BATTLE CREEK AREA

TRANSPORTATION STUDY

2035 METROPOLITAN TRANSPORTATION PLAN

APPROVED June 22, 2011

by the BCATS Policy Committee

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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.

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The BCATS 2035 Metropolitan Transportation Plan was formally approved by the BCATS' Policy Committee on June 22, 2011.

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Statement of Vision

2035 Metropolitan Transportation Plan

"The *2035 Metropolitan Transportation Plan* for the Battle Creek Area Transportation Study is a vision of the area's transportation system through the year 2035. The transportation improvements in the first four years (2011-2014) 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 (2015-2035) represent current priorities for the future. The transportation plan is updated every four years and the priorities for the later years can and will change as conditions warrant."

BCATS

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June 2011

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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

CCRC - Calhoun County Road Commission

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.

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) - Determination 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 decisionmaking by principal elected officials of general local government.

MICHIGAN ACCIDENT LOCATION INDEX (MALI) - A system of tabulating accident information by street intersections maintained by the Michigan State Police. This information is available to local areas for the purpose of conducting accident studies and other transportation studies.

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.

SCTSC - South-Central Traffic Safety Committee

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

SOUTH-CENTRAL TRAFFIC SAFETY COMMITTEE (SCTSC) - Organization of transportation officials from the counties of: Calhoun, Kalamazoo, Branch, Barry, St. Joseph dedicated to improving the safety of the transportation network

SOUTHCENTRAL MICHIGAN PLANNING COUNCIL (SMPC) - A regional planning organization located in Portage, 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.

TOPICS - Traffic Operations Program to Increase Capacity and Safety

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

TRAFFIC OPERATIONS PROGRAM TO IMPROVE TRAFFIC & SAFETY (TOPICS) -Program for evaluating intersections and street segments in urban areas for low cost means of improving safety and accessibility.

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.
2. Traffic Analysis Zone (TAZ) - A subdivision of the study area.

CHAPTER I
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, where applicable.

The development and content of this plan is mandated by the federal "Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation (enacted August 10, 2005, and currently operating under continuing resolutions) and accompanying regulations (promulgated February 14, 2007). The last update of the BCATS transportation plan occurred in November, 2007. This current update of the transportation plan, with a horizon year of 2035, was required to meet the federal transportation requirements and the air quality conformity requirements of the US EPA. It was approved by the BCATS Policy Committee on June 22, 2011. A copy of the approving resolution is included as the last page of this *Executive Summary*.

GOALS & OBJECTIVES

An important first step in any planning effort is the development of goals & objectives to support and to provide direction for the planning work to come. Goals & objectives reflect the values and desires of the individuals setting them. Goals & 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 & 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 & 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 & 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 & objectives for the Plan, and for BCATS in general, several existing plans and policy statements were considered as input, including: BCATS' previously adopted Goals & objectives from the 2030 Long Range Transportation Plan, Michigan Department of Transportation goals for the MI Transportation Plan (see chapter VI), State of Michigan Strategic Highway Safety Plan for 2009-2012, Michigan Climate Action Plan, and FHWA's SAFETEA-LU rules and regulations.

SAFETEA-LU requires transportation plans which involve all levels of government and all surface transportation modes. The intent of SAFETEA-LU is to improve transportation and provide for consideration of projects and strategies that will:

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

The MPO plans are coordinated with the state plans (as noted above) and the statewide planning process. The following updated goals & objectives were reaffirmed by the BCATS Policy Committee in June, 2010 to guide the minor update of the *2030 Transportation Plan* to a horizon year of 2035. A complete representation of the goals & objectives for the *Plan* is included in Chapter III of the full *2035 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

SAFETEA-LU expanded upon the public participation process for its predecessor legislation relative to the participation of the public and other interested parties in the transportation planning process. The metropolitan transportation planning regulations implementing SAFETEA-LU 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 the required Participation Plan, which was approved by the BCATS Policy Committee on December 20, 2006. A listing of interested parties included in the notification process is included in the full *2035 Metropolitan Transportation Plan* document, Chapter IV - Public Participation.

As part of the public participation process for the *2030 Transportation Plan,* BCATS surveyed the public relative to priorities for the transportation system. The survey results revealed that the highest priority by far was for the preservation of existing roadways. The second highest priority was for the specific widening of Interstate 94 and then widening in general where it is warranted to deal with congestion. Since this *2035 Metropolitan Transportation Plan is* a minor update of that *2030 Transportation Plan* completed in late 2007, another full-fledged general opinion survey was not deemed necessary at this time, and those previous survey results were considered still valid for the plan update to 2035.

BCATS provided updates relative to plan development throughout the process, at its regular Committee meetings, online, with newsletters/flyers distributed by regular mail and also made available at public facilities across the area, and with a May 25, 2011 public notice in the *Battle Creek Enquirer*. Copies of the newsletter/flyers associated with the Plan development, and the public notice are included in the full *2035 Metropolitan Transportation Plan* document, Chapter IV - PUBLIC PARTICIPATION.

CONSULTATION

A new requirement for the development of long range plans, since the implementing regulations for SAFETEA-LU went into effect, is the aspect of "Consultation" 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. A complete listing of contact agencies and organizations in included in the full *2035 Metropolitan Transportation Plan* document in Chapter V - Consultation.

BCATS received comments from some agencies when an initial contact letter was sent out in January, 2007 as part of the *2030 Transportation Plan* consultation process. The comments/issues generated by the 2007 letter that were still relevant were considered in this update of the 2030 plan to a 2035 horizon. The consultation mailing list received the same newsletter information about this plan update process as those on the public participation list. BCATS also provided correspondence to the targeted agencies as the plan's list of recommended improvements was developed & finalized. Up until the time of adoption of the *2035 Metropolitan Transportation Plan*, BCATS did not receive any new comments relative to this plan update from the consultation list. Upon local adoption & State & Federal approval of this plan update, the consultation agencies will be notified that, should they wish to consult BCATS' updated plan, it is available on the BCATS website.

INTERMODAL CONSIDERATIONS

Three chapters in the *2035 Metropolitan Transportation Plan* are devoted to the consideration of modes other than highways which are utilized for the movement of people and goods in the BCATS area. The modes reviewed included: aviation, rail, trucking, pedestrian, non-motorized, transit, taxicab, intercity bus, and ride-sharing. Transit provided information for the inclusion of transit projects in the overall Plan project listing. Ongoing work done in the planning & implementation of non-motorized projects by the local agencies is supported by BCATS within programming of its own long range transportation plan.

COORDINATION WITH THE STATE LONG RANGE PLAN & LONG RANGE PLANNING

Federal regulations require that BCATS' Plan coordinate with statewide long range plans required of the state. In March 2007 the Michigan Department of Transportation (MDOT) completed its own long range transportation plan, called the *MI Transportation Plan: Moving Michigan Forward*. The plan set forth four goals that reflect the same focus as the BCATS Plan goals for the transportation system. Those goals are:

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

MDOT also developed a State Highway Safety Plan (SHSP), published in August 2006, and in March 2009 the Michigan Department of Environmental Quality published a *Climate Action Plan (CAP)* addressing the issues of: climate change, reduction in greenhouse gases, and changes to the future of energy usage in the state. BCATS has taken these state plans and priorities into consideration in the development of the BCATS *2035 Metropolitan Transportation Plan*.

IDENTIFICATION OF RECOMMENDED PROJECTS FOR THE *2035 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 (population, households, and employment) in the model base year of 2002 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. "Expansion" projects in the Plan are derived from this analysis as well as consideration of economic development needs.

Safety-related concerns are routinely identified through periodic review of crash data and discussions with staff of the area road agencies & Battle Creek Transit. Typical safety-related projects are largely intersection related, but may also deal with signal progression & 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; this *Plan* includes a discussion of that topic and identification of specific road segments where the levels are significant.

Pavement rehabilitation projects are listed as "preservation" on the project list for specific improvements which are not included in the "expansion" category. The road agencies use pavement management assessment to develop schedules for pavement rehabilitation. It should be noted that on-going lower level pavement rehabilitation and maintenance activities are not reflected as specific projects in the *2035 Plan*.

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

OPERATIONAL AND MANAGEMENT STRATEGIES

SAFETEA-LU requires 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 SAFETEA-LU regulations require an extensive review of the financial feasibility of the improvements included in the long range plan. The BCATS *2035 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 new 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 conducted a lengthy process to determine costs and revenues in future dollars. Costs for the operations and maintenance of the of the existing system have been developed and projected over the life of the *Plan*. Based on all of this analysis, tables were developed which summarize available revenue and available costs over the life of the *Plan*. For detail about the development of any figures in the following tables, please see Chapter XV - FINANCIAL PLAN of the full *2035 Metropolitan Transportation Plan* document.

Summary of Available Revenues for the BCATS *2035 Metropolitan Transportation Plan*

Projected Capital Revenues	Total $
Federal Transportation Funds for Construction of Local Roads	88,593,000
Federal and State Funding for State Controlled Roadways in BCATS area	333,230,000
Federal/State/Local Transit Funding (operating and capital)	134,166,000
State and Local Funding for Construction and Operations/Maintenance of Local Roads	358,777,000
TOTAL	914,766,000

Summary of *2035 Metropolitan Transportation Plan*
Operations/Maintenance & Capital Expenditures 2011-2035

(Individual Projects are described in a detailed listing in Chapter XVII)

Operations/Maintenance (O/M) Expenditures for Local & State Roads	Total $
Estimated Expenditures for O/M of Local Roads	**229,188,000**
Estimated Expenditures for O/M of State Roads	**40,105,000**
Planned Capital Expenditures	
Local Road Projects	
Improve/Expand (4 projects)	14,306,000
Preservation (38 projects)	61,374,000
Safety and Operations/Air Quality Improvements (15 projects)	3,934,000
Non-motorized (1 project)	1,793,000
Total	**81,407,000**
Transit Projects	
Preservation (operating expense projects) (51 projects)	113,867,000
Vehicle Replacement (82 total vehicles) (29 projects)	16,217,000
Vehicle Addition (1 total vehicle) (1 project)	21,000
Other Capital (13 projects)	2,938,000
Facility Project (2 projects)	2,652,000
Security (annual) (25 projects)	315,000
Total	**136,010,000**
State Projects	
Preservation (27 projects)	130,856,000
Operations/CMAQ (5 projects)	4,208,000
Safety (1 project)	584,000
Bridges (9 projects)	39,828,000
Total	**175,476,000**
TOTAL CAPITAL EXPENDITURES	**392,893,000**
Total Expenditures	**662,186,000**

The total expenditures identified in the BCATS *2035 Metropolitan Transportation Plan* are within the total federal, state, and local revenues estimated for the *2035 Metropolitan Transportation 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 *2035 Metropolitan Transportation Plan* is financially constrained.

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	$914,766,000
Expenditures for Operations/Maintenance of Local & State Roads	($269,293,000)
Expenditures for Local Road Improvement Projects	($81,407,000)
Expenditures for Transit Improvement Projects	($136,010,000)
Expenditures for State Improvement Projects	($175,476,000)
REMAINING BALANCE	**$252,580,000**

ENVIRONMENTAL MITIGATION

SAFETEA-LU requires 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. 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 contacted under the "Consultation" efforts discussed above. These areas of concern include: 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 (except for signal interconnect projects) were assessed as to whether they may be in an area that might impact any of eleven selected factors. "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. The "expansion" projects recommended in this *Plan* are the Morgan Rd Extension with a new bridge over the Battle Creek River, the Glen Cross Rd Extension, and the Avenue A Re-alignment/Military Ave Extension.

The environmental guidelines and the assessment table and project overlay maps related to this issue are located in Chapter XVI - ENVIRONMENTAL MITIGATION of the full *2035 Metropolitan Transportation Plan* document.

AIR QUALITY CONFORMITY

The "Kalamazoo-Battle Creek-MI Non-Attainment Area", comprised of Kalamazoo, Calhoun, & VanBuren counties, was designated a "Basic Non-Attainment" area for the eight-hour ozone standard effective June 15, 2004, and was re-designated to "Attainment/Maintenance" on May 16, 2007and given a 2018 mobile source emission budget. Those actions make BCATS subject to requirements for conducting a conformity analysis on its plans and Transportation Improvement Programs (TIPs), meaning the *Plan* must include a demonstration that the implementation of projects recommended in the *Plan* do not result in greater mobile source emissions than the emissions budget. Even as an air quality "Attainment/Maintenance" area, BCATS still must complete the conformity requirements.

Relative to Kalamazoo and Battle Creek's *Plans* and TIPs, a conformity demonstration was made in compliance with all applicable conformity requirements. The implementation of projects in *Plans* & TIPs, and other regionally significant projects in the Non-Attainment Area results in lower emissions than the emissions budget in each of the milestone years of the assessment as shown in the following table.

Results for the Kalamazoo-Battle Creek MI Non-Attainment Area 8 Hour Ozone Standard

March 2011

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**26,916.6200**	**49,315.3900**
2011 Action	11,388.0916	18,016.8318
2018 Action	7,793.8609	9,268.0277
2025 Action	6,183.1643	6,531.0889
2035 Action	6,180.8517	5,563.1903

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. Therefore, it is a regular component of the BCATS' plans and TIPs to evaluate the potential of planned improvements relative to negative impacts on areas with racial minorities, Hispanic populations, and populations with income below the poverty level.

The analysis completed for this component, which is included in detail in Chapter XIX - ENVIRONMENTAL JUSTICE ANALYSIS in the full *2035 Metropolitan Transportation Plan* document, shows that there will impacts to non-minority as well as minority and low-income populations as a result of the projects recommended in the *2035 Metropolitan Transportation Plan*. However, none of the "expansion" roadway projects impact populated areas. None of the recommended 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 recommend improvements) there is no glaring disproportional impact to any of the identified groups as compared to the area as a whole.

2035 METROPOLITAN TRANSPORTATION PLAN PROJECTS

Nearly $392.9 million in "year of expenditure dollars" would be expended through implementation of the 221 "projects" recommended for inclusion in the *Plan*. The 52 projects at specific locations where an improvement is proposed are listed in the following table, and also displayed in the map at the end of this *Executive Summary*. The "BCATS ID" project numbers correspond to the mapped locations.

For discussion and evaluation, the proposed projects were designated one or more of ten "Project Types":

1. Non-motorized
2. Expansion (new or widened roads)
3. Preservation (of pavement)
4. Security (generally for transit)
5. Safety-Related
6. Traffic Operations
7. Transit Operating
8. Transit Capital
9. Bridges
10. Air Quality

For projects of multiple "Type", the first category listed is the predominant focus of the project and the category used in tabulating numbers of projects and total project costs by category. Following the map at the end of this *Executive Summary* is a graphic breakdown by project type, by the number of projects and by the total estimated costs of projects in each category.

Battle Creek Area Transportation Study (BCATS)
2035 Metropolitan Transportation Plan
Site-Specific Recommended Improvements

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST*	AGENCY	PROJECT TYPE
2011	**2**	0.60	**Beckley Road/B Drive N**	from M-66 to 6.5 Mile Rd	Resurface	$ 296	CCRC	Preservation
2011	**3**	4.10	**Calhoun Co. Trail Phase 1**	from Emmett St through Ott Preserve to Bridge Park	New multi-modal trailway	$ 1,793	CCRC	Non-motorized
2011	**4**	0.60	**Beckley Road/B Drive N**	from M-66 to 6.5 Mile Rd	Modify geometrics & signals at 6 Mile Rd & at Harper Village Dr intersections	$ 200	CCRC & City of BC	Traffic Operations, Safety-Related, & Air Quality
2011	**6**	1.00	**20th Street**	from Goguac St to Columbia Ave	Resurface	$ 249	City of BC	Preservation
2011	**7**	0.10	**20th Street Bridge**	over Kalamazoo River	Rehabilitation	$ 556	City of BC	Preservation
2011	**8**	1.70	**Capital Ave. SW**	from Fairfield to Rebecca	Resurface	$ 375	City of BC	Preservation
2011	**9**	0.10	**Capital/Hamblin Signal Upgrade**	Approaches & traffic signal devices at intersection of Capital Ave & Hamblin Ave in downtown Battle Creek	Replace 2 & add 2 steel strain poles to support new mast arm design signal system. Add signal faces for left-turn phasing (new), and detector cameras on for full signal actuation on each approach. Appurtenant signage & lane markings.	$ 254	City of BC	Air Quality & Traffic Operations
2011	**10**	0.10	**Hamblin/Jackson Intersection (2010 ARRA)**	Intersection & approaches	Rsurface all roadway pavement; minor widening to accomodate improved curb, gutter, & pedestrian facilities.	$ 85	City of BC	Safety-Related
2011	**11**	1.50	**Helmer Road**	from Beckley Rd to Gethings Rd	Resurface	$ 261	City of BC	Preservation
2011	**12**	1.30	**North Avenue**	from Capital Ave NE to Roosevelt Ave	Resurface	$ 337	City of BC	Preservation
2011	**19**	0.10	**I-194/M-66 Bridge**	over GTWRR	Rehabilitation	$ 1,918	MDOT	Bridges
2011	**20**	0.10	**I-194/M-66 Bridges**	over Dickman Road and Fountain Ave.	Rehabilitation	$ 2,756	MDOT	Bridges
2011	**21**	0.70	**I-94 Interchange (exit 104)**	at 11 Mile Road	Ramp work and center left turn lane on southbound Michigan Ave at Wheatfield Parkway	$ 584	MDOT	Safety-Related
2011	**22**	6.10	**M-37 (Bedford Rd.)**	from Creekview Dr to north county line	Double Chip Seal	$ 375	MDOT	Preservation
2011	**23**	3.50	**M-96 (Dickman Rd.)**	from Armstong Rd to Helmer Rd	Resurface	$ 1,054	MDOT	Preservation
2012	**25**	2.80	**B Drive N**	from 8.5 Mile Rd to 11 Mile Rd	Resurface	$ 800	CCRC	Preservation
2012	**26**	0.10	**B Drive N/Beadle Lake Road Intersection**	Intersection & Approaches	Modify geometrics & upgrade signals	$ 250	CCRC	Traffic Operations, Safety-Related, & Air Quality
2012	**28**	0.90	**Capital Ave. SW**	from Weeks Rd to Cascade Dr	Resurface	$ 285	City of BC	Preservation
2012	**29**	0.90	**Jackson St./Stringham Road**	from Bedford Rd to M-89 (Michigan Ave)	Resurface	$ 250	City of BC	Preservation
2012	**35**	0.10	**I-94BL/20th Street Intersection**	Crossovers in SE quadrant of inters.	Redesign SE quadrant to traditional 4-leg intersection	$ 396	City of Springfield	Traffic Operations
2012	**36**	0.40	**I-194 Interchange**	at Dickman Road	Interchange Lighting upgrade	$ 935	MDOT	Traffic Operations
2012	**37**	0.07	**I-194/M-66 southbound off ramp onto M-96 (Columbia Ave E)**	I-194/M-66 exit 2 interchange	Widen terminal ending to create a right turn lane onto M-96	$ 75	MDOT	Air Quality & Traffic Operations
2012	**38**	1.70	**I-94BL/M-96 (E. Michigan Ave)**	from Wattles Rd to M-311 (11 Mile Rd)	resurface/restripe and minor widening along 4/10ths mile at eastern edge of project	$ 1,607	MDOT	Traffic Operations & Air Quality
2012	**39**	0.80	**M-66 (Capital Ave NE) bridge over Wanondaga Creek**	over Wanondaga Creek	Replacement of bridge and rehab of approaches	$ 1,248	MDOT	Bridges
2012	**40**	2.30	**M-96 (Columbia Ave E)**	from west of Riverside Dr eastward to I-194/M-66, and from east of M-294 (Main St/Beadle Lake Rd) eastward to junction at I-94BL (Michigan Ave)	1.5" cold milling & 1.5" HMA resurfacing, ADA ramps	$ 1,100	MDOT	Preservation
2012	**41**	0.10	**M-96 (Columbia Ave E) bridge over Raymond Rd**	Bridge over Raymond Rd.	Bridge replacement	$ 1,810	MDOT	Bridges

