCRD project, CCRD section north of Coolidge.	$ 413,573	**215397**	CON
2023	43	Battle Creek	**Roundabout - Skyline Dr and Hill Brady Rd**	at intersection of Skyline Dr and Hill Brady Rd, also with Logistics Dr to southeast and planned new entrance to Air National Guard base to the northeast		In connection with the ANG base entrance upgrades, the existing signalized "T" intersection will be changed to a two lane 4-leg roundabout, increasing level of service & safety, and reducing delay & emissions.	$ 2,000,000		CON
2023	44	Battle Creek	**Union Street S bridge**	Union Street S, Str #1408 over the Battle Creek River, City of Battle Creek	0.00	Bridge Rehabilitation	$ 2,483,000	**212288**	CON
2023	45	Calhoun County	**1 Mile Rd (Uldriks)**	1 Mile Road from M-89 to U Drive N, Calhoun County	2.43	Tree removal and clearing	$ 173,000	**214629**	CON
2023	46	Calhoun County	**Morgan Rd (O Dr N)**	from North Ave (6 Mile Rd) eastward to M-66 (Capital Ave NE)	1.50	Mill & Resurface	$ 405,964	**207393**	CON
2023	47	Calhoun County	**Morgan Rd (O Dr N)**	O Drive N from 6 Mile Road to M-66, Calhoun County	1.50	Installation of recessed wet reflective centerline & edgeline pavement markings	$ 52,669	**214631**	CON
2023	48	Calhoun County	**Signal Upgrade - Morgan Rd @ North Ave**	Signalized intersection of Morgan Rd and North Ave	0.00	Upgrade/modernize existing signals, including video detection system	$ 285,000	**207469**	CON
2023	49	MDOT	**I-94, Calhoun County**	I-94 Existing Dynamic Message Signs (DMS)	0.00	Install seventeen (17) CCTV cameras on existing DMS.	$ 60,264	**207433**	CON
2023	50	MDOT	**M-37 (Bedford Rd N), M-66 (Capital Ave NE), & M-78**	entireties of M-37 in Bedford Twp and M-66 & M-78 in Pennfield Twp	8.94	Single course chip seal with fog seal	$ 830,000	**213288**	CON
2023	51	MDOT	**M-66 northbound**	from Beckley Rd to I-94	0.28	Construct auxiliary lane on M-66 NB between Beckley Rd. and I-94.	$ 115,000	**210822**	PE
2023	52	MDOT	**M-89 (Washington Ave) bridge**	over GTW RR & Kalamazoo River	0.00	Epoxy Overlay, Dk Patch, Full depth patch, substructure Repr, Jts, Appr	$ 995,000	**203293**	CON
2023	53	MDOT	**M--96 (Columbia Ave) bridges**	over I-194	0.23	Full Depth Deck Patching, Concrete Deep Overlay, Full Paint, Beam Repairs	$ 2,657,000	**208435**	CON
2023	54	MDOT	**M-96/M-37/I-94BL (Helmer Rd)**	Helmer Rd between Territorial and Dickman	0.96	Convert 4 lanes to 5 lane section.	$ 395,125	**210823**	PE
2023	55	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	0.98	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207365**	PE
2023	56	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	0.98	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207365**	CON
2023	57	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	1.19	Special pavement marking application on trunklines in Southwest Region	$ 900	**207367**	PE
2023	58	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	1.19	Special pavement marking application on trunklines in Southwest Region	$ 50,400	**207367**	CON
2023	59	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.72	Pvmt marking retroreflectivity readings on trunklines in Southwest Region	$ 990	**207378**	CON
2023	60	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 340,217	**214181**	PE
2023	61	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Farebox System Replacement**	Areawide - Battle Creek Transit	0.00	Farebox upgrade (qty up to 25) (combined with FY 2022)	$ 178,406	**208238**	Non-Infrastructure (NI)

2045 Metropolitan Transportation Plan -- Table 17-1

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2023	62	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 85,000		Non-Infrastructure (NI)
2023	63	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek		New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2023	64	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,280,170		Non-Infrastructure (NI)
2023	65	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY23**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY23 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2023	66	Community Action	**Transit Capital - Community Action (CA), Sec5310**	Computer equipment at CA central office to support areawide transit service for elderly & individuals w/disabilities	0.00	Purchase 3 computers and 9 monitors	$ 6,000	**215195**	Non-Infrastructure (NI)
2023	67	Community Inclusive Recreation	**Transit Capital - Community Inclusive Recreation (CIR), Sec5310**	Areawide/Calhoun County	0.00	Purchase 1 (one) replacement bus	$ 79,000	**210666**	Non-Infrastructure (NI)
2024	68	Battle Creek	**City BC CPM (Helmer, Kendall, 20th, Hamblin, Territorial)**	Helmer Rd from Gethings Rd to Columbia Ave (M-96); Kendall St from Dickman Rd (M-96) to Michigan Ave (M-89); 20th St from Columbia Ave (M-96) to Goguac St; Hamblin Ave from Washington Ave (M-89) to Division St (I-194/M-66); Territorial Rd from Helmer Rd (M-37) to Riverside Dr.	5.67	Single chipseal w/ fog seal	$ 400,000		CON
2024	69	Battle Creek	**City BC Rehab (Michigan, Porter, Sonoma)**	Michigan Ave from Washington Ave to State St; Porter St from Michigan Ave to Raymond Rd; Sonoma Rd from Minges Rd to Beckley Rd.	2.17	HMA mill and resurface with ADA ramp upgrades and associated items	$ 450,000		CON
2024	70	Battle Creek	**CMAQ Signal Modernization - GOLDEN @ RIVERSIDE**	intersection of Golden Ave and Riverside Dr		Remove and replace signal with modernized box span configuration	$ 280,700		CON
2024	71	Battle Creek	**Watkins Rd bridge**	Watkins Rd bridge over Minges Brook		Bridge Rehabilitation	$ 660,000		CON
2024	72	Calhoun County	**Wattles Rd N**	Michigan Ave to Verona	1.51	Mill (1.5") & resurface (3") existing travel lanes, bike lanes, and non-motorized paths. New signage & pavement markings.	$ 830,515		CON
2024	73	Springfield	**Avenue A**	from Helmer Rd eastward to 20th St	1.00	2-inch Mill & Fill overlay resurfacing, possibly in conjunction with water main improvements.	$ 326,206		CON
2024	74	MDOT	**I-194 bridges**	over Kalamazoo River, Calhoun County	0.00	Bridge Replacement, Approaches	$ 17,620,000	**210024**	CON
2024	75	MDOT	**I-94 Battle Creek Rest Area - Building Reconstruction**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97	0.00	Reconstruct the Battle Creek Rest Area Building. $520,000 PE phase obligated 06/03/2021.	$ 4,500,000	**212098**	CON
2024	76	MDOT	**M-66**	M-66 from Glenn Cross Rd south to Athens Twp Border	13.72	Fixed Object Removal	$ 73,226	**211892**	PE
2024	77	MDOT	**M-66 northbound**	from Beckley Rd to I-94	0.28	Construct auxiliary lane on M-66 NB between Beckley Rd. and I-94.	$ 670,000	**210822**	CON
2024	78	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 727,381	**213719**	PES
2024	79	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 74,419	**213719**	PE
2024	80	MDOT	**M-96 (Dickman Rd)**	from county line just west of Armstrong Rd eastward to M-37 (Helmer Rd) west junction	4.45	Milling and one course asphalt overlay with sidewalk ramp improvements. Additional depth repairs at designated locations.	$ 2,709,000	**213296**	CON
2024	81	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.88	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**207391**	PE
2024	82	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.88	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**207391**	CON
2024	83	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	3.82	Special pavement marking application on trunklines in Southwest Region	$ 900	**207392**	PE
2024	84	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	3.82	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**207392**	CON
2024	85	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	1.69	Pavement mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**207403**	CON
2024	86	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Three mini-vans.**	Areawide - Battle Creek Transit		Three 6-passenger mini-vans, accessible with ramp	$ 178,406		Non-Infrastructure (NI)
2024	87	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 87,550		Non-Infrastructure (NI)
2024	88	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2024	89	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,337,474		Non-Infrastructure (NI)
2024	90	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY24**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY24 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)

2045 Metropolitan Transportation Plan -- Table 17-1

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2025	91	Battle Creek	**City BC Rehab (Limit, Elm, Riverside, Cliff)**	Limit St from Parkway Dr to Goodale Ave; Elm St from Cliff St to Capital Ave NE; Riverside Dr from Columbia Ave to Dickman Rd; Cliff St from Main St to Raymond Rd.		HMA mill and resurface with ADA ramp upgrades and associated items. CCRD section of Cliff St included in this City BC project.	$ 823,152		CON
2025	92	Battle Creek	**CMAQ Signal Modernization - MCCAMLY @ VANBUREN**	intersection of McCamly St and VanBuren St		Removal and replacement of mast arm signal components	$ 370,000		CON
2025	93	Calhoun County	**Wattles Rd S**	B Dr N to G Dr N	2.02	Pulverize existing roadway and resurface over the graded and compacted crushed asphalt. Roadway to be trenched and widened to provide a 6 foot shoulder (3 foot paved & 3 foot gravel). No non-motorized component to this project.	$ 1,221,750		CON
2025	94	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 91,301	**213631**	PES
2025	95	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 43,219	**213631**	PE
2025	96	MDOT	**I-94 Battle Creek Rest Area - Landscaping**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 92 and Capital Ave exit 95	0.00	Battle Creek Rest Area Landscaping after Rebuild	$ 25,000	**212773**	PE
2025	97	MDOT	**I-94 Battle Creek Rest Area - Landscaping**	Battle Creek Rest Area on south side of eastbound I-94 between Helmer Rd exit 95 and Capital Ave exit 97	0.00	Battle Creek Rest Area Landscaping after Rebuild	$ 65,000	**212773**	CON
2025	98	MDOT	**I-94 Crash Investigation Sites**	Design two crash investigation sites in Calhoun county.	4.07	Construct crash investigation sites on I-94	$ 74,290	**211804**	PE
2025	99	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 25,000	**214871**	ROW
2025	100	MDOT	**M-66**	M-66 from Glenn Cross Rd south to Athens Twp Border	13.72	Fixed Object Removal	$ 286,871	**211892**	CON
2025	101	MDOT	**M-96/M-37/I-94BL (Helmer Rd)**	Helmer Rd between Territorial and Dickman	0.96	Convert 4 lanes to 5 lane section.	$ 2,446,596	**210823**	CON
2025	102	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.79	Longitudinal pavement marking application on trunklines in Southwest Region	$ 900	**209623**	PE
2025	103	MDOT	**Regionwide longitudinal pavement markings**	All of BCATS MPO	2.79	Longitudinal pavement marking application on trunklines in Southwest Region	$ 200,700	**209623**	CON
2025	104	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.84	Special pavement marking application on trunklines in Southwest Region	$ 900	**209624**	PE
2025	105	MDOT	**Regionwide special pavement markings**	All of BCATS MPO	2.84	Special pavement marking application on trunklines in Southwest Region	$ 41,400	**209624**	CON
2025	106	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	2.03	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**209634**	CON
2025	107	MDOT	**Trunkline Non-Freeway Signing**	Various trunkline non-freeway routes in the BCATS MPO area	137.12	Non-freeway signing replacement/upgrade,	$ 1,046,500	**202655**	CON
2025	108	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 7,500	**214181**	ROW
2025	109	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Equipment replacement.**	Areawide - Battle Creek Transit		Replace 5 complete office suites, dispatch funiture, and related computer equipment, including computers, monitors, and computer accessories.	$ 178,406		Non-Infrastructure (NI)
2025	110	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 90,176		Non-Infrastructure (NI)
2025	111	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2025	112	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,395,924		Non-Infrastructure (NI)
2025	113	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY25**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY25 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2026	114	Battle Creek	**City BC CPM (Carver, Stone Jug, Beckley, North Ave, Goguac)**	Carver from City limits to Stone Jug Rd; Stone Jug Rd from Carver to Beckley Rd; Beckley Rd from Stone Jug Rd to Helmer Rd; North Ave from Capital Ave to Roosevelt Ave; Goguac St from Helmer Rd to Capital Ave.	6.68	Single chipseal w/ fog seal	$ 324,604		CON
2026	115	Battle Creek	**City BC Rehab (Goodale, 24th, Gethings)**	Goodale Ave from Michigan Ave to Roosevelt; 24th St from Columbia Ave to Windamere Blvd; Gethings Rd from Helmer to Windamere Blvd.	3.34	HMA mill and resurface with ADA ramp upgrades and associated items	$ 650,000		CON
2026	116	Calhoun County	**Banfield Rd**	M-37 (Bedford Rd N) to Baseline Rd	0.96	Overlay existing roadway with 3 inches of HMA. Roadway to be trenched and widened to provide a 3 foot paved shoulder. No non-motorized component to this project. Signage & pavement markings to be updated.	$ 416,922		CON
2026	117	Calhoun County	**CMAQ Signal Modernization - 11 MILE RD @ VERONA**	intersection of 11 Mile Rd and Verona Rd		Signal modernization, including new poles and signal heads installed on a box span, and vehicle detection system.	$ 280,700		CON