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST*	AGENCY	PROJECT TYPE
2013	**42**	3.50	**B Drive S**	from 8.5 Mile Rd to 12 Mile Rd	Resurface	$ 800	CCRC	Preservation
2013	**45**	1.40	**Beckley Road**	from Minges Rd to M-66	Resurface	$ 500	City of BC	Preservation
2013	**52**	1.40	**Goguac Street**	from Helmer Rd to Carl Ave	Resurface	$ 284	City of Springfield	Preservation
2013	**53**	0.60	**Upton Ave/Avenue A**	from Avenue A eastward to city limits / from 20th St eastward to Upton 20th St.	Resurface	$ 121	City of Springfield	Preservation
2013	**54**	3.40	**I-194 Freeway Signing**	from I-94 to Hamblin Ave	Signing upgrade	$ 460	MDOT	Traffic Operations
2013	**55**		**I-94 & I-194 ITS Project**	In BCATS area	Installation of 4 ITS mess. signs on I-94 and 1 sign on I-194	$ 1,131	MDOT	Traffic Operations
2013	**56**	0.10	**I-94BL Carpool Lot**	NE quadrant at Exit 92	Resurface	$ 43	MDOT	Preservation
2014	**58**	1.60	**6 1/2 Mile Road**	from Christian Dr to G Dr N	Resurface	$ 440	CCRC	Preservation
2014	**59**	2.70	**Raymond Road**	from Verona Rd to Golden Ave	Resurface	$ 879	CCRC	Preservation
2014	**60**	0.10	**Wattles Road/Verona Road Intersection**	Intersection & Approaches	Modify geometrics & upgrade signals	$ 225	CCRC	Traffic Operations, Safety-Related, & Air Quality
2014	**61**	0.60	**East Avenue**	from Emmett St to Roosevelt Ave	Resurface	$ 160	City of BC	Preservation
2014	**65**	1.50	**Territorial Rd & Evergreen Ave**	from Helmer Rd eastward to 20th St & from Avenue A northward to Harmonia Rd	Resurface	$ 365	City of BC & City of Springfield.	Preservation
2014	**66**	0.50	**I-94 EB Rest Area**	Rest Area #703	Reconstruction	$ 4,202	MDOT	Preservation
2014	**67**	1.60	**I-94BL/M-37 (Climax Rd/Columbia Ave W)**	from I-94 exit 92 interchange to Columbia Ave W turnoff	HMA overlay and minor widening	$ 4,560	MDOT	Preservation
2016	**74**	1.00	**Glen Cross Road Extension**	from M-66 east and north to B Dr N	New Route	$ 2,138	CCRC	Expansion
2016	**80**	0.13	**Avenue A re-alignment / Military Ave extension**	from M-96 (Dickman Rd) to Avenue A	Close M-96/Avenue A intersection, extend Military Ave northeastward to meet Avenue A	$ 228	City of Springfield	Expansion, Safety-Related, Traffic Operations, & Air Quality
2019	**90**	0.10	**Morgan Road Bridge Over Battle Creek River**	at Battle Creek River	New Bridge	$ 5,970	CCRC	Expansion
2019	**91**	1.30	**Morgan Road Extension**	from M-66 (Capital Ave NE) to Bellevue Rd at N Dr N	New Route	$ 5,970	CCRC	Expansion
2020	**97**	0.90	**Verona Rd**	from McAllister Rd to Wattles Rd	minor widening for center left turn lane and resurfacing	$ 1,099	CCRC	Traffic Operations & Air Quality
2020	**102**		**Transit facility renovation**	for Battle Creek Transit	renovation of facilities	$ 1,195	City of BC Transit	Transit Capital
2021	**110**		**EB and WB Bridges on I-94**	over GTWRR	minor widening and rehabilitation	$ 3,668	MDOT	Bridges
2023	**119**		**EB and WB Bridges on I-94**	over 6 1/2 Mile Rd.	minor widening and rehabilitation	$ 4,618	MDOT	Bridges
2025	**130**		**EB and WB Bridges on I-94**	over M-294 (Beadle Lake Rd.)	minor widening and rehabilitation	$ 3,884	MDOT	Bridges
2027	**141**		**EB and WB Bridges on I-94**	over 9 Mile Road	minor widening and rehabilitation	$ 4,162	MDOT	Bridges
2030	**152**		**Transit facility renovation**	for Battle Creek Transit	renovation of facilities	$ 1,457	City of BC Transit	Transit Capital
2030	**156**		**EB and WB Bridges on I-94**	over Kalamazoo River	replacement of bridges	$ 15,764	MDOT	Bridges

* COST in thousands of "year of expenditure" dollars

Other road projects not on the list of "Site-Specific Recommended Improvements",as proposed in this *Plan*, include annual general projects to address pavement preservation on both “local” (non-State) and State trunkline roadways. Specific work for the “Preserve Strategy" projects are typically identified two or three years in advance and programmed accordingly into the Transportation Improvement Program (TIP) for implementation.

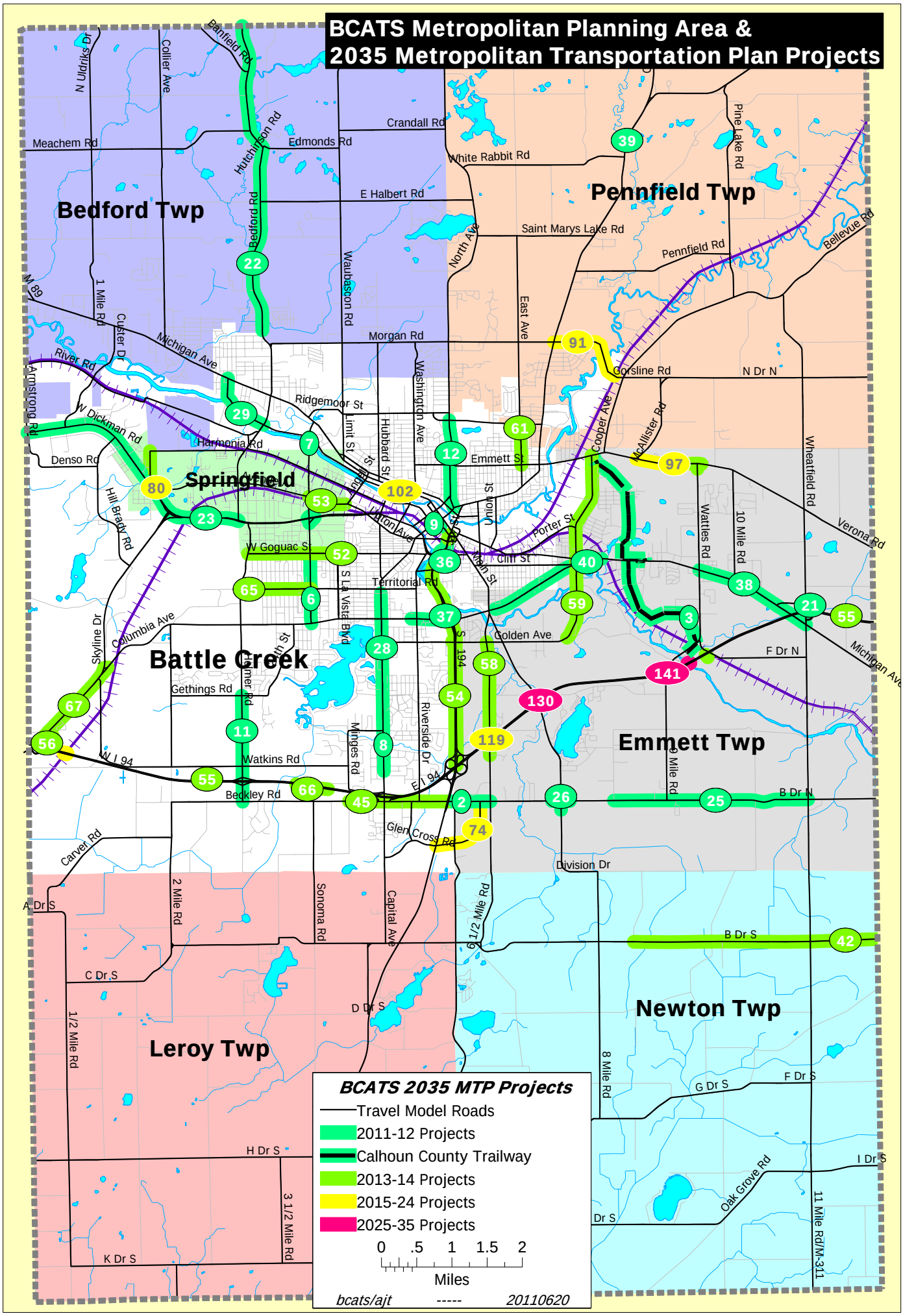
Both operating and capital expenditures for public transit are listed as “projects” in this *Plan*. Battle Creek Transit’s (BCT’s) annual operating cost, annual State “Specialized Services Operating Assistance“ funds “passed through” BCT to local social service agencies, and an annual transit security capital improvement project (required by the Federal Transit Administration), are recommended as "projects" in each *Plan* year. Other BCT capital projects over the twenty-five years of the *Plan* inlcude

replacement of 82 vehicles, most for BCT but several for the local social service agencies, adding new & replacing bus passenger shelters, periodic upgrades of the electronic farebox system and the automatic vehicle locator/computer aided dispatch (AVL/CAD) system, and periodic renovation of BCT's maintenance garage & administrative offices.

CONCLUSION

This *Executive Summary* provides a very cursory review of the contents of the Battle Creek Area Transportation Study's *2035 Metropolitan Transportation Plan* in an effort to have a succinct summary for interested individuals and the general public at-large. The full *2035 Plan* document is over 160 pages in length. Specifics regarding any of the information contained in this *Executive Summary* can be found in the complete *Plan* document.

This *Executive Summary* is included at the beginning of, and as part of, the full *Plan* document. It is also available as a stand alone report. The full document is available as a pdf document online at BCATS' website at http://www.bcatsmpo.org. The document can also be obtained by contacting the BCATS staff office at 601 Avenue A, Springfield, MI 49037, 269/963-1158, or contacting BCATS by e-mail at bcats@bcatsmpo.org. A fee may be charged for a paper copy of the full document.


BCATS Metropolitan Planning Area &
2035 Metropolitan Transportation Plan Projects
Bedford Twp
Pennfield Twp
Springfield
Battle Creek
Emmett Twp
Newton Twp
Leroy Twp
Banfield Rd
Collier Ave
N Updrik Dr
Meachem Rd
Crandall Rd
Edmonds Rd
Hutchinson Rd
White Rabbit Rd
Pine Lake Rd
E Halbert Rd
Bedford Rd
Saint Marys Lake Rd
North Ave
Pennfield Rd
Bellevue Rd
Waubascon Rd
East Ave
M 89
1 Mile Rd
Custer Dr
Michigan Ave
Morgan Rd
River Rd
Armstrong Rd
Ridgemoor St
Washington Ave
Gorsline Rd
N Dr N
Cooper Ave
McAllister Rd
W Dickman Rd
Harmonia Rd
Denso Rd
Limit St
Hubbard St
Emmett St
Wheatfield Rd
Hill Brady Rd
Union St
Porter St
Watties Rd
10 Mile Rd
Verona Rd
W Goguac St
Clinton Ave
Main St
Cliff St
Territorial Rd
S La Vista Blvd
Skyline Dr
Columbia Ave
Golden Ave
F Dr N
Michigan Ave
Gethings Rd
Capital Ave
S 194
Riverside Dr
Minges Rd
Watkins Rd
W I 94
E I 94
Beckley Rd
B Dr N
Glen Cross Rd
Carver Rd
Division Dr
A Dr S
2 Mile Rd
Sonoma Rd
6 1/2 Mile Rd
B Dr S
C Dr S
D Dr S
1/2 Mile Rd
8 Mile Rd
G Dr S
F Dr S
H Dr S
I Dr S
Oak Grove Rd
3 1/2 Mile Rd
K Dr S
11 Mile Rd/M-311
BCATS 2035 MTP Projects
Travel Model Roads
2011-12 Projects
Calhoun County Trailway
2013-14 Projects
2015-24 Projects
2025-35 Projects
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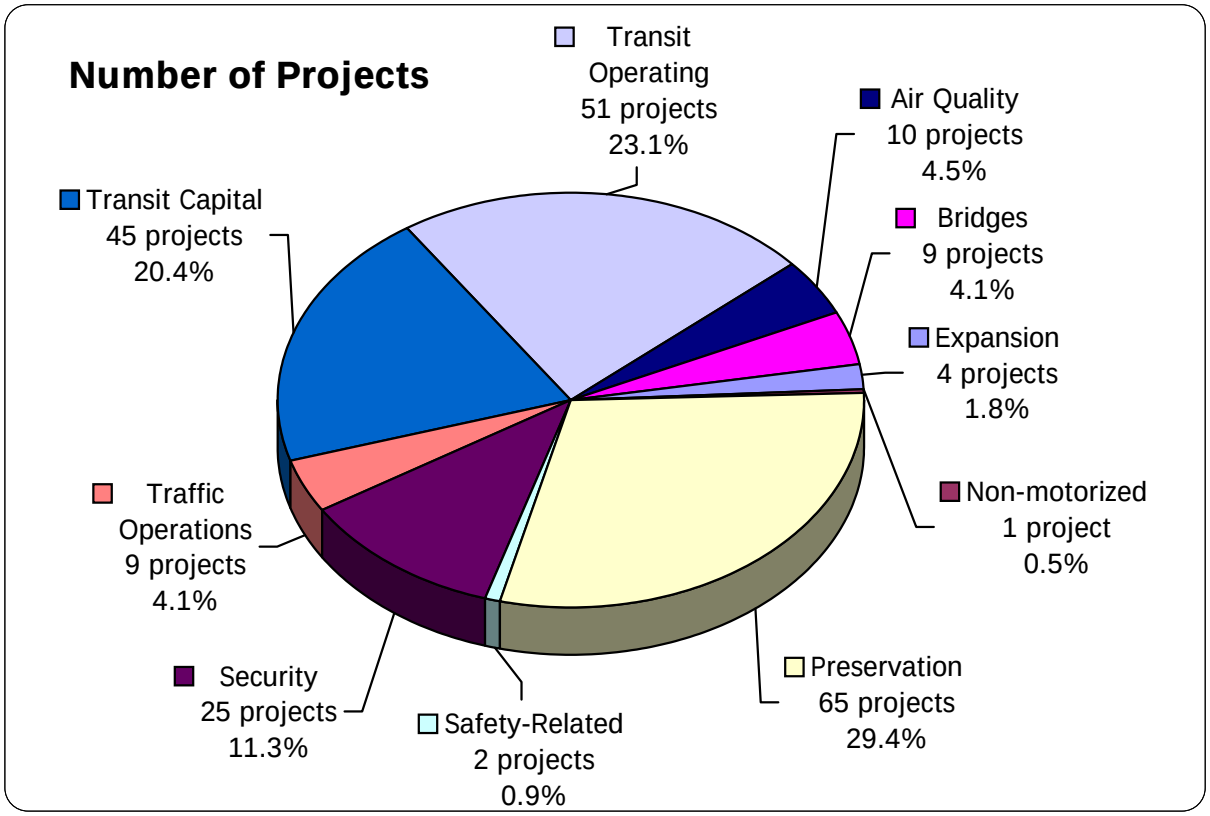
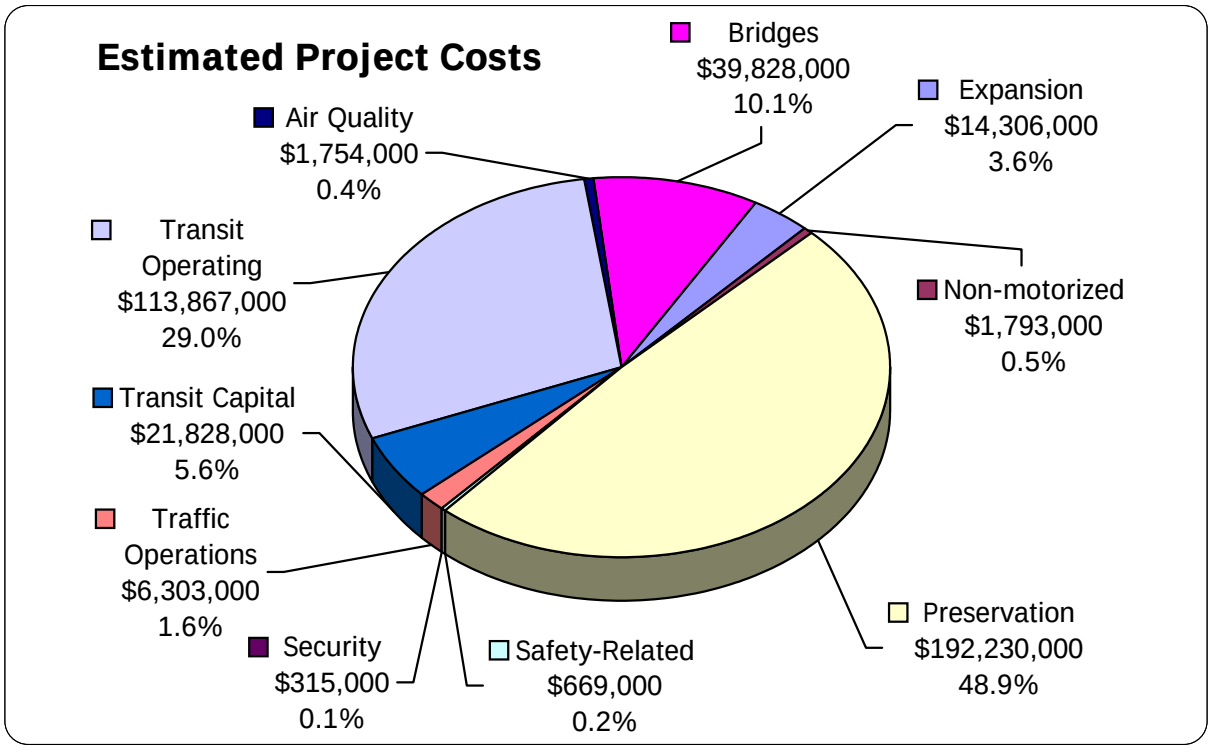
Miles
bcats/ajt ----- 20110620

Battle Creek Area Transportation Study (BCATS)
2035 Metropolitan Transportation Plan
Recommended Projects by Type





Resolution #11-27
Resolution to Approve the *2035 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 *2035 Metropolitan Transportation Plan* as been developed pursuant to USC 23 Section 134, as amended by the Safe, Accountable, Flexible, Efficient, Transportation Act: A Legacy for Users (SAFETEA-LU) federal transportation legislation, with a planning horizon of at least 20 years; and

WHEREAS, the BCATS *2035 Metropolitan Transportation Plan* identifies transportation facilities that should function as an integrated metropolitan transportation system; and

WHEREAS, the BCATS *2035 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 *2035 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 *2035 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 *2035 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, the BCATS *2035 Metropolitan Transportation Plan* was analyzed as a part of the Kalamazoo-Battle Creek-MI Maintenance Area and has been shown to conform with the State Implementation Plan (SIP) for air quality; 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 *2035 Metropolitan Transportation Plan* to be SAFETEA-LU compliant and approves its submission to the Michigan Department of Transportation for consideration by the Federal Highway Administration, Federal Transit Administration and the Environmental Protection Agency, as necessary.

ATTEST: (signed original on file) Date: June 22, 2011
Tom Matson
Chairperson, BCATS Policy Committee

Adopted by the Battle Creek Area Transportation Study Policy Committee at its meeting of June 22, 2011

BCATS

CHAPTER II
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 continuing, comprehensive, and cooperative 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 and sustainability.

The Study lies in the northwest corner of Calhoun County, Michigan (Figure II-1). The Study area [defined by the Metropolitan Area Boundary (MAB)] 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 II-2, includes areas anticipated 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 show growth primarily to the south of the pre-2000 urbanized area. Results of the 2010 U.S. Census are not yet available. Since 2007, growth in the metropolitan area has slowed significantly, and is not expected to rebound for many years given the condition of Michigan's economy. Therefore, BCATS does not expect there to be any changes in its MAB for some time.

Relative to the development and adoption of the BCATS *2035 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.

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

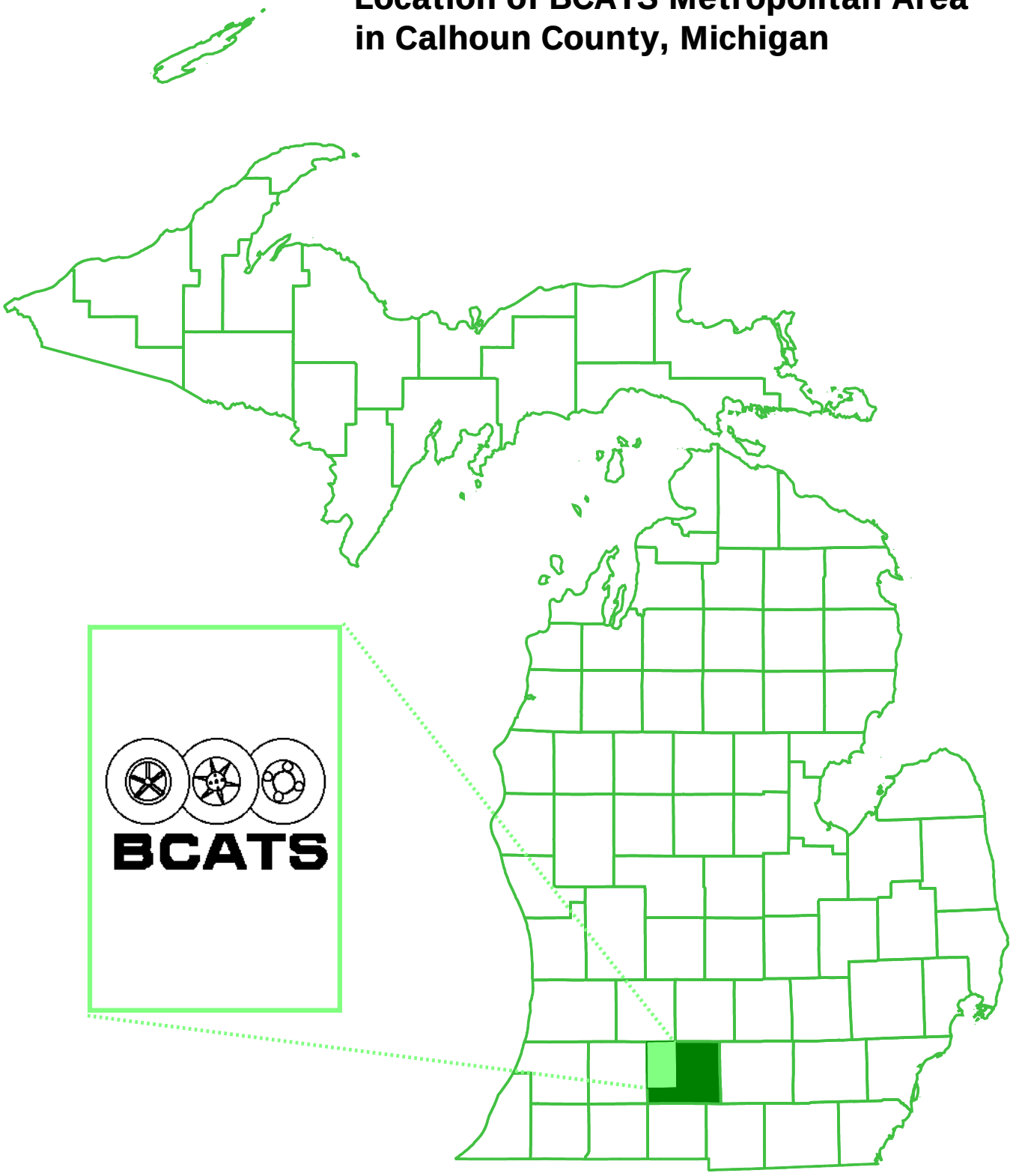
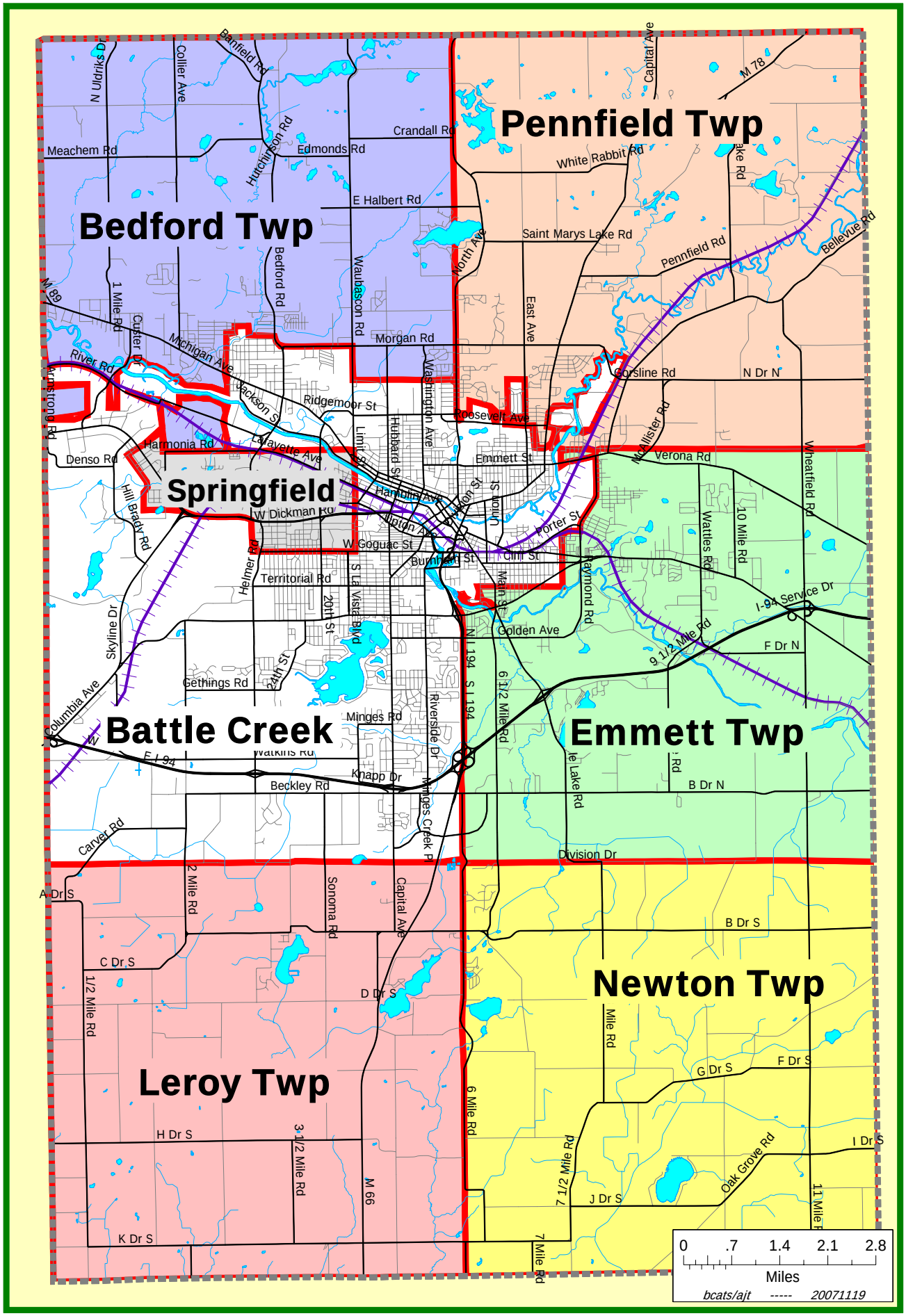


Figure II-2
BCATS Metropolitan Area & Jurisdictional Boundaries



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.

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 require 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 years 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. According to SAFETEA-LU, projects and strategies are to be considered 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;
3. Increase the security of the transportation system for motorized and non-motorized user;
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; and
8. Emphasize the preservation of the existing transportation system

These eight considerations are consistent with the goals for the long range plan that have been recently adopted by BCATS. The Plan components still must meet a financial constraint requirement first prescribed under ISTEA. SAFETEA-LU allows for the identification of "illustrative projects" which do not have to meet the strict fiscal constraint requirements. However, these projects are not considered available for programming until funding is identified and they are programmed into the constrained portion of the Plan.

BCATS updated the 2025 Plan to a 2030 horizon year with an effort that began in August, 2004. The goals and objectives from the 2025 Plan were reaffirmed by the BCATS Policy Committee in November, 2004. A steering team was assembled in August, 2004 to provide technical advice and to guide the development of the major Plan update. The technical aspects of Plan development were carried out over the next twenty month period. The update of all of the various components of the plan was completed in 2007, culminating in the adoption of the *2030 Transportation Plan* by the BCATS Policy Committee in November, 2007.

CURRENT PLAN UPDATE

The BCATS *2035 Metropolitan Transportation Plan* Update is considered a minor update since the last major update was completed only three years ago. Since new U.S. Census figures from the April, 2010 Census are not yet available, BCATS is using the same base data as was used for the *2030 Transportation Plan*. The goals and objectives for this plan update were reaffirmed by the BCATS Policy Committee in June, 2010 with only minor changes to reflect recent federal emphasis on liveability, sustainability, and climate change.

The results of the current Plan update will be the guide for the development of future Transportation Improvement Program (TIP) documents. The TIP was extended to be a four-year programming document for Federal transportation funds under SAFETEA-LU. Under previous legislation, the TIP had been a three-year document. The TIP has generally been updated in Michigan every two to three years. All projects in the BCATS area receiving Federal transportation funds must be included in the TIP.

As of May 16, 2007, the BCATS area, along with all of Calhoun County was designated as an attainment/maintenance area relative to ozone by the Environmental Protection Agency. A 2018 mobile source emissions budget was established. Due to this designation, BCATS still needs to consider the impacts to air quality of any recommended improvements in the update of the *2030 Transportation Plan* to a horizon year of 2035.

FUTURE PLAN DEVELOPMENT

It is expected that the Plan will be updated again in the 2014 to 2015 time period, based on current requirements. However, this may change when/if new federal legislation is enacted to replace SAFETEA-LU (which expired September 30, 2009 and continues to be extended by federal resolution).

BCATS

CHAPTER III
GOALS & OBJECTIVES

An important first step in any planning effort is the development of goals & objectives to support and to provide direction for the planning work to come. Goals & objectives reflect the values and desires of the individuals setting them. Goals & 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 & 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 & 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 & 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 & objectives for the Plan, and for BCATS in general, several existing plans and policy statements were considered as input, including: BCATS' previously adopted Goals & objectives from the 2030 Long Range Transportation Plan, Michigan Department of Transportation goals for the MI Transportation Plan (see chapter VI), State of Michigan Strategic Highway Safety Plan for 2009-2012, Michigan Climate Action Plan, and FHWA's SAFETEA-LU rules and regulations.

SAFETEA-LU requires transportation plans which involve all levels of government and all surface transportation modes. SAFETEA-LU intends to improve transportation and provides for consideration of projects and strategies that will:

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

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

The updated goals & objectives on the following pages were reaffirmed by the BCATS Policy Committee in June, 2010 to guide the minor update of the *2030 Transportation Plan* to a horizon year of 2035.

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

BCATS

CHAPTER IV

PUBLIC PARTICIPATION

SAFETEA-LU PUBLIC INVOLVEMENT REQUIREMENTS

SAFETEA-LU continued the provisions contained in the ISTEA and TEA-21 legislation that preceded 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. The metropolitan transportation planning rules and regulations implementing SAFETEA-LU, effective March 14, 2007, 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".*

The regulations continue 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 December, 2006, BCATS also had a documented Transportation Participation Plan (TPP) to guide involvement of the public and other interested parties. The TPP was adopted by the BCATS Policy Committee on December 20, 2006 in response to the new requirements under the federal SAFETEA-LU legislation. The TPP outlines who will be notified of BCATS activities. The listing of applicable interested parties in the BCATS area 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 (includes major employers in Ft. Custer Industrial Park)
- Community Action Agency
- Burnham Brook Senior Center
- Battle Creek Bicycle Club
- all area schools (intermediate school district plus 5 districts, and charter and private schools)
- local taxi cab operators
- unions for Battle Creek Transit drivers, mechanics and office staff
- W.K Kellogg Regional Airport
- Calhoun County Parks
- North Country Trail
- Disability Resource Center
- Norfolk Southern Railroad
- Canadian National Railroad

- City of Battle Creek Fire Department
- City of Battle Creek Police Department
- City of Springfield Public Safety
- City of Battle Creek Environmental Department
- Bedford Township Fire Department
- Leroy Township Fire Department
- Emmett Township Public Safety Department
- Calhoun County Sheriff Department
- Michigan State Police
- Calhoun County Human Services Department
- Calhoun County Senior Services
- Marian Burch Adult Day Care Center/Calhoun County Medical Care Facility
- Calhoun County Work First
- Calhoun Soil Conservation District
- Battle Creek Calhoun County Visitor and Convention Bureau
- Battle Creek Health System
- Southwest Regional Rehabilitation Center
- Behnke, Inc. (trucking)
- Kellogg Corporation
- General Foods/Post
- Kellogg Community College
- Miller 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
- AAA Insurance Branch Office Battle Creek

The TPP 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 2035 Transportation Plan. Several editions of BCATS' newsletter, "The Signal", promoted the Plan update process, the review of goals and objectives, preliminary project lists and the opportunity for public input. Since this was a minor update of the Plan just recently completed in 2007, a full-fledged general opinion survey (such as was conducted for the 2030 Plan) was not deemed necessary at this time.

When starting this minor update in early 2010, the BCATS staff worked off the previous survey results. Those results had been tallied by three groups: the general survey, surveys returned from the townships, and surveys returned from the neighborhood planning councils (NPCs). The results were combined from all three groups to determine overall ranking of the issues. The results of all the submitted surveys provided the following information:

- the highest priority by far was for the preservation of existing roadways, which ranked highest of the eight survey categories for all three survey groups
- the overall second highest priority was the specific widening of I-94, which ties in to the third highest priority of "widening" in general (where traffic volumes and/or other conditions will warrant)
- public transit ranked fourth overall and fourth in both the general survey and the neighborhood planning council (NPC) group, but ranked eighth in the township surveys
- topic areas of bicycle/pedestrian, traffic operations and repair and rebuild bridges were all within five points of each other in the final tally
- the traffic operations category scored the highest with the NPCs, likely because they are aware of the impact of these types of activities (many times safety related) due to the visits at their meetings from the City of Battle Creek's traffic engineering staff
- projects specific to improving air quality and lowering vehicle emissions are still not a high priority with the general public, ranking eighth overall in the BCATS survey

Based on the results of the survey, staff reviewed the "Goals and Objectives" and determined that they support the priorities derived from the survey results. Only minor changes were recommended to the Goals and Objectives, based on state and federal emphasis areas.

BCATS subsequently provided public updates regarding the status of the *Plan* development in periodic newsletters distributed to area groups, organizations, neighborhood planning councils, libraries, businesses, schools, etc., including all of the groups noted in the Transportation Participation Plan.

Copies of the newsletters/flyers which were distributed that had information about the *2035 Plan* development over the life of the project are included at the end of this chapter. BCATS also made copies available of these informational pieces to the local units of government and the local libraries for public distribution.

As displayed to the right & below, on May 25, 2011, BCATS published a formal notice of "request for comments" on the completed air quality conformity analysis for the *2035 Plan*, in conjunction with a request for comments on the overall *Plan*. It was published in the general circulation daily newspaper, the *Battle Creek Enquirer*. The public notice listed the dates of the BCATS' Committee meetings in June, 2011 as opportunities to comment as well. The notice is also presented in the air quality conformity chapter. Through final publication of the *Plan* document in late July 2011, no comments were received as a result of the notice. BCATS made draft documentation from the *Plan*, as it was completed, available to the public for review on its website as pdf documents throughout the *Plan* process.

8A Wednesday, May 25, 2011 Battle Creek Enquirer

REQUEST FOR COMMENTS ON TRANSPORTATION PROJECTS

THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public involvement in the final development & adoption of its ***2035 Metropolitan Transportation Plan*** for the BCATS' metropolitan area, comprised of the Cities of Battle Creek & Springfield, and the townships of Bedford, Pennfield, Emmett, Newton, & Leroy. The Plan identifies future transportation (including transit & non-motorized transportation) needs & appropriate projects for 2011–2035, and also includes an Air Quality Conformity Analysis demonstrating that the areawide transportation system, with the recommended projects, would result in lower emissions over the course of the Plan. That result is consistent with USDOT/EPA conformity rules, and supports the determination of conformity with the Federal Clean Air Act. Details of the Air Quality Conformity Analysis, and of projects recommended in the *Plan*, can be provided upon request, and may also be available online at ***www.bcatsmpo.org***. Several draft chapters of the *Plan*, as Adobe "pdf" files, are posted online already, and more will be added as completed & available, with the intent of the full draft *Plan* document being available by June 15, 2011 for review online, or paper copy upon request. Discussion and action regarding the 2035 *Metropolitan Transportation Plan* is anticipated to be conducted at the regular meetings of BCATS' Technical Committee on Wednesday, June 8, 2011, and Policy Committee on Wednesday, June 22, 2011. Both meetings begin at 1:30 pm in the Council Chambers of Springfield City Hall at 601 Avenue A. Public comment on BCATS' 2035 *Metropolitan Transportation Plan* is encouraged before or at those meetings; BCATS' regular meetings are open to the public. Comments will be accepted for 30 days following publication of this notice. Direct questions and/or comments to: BCATS, 601 Avenue A, Springfield, MI 49037; ph 269-963-1158, fax 269-963-4951, *e-mail bcats@bcatsmpo.org*.

BCATS

Battle Creek Area Transportation Study (BCATS)

The Newsletter of the Battle Creek Area Transportation Study

The Signal
Summer, 2010

BCATS

601 Avenue A, Springfield, MI 49037 (269) 963-1158 fax (269) 963-4951
e-mail: bcatsmpo@aol.com

July, 2010

Long Range Plan Update Moves Ahead in 2010

The Battle Creek Area Transportation Study is proceeding with a minor update of its 2030 Transportation Plan in order to extend the time horizon of the Plan to 2035. Federal regulations require that the Plan maintain a twenty-year horizon. Once 2010 closes out, the 2030 Plan will no longer have a full twenty-year span. Extending it to 2035 will address the requirement. Policy Committee approved the Goals and Objectives for the update of the 2030 Transportation Plan at its meeting on June 23, 2010. BCATS staff has already been working on various other components of the update such as: reviewing current traffic counts and socio-economic data to develop projections of future traffic on the major roadways in the BCATS area; evaluating safety data, assessing coordination with state plans and starting the process of consultation with other agencies and organizations about the plan update.

Simultaneously, other areas of transportation needs will be updated, as needed, for the 2035 Plan. These include: transit, non-motorized (including biking), pedestrian, rail crossings, bridges, freight movement, and safety (intersection changes, traffic signal upgrades, signing, etc.)

The selected improvements will be evaluated based on their potential impacts in the areas of: air quality, the natural environment, and social environmental justice.

BCATS expects to work on the Plan updating process for the next four to six months.

Public involvement is welcomed throughout the update process. Contact the BCATS office at any of the options listed to the right to find out how to be involved.

The purpose of this newsletter is to provide the public with information regarding the activities of the Battle Creek Area Transportation Study (BCATS). The newsletter also includes other local, regional, state, and national news affecting transportation in the Battle Creek area. The public is encouraged to contact BCATS at the above address or telephone (269) 963-1158, fax (269) 963-4951 or e-mail: bcatmpo@aol.com concerning issues in *The Signal* or other transportation matters.