2045 Metropolitan Transportation Plan -- Table 17-1

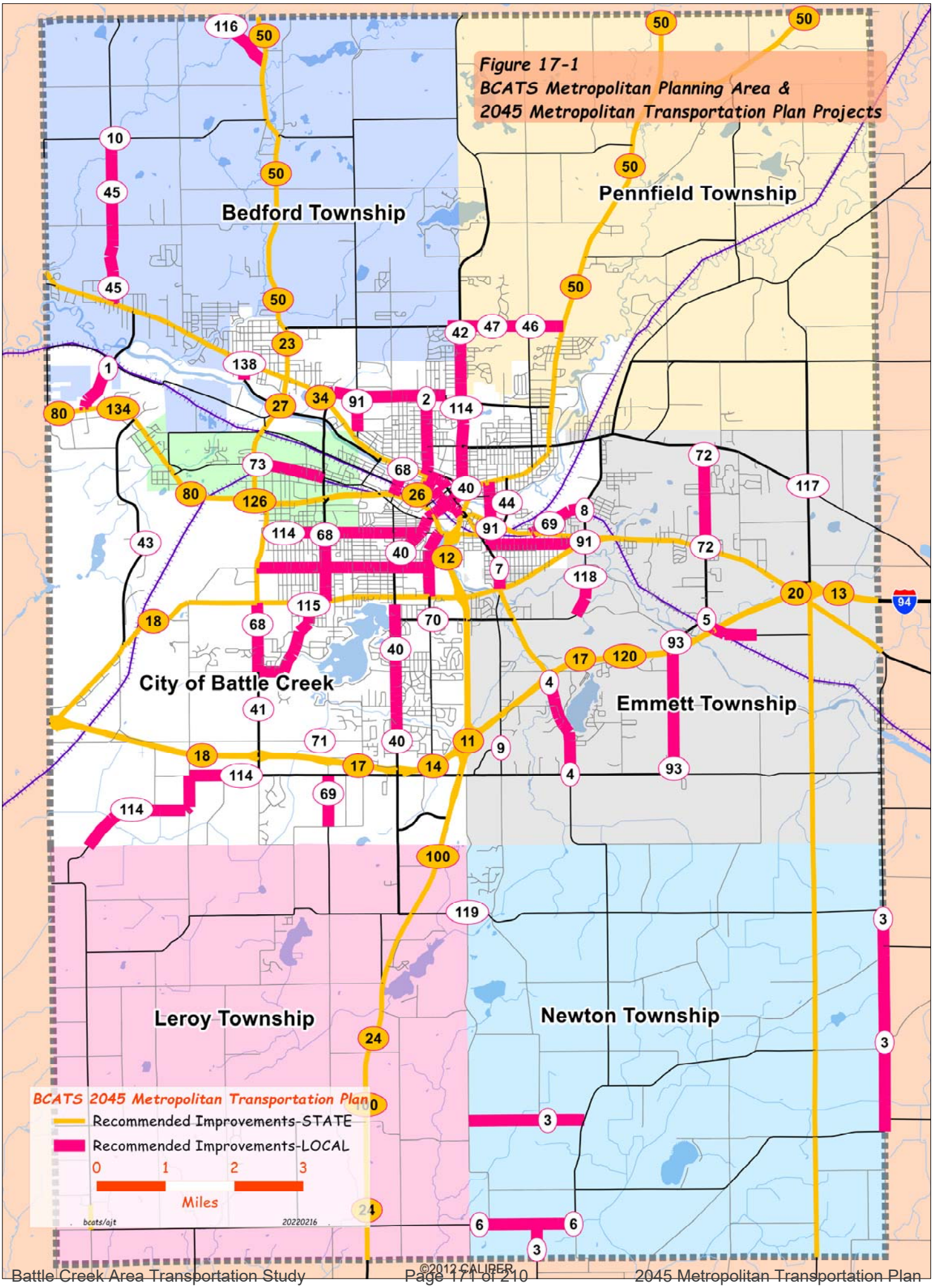
Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2026	118	Calhoun County	**Raymond Rd**	Golden Ave to E River Rd	0.77	Pulverize existing roadway and resurface over the graded and compacted crushed asphalt. Roadway to be trenched and widened to provide a 6 foot shoulder (3 foot paved & 3 foot gravel). No non-motorized component to this project.	$ 693,083		CON
2026	119	Calhoun County	**Roundabout - B Dr S and 6 Mile Rd**	Existing 2-way stop controlled intersection of B Dr S and 6 Mile Rd on Newton/Leroy twps boundary (6 Mile Rd)		Construct a mini-roundabout with a fully mountable center island, splitter islands at approaches, and traffic calming geometry to reduce entering speeds.	$ 945,000		CON
2026	120	MDOT	**I-94 Crash Investigation Sites**	Along I-94, one site eastbound & one site westbound between Exit 100 and 9 Mi Rd bridge	4.07	Construct two crash investigation sites in Calhoun county	$ 517,710	**211804**	CON
2026	121	MDOT	**Regionwide longitudinal pavement markings**	All trunkline routes in BCATS MPO	3.61	Application of longitudinal pavement markings on Southwest Region trunkline	$ 900	**213341**	PE
2026	122	MDOT	**Regionwide longitudinal pavement markings**	All trunkline routes in BCATS MPO	3.61	Application of longitudinal pavement markings on Southwest Region trunkline	$ 187,200	**213341**	CON
2026	123	MDOT	**Regionwide special pavement markings**	All trunkline routes in BCATS MPO	2.97	Application of special pavement markings on Southwest Region trunkline	$ 900	**213342**	PE
2026	124	MDOT	**Regionwide special pavement markings**	All trunkline routes in BCATS MPO	2.97	Application of special pavement markings on Southwest Region trunkline	$ 34,650	**213342**	CON
2026	125	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	19.43	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**213371**	CON
2026	126	MDOT	**TSC-wide Signal Modernizations**	6 locations: I-94BL, M-96 (Dickman) at M-37 W Jct (Helmer); I-94BL, M-96 (Dickman) at M-37 E Jct (Helmer); M-96 (Columbia) at 28th; M-89 (Michigan) at 20th; M-89 (Washington) at M-89 (Michigan); I-94BL (Michigan) at M-96 (Columbia).	0.00	Modernize signalized intersections	$ 2,248,509	**214181**	CON
2026	127	Battle Creek Transit	**Transit Capital - Battle Creek Transit, Sec5339. Miscellaneous Shop Equipment.**	Areawide - Battle Creek Transit		Miscellaneous shop equipment (vehicle hoist, diesel tools, etc.)	$ 178,406		Non-Infrastructure (NI)
2026	128	Battle Creek Transit	**Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 92,883		Non-Infrastructure (NI)
2026	129	Battle Creek Transit	**Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 459,990		Non-Infrastructure (NI)
2026	130	Battle Creek Transit	**Transit Operating - Battle Crk Transit, Fed+State+Local**	Areawide - Battle Creek Transit	0.00	Operating Assistance - FTA Sec5307, State CTF, and Local	$ 4,455,542		Non-Infrastructure (NI)
2026	131	Battle Creek Transit & Local Human Services Agencies	**Transit Operating - Specialized Services FY26**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.	0.00	State operating assistance for services for elderly & individuals w/disabilities under FY26 SpecSrvcs Prog	$ 108,434		Non-Infrastructure (NI)
2027	132	MDOT	**I-194/M-66 NB & SB bridges**	over Golden Avenue, City of Battle Creek, Calhoun County	0.00	Shallow Overlay	$ 1,289,150	**213631**	CON
2027	133	MDOT	**M-89 (Washington Ave) bridge**	over Battle Creek River, Battle Creek, Calhoun County	0.00	Superstructure Replacment	$ 4,730,000	**213719**	CON
2027	134	MDOT	**M-96 (Dickman Rd) Trail**	along north side of M-96 from Fort Custer National Cemetary (in Kalamazoo County) eastward ~ one mile crossing Armstrong Rd into Calhoun County (and City BC) to old Avenue A intersection/connector path to Evergreen Rd/American Legion Dr in Springfield	3.20	Rehabilitate existing 8'-12' wide asphalt path, add & update ADA ramps as necessary. Approximately 2.1 miles in Calhoun County and 1.1 miles in Kalamazoo County.	$ 650,000		Non-Infrastructure (NI)
2027	135	MDOT	**Southwest Regionwide Pvmt Mrkg Retro Readings**	All of BCATS MPO	28.35	Pvmt mrkg retroreflectivity readings on trunklines in Southwest Region	$ 990	**213379**	CON
2027	136	Battle Creek Transit	**Large Bus Replacements (4), 2027**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)
2028	137	Battle Creek Transit	**New Transit Facility Build**	rebuild BCT central offices & garage at location TBD		replace/relocate BCT central offices & garage	$ 13,100,000		Non-Infrastructure (NI)
2029	138	Battle Creek	**Stringham Rd Non-motorized Connector**	from W Jackson Rd northward to M-89 (Michigan Ave)	0.26	Reconfigure four-lane roadway to accommodate pedestrian and non-motorized travel from M-89 to connect to BC Linear Park at Jackson/Stringham intersection adjacent to Kalamazoo River	$ 450,000		Non-Infrastructure (NI)
2029	139	MDOT	**I-94BL (Michigan Ave E)**	I-94BL as Main St from Dickman Rd E northwestward to Hamblin Ave, then briefly northeastward on Hamblin Ave to Michigan Ave E, the eastward on Michigan Ave to 9 1/2 Mile Rd (Wattles Rd) in Emmett Twp, Calhoun County	3.92	Milling and two course asphalt overlay with sidewalk improvements	$ 7,177,500	**214871**	CON
2029	140	Battle Creek Transit	**Small Bus Replacements (2), 2029**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2034	141	Battle Creek Transit	**Large Bus Replacements (4), 2034**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)
2034	142	Battle Creek Transit	**Small Bus Replacements (2), 2034**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2039	143	Battle Creek Transit	**Small Bus Replacements (2), 2039**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2041	144	Battle Creek Transit	**Large Bus Replacements (4), 2041**	large buses used for BCT's fixed-route line-haul service within BCT service area		replace four (4) 35-40' large buses @ $625,000 ea.	$ 2,500,000		Non-Infrastructure (NI)

2045 Metropolitan Transportation Plan -- Table 17-1

Recommended Improvements

YEAR	BCATS 2045 MTP ID#	RESPONSIBLE AGENCY	PROJECT NAME	LIMITS	LENGTH (miles)	PROJECT DESCRIPTION	TOTAL ESTIMATED AMOUNT ($)	MDOT JN	PHASE
2044	145	Battle Creek Transit	**Small Bus Replacements (2), 2044**	small buses used for BCT's demand-response Tele-Transit service withing BCT demand-response service area		replace two (2) cutaway buses @ $100,000 ea.	$ 200,000		Non-Infrastructure (NI)
2022-2045	146	Battle Creek Transit	**Annual Transit Security (total expected over 2022-2045 average $17,800/year)**	for Battle Creek Transit		Security related improvements (1% of Federal operating assistance annually)	$ 427,200		Non-Infrastructure (NI)
2024-2045	147	Local Human Services Agencies	**Annual Specialized Services Transit CAPITAL Assistance (total expected over 2024-45, average $120,000/year)**	for local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center.		Fed Sec 5310 (with match from State) transit capital assistance "passed thru" Battle Creek Transit to local human services agencies,	$ 2,640,000		Non-Infrastructure (NI)
2027-2045	148	Local Road Agencies	**Annual Local (non-trunkline) Bridge Replacement & Preservation (total estimated over 2027-45, average $1.2M/year)**	Local (non-trunkline) bridges in the BCATS area		Bridge replacement & preservation	$ 22,800,000		CON
2027-2045	149	Local Road Agencies	**Annual Local CMAQ, Safety, & Non-Pavement Preservation STUL Projects (total planned over 2027-45, average $1.1M/year)**	on Federal-aid eligible roadways under jurisdiction of Battle Creek, Calhoun County, Springfield		CMAQ ~ $300,000/yr, Safety ~ $300,000/yr, STUL ~ $500,000/yr. (specific projects for 2022-26 that are in the current TIP, or to be amended or included in the next TIP thru 2026, are included separately in this list)	$ 20,900,000		CON
2027-2045	150	Local Road Agencies	**Annual Pavement Preservation Strategy Local Agencies (75% of STP Urban Local (STUL) Allocation+Local share) (total planned over 2027-45, average $1.5M/year)**	Capital Preventive Maintenance (CPM) on Federal-aid eligible roadways under jurisdiction of Battle Creek, Calhoun County, Springfield		Resurfacing, rehabilitation, and limited reconstruction (specific CPM projects for 2022-26 that are in the current TIP, or to be amended or included in the next TIP thru 2026, are included separately in this list)	$ 28,500,000		CON
2027-2045	151	Battle Creek Transit	**Annual Transit Capital - Battle Creek Transit, Sec5339. Miscellaneous Equipment & Small Vehicles (total expected over 2027-45, average $217,100/year)**	Areawide - Battle Creek Transit		Farebox system, office furniture, computer equipment, shop equipment/tools, mini-vans, cutaway buses, bus stop shelters, bus stop & route signage.	$ 4,124,900		Non-Infrastructure (NI)
2027-2045	152	Battle Creek Transit	**Annual Transit Capital (Mobility Management) - Battle Creek Transit (BCT), Sec5310 (total expected over 2027-45, average $118,300/year)**	Areawide/Battle Creek/Calhoun County	0.00	Continuation of Mobility Management to coordinate countywide transportation efforts and centralized dispatch coordinating service between multiple providers	$ 2,247,700		Non-Infrastructure (NI)
2027-2045	153	Battle Creek Transit	**Annual Transit Operating - Battle Creek Transit (BCT), Sec5310 New Freedom (total expected over 2027-45, $459,990/year)**	BC Transit service areawide/City of Battle Creek	0.00	New Freedom operating assistance, demand response service expansion beyond existing route hours & boundaries.	$ 8,739,810		Non-Infrastructure (NI)
2027-2045	154	Battle Creek Transit	**Annual Transit Operating Assistance (total expected over 2027-45, average $4.98M/year)**	for Battle Creek Transit		Federal, State, & Local Operating Assistance. Local $ includes "farebox revenue" from fares, tokens/tickets, passes, misc transp contracts, Auxiliary Trans Revenues (i.e.advertising), NonTrans Revenues, and contribution from City of Battle Creek general fund.	$ 94,620,000		Non-Infrastructure (NI)
2027-2045	155	Battle Creek Transit & Local Human Services Agencies	**Annual Specialized Services Transit OPERATING Assistance (total expected over 2027-45, $108,434/year)**	Areawide/Battle Creek/Calhoun County. For local human services agencies - Community Action, Community Inclusive Recreation, Marian Burch Adult DayCare Center, and BCT.		State transit operating assistance to BCT and "passed thru" Battle Creek Transit to local human services agencies	$ 2,060,246		Non-Infrastructure (NI)
2028-2045	156	MDOT	**Annual MDOT Bridge Replacement & Preservation (total estimated over 2028-45, average $3.0M/year)**	State trunkline bridges in the BCATS area		Bridge replacement & preservation	$ 54,000,000		CON
2030-2045	157	MDOT	**Annual MDOT Road CPM, Rehabilitation, & Reconstruction (total estimated by BCATS for period over 2030-45, average $6.1M/year)**	Capital Preventive Maintenance (CPM), road rehabilitation, & reconstruction of State trunkline system roadways		Road CPM, rehabilitation, & reconstruction. Specific MDOT projects for 2022-29 that are programmed in JobNet to-date are included separately in this list. FY22 I-94 RBMP project (JN-210073, $114.7M) excluded from calculation of annual average.	$ 97,600,000		CON
						(Planned Capital Expenditures on Table 15-8) TOTAL	**$591,467,519**		