Battle Creek Area
Transportation Study (BCATS)

601 Avenue A, Springfield City Hall
Springfield, MI 49037

TO:

BCATS

ACKNOWLEDGEMENTS - This document was financed through grants from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), and with local funds provided by Calhoun County Road Commission, the City of Battle Creek, and the City of Springfield. The views are those of the authors and do not represent the opinions of the funding agencies.

FY 2011 Unified Work Program Adopted

At its meeting of May 26th, the BCATS Policy Committee adopted the official Unified Work Program (UWP) (narrative and budget document) for the upcoming 2011 fiscal year, which starts October 1, 2010. In the upcoming year, BCATS will continue its efforts in the areas of: data collection, assessment of roadway condition, safety conscious planning, air quality planning, transportation and safety education, completion of the 2035 Transportation Plan update, and other short and long range planning studies.

MDOT COMPLETES ROADWORK

MDOT completed a resurfacing of M-96 (Helmer Road) from Columbia Avenue to north of I-94BL (Dickman Road) as part of a larger project to do microsurfacing on several sections of state trunkline facilities in Calhoun County. Although the project was obligated with 2009 funds, work on this part of the project was held for completion during the 2010 construction season.

Photo right: traffic snakes its way through the construction zone where crews were just finishing the overlay on Helmer Road, north of Dickman Road, in early June.

Improvements on the Horizon for Battle Creek's Intermodal Center

Battle Creek is the recipient of a $3.7 million grant under the federal ARRA program for improvements to the downtown intermodal center. Under the grant, the interior and exterior of the facility will be upgraded and improved for passenger and crew use in the areas of: passenger waiting areas, public restrooms, facility infrastructure, crew accommodations, and support for checked baggage service by AMTRAK. An architect has been retained and design work for the project is underway.

Battle Creek Area Transportation Study (BCATS)

The Newsletter of the Battle Creek Area Transportation Study

BCATS

February, 2011

"The Signal" BCATS 2035 Transportation Plan

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

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

BCATS Provides Update on 2035 Long Range Transportation Plan

The Battle Creek Area Transportation Study (BCATS) is moving ahead with the updating of its 20-year long range transportation plan. The current plan, approved in 2007, has a horizon year of 2030. The updated plan will have a horizon year of 2035. The 2035 Plan is a minor update to the 2030 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 gone through a process of reaffirming goals and objectives, developing projections of future population, employment, and traffic levels, and determining what levels of funding may be available to address future transportation needs. The development of a final 2035 Plan document over the next couple of months will complete this minor update process.

The BCATS Policy Committee reaffirmed, with only minor changes, nine 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
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 2007, almost all of the 2008-2010 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 three years, a total of approximately $37 million in federal funding, which was matched with state and local funding, was committed to projects within the metropolitan area.

Public input is welcomed at each phase in the development of the new 2035 Plan. CHECK OUT THE NEW BCATS WEBSITE AT: **www.bcatsmpo.org** VIEW INFORMATION ABOUT THE PLAN UPDATE AS MATERIAL BECOMES AVAILABLE.

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.

2035 Plan - Proposed Projects

The Major Road, Transit, Non-Motorized, and Other Projects included in the proposed listing for the 2035 Transportation Plan update at the present time are as follows:

2011 - **Beckley Road/B Drive N** (from M-66 eastward to 6 1/2 Mile Rd. - resurface and potential intersection projects along corridor)
Calhoun County Trailway Phase 1/Segment 1 (new multi-use trailway in Emmett Township in area of the Ott Preserve)
20th Street Bridge over the Kalamazoo River (rehabilitation)
20th Street (from Goguac St. to Columbia Ave. - resurface)
Capital Avenue SW (from Fairfield to Weeks and Cascade to Rebecca - resurface)
Helmer Road (from Beckley Rd. to Gethings Rd. - resurface)
North Avenue (from Capital Ave. NE to Roosevelt Ave. - resurface)
Two 10-Passenger Transit Vans (replacement)
I-94 Interchange at 11 Mile Rd. (modify lanes for turning traffic and complete modifications to one ramp)
M-37 (from Creekview Dr. to north County line - resurface)

2012 - **B Drive N** (from 8 1/2 Mile Rd. to 11 Mile Rd. - resurface)
Capital Avenue SW Phase 2 (from Weeks south to Cascade - resurface)
Jackson/Stringham (from Bedford Rd west and north to M-89/Michigan Ave. - resurface
20th Street/I-94 BL (W. Dickman Road) Intersection (redesign and reconstruct intersection, upgrade signals)
I-94BL/M-96/E. Michigan Ave. (from M-311/11 Mile Road to Wattles Road) (widen for 1/2 Mile west of M-311, resurface and restripe entire length for 3 lanes to tie into 3 lanes at either end of segment)

2013 - **B Drive S** (from 8 1/2 Mile Rd. east to 12 Mile Rd. - resurface)
Beckley Road (from Minges east to M-66 - resurface)
One 10-Passenger Transit Van - (replacement)
Farebox System Upgrade (update and upgrade transit farebox system)
Goguac Street (from Helmer Rd. east to Carl Ave. - resurface)
I-94/I-194 Intelligent Transportation System Message Signs (installation in Calhoun County along interstates)
Upton Avenue/Avenue A (Upton from Avenue A east to City limits and Avenue A from 20th St. east to Upton - resurface)

2014 - **I-94 Rest Area** (eastbound rest area just west of Capital Ave. SW - total rebuild of rest area)
6 1/2 Mile Road (from Christian Drive to G Drive N - resurface)
Raymond Road (from Verona Rd. to Golden Ave. - resurface)
Territorial Road and Evergreen Road (from Helmer Rd. to 20th St. + Avenue A to Harmonia Rd. - resurface)

2015 - **Transit Radio System, Computer System Upgrades** (updates and upgrades to transit facilities)
I-94 BL (W. Columbia Ave/Skyline Dr.) (from I-94 to Columbia Ave. - resurface and minor widening)

2016 - **Glen Cross Road Extension NEW FACILITY** (from M-66 eastward and then northward to B Drive N - new 3-lane road)

2018 - **Morgan Road Extension and Bridge NEW FACILITY** (from east of M-66 to Bellevue Road at N Drive N. - construct new 2-lane road segment with paved shoulders, and a bridge over the Battle Creek River and the railroad tracks)

2020 - **Verona Road** (from McAllister to Wattles - add continuous center left-turn lane and resurface)

2015-2035 **Numerous transit projects** to replace transit vehicles and equipment as they are eligible for replacement

2015-2035 **Selected MDOT Bridges** along I-94 to relieve construction/incident capacity and re-routing issues (reconstruction/rehabilitation)

Remaining Schedule for Development of the 2035 Transportation Plan

Feb. 2011

Apr. - May 2011

This process for developing a minor update to the BCATS 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 (that were just coming out at the time of the last Plan update) were incorporated into the preparation of this update. The list of projects will also undergo an assessment related to air quality impacts. The group of projects selected for the 2035 Plan is not allowed to result in worse levels of monitored pollutants as a result of the projects being implemented. Local approval of the final 2035 Transportation Plan is expected this spring. The BCATS Technical and Policy Committees meet the second and fourth Wednesday's, respectively of each month in the Council Chambers at the City of Springfield City Hall, 601 Avenue A, Springfield, MI at1:30p.m.

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

CHAPTER V
CONSULTATION

PROCESS

SAFETEA-LU requires 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. A letter, dated January 23, 2007, 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 DEQ - Kalamazoo District
- Michigan 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
- Lorence Wenke, State Representative
- Mike Nofs, State Representative
- Mark Schauer, 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 has also contacted the Nottawaseppi Huron Band of Potawatomi Indians (Tribal Chairperson and tribal planner). A copy of the letter sent to the tribe is also included at the end of this chapter.

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 (2011), updates to the W.K. Kellogg Airport Plan (2010), development plans along M-66 in Pennfield Township (2010-11), and update to the Calhoun County Coordinated Public Transit Human Service Agency Plan (2009).

The Consultation list received 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.

RESPONSES/COMMENTS

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 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.

The comments/issues generated by the 2007 letter that were still relevant were considered in the update of the 2030 Plan to a 2035 horizon.

BCATS did not receive any comments from the consultation list as a result of the newsletters published which promoted the *Plan* update.

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 2035 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 2035 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. For the few projects that are new roadways on a new alignment, the issue of potential environmental impacts is dealt with in the Environmental Mitigation chapter of this document.

There were no new comments to respond to from the Consultation agencies.

BCATS

Battle Creek Area Transportation Study
601 Avenue A - Springfield, MI 49015
269/963-1158 -- fax 269/963-4951
e-mail: *bcatsmpo@aol.com*

DATE: **January 23, 2007**

TO: **Agencies and organizations involved with plans and programs which may impact transportation - and for whom transportation decisions may impact their plans and programs**

FROM: **Patricia Karr, Executive Director** PAK

SUBJECT: **Introductory Letter - Request for Consultation with the Battle Creek Area Transportation Study, Battle Creek, Michigan**

Recent federal transportation legislation spelled out a concern with the impact that the plans and programs of those responsible for areas such as: environmental protection, land use management, historic preservation, provision of human service transportation, economic development, airport operations, freight movement, and other areas have upon the decisions, plans, and programs of federally designated transportation planning agencies.

The same legislation is now requiring metropolitan planning agencies, called MPOs, to have a specific "Consultation" element identified in their programs, and to use this element in the development of two existing major projects. These projects are: (1) a 20-year long range transportation plan; and (2) a 4-year implementing component of the long range plan (called a Transportation Improvement Program, or TIP).

As the MPO in the greater Battle Creek, Michigan area, the Battle Creek Area Transportation Study is working to identify appropriate agencies to include in this Consultation effort. BCATS requests a copy of any plans or programs your agency or organization may have that detail future development, location of sensitive resources, or any other inventory that may be useful in reviewing plans for future transportation projects. These items can certainly be provided electronically to BCATS at bcatsmpo@aol.com. Other contact options are included in the letterhead above. Please also provide the name of the best contact person within your agency or organization so that future contact can be completed as efficiently as possible.

BCATS is in the process of updating its long range transportation plan to the year 2030 at the present time. BCATS is also developing a new 4-year Transportation Improvement Program this winter and spring which will cover the time period of 2008-2011. As part of both of these activities, BCATS will send you correspondence notifying you of the projects included in these efforts and will solicit your comments. However, the intent of the consultation process is to ***exchange information*** and not just to have BCATS ask for comments on its plans and projects at any one point in time.

We do not wish this to be a burden to your organization - and be advised that all fourteen MPOs in Michigan have this same charge from the federal regulations - however, we do wish to develop a relationship that can be beneficial to both of our organizations. Thank you for your consideration and

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April 18, 2007

Ms. Laura Spurr
Tribal Chairperson
Nottawaseppi Huron Band of Potawatomi Indians
2221 - 1½ Mile Road
Fulton, MI 49052

Dear Chairperson Spurr:

I am contacting you on behalf of the Battle Creek Area Transportation Study (called BCATS) which is the metropolitan planning organization for the greater Battle Creek, Michigan area. As the metropolitan planning organization, BCATS is responsible for the planning and programming of transportation improvements involving many modes of travel. BCATS recognizes that your tribe has an interest in the transportation decisions which affect all areas of Calhoun County. The BCATS service area (which is only a portion of Calhoun County) includes the Cities of Battle Creek and Springfield and the Townships of Bedford, Pennfield, Emmett, Leroy and Newton.

Since your tribe has established land in trust within the BCATS' service area (in Emmett Township), BCATS would like to invite you, or your representative, to be involved in the activities of BCATS. BCATS has two standing Committees, the Technical Committee and the Policy Committee, which make decisions about transportation policies and programming. The Technical Committee reviews plans and programs and makes recommendations to the Policy Committee. The Policy Committee has final local approval regarding U.S. Department of Transportation funded projects. I invite you to attend a Committee meeting to see more of what BCATS is all about. I have included a joint meeting schedule for 2007 for your information.

BCATS has two major federally mandated programming requirements which are updated periodically. These are: a 20-year long range transportation plan; and a 4-year implementing component of the long range plan (called a Transportation Improvement Program, or TIP). BCATS is in the process of updating its long range transportation plan to the year 2030 at the present time. This spring, BCATS is also developing a new 4-year Transportation Improvement Program (the implementing plan) which will cover the time period of 2008-2011. As part of both of these activities, BCATS will request your comments on the planned improvements. A flyer detailing the updated Transportation Improvement Program is included with this correspondence for your review and comment.

Please feel free to contact me with any questions you may have about the BCATS organization.

Sincerely,

Patricia Karr

Patricia Karr
Executive Director

CHAPTER VI
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 ISTEA legislation was superceded by TEA-21 in 1998 and SAFETEA-LU in 2005, 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 W.K. Kellogg Airport (BTL), located approximately three miles west of downtown Battle Creek and immediately southwest of the City of Springfield. The Kellogg Airport completed an update 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 consultant completing the *Airport Layout Plan Update* was the firm of Mead & Hunt. The consultant has offices in Lansing, Michigan, and is headquartered in Madison, Wisconsin. 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.

Characteristics and Classification - W. K. Kellogg Airport is situated on 1,500 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 Airport Reference Code on the Airport Layout Plan is D-IV, indicating that this airport is capable of accommodating aircraft with approach speeds in excess of 141 knots (Aircraft Approach Category D) and wingspans under 171 feet (Airplane Design Group IV). The airport is classified as a general aviation airport in the National Plan of Integrated Airport Systems (NPIAS).

It is also classified as a Tier 1 airport in the 2000 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 W. K. Kellogg airport is 10,003 feet long, allowing it to serve a variety of users and nearly all aircraft types. The airport is currently constructing a new 4,100 foot parallel runway (5R-23L) which will be complete by spring 2011. It is located approximately 2,200 feet southeast of the exisitng primary runway. This runway will allow for the continued growth of the airport while separating the larger and faster jet aircraft from the smaller and slower piston aircraft. The new parallel runway will also likely push operations totals higher, as the ATCT frequently directs some activity to other area airports during peak periods. A full length parallel taxiway, Juliet (J), will be constructed as well. The airport also has runway 13-31 which is 4,835 feet long. This runway provides a crosswind runway when weather conditions require it. There are more than 284,000 feet of lighted taxiways. 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 6:00 am to 10:00 pm. After control tower hours, the ATCTs of Kalamazoo (10:00 -11:00 pm) and Chicago (11:00 pm - 6:00 am) allow for the 24-hour operation of the airport. A new midfield ATCT has been in operation since July, 2005, and is located on the southern portion of the airport property, near to one end of the primary runway.

Other structures on the property include thirteen City of Battle Creek-owned buildings and the old terminal building. There are two corporate-owned and 56 airport-owned hangars on-site. There are currently two fixed base operators (FBOs) providing services such as fuel sales, aircraft maintenance, flight instruction, airplane sales, charter operations, and/or aircraft refurbishing. There are buildings that also house the Air National Guard, Western Michigan University's College of Aviation, the Kellogg Corporate Flight Department, the Eaton Corporation Flight Department, and the FAA Regional Flight Inspection Field Office.

Utilization - W. K. Kellogg Airport has been one of the busiest airports in the State of Michigan. In 2009, W. K. Kellogg Airport was the third busiest 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 sixty-five private individuals, two large corporations, two fixed based operators (FBOs), one government agency, the Western University College of Aviation, and the Air National Guard. The Air National Guard base is currently home to the 110th Air operations Group (AOG) which utilizes C-21 Aircraft to transport military officials. The 110th AOG replaced the 110th Fighter Wing which was transferred to the Selfridge Air National Guard base. Scheduled commercial passenger service has not been provided at the airport since 1987, although the airport maintains the FAA required certification to provide passenger service to not only scheduled airline operations, but scheduled charter operations as well. Passenger service is provided at the Kalamazoo/Battle Creek International Airport located 23 miles to the west in Kalamazoo, Michigan. Table VI-1 below summarizes operations (including itinerant and local traffic) at the airport from 2006-2009.

TABLE VI-1
W.K. KELLOGG AIRPORT - AIRCRAFT OPERATIONS SUMMARY 2006-2009

OPERATIONS TYPE	2006	2007	2008	2009	2006-07	2007-08	2008-09
Air Taxi	1,096	831	682	409	-24.2%	-17.9%	-40.0%
Military	3,502	3,266	3,247	1,558	-6.7%	-0.6%	-52.0%
General Aviation	93,993	101,529	101,821	90,874	8.0%	0.3%	-10.8%
TOTAL	98,591	105,626	105,750	92,841	7.1%	0.1%	-12.2%

Aviation activity declined significantly after the terrorist attacks in 2001. While General Aviation traffic slowly continues to rebound, the military presence at the airport has significantly declined. The Air National Guard anticipates the arrival of a new flight mission in 2012 or 2013. This mission will focus on the new Joint Cargo Aircraft which is currently being manufactured. The potential impact to airport operations due to this mission is unknown at this time.

Other Considerations - Legislation enacted in 2000 by the State of Michigan created the Michigan SmartZone program. This legislation allows the Michigan Economic Development Corporation to designate SmartZones throughout the state. The zones are intended to stimulate the growth of technology-based businesses and jobs by aiding the recognized clusters of new and emerging businesses. Aviation, aerospace and e-learning research and development are the focus of the "Battle Creek Aviation SmartZone." State officials believe that the emphasis on e-learning and aviation is unique within the United States.

The Michigan Economic Development Corporation (MEDC) has designated the Airport and its surrounding environs as the "Battle Creek Aviation SmartZone." The SmartZone designation is anticipated to have an impact on the airport and its role in the community and its needs for the future. The goal of the "Battle Creek Aviation SmartZone" is to stimulate growth in technology based businesses and jobs, particularly within the areas noted in the above paragraph. Partners in the local SmartZone include the City of Battle Creek, Battle Creek Unlimited (BCU), WMU College of Aviation, and Kellogg Community College Regional Manufacturing Technology Center (RMTC).

The use of the W.K. Kellogg Airport as a cargo facility peaked in 1979 and was then associated with the provision of passenger service from the airport. All of the freight movement through the airport now occurs at Duncan Aviation at the south end of the airport and is done by ground transportation. Any freight ground movements are accommodated via South Airport Road and Helmer Road (M-96). From Helmer Road, the freight can be transported southwest via W. Columbia Avenue to I-94BL and on to I-94 for travel east (Detroit) or west (Kalamazoo/Chicago). Cargo can also be transported north to Lansing and Grand Rapids via M-96 (Helmer Road) to M-37 (Helmer Rd north of I-94BL).

U.S. Customs clearance services are provided in conjunction with 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 rental car operations on airport property.

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. The airport does not have any established noise abatement procedures. However, the City of Battle Creek is currently in the finals stages of a Federal Aviation Administration FAR Part 150 Noise Study. This study is providing the opportunity to examine the effects of aircraft noise on the community and to propose changes to procedures and local legislation to minimize the noise or the effects of the noise.

Access to the airport is primarily from Columbia Avenue, west of M-96 (Helmer Road). Helmer Road is a four-lane roadway along the eastern edge of the airport property. In 2009, a new midfield entrance road was constructed that

proceeds north from Columbia Avenue and acts as the new main entrance to the airport facilities. This road leads to the new 54,000 square foot airport administration, operations and maintenance facility, the new ATCT tower, the FAA Flight Inspection Area Office, Duncan Aviation, Centennial Aircraft Services, Waco Classic Aircraft Corporation, ten (10) private t-hangers, and a new private corporate hangar/office building. The Air National Guard has an entrance to its facilities from I-94BL/M-96 (Dickman Road) to the north. Access to 135 acres of airport property from the west is precluded by Grand Trunk Western Railroad tracks which run the entire length of the airport property. However, two studies were recently conducted for the purpose of determining feasibility and an estimated cost of road access to the west side of the airport. One study looked at constructing a bridge over the rail tracks and the other study looked at an at-grade crossing of the tracks off of Columbia Avenue. An cost estimate for each of these options was provided to the City of Battle Creek. There are no current plans to move ahead with a rail crossing to access airport property. There is a bridge over the rail tracks constructed by the military which only serves the Michigan Air National Guard Base.

Future Forecasts and Needs - The *Airport Layout Plan Update* estimates the number of aircraft based at the airport to increase from a 2005 total of 162 to 192 by the year 2020. Total aircraft operations are still projected to total more than 160,000 by 2020. The significant number, and wide variety of type of aircraft operations, occurring at the airport has created the need for added capacity, in the form of an additional runway, for the airport. This is now the runway which is under construction.

The *Airport Layout Plan Update* completed in 2003 found the annual service volume, or airfield capacity, to be 155,400 operations. FAA planning standards indicate that when an airport's annual operations reach 60% of its capacity, new airfield facilities that increase capacity should be planned. When annual operations reach 80% capacity, the standards indicate that the construction of the new facilities be initiated. These standards are based on the need to complete a thorough investigation of the alternatives, conduct the required environmental evaluations, and provide adequate time for project implementation before demand exceeds capacity.

The number of operations at the airport exceeded the 60% capacity threshold in 1998 with over 94,000 operations. In addition, it exceeded the 80% implementation threshold in 2002 with over 126,000 operations. However, operations dropped to under 92,000 in 2004, but again went past the 60% threshold in 2006, 2007, and 2008, reaching over 105,000 operations in 2008. The total is expected to rebound to the earlier levels, which exceeded 80% capacity, in the coming years. Therefore, the capacity improvements are underway as recommended in the February, 2005 study by Mead & Hunt.

Other planned improvements associated with the new parallel runway and to accommodate projected aviation demand over the next five years include: a new parallel taxiway to serve the new runway, additional aircraft hangars, apron expansions, pavement rehabilitations, and electrical system rehabilitations. The noise study currently underway will likely recommend property purchase and a ground run-up pad as options to deal with noise issues.

The airport activity noted above (implemented and future) has, and will, impact the adjacent roadways, especially M-96/M-37 (Helmer Road), 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 some additional traffic volume without the need for significant upgrading. Columbia Avenue is a two-lane roadway that will likely have adequate capacity in the near to mid-term (next 10 years or more). Recently, improvements to the South Airport Road/Columbia Avenue intersection were completed which relocated the intersection further east, away from a curve in Columbia Avenue. This also involved adding a traffic signal with dedicated left-turn lanes

at the intersection. These roadways will be evaluated in the next long range plan update for any further upgrades in the future, after the initial redevelopment of the area has had a chance to become fully operational.

At this time, the airport's consultant foresees no additional roadway projects to address airport needs that should be included in BCATS' 2035 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 during the evening hours. The City of Battle Creek has been investigating the requirements for creating a rail "Quiet Zone" in downtown Battle Creek. A significant cost would be incurred to implement all of the necessary crossing changes to allow for no, or lesser, train horn sounding in the area where hotels and other venues find the noise associated with passing trains to negatively impact their businesses. This is currently still under investigation by the City of 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 high-speed rail service.

Amtrak provides passenger services using the Norfolk Southern tracks that enter the area from the east, coming from Detroit, which pass through downtown Battle Creek's intermodal terminal and leave the area headed west to Chicago. This is the Wolverine line of service. Service is also provided along the Blue Water line, which runs from Port Huron to Chicago. Once west of Kalamazoo, Amtrak is able to travel at speeds of 95 miles an hour for a stretch of 45 miles. Rail passenger ridership saw a resurgence in 2003 in Michigan as well as nationwide. The annual number of riders at the Battle Creek station reached a new high of 56,120 in 2008 (Source: National Association of Railroad Passengers fact sheet, 2009). Rail passengers are also afforded an opportunity to "single ticket" an intercity bus connection to certain destinations through Indian Trails, an intercity operator upon their arrival in Battle Creek. Daily train movements, as of September 7, 2010, are shown in Table VI-2.

TABLE VI-2
AMTRAK SERVICE FROM BATTLE CREEK
DAILY (as of 9/7/10)

Destination	Departure Times
DEARBORN (eastbound)	11:30 pm
	4:13 pm
	10:02 pm
CHICAGO (westbound)	9:19 am
	9:54 am
	2:06 pm
	8:48 pm
EAST LANSING/ PORT HURON (northbound)	8:17 pm

Source: Amtrak fare and schedule website

Improvements in the form of service extensions and new stations may result in increased ridership and more trains operating in and out of Battle Creek's intermodal center. The implementation of high-speed passenger rail at some point in the future will require changes to the intermodal facility and possibly street closures or grade separations at

some rail/highway crossings. Work at the intermodal facility to implement some of the needed changes, and to update the facility in general, will be completed in 2011 as a result of federal funds provided to upgrade the Battle Creek intermodal facility. The Michigan Department of Transportation (MDOT) has been working on long range plans for high-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. This issue is discussed in detail in the "At-Grade Crossing" section later in this chapter.

MDOT has identified a preliminary listing of at-grade crossings to be modified in some manner to accommodate high-speed rail along the entire Detroit to Chicago corridor. The possible actions are upgrade warning devices from flashing lights to gates, maintain gates, provide for a grade-separation of roadways and rail tracks, or close crossings at some roads. Most of the crossings in the BCATS area are included in the listing for maintaining the gated crossing devices. However, MDOT recommended three crossings for grade separation (see listing on the next page). Some crossings in the eastern portion of Calhoun County (outside the BCATS area) are indicated for upgrading from flashing lights to gates, but this information is not included in this document.

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 2025 BCATS Transportation Plan, CN North America had approximately thirty (30) through freight train movements per day in the BCATS area and about 25 to 30 yard movements at its Emmett Street switching and maintenance yard per day. At that time, the freight traffic figures had increased by fifty percent and the yard movements were up by thirty-three percent after the railroad tunnel under the St. Clair River at Port Huron became fully operational in 1995. Statewide, the use of rail for transporting containers, especially truck trailers loaded on rail flatcars, has increased dramatically in the last several years. Between 2001 and 2005, this type of activity increased by 32 percent. In 2003, the truck-rail intermodal activity rose to be the top source of railroad freight revenue. It surpassed the transport of coal, which had previously been the top revenue producer. Continued increases in this type of 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. In the past, a major rail/auto conflict location was at the E. Emmett Street crossing in the area of the switching yard. This conflict was addressed several years ago and a grade separation/bridge was built to eliminate this serious congestion and safety problem. Additional intersections are being evaluated for grade separation due to high freight volumes. This is independent of the locations along the rail passenger route identified for grade separation, which are listed below. One location with high freight volumes included in the 2025 BCATS Transportation Plan is the at-grade crossing on M-37 (Helmer Road), just south of Avenue A.

Norfolk Southern assumed the operations of Conrail in the Battle Creek area. Norfolk Southern has a limited number of through freight trains per day operating along the Detroit to Chicago corridor. They do not operate any switching yard operations in the BCATS area. Future levels of activity are not known at present and Norfolk Southern is currently in negotiations to sell this stretch of track.

At-Grade Crossings - The increases expected in freight movements, combined with the potential for high speed passenger rail in the future, require that the status of all at-grade rail crossings in the area be examined. As noted earlier in this section, MDOT has identified at-grade crossings which would be affected by the development of a

high speed rail line from Detroit to Chicago. There are three grade separations recommended for the future in the BCATS area. However, no closings of at-grade crossings are included for the BCATS area on MDOT's master list. All other identified gated crossings would remain gated under MDOT's proposed long range plan. This MDOT plan only addresses tracks used with Amtrak service. The locations of gated crossings and potential grade separations for the Amtrak line, as determined by MDOT, are listed below:

Crossings Impacted by High Speed Passenger Rail & Treatment Recommended by MDOT

Gated Crossing Retained

Milepost	Description (Responsible Railroad)
114.260	11 Mile Road (NS)
116.000	Wattles Road (NS)
118.930	Spencer Street (NS)
119.230	I-94BL/Michigan Avenue (NS)
119.440	Greenville Street (NS)
119.860	Elm Street (CN)
120.050	Main Street (CN)
120.270	South Avenue (CN)
120.390	Division Street (CN)
120.520	Fountain Street (CN)
120.720	M-66/Capital Ave. SW (NS)
120.870	McCamly Street (CN)
121.550	Kendall Street (NS)
121.950	Angell Street (NS)

Grade Separation Recommended

Milepost	Description (Responsible Railroad)
122.700	20th Street (NS)
123.650	Helmer Rd/S Bedford Rd (NS)
126.100	Clark Road/Custer Drive (NS)

NS = Norfolk Southern CN = Canadian National

TRUCKING

Background - Whether the criteria is weight or value, commodity movement in Michigan is handled overwhelmingly by truck transport; 70% and 86% respectively in 2003, according to research 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." Total private and commercial trucks registered in Michigan numbered 2,201,144 in 1994. By 2004, that number had risen to 3,612,504, a 6.4% average annual rate of change. (Note that SUVs are recorded as trucks in the Michigan statistics.) 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. BCATS has a copy of the most recent truck route map at its offices for reference.

There are approximately sixteen 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. 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 - In reviewing the website of the American Trucking Association (ATA) (www.truckline.com) 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 broadened its areas of concern to include the following topics which can impact transportation planning:

- energy (cap and trade, ultra low sulfur fuels, biodiesel, comprehensive energy plans)
- hazardous materials (regulation, tracking technology)
- tolls and public/private partnerships
- truck size and weight issues
- federal transportation reauthorization
- safety (hours of service, vehicle safety, distracted driving)
- security (emergency preparedness, pandemic planning, national infrastructure protection plan, terrorism)
- cross border topics (NAFTA, ACE (automated customs), customs-trade partnership against terrorism)

These concerns are taken into consideration, to the extent possible, within the context of the development of this *2035 Metropolitan Transportation Plan.*

CHAPTER VII
INTERMODAL CONSIDERATIONS
PEDESTRIAN & NON-MOTORIZED

There are several related areas of interest in the provision of transportation facilities to meet the needs of pedestrian and 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.

Recent passage of "Complete Streets" legislation by the Michigan legislature will add additional planning and development requirements to transportation projects to adequately consider all users of the roadway system. Implementation of the legislation is expected to take the next two years and its impacts on BCATS' activities will not fully known until that time.

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 federal Transportation Enhancement grants, 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 a limited number of 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.

Recently expanded Americans with Disabilities Act (ADA) enforceable requirements now include the installation of not only sidewalk ramps at crosswalks, but also the addition 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 or resurfaced.

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 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.

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 and another portion (from the Emmett St/Verona Rd intersection with Raymond Rd southeastward through Ott Biological Preserve & Kimball Pines Park to Historic Bridge Park off Wattles Rd/9 Mile Rd just north of I-94 & the Kalamazoo River) will begin construction in late 2011. The CCRC received a federal Transportation Enhancement grant to prepare a comprehensive plan for the development of these trails county-wide. Now the plan is beginning to be implemented. 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. This plan is a 20-year vision for the City's non-motorized system. The City utilized the assistance of consulting firm Wade Trim to complete the plan and incorporated an extensive amount of public involvement in the development of the plan. 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
- 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

Chapter XII - TRANSPORTATION DEFICIENCY ANALYSIS includes a discussion of non-motorized "deficiencies" relative to a BCATS areawide future non-motorized transportation network that was presented as part of BCATS' *2025 Transportation Plan* (September 2000). In reviewing the status of non-motorized facilities within the BCATS area for this *Plan* update, it is recognized that the local agencies have had a very 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 continue supporting the plans of the local agencies within the programming of its own long range transportation plan. There is no need to recreate the excellent process recently used by the City of Battle Creek for determining non-motorized needs. The city's process addressed a significant amount of the "needs" in regard to this system and did an excellent job of looking beyond the borders of the City of Battle Creek.

BCATS

CHAPTER VIII

INTERMODAL CONSIDERATIONS

TRANSIT, TAXICAB, INTERCITY BUS, & RIDESHARING

TRANSIT

Public transportation service in the area encompassed by BCATS is currently provided by Battle Creek Transit (BCT). According to BCATS' 2000 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 housed 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.

TABLE VIII-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 fourteen (14) traditional large buses for its line-haul service and 9 van-type vehicles for demand-response operations. As of October,2010, the average age of BCT large buses was 3.4 years. Since Federal guidelines dictate that large buses can be replaced at 12 years of age, the BCT fleet has many years to go before vehicles are being replaced again.

The plans for the next 25 years call for replacement of both 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 VIII-1). BCT plans to rotate replacement of shelters on an on-going basis, addressing those in the worst condition first. As new destinations develop, BCT evaluates the need for service and service amenities for those locations.

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 recent safety projects for transit include improved facility exterior lighting, security awareness training for staff, and security cameras on the buses.

BCT is has outfitted its line-haul fleet of buses with bicycle racks so that passengers can load their bikes on the bus and travel to a destination where they can continue their bicycle trip. This upgrade to BCT's buses represents an increase in intermodal connectivity within the BCATS area.

A 25-year 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. They 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.

TAXICAB SERVICES

There is currently remains only one taxicab service operating in the BCATS area, which is Battle Creek Cab. In the 2025 Transportation Plan, there were five cab operators. There are also three limousine operators licensed in the City of Battle Creek to provide specialty service. The cab and limousine services are licensed and are regulated by the City of Battle Creek in order to operate within the City Limits. Most of these services are available on an on-call basis 24-hours per day, 7 days per week.

INTERCITY & 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 VI, 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 is included within the Kalamazoo Local Ridesharing Office (LRO), which encompasses 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. 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 were expanded as demand for carpooling spots increases. The Beadle Lake Road lot currently has 53 spaces and the Skyline Drive lot has 65 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. 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.

BCATS

CHAPTER IX

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

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) maintained the prior legislation's requirements for a statewide long range transportation plan (SLRP). The state plan must cover a twenty-year time frame and must be developed in cooperation with the Metropolitan Planning Organizations (MPOs). Upon completion of the plan, future transportation improvements need to be consistent with the plan. For that reason, Michigan's State 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 GOALS

MDOT started the development of its "*MI Transportation Plan Moving Michigan Forward*" process with two major transportation "summit" meetings, which were held in December 2003 and December 2004. This process resulted in the identification of a long-range vision for Michigan's transportation system. The vision was identified as:

> *"Michigan will lead the 21st century transportation revolution as it led innovation in the 20th century. We will move people and goods with a safe, integrated, and efficient transportation system that embraces all modes, is equitably and adequately funded, and socially and environmentally responsible. Michigan's transportation community will work together to ensure that resources are in place to deliver the system."*

The vision was then defined in some measure of detail to provide guidance for planning and implementing future investments. Nine components were identified to put the vision into action. The system was characterized to be: purposeful, prioritized, coordinated, safe, advanced, integrated, appropriate to the setting, flexibly funded, and responsive.

MDOT established four goals in the Plan that incorporate the above components. The goals are designed to achieve the transportation summit meetings' vision for Michigan's transportation system.

Goal 1: **System Improvement**: Modernize and enhance the transportation system to improve mobility and accessibility.

Goal 2: **Efficient & Effective Operations**: Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners.

Goal 3: **Safety & Security**: Continue to improve transportation safety and ensure the security of the transportation system.

Goal 4: **Stewardship**: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner.

METROPOLITAN PLANNING ORGANIZATION PLANS

SAFETEA-LU, as well as its predecessors TEA-21 and ISTEA, requires 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 rather than simply corridors. MPO plans must also undergo air quality conformity testing, if applicable, before approval is granted.

INTEGRATION OF PLANS

MI Transportation Plan: Moving Michigan Forward

MDOT completed its "*MI Transportation Plan: Moving Michigan Forward"* through its consultant, Wilbur Smith Associates, in March, 2007.

The Michigan Department of Transportation has stated a commitment to on-going public involvement in its planning activities and completed extensive public involvement in the development of its updated Plan.

The *MI Transportation Plan* includes approximately eighteen technical reports which provide valuable support/ information for the State's Plan. These reports constitute a library of reference material specific to transportation in Michigan. BCATS has access to these reports and has been able to utilize information from the reports to develop its own long range plan update. BCATS' goals for its 2035 Transportation Plan update are consistent with the State's goals, as referenced on the preceding page.

The *MI Transportation Plan* establishes nineteen (19) multi-modal corridors as "Corridors of Highest Significance" when determining how to achieve the "Preferred Vision" for transportation in Michigan. One of the technical reports, *Corridors and International Borders Report*, defines and identifies these corridors. Broad strategies are identified for each corridor. The portion of Interstate 94 (I-94) which traverses the BCATS area is included in two of the identified highly significant corridors (Detroit/Chicago and Port Huron/Chicago). In addition, the I-94 Corridor (Port Huron to Detroit to Indiana State Line) was submitted by MDOT to FHWA for designation as a "Corridor of the Future" under a new federal designation. Specific objectives and future strategies for the corridor were detailed in the application that was prepared for this request. This information was taken into consideration in the development of projects for the BCATS' 2030 Transportation Plan and has been considered during the BCATS Plan update to 2035.

State Highway Safety Plan

The SAFETEA-LU legislation also required states to develop a State Highway Safety Plan. In anticipation of this requirement, Michigan's "Governor's Traffic Safety Advisory Commission" (GTSAC) commissioned the preparation of a strategic highway safety plan (SHSP) in October, 2004. The SHSP, which was published in August, 2006, provided for addressing twelve emphasis areas with the goal of reducing Michigan's fatalities to 1.0

fatalities per 100 million vehicle miles traveled by 2008, along with a corresponding reduction of 15% in serious injuries as well. The twelve (12) emphasis areas were:

- alcohol/drug impaired driving
- commercial vehicle safety
- drivers age 24 and younger
- driver behavior and awareness
- intersection safety
- lane departure
- motorcycle safety
- occupant protection
- pedestrian and bicycle safety
- senior mobility and safety
- traffic records and information systems
- work zone safety

In early 2008, the GTSAC initiated an update of the SHSP which resulted in the development of a new SHSP document in 2009. The update contained specific fatality and serious injury goals and some modification of the emphasis areas that had been identified in the original SHSP. The specific goals were for Michigan to strive for:

- reduction in traffic fatalities from 1,084 in 2007 to 850 in 2012
- reduction in serious traffic injuries from 7,485 in 2007 to 5,900 in 2012

Traffic crash data available for calendar year 2009 indicates that Michigan has superceded the fatality and serious injury goals already, with a total of 806 fatalities and 5,233 incapacitating injuries in 2009. The early meeting of these goals may be due to the serious downturn in Michigan's economy since 2008, with the corresponding reduction in vehicle miles of travel that has been experienced.

After review of the twelve (12) emphasis areas identified in the first SHSP, the plan update group decided that there were adequate methods already in existence through the Michigan Department of Transportation to address the work zone safety issue. Therefore, that topic was removed from the list of emphasis areas considered in the SHSP update and the work group for this topic was dissolved.

The eleven (11) remaining emphasis areas have been considered in developing safety related projects for BCATS' 2035 Transportation Plan.