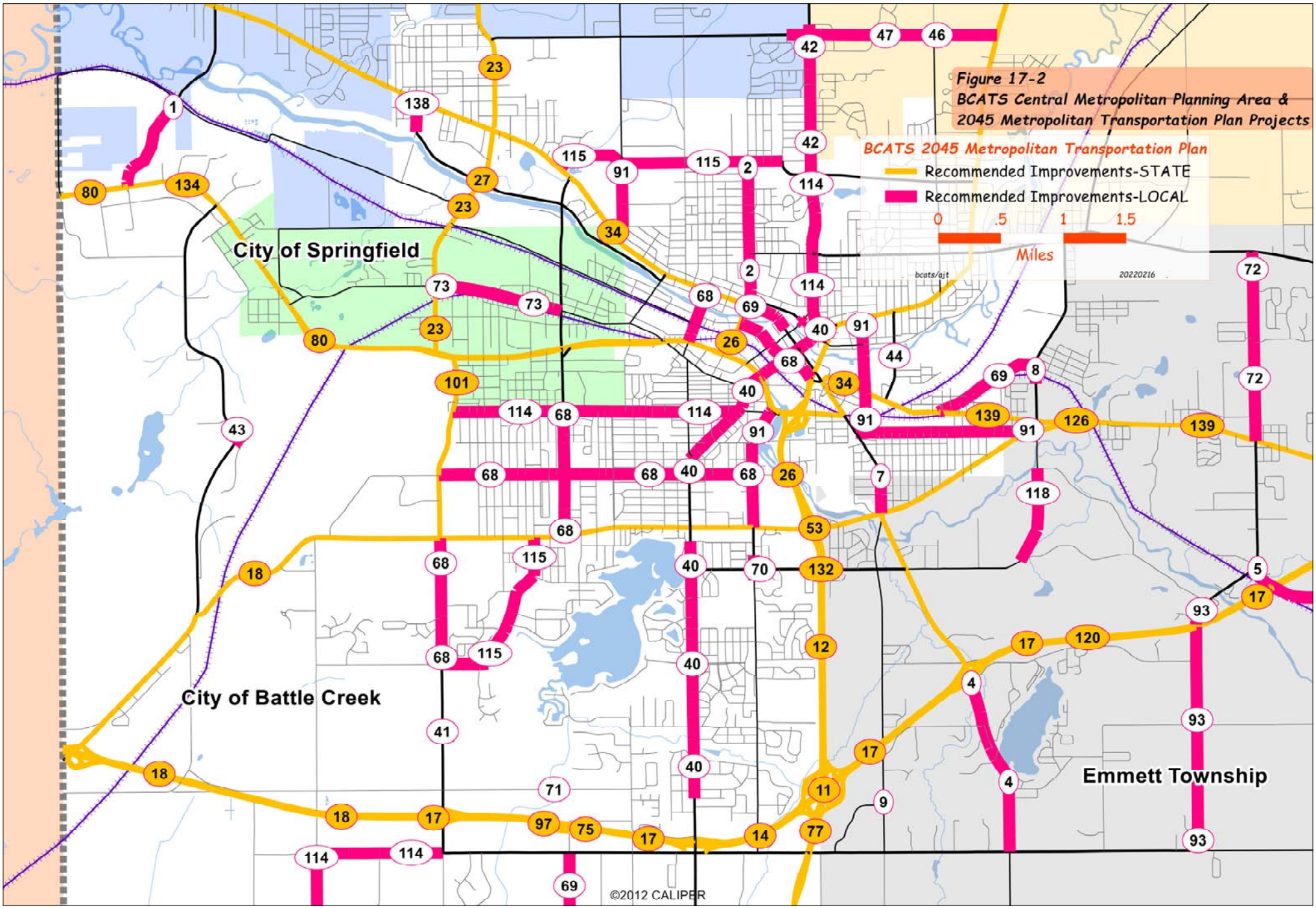


Figure 17-2
BCATS Central Metropolitan Planning Area &
2045 Metropolitan Transportation Plan Projects
BCATS 2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
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City of Springfield
City of Battle Creek
Emmett Township
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CHAPTER 18
ENVIRONMENTAL JUSTICE

In accordance with federal guidelines on Environmental Justice (EJ) that amplify Title VI of the Civil Rights Act, attention has been placed on the need to incorporate environmental justice principles into the processes and projects of transportation planning. While procedural and analytical processes for meeting these requirements are largely unspecified, the potential for disproportionate impacts of transportation improvement projects on racial minorities and impoverished neighborhoods is to be considered. BCATS has conducted an analytical process within the metropolitan planning area to identify the size and location of racial minority populations, and populations below poverty level in the 2010 U.S. Census. The distribution of Hispanic residents has also been assessed. Transportation improvements recommended for 2022-2045 implementation as listed in this Plan were placed, as possible, on thematic maps of percent African-American, American Indian & Alaska Native, Asian, Native Hawaiian & Other Pacific Islander; Hispanic; and below poverty level populations to visually assess whether or not imminent transportation system investments may disproportionately burden or fail to meet the needs of any segment of the population. Summary statistics of the racial minorities, Hispanic, and below poverty level populations within .10, .25. And .50 mile of a site-specific Plan recommended improvement were also calculated. Maps, tables, and additional discussion are presented in this chapter.

The following tables display percentages quantifying the varying racial composition of the overall metropolitan area population compared to the populations within .10, 25, and .50 mile of BCATS' major projects proposed in this Plan, as recommended for 2022-2045.

TABLE 18-1	BCATS Metropolitan Planning Area		EJ Zones Distance from 2045 MTP Site-specific Recommended Improvement					
			within .50 mile		within .25 mile		within .10 mile	
Area (sq mi)	217.20	----	108.6	50.0%	61.28	28.2%	26.79	12.3%
Total Population	**94,367**	----	**76,842**	81.4%	**56,730**	60.1%	**26,601**	28.2%
White	74,606	79.1%	58,687	76.4%	42,323	74.6%	19,511	73.3%
African-American	11,997	12.7%	11,214	14.6%	8,916	15.7%	4,441	16.7%
American Indian & Alaska Native	608	0.6%	518	0.7%	418	0.7%	205	0.8%
Asian, Native Hawaiian, & Other Pacific Islander	1,991	2.1%	1,776	2.3%	1,312	2.3%	596	2.2%
Other Race or 2+ Races	5,166	5.5%	4,646	6.0%	3,761	6.6%	1,848	6.9%
Individuals of Hispanic Origin	4,868	5.2%	4,365	5.7%	3,584	6.3%	1,822	6.8%
Individuals Below Poverty Level	16,786	17.8%	14,603	19.0%	11,608	20.5%	5,588	21.0%

The preceding table displays the composition of the 2010 Census population within the three EJ Zones, or "bands" within .50, .25, and .10 mile of 2022-2045 site-specific Plan projects. The bands, or "buffer" zones, surrounding the proposed site-specific Plan projects are highlighted in Figure 18-1 on a following page. The percentages can be compared across columns to the percentage under "BCATS Metropolitan Planning Area", to determine how the makeup of the EJ Zones' population matches that of the overall area. For instance, 17.8% of the metropolitan area total population is below the poverty level, while 21.0% of the population within 0.10 mile of a 2022-2045 site-specific Plan project is below poverty level.

The next table calculates a different statistic, that is how the percentage of each subject population group in each sub-area EJ Zone compares to each EJ Zone's percentage of the total metropolitan area population. In this case, the percentages for each EJ Zone should be compared up & down rows to the Total Population % to see if the given zone's proportion of the subject variable population is more concentrated than it is for the whole metropolitan area. For instance here, while 60.1% of the total metropolitan area population resides within 0.25 mile of a 2022-2045 site-specific Plan project, 74.3% of the area's African-American individuals do so.

TABLE 18-2	BCATS Metropolitan Planning Area	EJ Zones Distance from 2045 MTP Site-specific Recommended Improvement					
		within .50 mile		within .25 mile		within .10 mile	
Area (sq mi)	217.20	108.6	50.0%	61.28	28.2%	26.79	12.3%
Total Population	**94,367**	**76,842**	81.4%	**56,730**	60.1%	**26,601**	28.2%
White	74,606	58,687	78.7%	42,323	56.7%	19,511	26.2%
African-American	11,997	11,214	93.5%	8,916	74.3%	4,441	37.0%
American Indian & Alaska Native	608	518	85.2%	418	68.8%	205	33.7%
Asian, Native Hawaiian, & Other Pacific Islander	1,991	1,776	89.2%	1,312	65.9%	596	29.9%
Other Race or 2+ Races	5,166	4,646	89.9%	3,761	72.8%	1,848	35.8%
Individuals of Hispanic Origin	4,868	4,365	89.7%	3,584	73.6%	1,822	37.4%
Individuals Below Poverty Level	16,786	14,603	87.0%	11,608	69.2%	5,588	33.3%

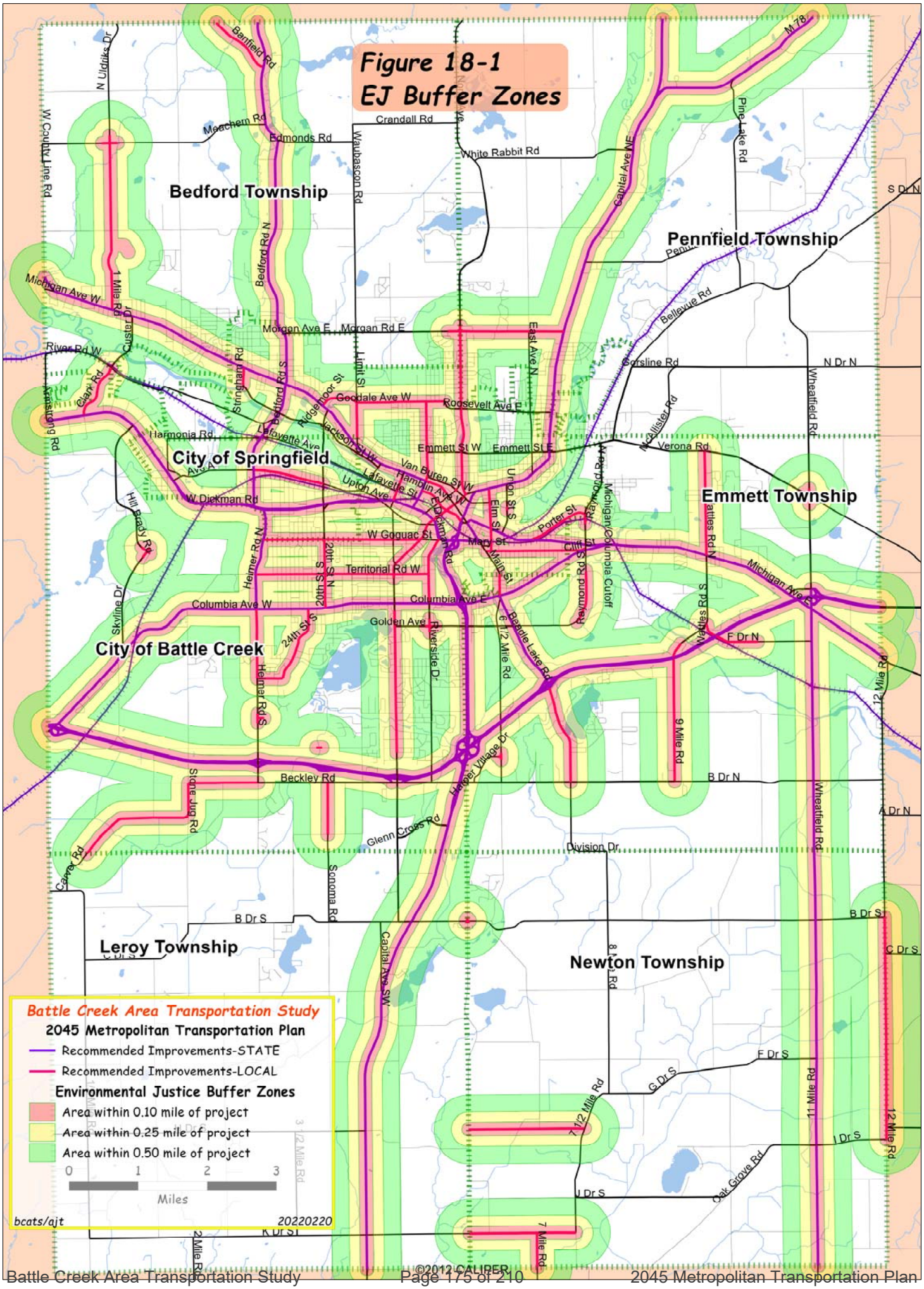
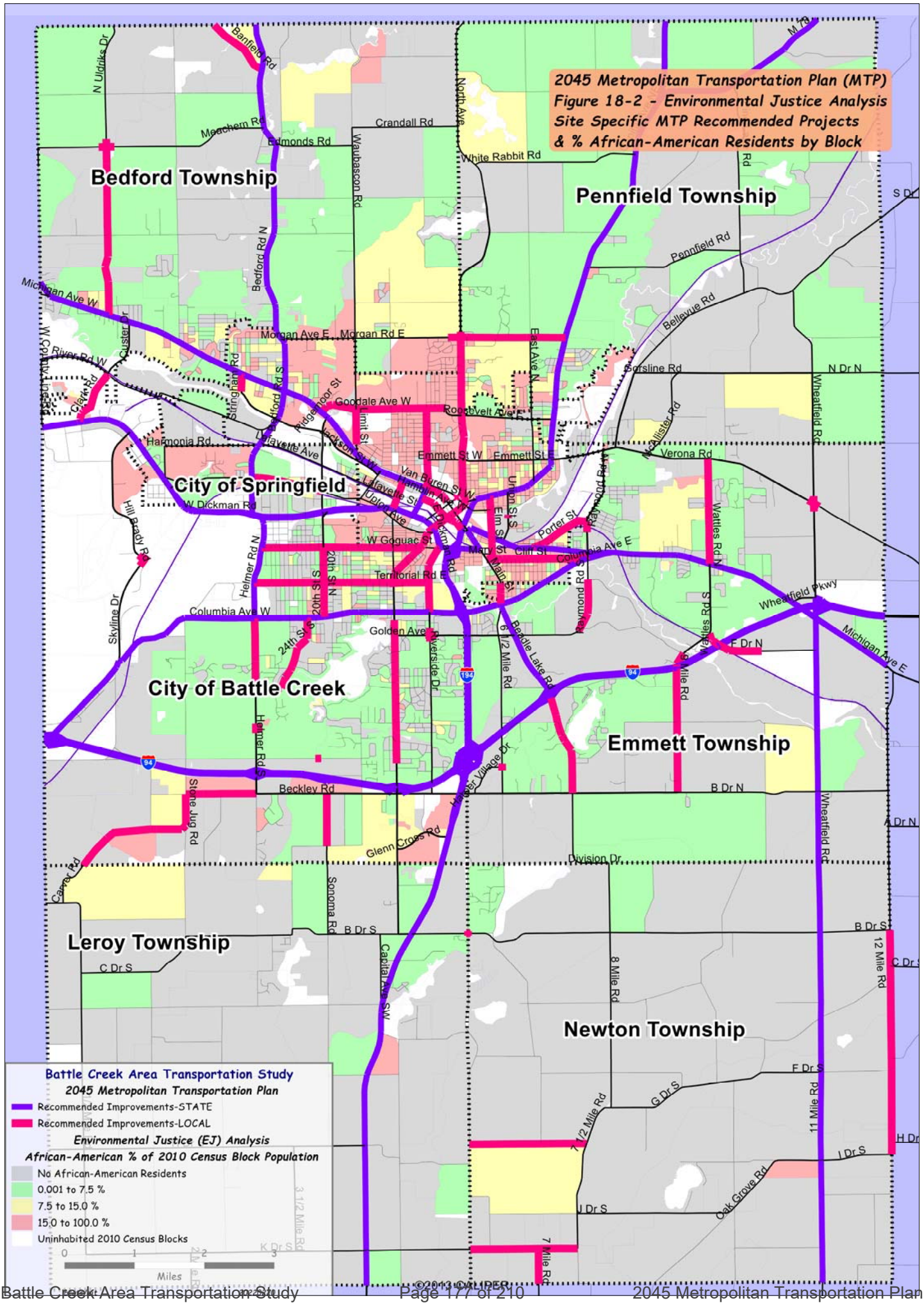