Michigan Climate Action Council *Climate Action Plan*

In March, 2009 the Michigan Department of Environmental Quality published a document entitled "*Climate Action Plan" (CAP)* to address Michigan's response to the issues of: climate change, reduction in greenhouse gases, and changes to the future of energy usage in the state. The Plan not only makes recommendations specific to the issue of climate change, but also to the transitioning of Michigan's economy by "promoting new technology development, improving energy efficiency, conserving natural resources, and developing clean and renewable energy sources." (Climate Action Plan, p.11)

The CAP presents Michigan's "platform" on climate change. It represents a uniform position for all Michigan leaders to take on the topic of climate change by presenting a climate action strategy. Fifteen bullet points present tactics to be used in addressing the issues of climate change. The points are summarized as follows:

- Michigan should take action now to reduce GHG in Michigan and to be actively involved in the development of national climate policy
- Strengthen the auto industry, but dramatically diversity Michigan's economy
- Stress a federal-state partnership in any nation efforts to reduce GHG

- Push for national cap and trade legislation that is economy wide
- Federal legislation should have national emission reduction targets
- Federal legislation must drive immediate GHG reductions
- Federal legislation should ensure reduction of GHG, not just shifting of GHG
- Federal program should encourage rapid technology development and use
- Federal program should be fluid to allow for changes in technology
- Effective measures to address climate change must be global
- Federal policies should not put the domestic auto industry at a disadvantage
- All impacts of reducing GHG emissions should be disclosed
- A national cap and trade program should control future cost uncertainties
- Care should be taken to avoid unintended consequences
- Revenue derived from GHG regulation should be returned to the states in proportion to that collected, after a draw down for technology research

Source: *Michigan Climate Action Plan*, pp. 12-13

Overall, the CAP proposes GHG reduction goals for Michigan of a 20% reduction of GHGs from 2005 levels by 2020, and an 80% reduction of GHGs from 2005 levels by 2050. The CAP includes a package of 53 adopted policy recommendations for reducing GHGs and addressing energy and commerce issues in Michigan. The recommendations are broken down by sector, with transportation targeted as a specific sector with nine (9) policy recommendations in the areas of: low-carbon fuel use, eco-driver programs, truck idling policies, advanced vehicle technology, congestion mitigation, land use planning and initiatives, transit and travel options, increase rail capacity, decrease rail freight system bottlenecks, and Great Lakes shipping.

BCATS has assessed the content of the CAP for areas that can be incorporated into the update of the BCATS' long range transportation plan.

CHAPTER X
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 X-1 & 2 at end of this chapter, and Figure II-2)

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 *2035 Metropolitan Transportation Plan* prioritizes deficient corridors, provides improvement recommendations, and suggests an implementation program to address identified deficiencies.

The methodology for developing the socio-economic data is outlined in this chapter. TAZ-level data was calculated for the initial TDFM base year of **2002**, the *Plan* horizon year of **2035**, and for "interim" years of **2011**, **2018** & **2025** required for the air quality analysis outlined in Chapter XVIII. Further detail relative to the 2002 (base year) and forecast data can be provided upon request.

METHODOLOGY

Since this *2035 Metropolitan Transportation Plan* was considered to be only an update of BCATS' *2030 Transportation Plan*, and since appropriate data from the 2010 Census was not expected to be available until spring 2012, it was decided to utilize the TAZ-level population & households, and employment data prepared for the *2030 Transportation Plan* (November 2007) as the base upon which this *Plan's* calculations were built.

Population & Households

The following steps 1-5 outline the early 2006 development of population & households data for use in BCATS' *2030 Transportation Plan.* Steps 6-9, implemented in late 2009, produced updated data for this *2035 Metropolitan Transportation Plan.*

1. 2000 Census block populations in households, and households, were aggregated into each of BCATS' 292 TAZs encompassing an individual block or collection of blocks, using BCATS' computerized geographic information system (GIS) program, *TransCAD*.
2. 2000 Census population & households and forecasts for 2005-2030 (at five-year intervals) by Statewide TAZs in Calhoun County were obtained from the MDOT Travel Demand Analysis Section. BCATS' TAZs generally "nest" within the 27 Statewide TAZs designated in the BCATS metropolitan area. The MDOT estimates are based on a computerized economic forecasting tool known as REMI[1].
3. Each BCATS' TAZ was "tagged" with the Statewide TAZ number that it resides in.
4. Annual rates of change in each Statewide TAZ population & households were calculated for each five-year interval from 2000-2030.
5. The annual rate of change for the appropriate five-year interval of its corresponding Statewide TAZ was applied to the 2000 Census population & households of each BCATS TAZ, first to calculate 2002 base year levels, then to calculate 2005-2030 TAZ figures at the five-year benchmarks.
6. The potential for increased numbers of households in excess of that drawn from the Statewide TAZ growth rates was identified in several BCATS' TAZs. In the City of Springfield, a developing subdivision in TAZ 107, south of Dickman Rd & east of 20th St, was reflected with 40 additional households in 2015. A substantial "planned unit development" has been suggested in TAZ 246 in Leroy Township, north of B Dr S between Capital Ave SW & M-66; for 2015, an additional 200 households were included in that TAZ. Possible residential developments in TAZ 131, appurtenant to the imminent new Wal-Mart on the east side of M-66 (Capital Ave NE) at Morgan Rd in Pennfield Township, are accounted for with 120 households added in 2015.
7. The respective TAZ population per household in 2015 was applied to the added numbers of households listed in step #6 to expand the TAZ population figures accordingly, and the increases were carried forward to the 2020, 2025, & 2030 estimated TAZ population & households values.

[1] Recent Federal transportation legislation has placed a number of new demands on both MDOT and the state's urban areas' travel demand forecast models. One requirement is the need for a Statewide Plan and Transportation Improvement Program, and the integration of the urban and statewide planning processes. This requirement led MDOT to develop a consistent set of population and employment forecasts in cooperation with regional planning agencies and Metropolitan Planning Organizations to be used in the travel demand modelling process. MDOT contracted with the University of Michigan Institute of Labor and Industrial Relations (UM-ILIR) to develop an integrated set of employment and population forecasts for each county in Michigan as well as national forecasts by region. The historical data source and model used by the UM-ILIR was developed by Regional Economic Models Inc. (REMI). MDOT specified the forecasted data set in terms of employment detail, age group, and geographic breakdown. The REMI model is a linked population economic model that is driven by U.S. economic and population forecasts and the influence of births and deaths by age group on the resident population. Employment increases at the national level stimulates growth by sector at the county level. As the labor force participation rate increases wages increase which results in an influx of population to fill the new jobs. At some point wages may become high enough to retard employment growth. The natural increase component of the population forecasts is the result of expected births and deaths by age groups.

8. TAZ-level population & household values for 2011 and 2018 were interpolated between the nearest five-year benchmarks respectively, while the 2025 values were already complete after step #7.
9. *Plan* horizon year 2035 population & household numbers were determined by applying the average annual growth rate calculated over 2010–2030 in each TAZ to the 2030 values cumulatively to 2035.

Employment

The place, type, and level of employment facilities are work-based socio-economic characteristics used to estimate the number of trips terminated in individual TAZs (i.e. destinations). Each of the six types of workplaces (manufacturing, wholesale trade, retail trade, services, government, and agriculture/mining) have unique trip-generating characteristics relative to the number of workers. The employment figures compiled by economic sector can be used to estimate the number of trips by workers in each TAZ, and the number of other trips attracted to a TAZ, especially applicable where a large concentration of retail employment exists.

The following steps 1-6 outline the early 2006 development of employment data for use in BCATS' *2030 Transportation Plan.* Steps 7-10, implemented in late 2009, produced updated data for this *2035 Metropolitan Transportation Plan.*

1. Initial estimates of 2002 employment by TAZ were determined by interpolation between the 1998 and 2025 number of employees calculated for BCATS' *2025 Transportation Plan* (September 2000). For use in the TDFM, employment is divided into three major categories: Retail, Services (including Finance, Insurance, & Real Estate; Business Services; and Government - Health/Social Services & Public Admin), and Other (including Agriculture, Forestry, & Fishing; Mining; Construction; Manufacturing; Transportation, Communications, & Public Utilities; and Wholesale Trade).
2. The initial estimates of 2002 employment by TAZ were reviewed and supplemented with information from MDOT's Statewide & Urban Travel Analysis (SUTA) section. The MDOT data also facilitated tabulation of employment levels in TAZs 285-292 in southern Leroy and Newton Townships. Those "new" TAZs were not part of BCATS' metropolitan planning area until late 2003, and so not part of the data prepared for the *2025 Transportation Plan.*
3. Employment forecasts in each of the three categories (Retail, Services, & Other) for 2005-2030 (at five-year intervals) by Statewide TAZs in Calhoun County were obtained from MDOT's SUTA section. The MDOT employment estimates are based on the same computerized economic forecasting tool, REMI, discussed before under the population & households methodology.
4. Each BCATS' TAZ was "tagged" with the Statewide TAZ number that it resides in.
5. Annual rates of change in each Statewide TAZ Retail, Services, & Other employment were calculated for each five-year interval from 2000-2030.
6. The annual rate of change for the appropriate five-year interval of its corresponding Statewide TAZ was applied to the 2002 retail, services, & other employment values of each BCATS TAZ, to calculate 2005-2030 TAZ employment figures at the five-year benchmarks.
7. The potential for increased employment in excess of that drawn from the Statewide TAZ growth rates was identified in several BCATS' TAZs. Of significance are the following:
   - For 2010, 150 retail employees and 650 service employees were added among TAZs 147, 213, 214, 215, and 227 relative to the late 2009 opening of a casino in TAZ 214. In 2015, an additional 225 retail employees and 525 more service employees were assigned to the same TAZs.
   - In the City of Springfield, 50 other employees in 2010, and 100 other employees in 2015, were added to account for development of the Helmer Farms Industrial Park (TAZ 182) and redevelopment of vacant industrial land in TAZ 177.
   - The Veterans' Affairs Medical Center in TAZ 268 was assigned an additional 100 service employees in 2010 and 50 more service employees in 2015.

- In each five-year benchmark year from 2010-2030, the twelve TAZs that comprise Fort Custer Industrial Park (FCIP) (TAZs 166-168, 260-267, & 269) were assigned a total of 20 retail, 252 service, and 845 other employees to add to the totals generated by application of the Statewide TAZ growth rate in each employment category. *Given the recent economic recession nationwide, the forecast increases in the FCIP TAZs were reduced 25% to a total of 15 retail, 189 service,and 634 other employees added every five years across the FCIP TAZs, for this Plan update.*
- Expansion of Duncan Aviation in TAZ 169 is expected to continue, with 100 other employees added in 2005, 2010, & 2015, and 20 more other employees in 2020, 2025, & 2030.
- Reconstruction of the Meijer retail store at Columbia & Helmer in TAZ 163 was completed in early 2009. Expected expansion and adjacent commercial development did not materialize, so additional retail and service employment that had been included for 2010 & 2015 was removed from TAZ 163.
- A new Wal-Mart on the east side of M-66 (Capital Ave NE) at Morgan Rd in Pennfield Township, in TAZ 131, should open in 2012. 680 retail employees and 100 service employees were added to the 2015 benchmark year values. Adjacent TAZs 132 & 203 share an added 100 retail and 50 service employees in 2015.

8. The respective TAZ employment changes listed in step #7 were carried forward to the 2020, 2025, & 2030 estimated TAZ employment values.
9. TAZ-level employment values for 2011 and 2018 were interpolated between the nearest five-year benchmarks respectively, while the 2025 values were already complete after step step #8.
10. Plan horizon year 2035 employment numbers were determined by applying each employment category's percent change (increase or decrease) from 2025 to 2030 in each TAZ to the 2030 values.

Table X-1 – 2011 & 2035 Estimated Population & Employment by Local Government Unit

	Local Govt Unit	2011 Population in Households	2035 Population in Households	Pop % Chg 2011--2035	Pop # Chg 2011--2035	% of BCATS Area Change
POPULATION	CITY OF BATTLE CREEK	53,791	55,619	3.40%	1,828	23.9%
	BEDFORD TOWNSHIP	9,467	9,370	-1.02%	(97)	-1.3%
	EMMETT TOWNSHIP	12,741	15,054	18.15%	2,313	30.3%
	LEROY TOWNSHIP	3,983	5,648	41.80%	1,665	21.8%
	NEWTON TOWNSHIP	2,862	3,653	27.64%	791	10.3%
	PENNFIELD TOWNSHIP	9,154	10,239	11.85%	1,085	14.2%
	CITY OF SPRINGFIELD	5,044	5,103	1.17%	59	0.8%
	BCATS Metropolitan Area	*97,042*	*104,686*	*7.88%*	*7,644*	*100.0%*
	Local Govt Unit	**2011 Total Employment**	**2035 Total Employment**	**Empl % Chg 2011--2035**	**Empl # Chg 2011--2035**	**% of BCATS Area Change**
EMPLOYMENT	CITY OF BATTLE CREEK	44,654	49,640	11.17%	4,986	64.4%
	BEDFORD TOWNSHIP	2,409	2,558	6.19%	149	1.9%
	EMMETT TOWNSHIP	8,239	9,814	19.12%	1,575	20.3%
	LEROY TOWNSHIP	504	553	9.72%	49	0.6%
	NEWTON TOWNSHIP	205	236	15.12%	31	0.4%
	PENNFIELD TOWNSHIP	2,378	3,138	31.96%	760	9.8%
	CITY OF SPRINGFIELD	3,769	3,959	5.04%	190	2.5%
	BCATS Metropolitan Area	*62,158*	*69,898*	*12.45%*	*7,740*	*100.0%*

CHAPTER XI

TRAVEL DEMAND FORECAST MODEL (TDFM)

Capacity deficiency identification and analysis is a key ingredient in an area's long-range transportation plan. Both the identification of deficiencies and the plan itself are dynamic; initiated under ISTEA and continuing under TEA-21 and now SAFETEA-LU, they are to be updated every four to five years to reflect changing transportation and land use conditions. In essence, the 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.

The purpose of capacity deficiency identification and analysis is to determine where future congestion is projected to occur or where current safety deficiencies related to a roadway's capacity may exist. Deficiency identification and analysis is done with a computerized network model of the street and highway system. The identification and analysis of deficient corridors and links is intended to serve as the basis for system improvement/expansion funding decisions. Technical terms utilized in this discussion are defined in the glossary at the front of this document.

MODEL PROCESS DESCRIPTION

Travel demand forecasting within the Battle Creek urban area has been completed through application of a travel demand forecast model (TDFM) developed and maintained by staff of MDOT's Statewide & Urban Travel Analysis (SUTA) section in Lansing, in cooperation with the BCATS staff. The model is a computer simulation of current and future traffic conditions, and is based in *TransCAD*, a transportation modeling software and geographic information system (GIS). This is the same GIS program used in-house by BCATS. Since the model is a "systems-level" transportation planning model, the deficiencies identified are generalized, 24-hour (daily) deficiencies, based on generalized 24-hour capacities and traffic assignment volumes.

The urban travel demand forecasting model development process generally consists of six phases:

1. Data Collection, in which socio-economic and facility inventory data are collected.
2. Trip Generation, which calculates the number of trips produced in or attracted to a traffic analysis zone (TAZ).
3. Trip Distribution, which determines how much travel will occur between TAZs, based on the "attractiveness" of the other zones.
4. Traffic Assignment, which determines what routes trips will take between zones.
5. Model Calibration/Validation, which involves adjusting the model and verifying that the volumes (trips) simulated in traffic assignment replicate (as closely as possible) actual, observed traffic counts.
6. System Analysis, to test alternatives and to analyze changes in order to improve the transportation system.

There are two basic systems of data in the travel demand forecasting process. The first system is the street and highway network (links). The network generally includes only links of the "collector" functional classification and higher. The second data organization mechanism involves the traffic analysis zones (TAZ's). These geographic

areas are 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.

TABLE XI-1
SOCIO-ECONOMIC DATA SUMMARY

Data Type	2011	2035	Change
POPULATION	97,042	104,686	7.9%
HOUSEHOLDS	40,593	45,486	12.1%
RETAIL EMPLOYMENT	13,266	13,427	1.2%
SERVICES EMPLOYMENT	24,839	31,015	24.9%
OTHER EMPLOYMENT	24,053	25,456	5.8%
TOTAL EMPLOYMENT	62,158	69,898	12.5%

DATA COLLECTION

The BCATS staff produced population (in households), households (occupied housing units), and employment summaries by TAZ for input into the model. As described in Chapter X, each data item by TAZ was retrieved from the previous *Plan* process for the 2002 base year, and then forecast to the horizon year 2035, as well as to "interim years" of 2011, 2018, and 2025 required for air quality conformity testing. Additional discussion of the socio-economic data and air quality conformity is presented in Chapters X and XVIII respectively. A summary of the data for the BCATS metropolitan area, as used within the TDFM, is shown in Table XI-1.

TRIP GENERATION

Trip generation is the process by which the TDFM translates the socio-economic data into numbers of person trips. Generally the households produce trips and the employment places attract trips. For each TAZ the number of trips produced and attracted to a zone are determined based on the socio-economic data for each zone. The three trip purposes used in the model are home-based work (HBW), home-based other (HBO), and non-home-based (NHB). 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. Details of travel characteristics generated from the model can be provided upon request.

TRIP DISTRIBUTION

Trip distribution involves the use of a mathematical formula (a "gravity model") which determines how many trips produced in a zone will be attracted to each of the other zones. 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 this gravity model, trips produced in one zone are "distributed" to all other zones. At the end of distribution, formulas are applied by each purpose to convert person trips to vehicle trips.

TRAFFIC ASSIGNMENT

Traffic assignment 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 network using the "capacity restraint" process. The capacity restraint method assigns the trips based on the shortest time path, but when the assigned volume of trips

on a link nears the road capacity, trips begin to be diverted to the next quickest route. This continues until the system reaches equilibrium. (The capacity for each link is the maximum number of vehicles that can travel on that segment of road in an "average" 24 hour day. A capacity calculator program developed for MDOT computes the daily capacity for each link). When the assignment process is completed, each link (road) will have a volume that represents the number of vehicles that travel on that link (road) over a typical twenty-four hour day.

MODEL CALIBRATION/VALIDATION

The purpose of model calibration is to adjust the model to achieve statistically valid model outputs which are reflected in model validation. Model validation verifies that the base year assigned volumes simulate actual base year traffic counts. When validation is complete, the base model is considered statistically acceptable. This means that the process can proceed to future socio-economic data being substituted for existing (base) data. Then the trip generation, trip distribution and traffic assignment can be repeated and future trips can be simulated for system analysis, as part of the plan process. For this *2035 Metropolitan Transportation Plan*, the calibrated "base year" is 2002, as used for the previous *Plan.*

SYSTEM ANALYSIS

Once the base and future trips are simulated, a number of system analysis procedures can be conducted:

< Potential improvements to relieve congestion can be tested for the plan. Future traffic can be assigned to the existing network to show what would happen in the future if no improvements were made to the present transportation system. From this, improvements can be planned that would alleviate demonstrated capacity problems. This analysis was performed for the BCATS Plan, and is discussed in further detail in the Transportation Deficiency Analysis chapter of this document.

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

< Links can be analyzed to determine what zones are contributing to the travel on that link (i.e., the link's service area). This can be shown as a percentage breakdown of total link volume (e.g., 50% of the trips in a given TAZ utilize the selected link).

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

< The impacts of land use changes on the network can be evaluated (e.g., what are the impacts of a new major retail store being built).

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

< Model runs are also done as part of air quality conformity analysis.

Generally three different alternative scenarios are developed for a long-range transportation plan:

< Existing trips on the existing network; this scenario created 2002 volumes, generated by 2002 socio-economic (SE) data, onto the highway network as it was in 2002. This is referred to as the “calibrated”, existing network scenario, or **“base-year”** alternative, and is a prerequisite for the other two scenarios. After reviewing the

calibrated 2002 TDFM network, and incorporating numerous roadway capacity changes to the network over 2002–2011, it was decided to present the forecast 2011 traffic on the current (2011) TDFM network as the initial comparative year for this *Plan* update.

< Future trips on the "existing plus committed" (E+C) network; this scenario creates 2035 volumes, generated by 2035 SE data and the highway network as it exists in 2011, with any improvements listed in BCATS' *FY 2011-2014 Transportation Improvement Program (TIP)* for which funds have been "committed" to complete the project. This alternative displays future capacity and congestion problems if no further improvements beyond those committed thru 2014 are made. This "deficiency analysis" on the 2014 E+C network is also called the "do nothing", or **"no-build"** alternative, and includes the 2014 E+C network, with current capacities and those "committed" capacity improvements.

< Future trips on the future network; this scenario creates 2035 volumes, generated by 2035 SE data and the highway network as it is proposed to be in 2035. This scenario is the long-range transportation plan **"build"** alternative. It includes the 2014 E+C highway network, plus alternative capacity improvement projects selected to alleviate congested areas or corridors. Projects that successfully resolve or mitigate forecasted congestion in the TDFM continue on in the plan process to be evaluated against expected financial resources and then to possibly be recommended for programming in the *TIP* and implementation at some time over the course of the plan.

CHAPTER XII
TRANSPORTATION DEFICIENCY ANALYSIS

Detailed analysis of observed and forecast capacity deficiencies in the transportation network traditionally serves as the basis for the development of solutions to deficiencies within a long-range plan. An areawide travel demand forecast model (TDFM) is the primary analytical tool of the process to identify capacity deficiencies. However, Federal transportation legislation has continued a growing emphasis not only on resolution of capacity deficiencies, identified through a TDFM, but also of safety-related, pavement, bridge, transit, and intermodal/non-motorized deficiencies, and now on security concerns as well. This chapter describes the evaluation of deficiencies in the areas of capacity, safety, pavement, bridges, non-motorized transportation, and security, and also of needs related to economic development. From these evaluations, specific projects and alternatives are proposed, as described in the next 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 XVII. Transit deficiencies and other long-range intermodal needs are discussed in Chapters VI–VIII.

CAPACITY DEFICIENCIES

The BCATS areawide Travel Demand Forecast Model (TDFM), discussed in Chapter XI, was utilized to locate road segments where traffic congestion is probable by 2035. The intent of this effort is to identify potential solutions (needed improvements) to the recognized 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' *2035 Metropolitan Transportation Plan*.

The following steps were employed to determine future congested segments:

- Using TDFM results from assignment of 2035 volumes onto the 2014 "existing + committed" network (the "no-build" alternative), any road link with an assigned volume greater than or equal to its calculated daily capacity [volume to capacity (V/C) >= 1.00] was marked for review as a deficient link. These links are displayed in blue or red in Figure XII-2 and in the 2035 assignment amounted to 6.46 miles, or 1.8% of the BCATS total network road mileage.
- Contiguous deficient (V/C>=1.00) links were aggregated into eleven larger segments, or "corridors", defined by points such as jurisdictional boundaries, major intersections, changes in roadway geometrics, changes in land use, centroid loadings [the point where trips generated within a traffic analysis zone (TAZ) are actually put out onto a roadway], and distinct changes in the level of the capacity deficiency. In most cases, adjacent links which may be only marginally deficient, with V/C ratios < 1.00, were included within a corridor, for purposes of system continuity or connectivity, to establish logical and valid deficient corridors to consider for improvement.
- The severity of congestion for each of the eleven corridors was measured by computing a weighted V/C ratio, generated by applying factors to each individual link's V/C ratio according to it length as a proportion of the corridor length. For example, a capacity deficient corridor consisting of two links, one two miles long with a V/C of 1.10 and the other one mile long with a V/C of .85, would have a weighted V/C ratio of 1.01 [(2 miles/3 miles X 1.10) + (1 mile/3 miles X .85) = 1.01].
- The eleven capacity deficient corridors are listed in Table XII-1 (following the map Figures XII-1&2), with their overall limits, length, and weighted V/C ratios of forecast 2011 & 2035 volumes to capacities on the 2014 E+C network.

Figure XII-1
BCATS Metropolitan Planning Area & 2011 Travel Demand Forecast Model

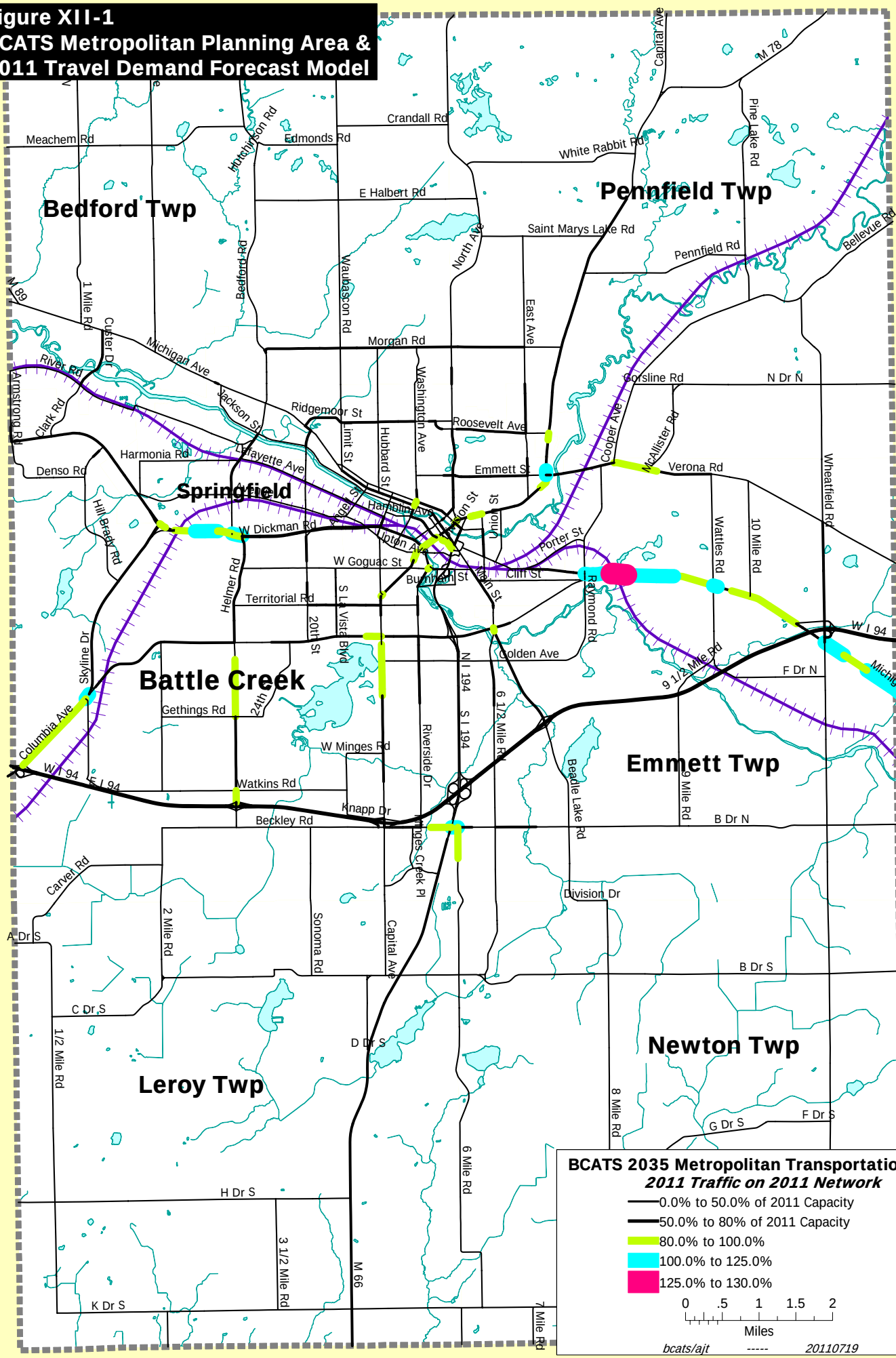


Figure XII-2
BCATS Metropolitan Planning Area &
2011 Travel Demand Forecast Model
"No-Build Alternative"

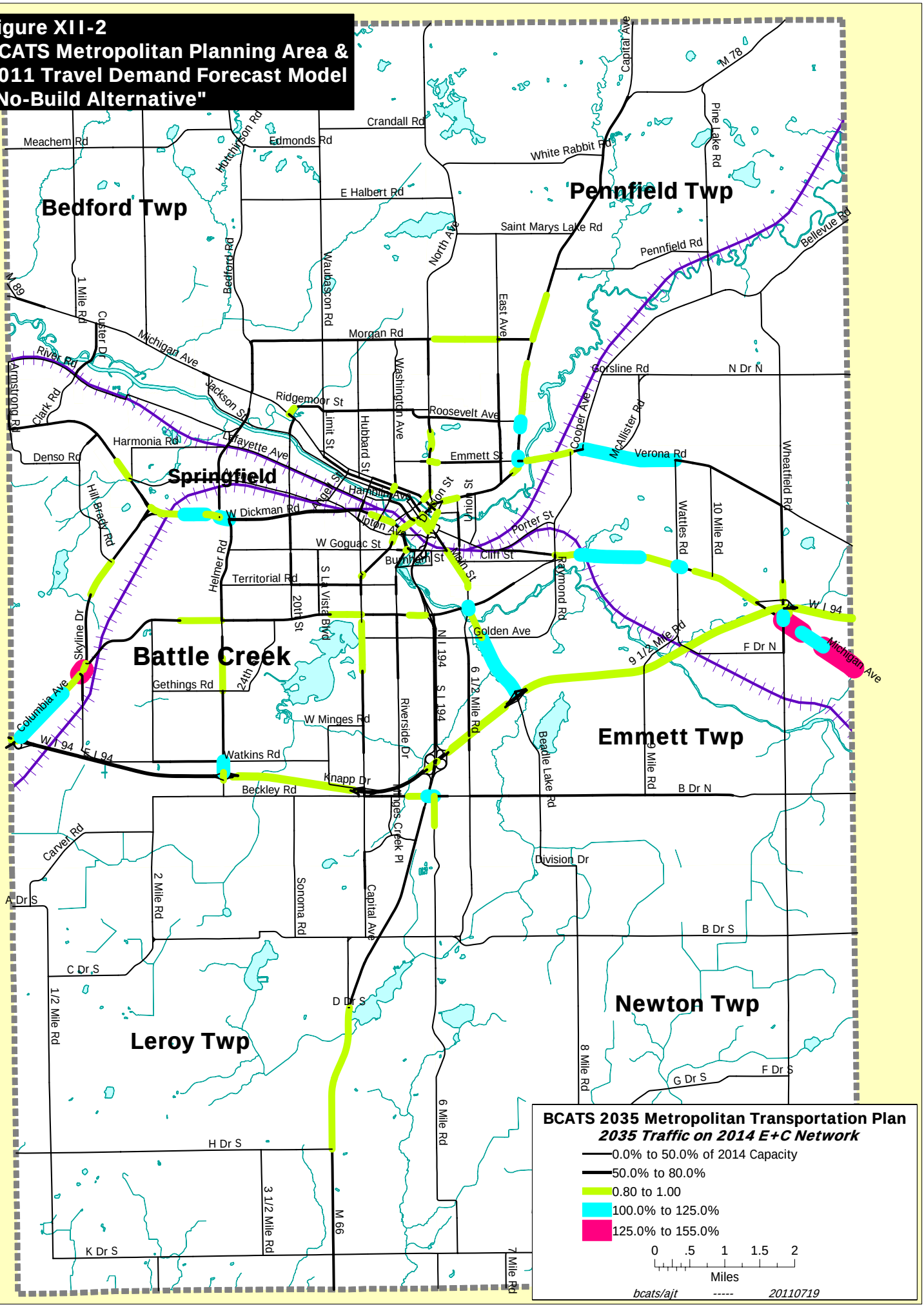


TABLE XII-1
BCATS 2035 "NO-BUILD" ALTERNATIVE CAPACITY DEFICIENT CORRIDORS

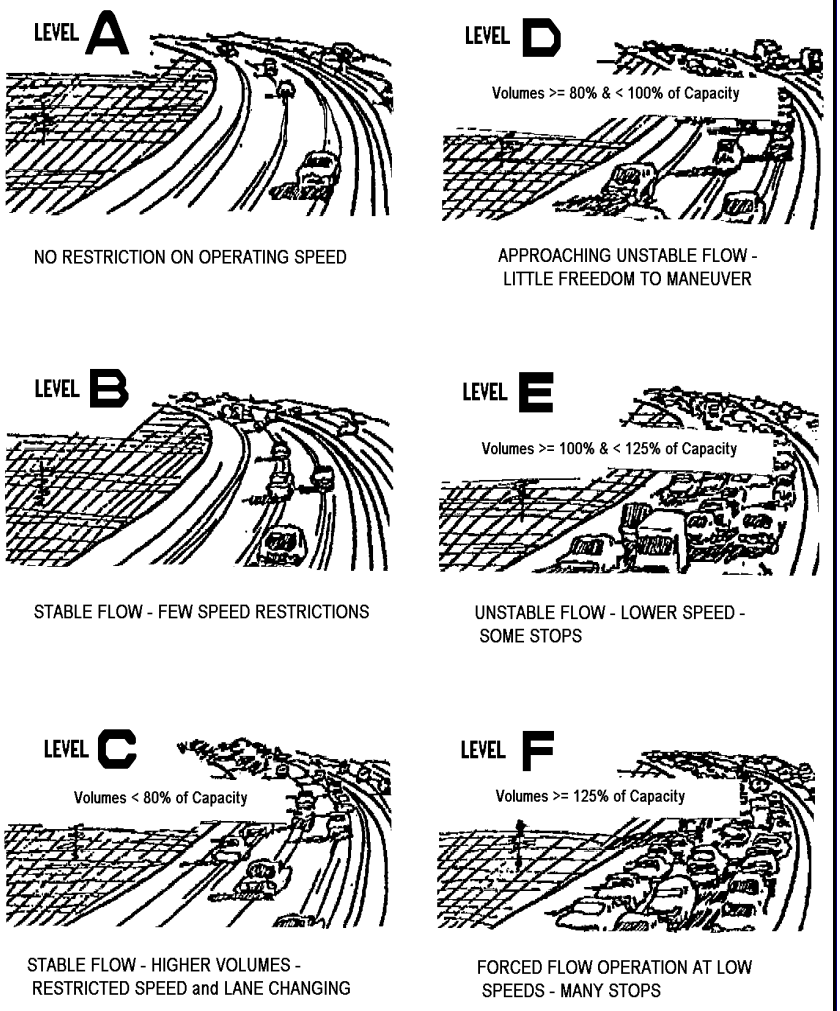
	Weighted V/C for Corridor		Road Name	Length (miles)	Corridor Limits
	2011	2035			
1	*104.6%*	*132.8%*	**M-96 (Michigan Ave E)**	1.4	from M-311 (11 Mile Rd/Wheatfield Rd) southeastward past casino to 12 Mile Rd (metro area boundary)
2	*111.6%*	*107.5%*	**I-94BL/M-96 (Michigan Ave E)**	1.8	from Raymond Rd eastward thru M-96 (Columbia Ave) junction to Wattles Rd (9.5 Mile Rd)
3	*85.4%*	*100.9%*	**Verona Rd**	1.3	2 thru-lane section from Cooper Ave-Bellevue Rd eastward to Wattles Rd (9.5 Mile Rd)
4	*91.2%*	*100.3%*	**I-94BL/M-37 (Columbia Ave W/MLK Hwy)**	1.6	from I-94 northward to Columbia Ave W signalized intersection
5	*61.0%*	*95.8%*	**M-294 (Main St/6.5 Mi Rd-Beadle Lake Rd)**	1.5	from M-96 (Columbia Ave) southward under I-94 to I-94 eb entrance/exit ramps
6	*88.3%*	*94.6%*	**I-94BL/M-96/M-37 (Dickman Rd W)**	1.7	from I-94BL/M-37 (Skyline Dr/MLK Hwy) eastward to M-96 (Helmer Rd) south leg
7	*95.0%*	*91.7%*	**M-66 (Capital Ave NE)**	0.3	2 thru-lane section from Evans St northeastward thru "Verona Business District" across Emmett St to Hunter St/Stayman St
8	*85.4%*	*88.6%*	**Beckley Rd-B Dr N**	0.6	from mall entrance ~700' east of Riverside Dr eastward across M-66 to Harper Village Dr
9	*74.0%*	*85.2%*	**M-66 (Capital Ave NE)**	2.3	2 thru-lane section from Montford St north across Roosevelt Ave past Bailey Park to Bridge St, then north past Morgan Rd to Pennfield Rd
10	*56.9%*	*80.8%*	**M-311 (11 Mi Rd/Wheatfield Rd)**	0.3	from I-94BL/M-96 (Michigan Ave E) northward to wb I-94 entrance+exit ramp/Wheatfield Parkway
11	*84.7%*	*78.4%*	**Helmer Rd**	2.0	2 thru-lane section from Lakeview HS entrance southward to I-94 eb entrance/exit ramps

Capacity deficiencies are often described by “Level-of-Service”, abbreviated “LOS”. BCATS has defined two Level-of-Service categories, LOS E (V/C >= 1.00 & < 1.25) and LOS F (V/C >= 1.25) as deficient. Only M-96 (Michigan Ave E) east of 11 Mile Rd (LOS F), and I-94BL/M-96 (Michigan Ave E) from Raymond to Wattles, Verona Rd from Cooper-Bellevue to Wattles, & I-94BL/M-37 (Columbia/MLK) from I-94 to Columbia (all 3 LOS E) are accordingly considered capacity deficient in the 2035 No-Build Alternative analysis for this *Plan*. Figure XII-3 on the next page demonstrates the LOS concept.

Besides the limited number of congestion issues currently revealed through the TDFM process, several corridors are clearly recognized, through local knowledge/experience and “professional judgement”, as capacity deficient. Typically, these corridors endure peak-hour congestion through signalized intersections spaced less than ¼ mile apart; such congestion is not reflected in the 24-hour daily traffic evaluation of the TDFM. Using Congestion Mitigation Air Quality (CMAQ) funding, these corridors are being 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.

Another corridor routinely considered capacity deficient is interstate highway I-94 across the entirety of the BCATS area. According to the TDFM however, it operates generally at LOS D, with the section between Beadle Lake Rd & 11 Mile Rd forecast to be the most congested in 2035 with a daily volume almost 90% of the 2014 capacity. At the eastern terminus of that section, it should be noted that the eastbound I-94 exit ramp to M-311 is forecast to operate at 90% of its single lane capacity in 2035, if unimproved from its current configuration. The weighted V/C ratio for all of mainline I-94 in BCATS' area is 0.813. While no additional thru-lanes for I-94 or interchange ramp expansions are being recommended at this time, widening of five "bottleneck" bridge pairs on I-94 in the BCATS area is included in this *Plan*, as discussed later in this chapter under "Bridge Deficiencies".

FIGURE XII-3
ROADWAY "LEVEL-OF-SERVICE" (LOS) BY VOLUME/CAPACITY RATIO



The BCATS TDFM is presently being updated by MDOT's Statewide & Urban Travel Analysis (SUTA) section to be converted to a peak-hour model, and to offer several other enhanced analytical processes. The new TDFM is expected to provide a more accurate measure of the perceived I-94 congestion, and an improved calculation of the impact that high volumes of commercial traffic i.e. "semi-tractor trailers" has on highway capacity, and subsequently on the forecast V/C ratios. The next update of BCATS' long-range metropolitan transportation plan, to horizon year 2040, will utilize the new & improved TDFM.

SAFETY-RELATED DEFICIENCIES

The announcement in September, 2010 that traffic deaths nationwide fell 9.7% in 2009 compared to 2008 was good news for those concerned with traffic safety. However, the reality is that nationally 33,808 persons still lost their lives in traffic crashes in 2009 - an average of 92 persons each day of the year. Safety improvements continue to be a top priority in planning transportation projects.

The BCATS area has mirrored the national decline in numbers of traffic crashes with a decline of 38% in total crashes from 2004 to 2009. The majority of crashes remain property damage crashes at 82.6% of the total in 2009. The adjacent table depicts data for crashes in the BCATS area for the 2007-2009 time period.