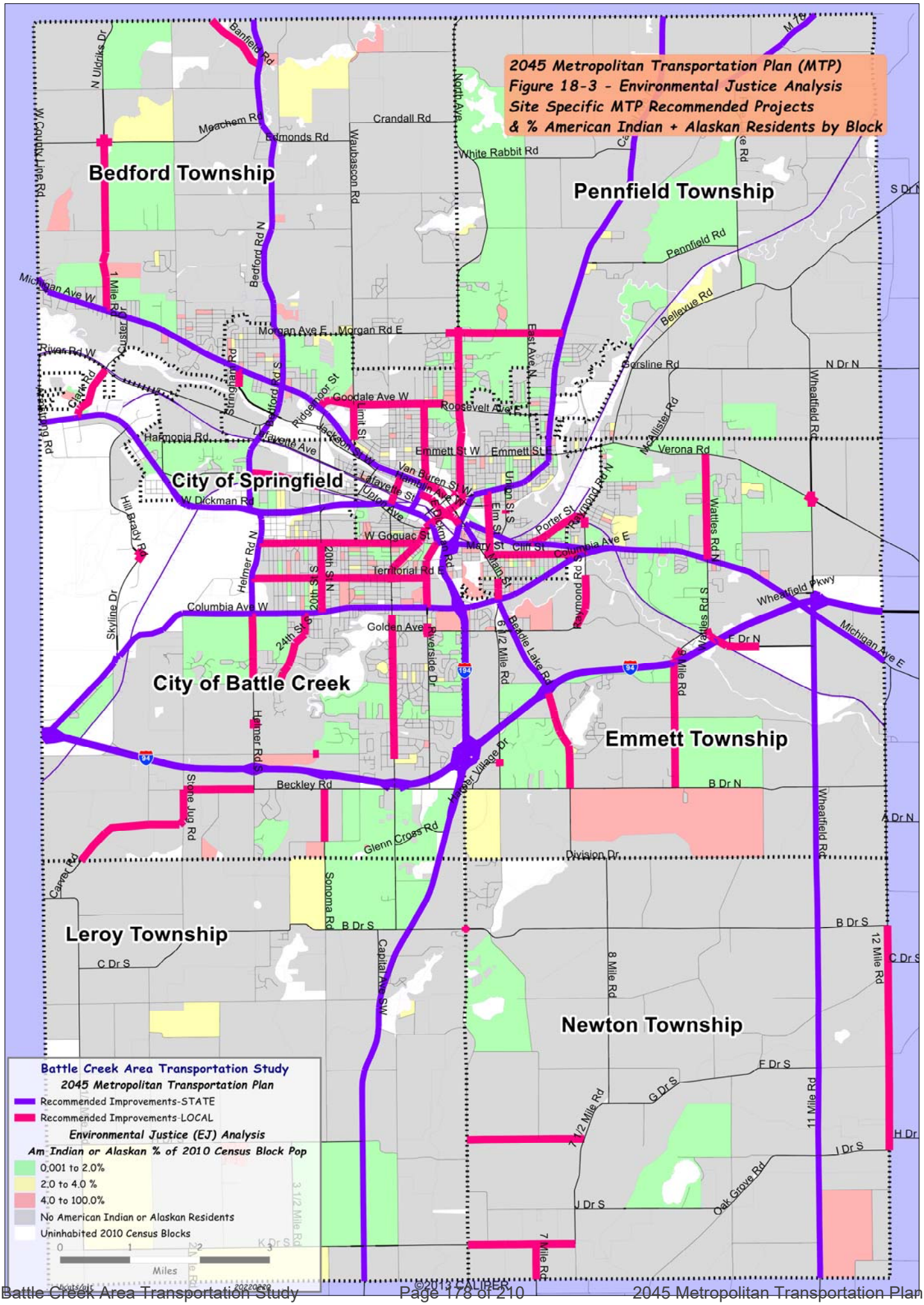
Figure 18-1
EJ Buffer Zones
Bedford Township
Pennfield Township
Emmett Township
City of Springfield
City of Battle Creek
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice Buffer Zones
Area within 0.10 mile of project
Area within 0.25 mile of project
Area within 0.50 mile of project
0 1 2 3
Miles
bcats/ajt
20220220
©2012 CALIPER

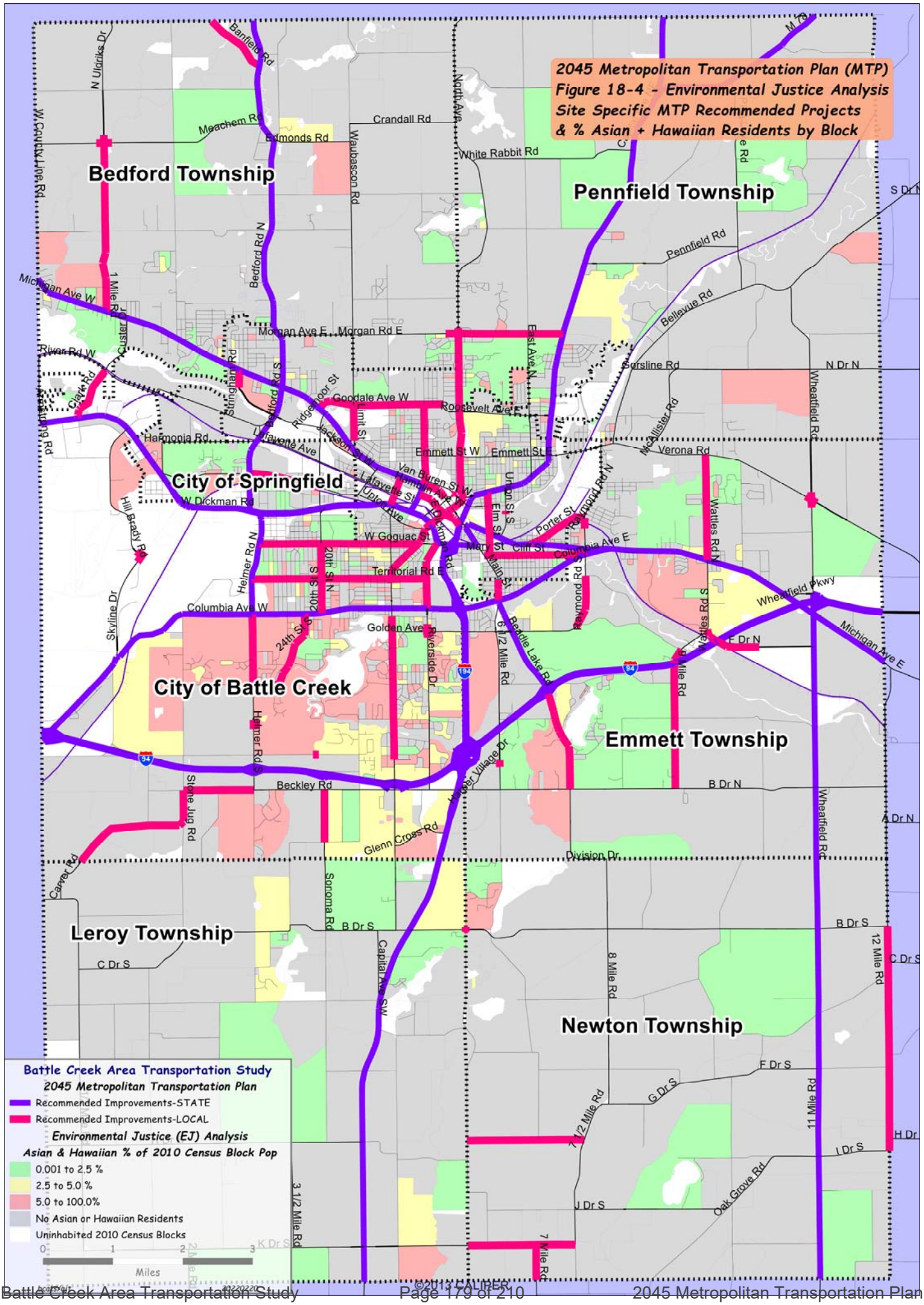
Additional maps on the following pages (Figures 18-2 to 18-6) depict concentrations of racial minorities, Hispanic, and below poverty level populations with the major projects proposed in this Plan for 2022-2045. Figure 18-1, from a previous page, highlights the .10, .25, and .50 mile zones around each project. The bold, black lines on the maps are roads that generally comprise the Federal-aid eligible network used with BCATS' Travel Demand Forecast Model, or TDFM (see Chapter 12).

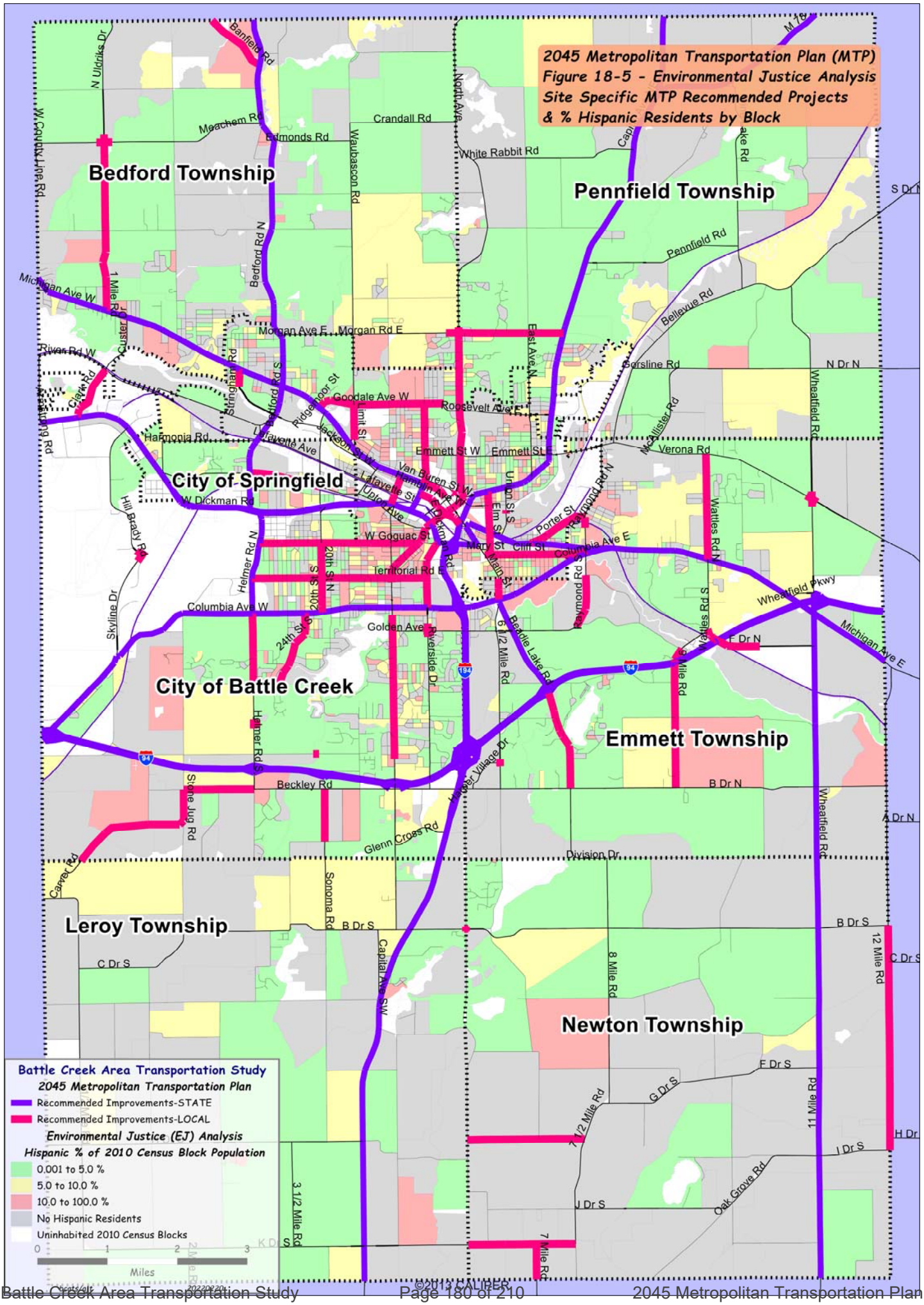
Review of the tables and maps in this chapter indicates that BCATS' site-specific 2045 MTP projects as located will impact non-minority as well as minority and low-income populations. The figures in the tables suggest that a larger percentage of the non-white populations, those of Hispanic origin, and individuals below poverty level, may be impacted during the construction phase of the projects. However, the completion of these short-term TIP projects in turn provides a higher benefit to those project areas than the overall population. None of the planned projects involve residential displacements. Other construction related roject impacts, such as noise, dust, and access inconvenience will be short-lived and confined to the traditional construction season.

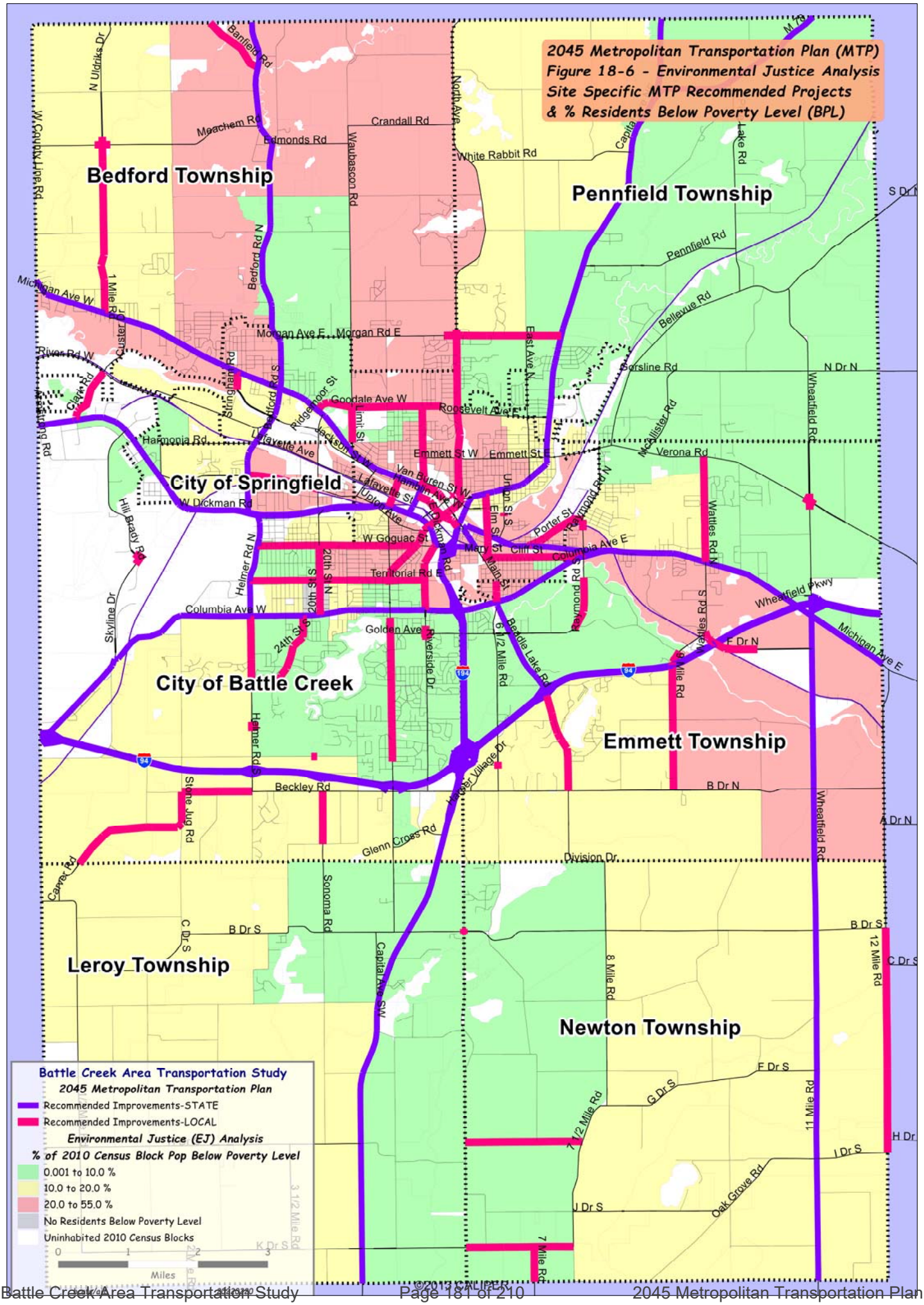
When looking at the most directly impacted residents (those within .10 mile of the planned improvements), there is likely limited disproportional net adverse impact to any of the identified groups as compared to the area as a whole.


2045 Metropolitan Transportation Plan (MTP)
Figure 18-2 - Environmental Justice Analysis
Site Specific MTP Recommended Projects
& % African-American Residents by Block
Bedford Township
Pennfield Township
City of Springfield
City of Battle Creek
Emmett Township
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice (EJ) Analysis
African-American % of 2010 Census Block Population
No African-American Residents
0.001 to 7.5 %
7.5 to 15.0 %
15.0 to 100.0 %
Uninhabited 2010 Census Blocks
Miles
©2013 CARIDER


2045 Metropolitan Transportation Plan (MTP)
Figure 18-3 - Environmental Justice Analysis
Site Specific MTP Recommended Projects
& % American Indian + Alaskan Residents by Block
Bedford Township
Pennfield Township
City of Springfield
City of Battle Creek
Emmett Township
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice (EJ) Analysis
Am Indian or Alaskan % of 2010 Census Block Pop
0.001 to 2.0%
2.0 to 4.0 %
4.0 to 100.0%
No American Indian or Alaskan Residents
Uninhabited 2010 Census Blocks
Miles
©2013 CALIPER


2045 Metropolitan Transportation Plan (MTP)
Figure 18-4 - Environmental Justice Analysis
Site Specific MTP Recommended Projects
& % Asian + Hawaiian Residents by Block
Bedford Township
Pennfield Township
City of Springfield
City of Battle Creek
Emmett Township
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice (EJ) Analysis
Asian & Hawaiian % of 2010 Census Block Pop
0.001 to 2.5 %
2.5 to 5.0 %
5.0 to 100.0%
No Asian or Hawaiian Residents
Uninhabited 2010 Census Blocks
Miles
©2013 CUBRC


2045 Metropolitan Transportation Plan (MTP)
Figure 18-5 - Environmental Justice Analysis
Site Specific MTP Recommended Projects
& % Hispanic Residents by Block
Bedford Township
Pennfield Township
City of Springfield
City of Battle Creek
Emmett Township
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice (EJ) Analysis
Hispanic % of 2010 Census Block Population
0.001 to 5.0 %
5.0 to 10.0 %
10.0 to 100.0 %
No Hispanic Residents
Uninhabited 2010 Census Blocks
Miles
©2013 CALIPER


2045 Metropolitan Transportation Plan (MTP)
Figure 18-6 - Environmental Justice Analysis
Site Specific MTP Recommended Projects
& % Residents Below Poverty Level (BPL)
Bedford Township
Pennfield Township
City of Springfield
City of Battle Creek
Emmett Township
Leroy Township
Newton Township
Battle Creek Area Transportation Study
2045 Metropolitan Transportation Plan
Recommended Improvements-STATE
Recommended Improvements-LOCAL
Environmental Justice (EJ) Analysis
% of 2010 Census Block Pop Below Poverty Level
0.001 to 10.0 %
10.0 to 20.0 %
20.0 to 55.0 %
No Residents Below Poverty Level
Uninhabited 2010 Census Blocks
Miles

BCATS

CHAPTER 19
AIR QUALITY

As part of its transportation planning process, the Battle Creek Area Transportation Study (BCATS) completed the transportation conformity process for BCATS' 2045 Metropolitan Transportation Plan (MTP) and the FY2020-2023 Transportation Improvement Program (TIP) and relevant portions of the State Transportation Improvement Plan (STIP). The Transportation Conformity Determination Report for the 1997 Ozone NAAQS (National Ambient Air Quality Standards) demonstrates that BCATS' 2045 MTP and the associated FY2020-2023 TIP, as well as the State Transportation Improvement Program (STIP) in Calhoun County, meet the federal transportation conformity requirements in 40 CFR Part 93. A brief summary of the report is below.

History of Transportation Conformity

The concept of transportation conformity was introduced in the Clean Air Act (CAA) of 1977, which included a provision to ensure that transportation investments conform to a State Implementation Plan (SIP) for meeting the federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The transportation conformity regulations that detail implementation of the CAA requirements was first issued in November 1993 and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from LRTPs, TIPs, and projects are consistent with ("conform to") the state's air quality goals in the SIP.

The Clean Air Act (CAA) section 176(c) (42 U.S.C. 7506(c)) requires federally funded or approved highway and transit activities to be consistent with ("conform to") the purpose of the State Implementation Plan (SIP). Conformity to the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone. 42 U.S.C. 7506(c)(1). United States Environmental Protection Agency's (EPA's) transportation conformity rule establishes the criteria and procedures for determining whether MTPs, TIPs, and federally supported highway and transit projects conform to the SIP, 40 CFR Parts 51.390 and 93.

South Coast Air Quality Mgmt. District v. EPA

On Feb. 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Mgmt. District v. EPA ("South Coast II*," 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. These conformity

determinations were required in these areas after Feb. 16, 2019. The Kalamazoo/Battle Creek air quality area (Kalamazoo, Calhoun and Van Buren counties) was in maintenance at the time of the 1997 ozone NAAQS revocation on April 6, 2015 and was also designated attainment for the 2008 ozone NAAQS on May 21, 2012. It was also designated attainment for the 2015 ozone NAAQS on Aug. 3, 2018. Therefore, per the *South Coast II* decision, a conformity determination must be made for the 1997 ozone NAAQS on the LRTPs and TIPs.

Criteria and Procedures for Determining The Transportation Conformity

A Transportation Determination Report was completed consistent with CAA requirements, existing associated regulations at 40 CFR Parts 51.390 and 93, and the *South Coast II* decision, according to EPA's Transportation Conformity Guidance for the *South Coast II* Court Decision issued on Nov. 29, 2018, and followed the criteria and procedures outlined below.

The transportation conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for determining conformity. The conformity criteria for MTPs and TIPs includes latest planning assumptions (93.110), latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c)), and emissions budget and/or interim emissions (93.118 and/or 93.119). For the 1997 ozone NAAQS areas, transportation conformity for MTPs and TIPs for the 1997 ozone NAAQS can be demonstrated without a regional emissions analysis, per 40 CFR 93.109(c). This provision states that the regional emissions analysis requirement applies one year after the effective date of EPA's nonattainment designation for a NAAQS and until the effective date of revocation of such NAAQS for an area. The 1997 ozone NAAQS revocation was effective on April 6, 2015, and the *South Coast II* court decision upheld the revocation. As no regional emission analysis is required for this conformity determination, there is no requirement to use the latest emissions model, budget, or interim emissions tests.

Therefore, transportation conformity for the 1997 ozone NAAQS for the BCATS 2045 MTP and the 2020-2023 TIP and the rural STIP in Calhoun County can be demonstrated by showing the following requirements have been met:

- Latest planning assumptions (93.110)
- Consultation (93.112)
- Transportation control measures (TCMs) (93.113)
- Fiscal constraint (93.108)

Latest Planning Assumptions

The use of latest planning assumptions in 40 CFR 93.110 of the conformity rule generally applies to regional emissions analyses. In the 1997 ozone NAAQS areas, the use of the latest planning assumptions requirement 198 BCATS 2045 Metropolitan Transportation Plan applies to assumptions about transportation control measures (TCMs) in an approved SIP. The Michigan SIP does not include any TCMs.

Consultation

The consultation requirements in 40 CFR 93.112 were addressed both for interagency consultation and public consultation. Interagency consultation was conducted by and between the Battle Creek Area Transportation Study, Kalamazoo Area Transportation Study and the Michigan Department of Transportation. A Michigan Transportation Conformity Interagency Workgroup (MITC-IAWG) meeting was initially held on December 17, 2018. Interagency consultation was conducted consistent with Michigan's conformity SIP. Public consultation will be conducted consistent with planning rule requirements in 23 CFR 450. The Participation Plan adopted by the BCATS' Policy Committee establishes the procedures by which BCATS engages the public. The same procedures were followed for this document, ensuring that the public has an opportunity to review and comment before the MPOs make a determination. A formal public comment period for the draft conformity report was held from February 7, 2022 to February 23, 2022. The BCATS Policy Committee will make a formal conformity determination through a resolution at its meeting on February 23, 2022. The draft conformity report can be found at: https://bcatsmpo.org which is the official BCATS website.

Timely Implementation of Transportation Control Measures (TCMs)

The Michigan SIP does not include any TCMs.

Fiscal Constraint

Transportation conformity requirements in 40 CFR 93.108 state that transportation plans and TIPs must be fiscally constrained consistent with the metropolitan planning regulations at 23 CFR part 450. The MTPs and 2020-2023 TIPs are fiscally constrained, as demonstrated in:

- BCATS 2045 MTP, Chapter 15 Financial Plan
- BCATS 2020-2023 TIP, Section 2 Financial Considerations/Constraint (latest financial constraint submitted with most recent TIP amendment)
- 2020-2023 STIP, including latest amendments for Calhoun County

Conformity Determination

The transportation conformity process determined and demonstrated that the BCATS 2045 MTP, the FY2020-2023 BCATS TIP, and the FY2020-2023 STIP for Calhoun County meet the CAA and Transportation Conformity rule requirements for the 1997 ozone NAAQS. See the separate document, Transportation Conformity Determination Report for the Kalamazoo-Battle Creek Limited Orphan Maintenance Area (LOMA) for further information about conformity of the BCATS *2045 Metropolitan Transportation Plan*, available on the BCATS website or upon request.

BCATS

Appendices

BCATS

COMMITTEE LISTS

The membership of the BCATS Policy and Technical Committees as of February 1, 2022, is shown below:

POLICY COMMITTEE

Voting Members

Harry Burdett (Chair), Mayor, City of Springfield
John Midgley (Vice-Chair), Managing Director, Calhoun County Road Department
Greg Rickmar, Traffic Engineer (Sec/Treas), permanent alternate, City of Battle Creek
Mallory Avis, Transit Director, permanent alternate, Battle Creek Transit
Deb Belles, Supervisior, Charter Township of Emmett
Jeff Franklin, Unit Supervisor, MDOT Statewide Planning, Lansing
Laveta Hardish, Supervisor, Leroy Township
Derek King, County Commissioner, Calhoun County Board of Commissioners
Annjanette Kremer, Manager, MDOT Transportation Service Center, Marshall
Kevin Leiter, Supervisor, Charter Township of Pennfield
William Scutt, Supervisor, Charter Township of Bedford

Non-Voting Members

Andrew Sibold, Federal Highway Administration
Chair, Southcentral Michigan Planning Council

TECHNICAL COMMITTEE

Voting Members

Carl Fedders (Chair), Public Works Director, City of Battle Creek
Kristine Parsons (Vice-Chair), County Engineer, Calhoun County Road Department
Chaz Wilkey, Public Works Director, City of Springfield
Luke Walters, Planner/Program Manager, MDOT Statewide Planning, Lansing
Brian Sanada, Planner, MDOT SW Region, Kalamazoo
Mallory Avis, Transit Manager, Battle Creek Transit
Susan Cronander, Community Development Department, City of Battle Creek

Non-Voting Members

Lee Adams, Southcentral Michigan Planning Council
Andrew Sibold, Federal Highway Administration

STAFF

Patricia Karr, Executive Director
Andrew Tilma, Principal Planner

BCATS

BATTLE CREEK AREA TRANSPORTATION STUDY
Policy Committee
Minutes of February 23, 2022 Meeting

VOTING MEMBERS PARTICIPATING: Mallory Avis, Jacob Schacht (for Deb Belles), Harry Burdett, Annjanette Kremer, Jeff Franklin, Derek King, Kevin Leiter, John Midgley, Greg Rickmar, and Bill Scutt
NON-VOTING MEMBERS PARTICIPATING: None
VOTING MEMBERS NOT PARTICIPATING: Laveta Hardish
NON-VOTING MEMBERS NOT PARTICIPATING: Andrew Sibold (FHWA) and Southcentral Michigan Planning Council
OTHERS PARTICIPATING: Kara Dougherty, Pat Karr and Andrew Tilma

Chair Burdett called the meeting to order at 1:30 p.m. in the Council Room of the Susan L. Anderson Municipal Building (Springfield City Hall), 601 Avenue A, Springfield, MI 49037.

ROLL CALL

All in attendance introduced themselves and their affiliations. There was a quorum of voting members.

APPROVAL OF THE AGENDA

It was moved by Rickmar, supported by Midgley, to approve the agenda. MOTION CARRIED UNANIMOUSLY to approve the agenda.

Res. 22-07

PUBLIC COMMENTS

There were no public comments.

APPROVAL OF THE MINUTES

It was moved by Franklin, supported by Scutt, to approve the minutes of the January 26, 2022 meeting, as presented, subject to any additions, corrections or changes. MOTION CARRIED UNANIMOUSLY.

Res. 22-08

COMMUNICATIONS

Karr reported the following items of communication:

- At the beginning of February, BCATS staff completed the final newsletter for the 2045 Metropolitan Transportation Plan and distributed it, both electronically and in hard copy to promote the Plan and the public comment period for the Plan.
- A public notice for the 2045 Plan and the Transportation Conformity Determination Report for the Kalamazoo-Battle Creek Limited Orphan Maintenance Area was published in the BC Enquirer, with the comment period running up until today's Policy Committee meeting.
- On February 3rd, BCATS has received information from MDOT about the IIJA funding levels and the dollar amounts were considerably less than anticipated for the BCATS area. Therefore, some re- working of projects for the current year and for the years of the new TIP has had to take place over the last couple of weeks.
- Amendment #14 to the current FY 2020-2023 TIP was approved federally as of February 8th.

- A public notice for the current TIP Amendment #15 was published in the BC Enquirer and posted to the BCATS website.
- The pre-Unified Work Program meeting mentioned last month between MDOT and BCATS will be held on March 1st, next Tuesday .
- A special newsletter about the development of the new FY 2023-2026 Transportation Improvement Program (TIP) has been completed and is being distributed. Karr stated that some of the members had copies of the newsletter at their places to take back to make available to the public at their offices.
- BCATS received notification about calls for project applications from MDOT for both the local safety program and the local bridge program that are administered by MDOT. The local agencies have been notified of these potential funding programs. The BCATS Committees will have requests for letters of support for various project applications under these programs to consider at the March BCATS Committee meetings.

UNFINISHED BUSINESS

There was no unfinished business.

NEW BUSINESS

A. FY 2020-2023 Transportation Improvement Program (TIP) Amendment #15

Tilma noted that this a special amendment in a month not usually scheduled for a TIP amendment opportunity. He discussed the list of items being considered for this February amendment. A total of eleven (11) items are recommended for changes and additions. There was discussion about some of the items included on the list.

Tilma noted that the Interagency Work Group (IAWG) request for air quality review of this proposed amendment will be distributed yet this afternoon.

It was moved by Kremer, supported by Avis, to approve Amendment #15 to the FY 2020-2023 TIP, as presented. MOTION CARRIED UNANIMOUSLY.

Res.
22-09

B. BCATS 2045 Metropolitan Transportation Plan (MTP)

Karr indicated that a cover memo about the 2045 Metropolitan Transportation Plan was provided in advance of the meeting, along with a draft of the MTP approving resolution. Copies of the Executive Summary and Chapter 13 of the Plan were distributed at the meeting. The full draft Plan itself is posted, by chapter, on the BCATS website for Committee members and the public to view. The MTP is updated every five years, with the next version due in 2027. This update of the MTP has had to incorporate all of the performance based planning requirements as well as a System Performance Report, which is a new requirement. The System Performance Report will now be required to be updated each year for the BCATS area.

Karr discussed the draft Chapter 13 that had been distributed. There was additional discussion about this chapter. Franklin indicated that a future formal amendment of the 2045 MTP is also possible, depending upon the nature of potential changes/updates.

Once approved, the 2045 MTP document will be finalized, including the noted resolutions and draft minutes of this Policy Committee meeting, in order to meet the submittal deadline to MDOT of February 28, 2022 for the updated Plan.

It was moved by Midgley, supported by Scutt, to adopt Resolution 22-10 approving the BCATS 2045 Metropolitan Transportation Plan, with the provision that some administrative modification to the document may occur in the future. MOTION CARRIED UNANIMOUSLY.

Res.
22-10

C. Transportation Conformity Determination Report for Kalamazoo-Battle Creek Limited Orphan Maintenance Area (LOMA)

Karr stated that this joint determination report was initially prepared by the Kalamazoo Area Transportation Study (KATS) staff in September 2021 after a meeting of the Interagency Work Group for air quality in the LOMA. At that time, BCATS had a preliminary 2045 Plan project list that was reviewed by the IAWG for any air quality issues. With the finalization of the BCATS 2045 MTP, the project list changed and was resubmitted to the IAWG group for review. The results of that review are reported in the updated Determination Report. The revised BCATS project list was incorporated into the update of the KATS September Report that was completed by BCATS staff. This included changes to pertinent dates for approval of the 2045 MTP by BCATS. The updated Report was provided to the Committee members in the advance material and was available online to the public. This Report was included in the public comment period public notice from early February, along with the 2045 MTP. Karr stated that no public comments have been received regarding this document.

It was moved by Scutt, supported by Midgley, to adopt Resolution 22-11 approving the updated Transportation Conformity Determination Report for the Kalamazoo-Battle Creek LOMA, as presented. MOTION CARRIED UNANIMOUSLY.

Res.
22-11

D. Draft FY 2023-2026 Transportation Improvement Program (TIP) Project List

Tilma indicated that, after the presumed final funding figures for the federal funding programs for which BCATS selects projects were given to BCATS, a reworking of the list of projects for future years was required, as Karr noted under Communications. He provided copies of the proposed project list to the members. The list was also provided in the advance meeting materials.

The local agencies worked with BCATS' staff to develop a final list that will still meet the requirements for financial constraint for the FY 2023-2026 time period of the next TIP. Karr commended the work of the local agencies for the hard work they did in revising the project list many times. She indicated that a first informational newsletter has been prepared for the development of the new TIP and it is being distributed. Karr noted that the TIP is more than just the project list and that the process of finalizing a new TIP includes review by the IAWG of the project list, consideration of performance-based planning, and financial constraint, as examples. It is anticipated that a final draft FY 2023-2026 TIP document will be presented to the BCATS Committees for approval in May 2022.

BCATS staff will need to make sure that all of the projects are entered into the MDOT JobNet database system as the new TIP development moves forward. It is very important that the last year of the current TIP, which overlaps into the first year of the new TIP, match in all ways as the process proceeds. Once the new TIP is approved locally and submitted to MDOT, the overlapping year is, in effect, frozen until the new TIP is approved for use by the federal funding agencies. This is usually late September for an October 1st effective date.

Tilma stated that the MDOT projects on the 4-year list are drawn from the projects listed in the MDOT JobNet database. Some of the items are for the preliminary engineering phase, indicating that construction

projects may be planned for years beyond 2026. He also highlighted the transit jobs currently entered on the list.

It was moved by King, supported by Avis, to approve moving ahead with the draft project list for the FY 2023-2026 TIP, as presented. MOTION CARRIED UNANIMOUSLY.

Res. 22-12

COMMENTS

A. Next Meeting

The next Policy Committee meeting is scheduled for Wednesday, March 23, 2022, 1:30 p.m.

B. Committee Member Comments

Kremer reported from MDOT that work on the multi-year I-69 project starts again as of next Monday, February 28th. The southbound lane of I-69, from the end of last year's work in Eaton County down to I-94, will be reconstructed this construction season. The northbound lane of I-69 along the same section will be reconstructed in 2023. There will be bridge work at 15 Mile Road and at the I-69/I-94 interchange this current year as well. She also indicated that a follow-up virtual meeting with local businesses will be held on March 10th regarding the I-94/Capital Avenue interchange to close the communications loop for this aspect of the larger I-94 project. The alignment at that interchange will remain as is. The MDOT Transportation Service Center (TSC) in Marshall is implementing a new phone system and will now have only one phone number (269-789-0592). Employees can be reached through that number or through their cell phones.

Midgley announced that spring weight restrictions on County roads will go into effect on March 1, 2022. It is expected that MDOT will make a similar announcement shortly about weight restrictions.

Avis indicated that she and Doug Ferrell from Calhoun County will be making presentations around the county to various units of government in March and April about a countywide transit initiative.

Franklin stated that the federal government has re-branded the latest infrastructure legislation and wants it referred to as BIL (Bipartisan Infrastructure Law) rather than by the IIJA acronym for the Act's name (Infrastructure Investment and Jobs Act).

Scutt asked about a delay in planned work on Meachem Road from Collier to M-37 in Bedford Charter Township. King indicated that he thinks it may be a culvert issue. Midgley concurred with this assessment.

Karr reported that one comment was received about the 2045 Plan and that it came from the state's Department of Fisheries. She also stated that she is open to input from the Committee members about when to return to a normal room set-up within the context of the status of the pandemic. MDOT won't return fully to in-office for another few months. King expressed that some of the changes that were made are more inclusive for the public. This will be considered on a month to month basis.

C. Public Comments

There were no public comments.

ADJOURNMENT

Chair Burdett adjourned the meeting at 2:28 p.m.

Resolution #22-10
Resolution to Approve the *2045 METROPOLITAN TRANSPORTATION PLAN*
for the Battle Creek Area Transportation Study

WHEREAS, the Battle Creek Area Transportation Study (BCATS) is the designated Policy Committee and Metropolitan Planning Organization (MPO) for the Battle Creek, Michigan urban area; and

WHEREAS, the development of a long range transportation plan is a requirement of both the Federal Highway Administration and the Federal Transit Administration; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* has been developed pursuant to USC 23 Section 134, as amended by the Moving Ahead for Progress in the 21st Century (MAP-21) and subsequent Fixing America's Surface Transportation (FAST) Act federal transportation legislation, with a planning horizon of at least 20 years; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* identifies transportation facilities that should function as an integrated metropolitan transportation system; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* includes a financial analysis that demonstrates how the projects that have been identified will have adequate funding, and indicates the resources that are reasonably expected to be made available to carry out the Plan; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* recognizes the necessity of preserving the existing transportation system and includes projects that will enhance the efficiency of the existing transportation system to relieve vehicular congestion and improve the mobility of people and goods; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* was developed through a process that included input from private citizens, private providers of transportation, affected public agencies, and other interested parties; and

WHEREAS, the BCATS *2045 Metropolitan Transportation Plan* was developed utilizing a consultation process taking into consideration the plans and programs of other agencies; and using information obtained through the consultation process, recognizes potential environmental mitigation needs as related to projects in the Plan; and

WHEREAS, this Plan can be amended periodically upon request and with appropriate documentation supporting such a request;

NOW THEREFORE BE IT RESOLVED, that the Policy Committee of the Battle Creek Area Transportation Study finds the *2045 Metropolitan Transportation Plan* to be compliant with federal requirements and approves its submission to the Michigan Department of Transportation, the Federal Highway Administration, and the Federal Transit Administration.

ATTEST: Harry Burdett

Harry Burdett
Chair, BCATS Policy Committee

Date: February 23, 2022

Adopted by the Battle Creek Area Transportation Study Policy Committee at its meeting of February 23, 2022

BCATS
BATTLE CREEK AREA TRANSPORTATION STUDY
601 Avenue A • Springfield, MI 49037 • 269-963-1158 • Fax 269-963-4951

Resolution #22-11
Resolution to Accept the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo-Battle Creek Limited Orphan Maintenance Area for the Battle Creek Area Transportation Study

WHEREAS, per the decision in South Coast II, beginning February 16, 2019, transportation conformity determinations for the 1997 ozone national ambient air quality standard (NAAQS) will be needed for those areas that were maintenance areas when the 1997 ozone NAAQS was revoked and then attainment for the 2008 and 2015 NAAQSs, referred to as "orphan" areas; and

WHEREAS, in November 2018, the United States Environmental Protection Agency (EPA) promulgated guidance to assist in implementing the court decision in South Coast II, providing the requirements to demonstrate transportation conformity for areas that were "orphan" areas; and

WHEREAS, the EPA designated the Kalamazoo-Battle Creek non-attainment area of Kalamazoo, Calhoun and Van Buren counties as a maintenance area for the 1997 ozone NAAQS in May 2007 and attainment in July 2012 for the stricter 2008 ozone NAAQS and in January 2018 for the 2015 ozone NAAQS and in April 2020 created a limited second maintenance plan for the 1997 ozone NAAQS; and

WHEREAS, the Kalamazoo-Battle Creek MI maintenance area is deemed an "orphan" area, and the Battle Creek Area Transportation Study (BCATS) is wholly contained in the Kalamazoo-Battle Creek limited orphan maintenance area; and

WHEREAS, the Battle Creek Area Transportation Study (BCATS) is the designated Policy Committee and Metropolitan Planning Organization for the Battle Creek , Michigan urban area; and

WHEREAS, the conformity of BCATS' 2045 Metropolitan Transportation Plan, including the FY 2020-2023 Transportation Improvement Program (TIP), will be pending approval by the Federal Highway Administration after local action on the conformity report by the Battle Creek Area Transportation Study;

NOW THEREFORE BE IT RESOLVED, that the Policy Committee of the Battle Creek Area Transportation Study accepts the conclusions of the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo-Battle Creek limited orphan maintenance area for the BCATS 2045 Metropolitan Transportation Plan and the 2020-2023 Transportation Improvement Program; and

BE IT FURTHER RESOLVED, that the Transportation Conformity Determination Report for the 1997 Ozone NAAQS for the Kalamazoo-Battle Creek limited orphan maintenance area demonstrates that these planning documents meet the Clean Air Act and Transportation Conformity rule requirements for the 1997 ozone NAAQS to conform to the State Implementation Plan as required by provisons of Title 40 CFR 51.390 and 93 Subpart A, and the South Coast II decision.

Harry Burdett, Chairperson
Battle Creek Area Transportation Study Policy Committee

Date: February 23, 2022

Adopted by the Battle Creek Area Transportation Study Policy Committee at its meeting of February 23, 2022

Battle Creek Area Transportation Study (BCATS)
System Performance Report

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

Roads and Highways Reporting Requirements
MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on biennial basis (October 1 of each even numbered year). One exception to the biennial reporting requirements is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

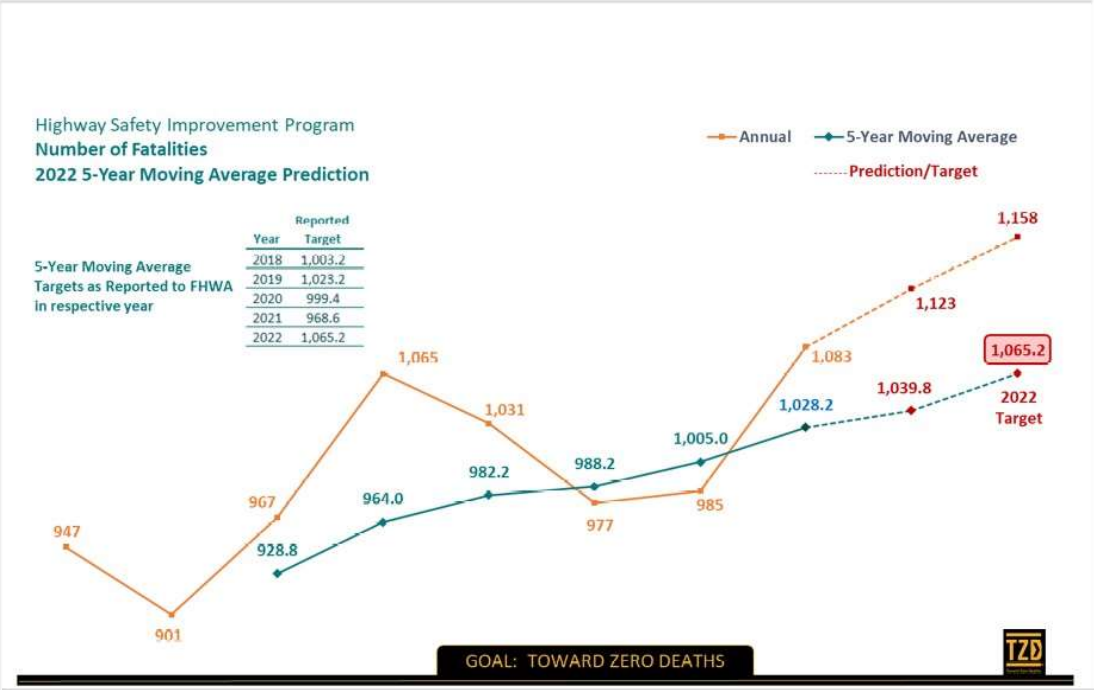
MPOs are not required to provide annual reports other than MPO decisions on targets. MPOs are required to report MPO performance targets to MDOT in accordance with the documented procedures. This will result in MPOs reporting MPO safety targets annually to MDOT, and other performance targets as they are established (every two or four years).

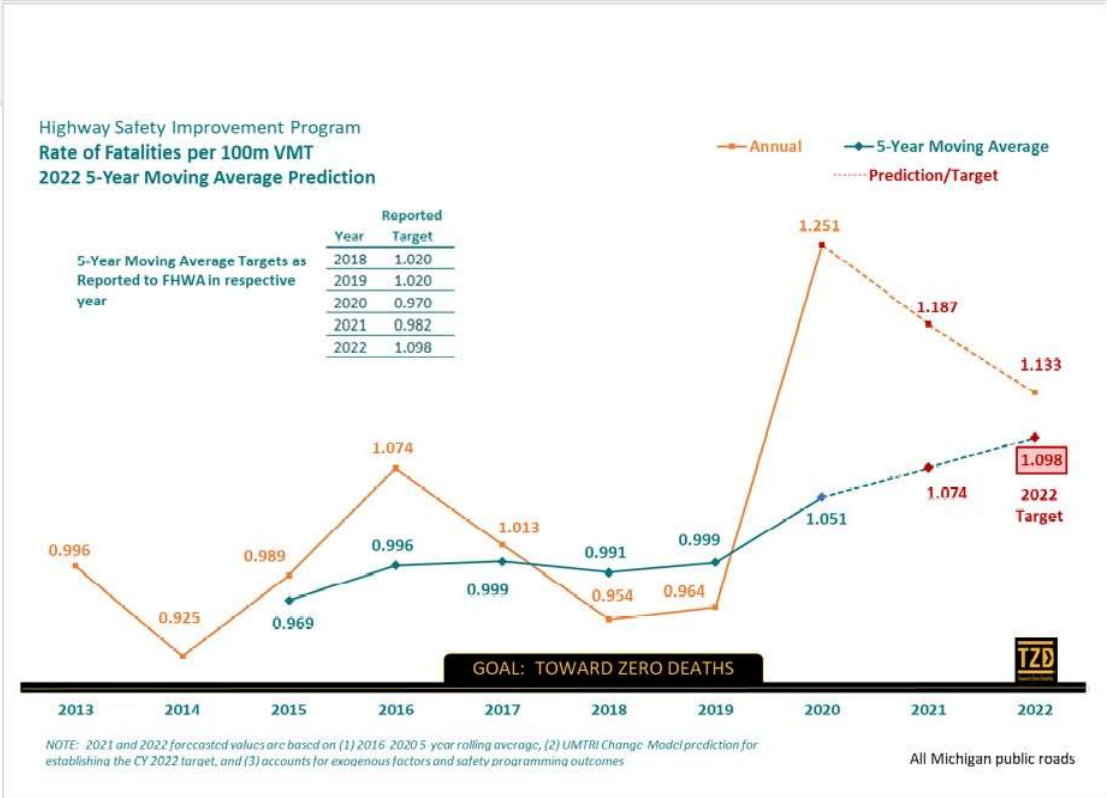
2022 Safety Targets – Road and Highways
Federal regulations require the use of five-year rolling averages for each of the performance measures which include Fatalities, Fatality Rate per 100 million VMT, Serious Injuries, Serious Injury rate per 100 million VMT, Non-Motorized Fatalities and Serious Injuries. The charts for 2021 and 2022 estimates were provided by MDOT.

Total Fatalities & Fatalities Rate

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

To determine the forecasted five-year rolling average for Fatalities, Fatality Rate per 100 million VMT, Serious Injuries, and Serious Injury Rate per 100 million VMT, the forecast was obtained from the models for 2021 and 2022. The final forecasted value for fatalities is the average of MDOT and UMTRI forecasted values which predicts a final number of 1,123 in 2021 and 1,158 in 2022. The target for calendar year 2022 is 1,065.2 for fatalities and 1.098 for fatality rate, which are shown in the following charts.





Reporting Requirements

MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1st of each even numbered year). One exception to the biennial reporting requirement is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31st of each year.

State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state trunkline system, the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's Strategic Highway Safety Plan (SHSP), to address trunkline locations with correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the area. Priority is given to those projects with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

MPO Actions

- As shown in the table below, the Battle Creek MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2022 in September 2021. This established targets for performance measures based on five-year rolling averages, including:
    - Number of Fatalities,
    - Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT).

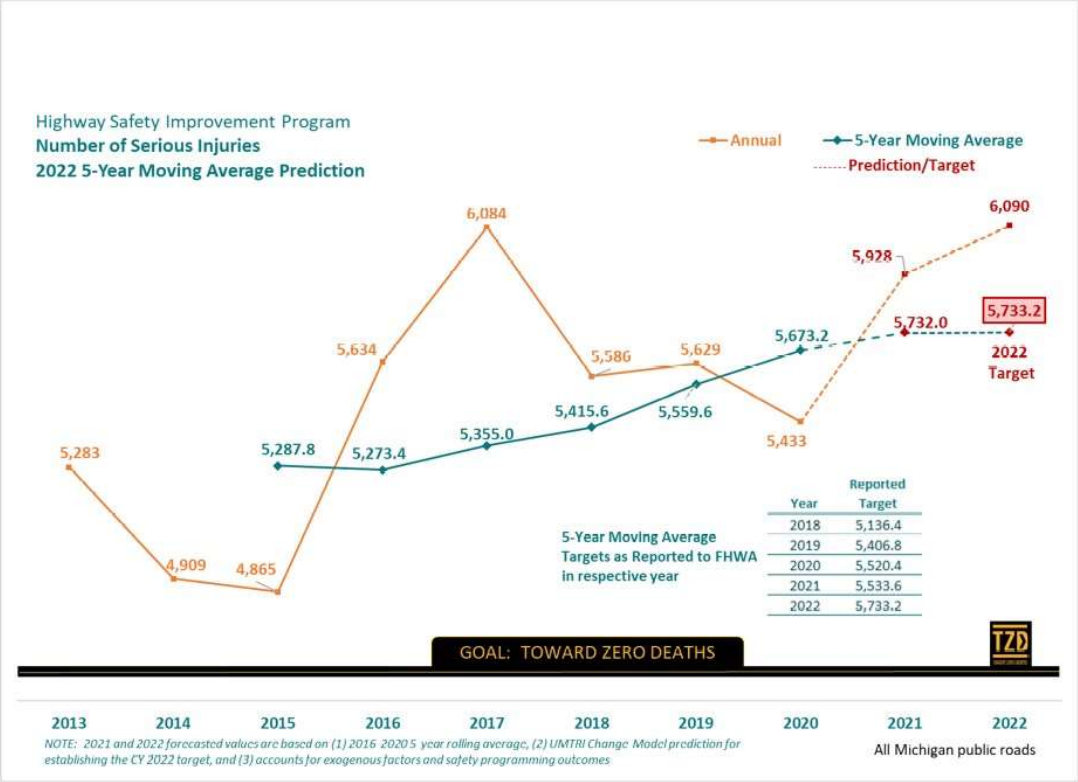
Michigan State Safety Targets for Calendar Year 2022		
Safety Performance Measure	**Baseline Condition**	**2022 Targets**
Fatalities	1,039.8	1,065.2
Fatality Rate	1.074	1.098

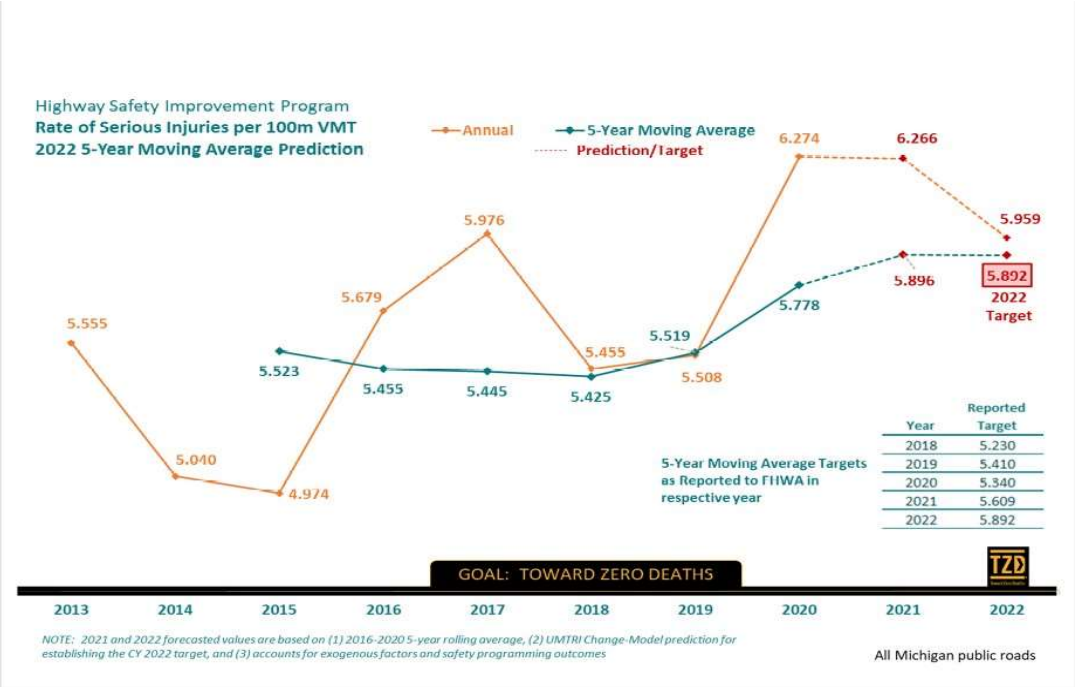
- Give priority in the Transportation Improvement Program (TIP) to projects that address safety.
- Encourage Act 51 Agencies to apply for local safety funds for all available categories of projects which address safety concerns within the BCATS area.
- Promote safe travel habits for all users of the transportation system through education opportunities.

Total Serious Injuries & Serious Injuries Rate

How Targets are Set

The UMTRI model was the sole model used in forecasting total serious injuries as it exhibited a strong linear relationship of the ratio of serious injuries and fatalities (A/K). The forecasting total for serious injuries is 5,928 in 2021 and 6,090 in 2022. The target for calendar year 2022 is 5,733.2 for serious injuries and 5.892 for serious injury rate.





State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state trunkline system, the strategy of the Safety Program is to select cost-effective safety improvements as identified in Michigan's SHSP to address trunkline locations with the correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the region. Priority is given to those projects within each Region, with SHSP focus area improvements that have the lowest cost/benefit analysis or are proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

MPO Actions

- As shown in the table below, the Battle Creek MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2022 in September 2021. This established targets for performance measures based on a five-year rolling average, including:

    - Number of Serious Injuries.
    - Rate of Serious Injuries per 100 million VMT.

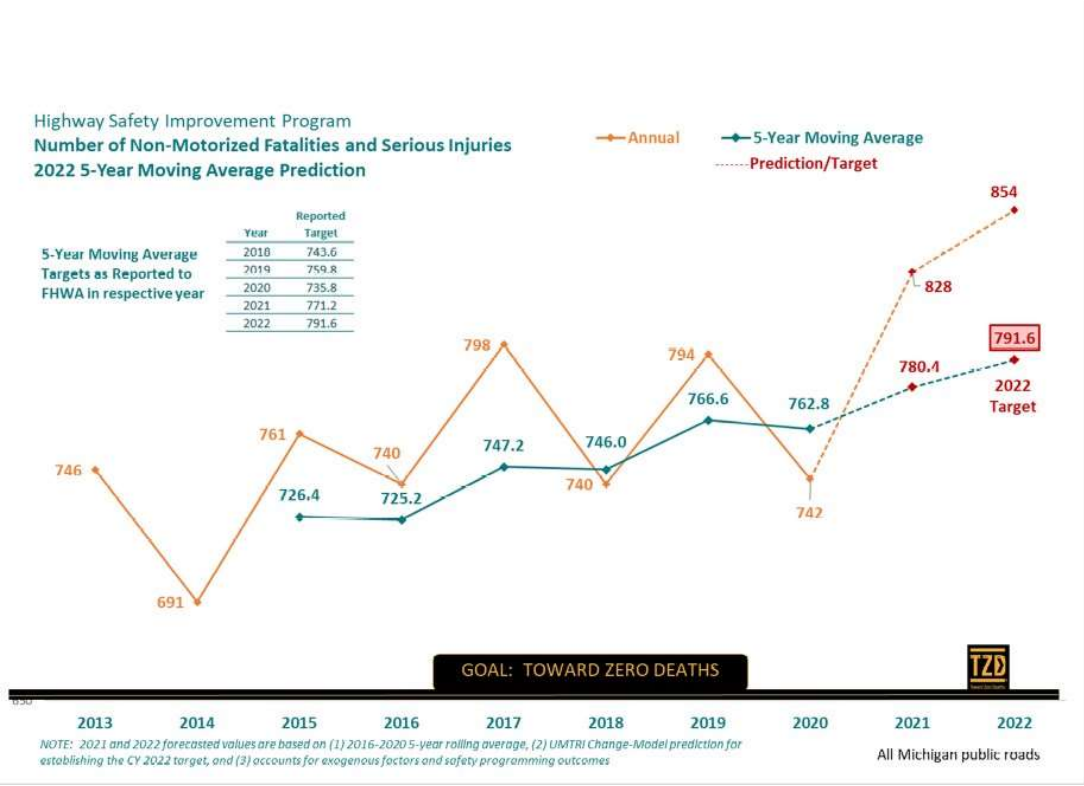
Michigan State Safety Targets for Calendar Year 2022		
Safety Performance Measure	**Baseline Condition**	**2022 Targets**
Serious Injuries	5,673.2	5,733.2
Serious Injury Rate	5.778	5.892

- Give priority in the TIP to projects that address safety.
- Encourage Act 51 Agencies to apply for local safety funds for all available categories of projects which address safety concerns within the BCATS area.
- Promote safe travel habits for all users of the transportation system through education opportunities

Total Bicycle & Pedestrian Fatality and Serious Injuries

How Targets Were Set

Results from the UMTRI model (the A/K relationship) were also used to generate forecasted 5-year moving average values for bicycle and pedestrian fatalities and serious injuries for 2021 and 2022. The forecasting total for fatalities and serious injuries is 828 for 2021 and 854 in 2022. The target for calendar year 2022 is 791.6 for fatalities and serious injuries.



State Actions

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

MPO Actions

- As shown in the table below, the Battle Creek MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2022. This established targets for performance measures based on five-year rolling averages, including the number of non-motorized fatalities and serious injuries.

Michigan State Safety Targets for Calendar Year 2022		
Safety Performance Measure	**Baseline**	**2022 Target**
Non-Motorized Fatalities & Serous Injuries	762.8	791.6

- Address safety issues, concerns, and needs for bicyclists and pedestrians in the development of the Metropolitan Transportation Plan (MTP) and the Transportation Improvement Program.
- Utilization of MDOT road safety audits and engineering countermeasures and other initiatives, programs or designs that are promoted as part of the Toward Zero Deaths National Strategy.

Battle Creek Area Transportation Study - Traffic Crash Statistics

Calendar Years 2016-2020

Year	Total Crashes	Bicycle Involved	Predestrian Involved	Fatalities/ Fatality Crashes	Serious Injuries/Crashes
2020	2,172	11	16	30/13	55/45
2019	2,672	15	8	23/11	35/32
2018	2,883	15	25	13/7	38/34
2017	2,729	9	20	27/12	59/53
2016	3,149	17	28	43/13	58/52
Total	13,605	67	97	136/56	245/216

Transit Reporting Requirements

The Federal Transit Administration Transit Asset Management Rule requires a Transit Asset Management (TAM) plan to set one or more performance targets for each applicable performance measure. The goal is to establish a strategic and systematic process of operation, maintaining, and improving public capital assets effectively through their entire life cycle. The targets should be based on realistic expectations, and the recent data available and the financial resources from all sources that area reasonably expected funding the TAM plan horizon period. The three asset classes to be in the Transit Asset Management plan are Revenue Vehicles, Equipment/Service Vehicles, and Facilities.

The targets for 2022 are reflective of the current status of the Battle Creek Transit (BCT) fleet. Although BCT received a significant Section 5339 grant for vehicle replacement in FY 2021, those vehicles will be phased in over time through FY 2028.

How Targets are Set

Battle Creek Transit annually sets State of Good Repair targets for its assets based on recent and anticipated capital funding available to updates to rolling stock, equipment/service vehicles, and facilities. Transit agencies in an urban area are required to develop targets for State of Good Repair. The purpose of the State of Good Repair is to establish a strategic and systematic process of operation, maintaining and improving public capital assets effectively through their entire life cycle.

The BCATS Policy Committee voted to support the 2022 BCT State of Good Repair targets at its meeting on January 26, 2022.

Battle Creek Transit "State of Good Repair" Targets for Calendar Year 2022

Asset Category – Performance Measure	Categories	2022 Target
REVENUE VEHICLES Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark (ULB)	BU - Bus	76.92%
	MB - Mini-bus	57.14%
	MV - Mini	0%
EQUIPMENT Age - % of vehicles that have met or exceeded their Useful Life Benchmark (ULB)	Non-Revenue/Service Automobile	100%
	Trucks & other Rubber Tire Vehicles	75%
	Maintenance Equipment	0%
FACILITIES Condition - % of facilities with a condition rating below 3.0 on the FTA Transit Economic Requirements Model (TERM) Scale	Administration	50%
	Maintenance	50%
	Passenger Facilities	100%

An additional transit performance measure requirement from the FTA is the development of a Public Transportation Agency Safety Plan (PTASP) which sets Safety Performance Targets for the public transportation agency. The transit agency is to provide the PTASP, with targets, to the MPO when it is developed. Upon receipt of BCT's Plan and targets in July of 2020, the BCATS Policy Committee acknowledged receipt of the Plan and adopted a resolution acknowledging the intent to plan and program projects that contribute to the accomplishment of BCT's safety targets. The BCT safety targets, as reported to BCATS, are shown in the table below.

Battle Creek Transit Safety Performance Targets*

Mode of Transit Service	Fatalities (total)	Fatalities (per 10k VRM)	Injuries (total)	Injuries (per 10k VRM	Safety Events (total)	Safety Events (per 10kVRM)	System Reliability (VRM/failures)
Fixed Route Bus	0	0	3	.055	5	.091	15,000
ADA/ Paratransit	0	0	2	.036	4	.073	20,000

* Targets above are based on the previous 5 years of BCT's safety performance data.

National Highway System Bridge Condition Targets

The Transportation Performance Measure regulatory requirements outlined in 23 CFR 490.105 and 23 CFR 490.107 regarding bridge condition targets, are based on a state adjusted 4-year National Highway System targets. The Battle Creek Area Transportation Study recognizes the importance of a safe transportation system and supports the cooperatively developed bridge targets from the Michigan Department of Transportation. MDOT adopted adjusted 4-year bridge targets on October 1, 2020. BCATS adopted a resolution to support the state's adjusted bridge targets on January 27, 2021.

Michigan's Adjusted 4-Year Bridge Targets

Bridge Performance Measure	Baseline Condition Calendar Year 2017	2-Year Target (ended 10/1/20)	4-Year Target
% National Highway System Deck Area in Good Condition	32.7%	27.0%	23.0% (adjusted from the previous 4-yr. target of 26%)
% National Highway System Deck Area in Poor Condition	9.8%	7.0%	8.0% (adjusted from the previous 4-yr. target of 7%)

The current condition of NHS bridges in the BCATS area is shown in the table below.

BCATS MPO 2020 Bridge Conditions		
Deck Area in Good Condition	Deck Area in Fair Condition	Deck Area in Poor Condition
1% 3,429 square feet	92% 420,446 square feet	7% 31,722 square feet

The total NHS bridge deck area in the BCATS area is 455,597 square feet.

Pavement Condition Targets

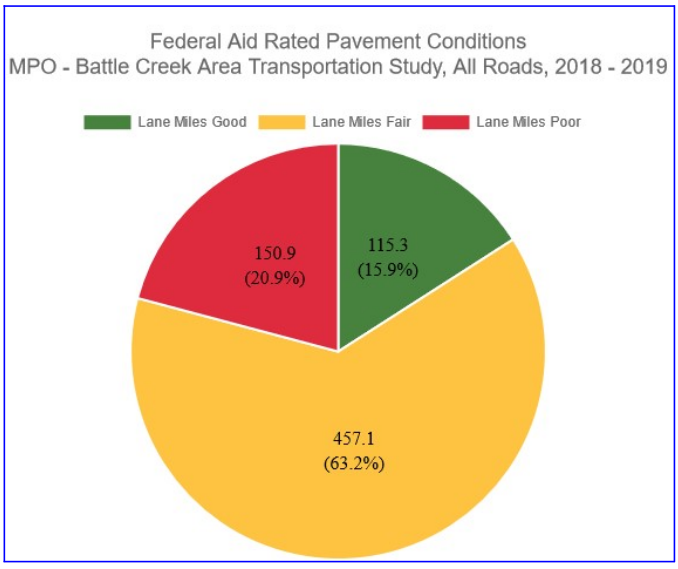
The federal regulations require the state to establish targets for pavement condition measures Percent Good and Percent Poor on the Interstate and non-Interstate National Highway System. Targets were to be set for two and four-year intervals for each measure, or eight targets total. However, for the Interstate measures, there were no two-year targets required for the first performance period of 2018 to 2021. Therefore, only six targets were set by the state in the first period. The regulations dictated the measuring tools to be used in defining the pavement condition. As with the other target categories, MPOs were to either support the state targets or establish their own independent targets for the required categories within 180 of the state establishing targets.

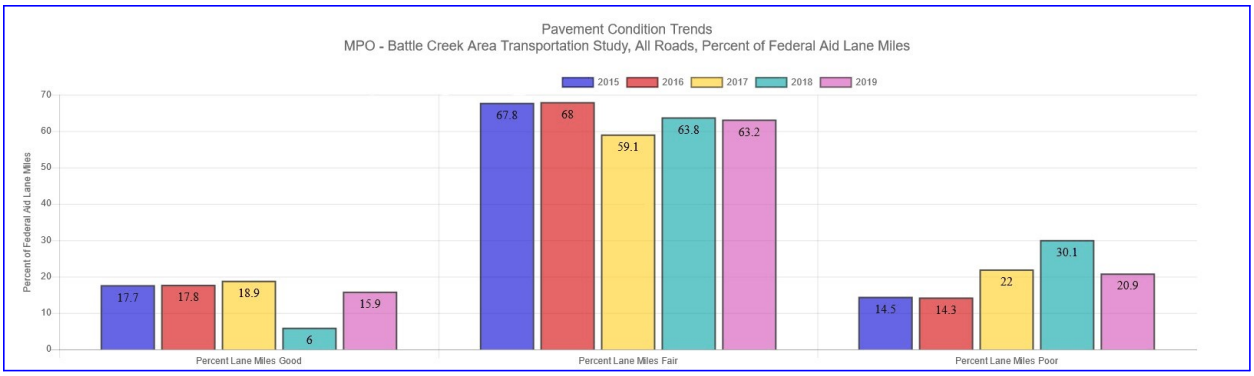
MDOT officially adopted the state pavement targets as of May 20, 2018. BCATS acted to support those targets on October 24, 2018. The table below indicates the Michigan State Pavement Targets.

Michigan State Pavement Targets

Pavement Performance Measure	Baseline Condition Calendar Year 2017	2-Year Targets	4-Year Targets
% Interstate Pavement in Good Condition	56.8%	N/A	47.8%
% Interstate Pavement in Poor Condition	5.2%	N/A	10.0%
% Non-Interstate NHS in Good Condition	49.7%	46.7%	43.7%
% Non-Interstate NHS in Poor Condition	18.6%	21.6%	24.6%

Pavement condition in the BCATS area has been measured for approximately 20 years using the PASER data collection process implemented by the Michigan Transportation Asset Management Council (TAMC). State of Michigan Act 51 (P.A. 499 202, P.A. 199 2007 requires each local road agency to annually report the mileage and condition of the road and bridge system within their jurisdiction and provide this data to the TAMC. The uniform PASER process for collection of condition data on federal-aid eligible roadways (which includes all Interstate and non-Interstate facilities) uses a visual inspection to evaluate pavement surface condition. It rates various types of pavement distress on a scale of 1-10, with 1 being the worst and 10 being the best. PASER helps to predict the remaining service life of a road and the type of maintenance needed to maximize pavement life. PASER data is to be collected in each Michigan county at 50% of the federal-aid eligible system each year. It so happens that the BCATS area includes approximately 50% of the federal-aid roadways in Calhoun County. Therefore, the PASER data collection process has been occurring every other year in the MPO area. The adjacent and following charts show the results of recent PASER data collection for the BCATS area.





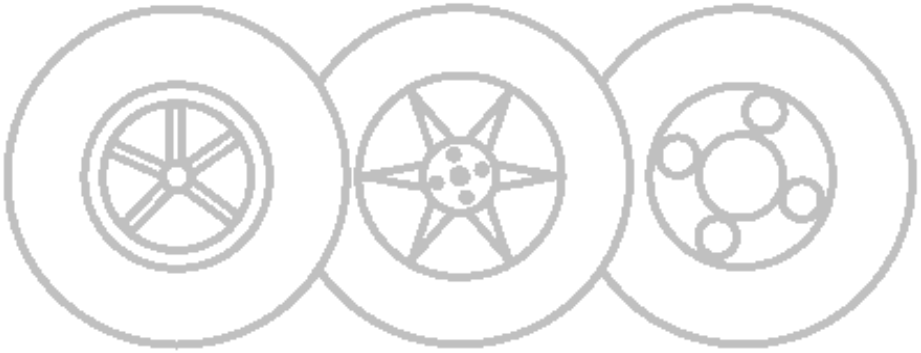
System Performance – Travel Time Reliability

Travel Time Reliability relates to the consistency or dependability in travel time. It is measures from day to day, or across differing times of the day. Unreliable travel times usually occur during the "peak" periods of the day. Most travelers are less tolerant of "unexpected" delays since they cannot plan for it. The Travel Time Index (TTI) is the ratio of the congested travel time to the time it takes to make the same trip at free-flow speeds (light traffic conditions). When congestion gets worse, the TTI increases. Performance on the National Highway System (NHS) uses Level of Travel Time Reliability (LOTTR) to measure interstate and non-interstate travel. The interstate travel time reliability measure is the percent of "person-miles" traveled that are reliable. Non-interstate travel time reliability is measured by percent of "person-miles" traveled that are reliable. These measures correspond to 80th and 50th percentile travel times. Freight movement on the NHS is measured for reliability using the Truck Travel Time Reliability Index (TTTR) and corresponds to 95th and 50th percentile travel times. Travel time reliability in the BCATS area, as reported by MDOT with 2016, 2017, and 2018 data is shown in the tables below.

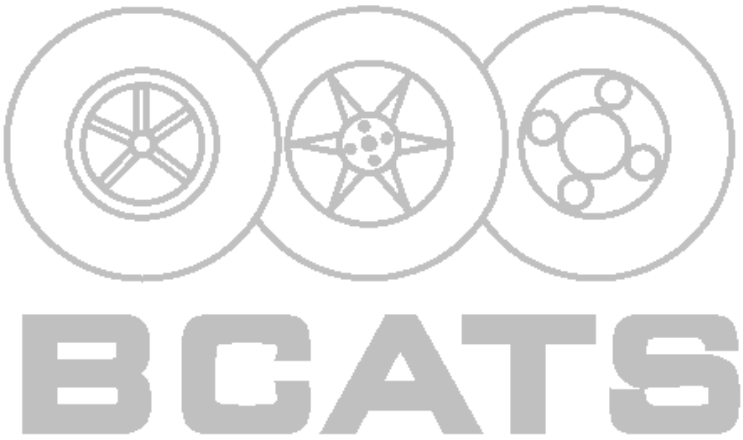
Level of Travel Time Reliability – Interstate "person-miles" for BCATS MPO			
2018	**2017**	**2016**	**Target**
99.7%	99.7%	98.5%	75%

Level of Travel Time Reliability – Non-Interstate "person-miles" for BCATS MPO		
2018	**2017**	**Target**
92.8%	96.1%	70%

Truck Travel Time Reliability Index for BCATS MPO			
2018	**2017**	**2016**	**Target**
1.23	1.15	1.25	1.75



BCATS



2045
Metropolitan Transportation Plan
for the
Battle Creek Area Transportation Study

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February, 2022