Deer involved crashes remain a significant crash type in the BCATS area that presents a problem difficult, if not impossible, to remedy. While the deer involved crash total figures have gone down over the last three years, the percentage has remained steady in the 17-18% range of total crashes. When the data are mapped, several corridors within the BCATS area have consistently high numbers of vehicle/deer crashes. These corridors are:

- I-94 corridor throughout the BCATS area
- M-37/Helmer/Bedford Rd. from B Drive N north to north county line
- W. Columbia Ave. from Helmer Rd. west to Skyline Dr.
- M-66 from Frey Drive north to north county line
- M-66 from Beckley Road south to Athens Township (very heavy concentration)
- I-194 from Beckley Road north to Dickman Road
- M-96/Michigan Avenue from Columbia Ave. east to 12 Mile Road
- Verona Road from Bellevue Rd. east to 12 Mile Road
- M-311/11 Mile Road from B Drive South south to J Drive South
- Morgan Road from North Avenue east to M-66
- M-78 from M-66 east to north county line

Motorists are advised to take extra caution when traveling these corridors in the BCATS area. Statewide data suggests that the 6:00 p.m. to 8:59 p.m. and 9:00 p.m. to 11:59 p.m. time periods are the peak times of day (first and second, respectively) for vehicle-deer crashes. These crashes occur at a significantly higher rate during the fourth quarter of the year (October - December), which is logical considering the movement of deer during mating times and hunting season.

Meanwhile, a crash type that has shown a continuing upward trend in the BCATS area is the percent of crashes involving elderly drivers (with "elderly" defined as persons over 60 years old). In 2004, 17.7% of crashes in the BCATS area involved elderly drivers. The percentage of these types of crashes has steadily increased since 2004 to reach 22.2% in 2009. As the average age of the population in Michigan continues to rise, this percentage is expected to increase further. Senior mobility and safety is one of the twelve emphasis areas in the state's 2009-2012 "Strategic Highway Safety Plan". BCATS has attempted to address safety issues related to the elderly with a project involving replacement of street signs with larger font sizes for better readability.

Table XII-2 – BCATS Area Crash Data for 2007-2009

City or Township	Deer Involved Crashes 2007	2008	2009	% of total crashes 2007	2008	2009
Battle Creek	138	128	114	7.6	6.9	6.8
Springfield	12	10	11	6.7	5.6	8.2
Bedford	67	72	45	32.7	34.6	29.0
Emmett	119	107	122	23.0	20.1	24.5
Leroy	90	87	90	55.2	53.0	64.3
Newton	69	59	71	60.5	57.8	67.0
Pennfield	101	102	98	39.3	43.6	36.8
BCATS Area Total	**596**	**565**	**551**	**18.3**	**17.4**	**18.6**

BCATS Areawide	# of crashes 2007	2008	2009	% of total crashes 2007	2008	2009
Fatal Crashes	10	6	9	0.3	0.2	0.3
Fatalities	21	11	19	0.6	0.3	0.6
Injury Crashes	526	517	506	16.2	15.9	17.1
Injuries	1284	1210	1311	-	-	-
Property Damage Crashes	2716	2723	2449	83.5	83.9	82.6
Pedestrian Crashes	16	25	27	0.5	0.8	0.9
Injuries in Ped. Crashes	38	57	71	-	-	-
Alcohol Involved Crashes	108	116	116	3.3	3.6	3.9
Elderly Involved Crashes	657	668	657	20.2	20.6	22.2
Motorcycle Crashes	35	64	55	1.1	2.0	1.9
Bicycle Crashes	30	19	32	0.9	0.6	1.1
Deer Involved Crashes	596	565	551	18.3	17.4	18.6
Total BCATS Area Crashes	**3252**	**3246**	**2964**			

PAVEMENT DEFICIENCIES

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 deficient roadways under their respective jurisdictions. Along with Pavement Surface Evaluation& Rating (PASER) data collected each year 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. Specific major projects planned through 2014 have been included in this *Plan* and will proceed to implementation in BCATS' *FY 2011-2014 Transportation Improvement Program (TIP).* Beyond 2014 in this Plan, funding for both a local and MDOT "preserve strategy" is recommended as a project each year through 2035.

BRIDGE DEFICIENCIES

The condition of all bridges is closely monitored and routinely reviewed by both MDOT and the local road agencies. Periodically, MDOT publishes a "Highway Bridge Report" for structures located on the state maintained system (interstate routes and state trunklines). The latest MDOT bridge report was released March 31, 2010. There are forty-seven (47) structures under MDOT jurisdiction within the BCATS area that are included in the latest report. Two of the structures are listed as culverts and neither of them have structural or functional issues. The remaining forty-five (45) bridges were all last inspected between July, 2009 and December, 2009.

Based on those inspections, five (5) bridges were assessed to be structurally deficient (SD). "A highway bridge is classified as structurally deficient if the deck, superstructure, or substructure is rated in "poor" condition (0-4 in the NBI rating scale). A bridge can also be classified as structurally deficient if its load carrying capacity is significantly below current design standards, or if a waterway below frequently overtops the bridge during floods." (Source: MDOT Highway Bridge Report, March 31, 2010, MDOT) In addition, a total of twelve (12) bridges were classified as functionally obsolete (FO) in the latest report. "Highway bridges classified as functionally obsolete are NOT structurally deficient, but their design is outdated. They may have lower load carrying capacity , narrower shoulders, or less clearance underneath than bridges built to the current standard." (Source: MDOT Highway Bridge Report, March 31, 2010, MDOT) The deficient and obsolete MDOT bridges are as follows:

Structurally Deficient on MDOT System

Route	Over	Year Built
M-66	Wanondoger Creek	1940
I-194	I-94BL (Dickman)	1966
I-194	Fountain St	1966
I-94BL (Skyline Dr)	I-94	1958
M-96 (Columbia Ave)	Raymond Rd	1940

Functionally Obsolete on MDOT System

Route	Over	Year Built
M-37 (Bedford Rd)	Waubascon Creek	1990
M-66	Battle Creek River	1966
M-96 (Columbia Ave)	I-194	1965
M-89	Waubascon Creek	1947
Helmer Rd	I-94	1959
Capital Ave	I-94	1992
I-194/M-66 (NB)	I-94	1994
I-194/M-66 (SB)	I-94	1994
I-94BL (Michigan)	I-94	1960
M-311 (11 Mile Rd)	I-94	1960
M-311 (11 Mile Rd)	Kalamazoo River	1959
M-37 (Bedford)	Kalamazoo River	2006

Four of the five MDOT bridges listed as structurally deficient are identified for work in BCATS' *FY 2011-2014 Transportation Improvement Program (TIP).* The replacement of the M-66 bridge over the Wanondoger Creek is scheduled for funding in 2011 and construction in 2012. Rehabilitation of the two I-194 bridges is funded for 2012 with construction in 2012 or 2013. The M-96 (Columbia Ave) bridge over Raymond Rd is scheduled for replacement in 2012 on the *TIP* "illustrative" list of projects, meaning it cannot proceed until adequate funding is secured and the project accordingly moved from the "illustrative" list to the funded program. There are no current plans to address the one remaining structurally deficient bridge (I-94BL over I-94) or any of the functionally obsolete bridges on the MDOT system.

The City of Battle Creek has twenty (20) non-trunkline bridges under its jurisdiction. Only one of those bridges is currently in the structurally deficient category. This is the 20th Street bridge over the Kalamazoo River. This bridge is already scheduled for major restoration and rehabilitation during the 2011 construction season. The City of Springfield has no bridge structures within its boundaries for which it is the responsible road agency. There are twenty-two (22) structures under the jurisdiction of the Calhoun County Road Commission (CCRC) that are located within the BCATS area in the townships of Bedford, Pennfield, Emmett, Leroy and Newton. Of these structures, three (3) are currently listed as structurally deficient and eight (8) are listed as functionally obsolete. Two of the bridges appear on both lists.

Structurally Deficient on CCRC System

Road	Over	Year Built
Raymond Rd	Conrail	1968
Raymond Rd	Kalamazoo River	1960
12 Mile Rd	Nottawassepee Creek	1919

Functionally Obsolete on CCRC System

Road	Over	Year Built
10 Mile Rd	Battle Creek River	1962
Pennfield Rd	Wanondoger Creek	1962
Raymond Rd	Conrail	1968
Raymond Rd	Kalamazoo River	1960
Main St	Kalamazoo River	1957
12 Mile Rd	Kalamazoo River	1925
6 ½ Mile Rd	Barnum Creek	1905
M Dr S	Nottawassepee Creek	1920

The CCRC has not yet identified any projects for these bridges.

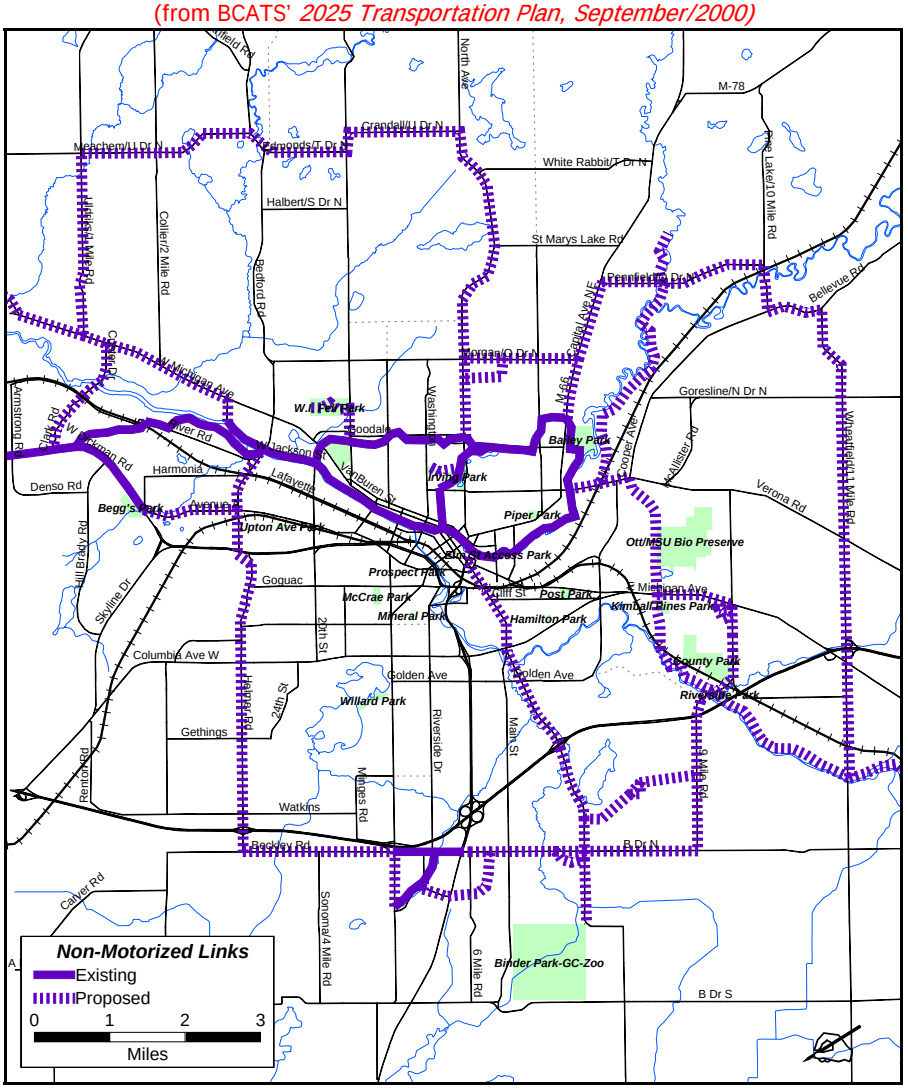
The bridge improvements identified in this *Plan* consist of six rehabilitation and three replacement projects by MDOT, one local bridge rehabilitation, and one new local bridge. Five of the nine MDOT bridge projects are on I-94, and reflect the recognition that any replacement or major rehabilitation of bridges along I-94 should consider how to best facilitate construction to widen I-94 across the BCATS area, generally considered a long-term need. The five pairs of eastbound & westbound I-94 bridges have been described by MDOT as "bottleneck" bridges that are not currently wide enough to maintain two lanes of I-94 traffic in each direction during construction, assuming all traffic is crossed over to one bound while the other bound is under construction. The "bottleneck" bridges, whether to be replaced or rehabilitated, would be widened to accommodate four traffic lanes, with projects recommended to be implemented from 2021–2030.

Other known bridge deficiencies 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 designation of a specific future project, in part due to uncertainly regarding the availability and acquisition of dedicated bridge funding.

NON-MOTORIZED TRANSPORTATION DEFICIENCIES

Eleven years ago, as part of BCATS' *2025 Transportation Plan,* a future non-motorized transportation network was identified, as depicted in Figure XII-4. The existing facilities in that network included the City of Battle Creek's Linear Park, and Lakeview Pathway, and a bike/pedestrian path along the north side of M-96 (Dickman Rd W). Since then, development of several proposed non-motorized facilities in Pennfield and Emmett Townships has been completed, coordinated by the Calhoun County Road Commission (CCRC) within its *Calhoun County Trailway Master Plan*. Other non-motorized links were proposed for the 2025 network in Bedford Township and southwest Battle Creek to connect the existing and proposed facilities and form a comprehensive non-motorized transportation network across the BCATS metropolitan area.

FIGURE XII-4
2025 NON-MOTORIZED TRANSPORTATION NETWORK IN THE BCATS AREA
(from BCATS' *2025 Transportation Plan, September/2000)*



Some of the links were selected to be added based on corresponding capacity and/or pavement deficiencies that could be addressed with projects to include concurrent implementation of the non-motorized facility; such projects would then incorporate accommodations for non-motorized transportation within resurfacing or reconstruction work.

In the City of Battle Creek, the proposed 2025 network links and numerous more links were included in the city's *Non-Motorized Transportation Network Master Plan* (March/2006). The City is actively implementing many of the recommendations of its *Master Plan.*

Only one specific non-motorized project, the "Calhoun County Trailway Phase 1/Segment 1" (from the Emmett St/Verona Rd intersection with Raymond Rd southeastward through Ott Biological Preserve & Kimball Pines Park to Historic Bridge Park off Wattles Rd/9 Mile Rd just north of I-94 & the Kalamazoo River) was identified to include in this *2035 Metropolitan Transportation Plan.*

Future non-motorized projects will be reviewed to ensure compatibility among the plans of BCATS, the CCRC, and the City of Battle Creek. As appropriate, non-motorized projects may continue to be implemented concurrent with adjacent road work. Chapter VII, "INTERMODAL CONSIDERATIONS - Pedestrian & Non-Motorized", includes additional discussion of the planning & implementation of non-motorized transportation improvements in the BCATS area.

SECURITY

One of the SAFETEA-LU 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. In earlier federal legislation, safety and security were joined as one planning factor. 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 the SAFETEA-LU 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 Reutilization Notation, and General Services Administration of the Department of Defense (approx. 1,200 employees)
- W.K. Kellogg Airport, which has on its grounds the 110th Air National Guard (approx. 275 employees), and with its 10,000 foot runway 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)
- Miller College
- Western Michigan University Kendall Center
- 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 through the BCATS area
- Canadian National Rail Yard (approx. 500 employees)
- ITS message system on I-94/I-69 (to be installed in calendar year 2011)
- 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. BCATS' Executive Director has been an appointed member of the LEPC in the past. 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 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.

In 2006, the Michigan Department of Transportation completed a State Long Range Transportation Plan covering the 2005-2030 time period. One component of that Plan is a "Security Technical Report" which addresses programs, activities and strategies that MDOT has identified to address security concerns in the areas of: international border crossings, highways and roads, public transit, motor carrier, marine transportation, aviation, and information technology. As part of this effort, MDOT has created the Transportation Risk Assessment and Protection (TransRAP) Team. This Team includes members from MDOT's multi-modal, planning, and highway operations staffs, along with representatives of the Michigan State Police Motor Carrier Enforcement and Michigan Department of Information Technology. The TransRAP Team directs the implementation steps of the security strategy.

MDOT also actively participates in the protection of critical infrastructure with state and federal partners in Homeland Security. 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.

There have been two incidents in the last two years in the BCATS area that have had regional or greater impact on the transportation system. In May, 2009, a bridge replacement project along Interstate 94 in Battle Creek turned into a major traffic disruption lasting several months when a span of the existing bridge being used for maintaining traffic shifted, creating an unsafe situation with the bridge structure. The bridge had to be immediately shut down, diverting nearly 25,000 eastbound interstate vehicles daily to the surrounding local streets as a detour was implemented. The local streets involved are located in the area's largest retail zone and already were experiencing large volumes of traffic. However, all of the traffic and emergency response agencies came together quickly to implement the detour and reroute the traffic. Although there was still a large impact on the local street network until a solution was put into place on the interstate, it would have been far worse without the excellent cooperation of all of the agencies involved.

More recently, in July 2010, an oil pipeline spill in Marshall Township, just east of the BCATS area, released 819,000 gallons of oil into a tributary of the Kalamazoo River which found its way into the Kalamazoo River. The Kalamazoo River runs right through downtown Battle Creek and westward toward downtown Kalamazoo. While there was not an immediate roadway shutdown involved, the crisis and clean-up crews set up numerous staging areas and command locations along the river that resulted in some periodic road closures and detours at numerous locations throughout the BCATS area.

BCATS' historic role in security planning has been providing data for LEPC analyses and to other agencies, as requested, and including transit related security projects in the Long Range 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. Recent MDOT projects in the State Transportation Improvement Program (STIP) related

to ITS deployment also offer security enhancement in the BCATS area. For this *Plan* update, BCATS has compiled a listing of valuable assets, above, and has solicited information from the W.K. Kellogg Airport, City of Battle Creek Emergency Services, and County LEPC Coordinator about the security plans they have in place. BCATS has considered security as a factor when reviewing projects for the *Plan* update.

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. Four projects have been identified for this *Plan* as appropriate and necessary to support continued economic development.

Morgan Rd Extension - this project would extend 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 enhance access to a retail, office, and residential complex, based on a new Wal-Mart "superstore" expected to open late 2012 on the east side of M-66 (Capital Ave NE), on the north side of the proposed 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, is also a significant benefit to the overall transportation system.

Glen Cross Rd Extension - this project would extend Glen 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 be made accessible and available for development, while the new road itself would alleviate congestion at the M-66/B Dr N (Beckley Rd) intersection and serve as a "bypass" route.

20th St / I-94BL (Dickman Rd) Intersection Re-Configuration - 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 not only to open up the southeast corner parcel to commercial development, but also to provide for more efficient & safe left-turn movements onto southbound 20th St as traffic volumes at the intersection increase.

Avenue A / M-96 (Dickman Rd) Intersection Re-Configuration & Military Ave Extension - At present, Avenue A intersects M-96 at an acute angle which can greatly hinder left-turns from Avenue A onto eastbound M-96, especially given 50+ mph speeds & high peak hour volumes on M-96, and potential eastward sight distance limited by a guardrail and snow accumulation or brush overgrowth. Since 1995, BCATS' 2015, 2025, & 2030 long-range transportation plans have each included a "safety-related" project to realign Avenue A to meet M-96 at a right angle "T" intersection, and consider signalization. The current situation is also complicated by Evergreen Rd, which meets Avenue A from the north, only ~150' east of M-96. Recently, a forested parcel between Avenue A & M-96, opposite & southeast of where Military Ave intersects M-96, was cleared by the property owner in hopes of attracting commercial development. In consultation with the property owner, the City of Springfield has suggested a possible extension of Military Ave eastward then northward to meet Avenue A. The new connecting road would enhance the marketability of the cleared property, provide access to the interior of the parcel directly instead of off M-96, and allow the closure of the existing Avenue A intersection at M-96, with limited re-alignment of Evergreen Rd & Avenue A necessary to provide a smoother continuous curve connecting the two roads.

CHAPTER XIII

TRANSPORTATION ALTERNATIVES IDENTIFICATION

The preceding chapter described identified future transportation deficiencies relative to capacity, safety, bridges, pavement condition, non-motorized transportation, and economic development, and discussed projects suggested to resolve those identified deficiencies. Each of those suggested projects is considered to be the preferred option to address each deficiency, and with the two capacity-expansion projects specified in this chapter, constitute the comprehensive package of improvement projects recommended for programming through 2035 (see Chapter XVII), within reasonable financial constraints.

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 travel demand forecast model (TDFM). In the 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.

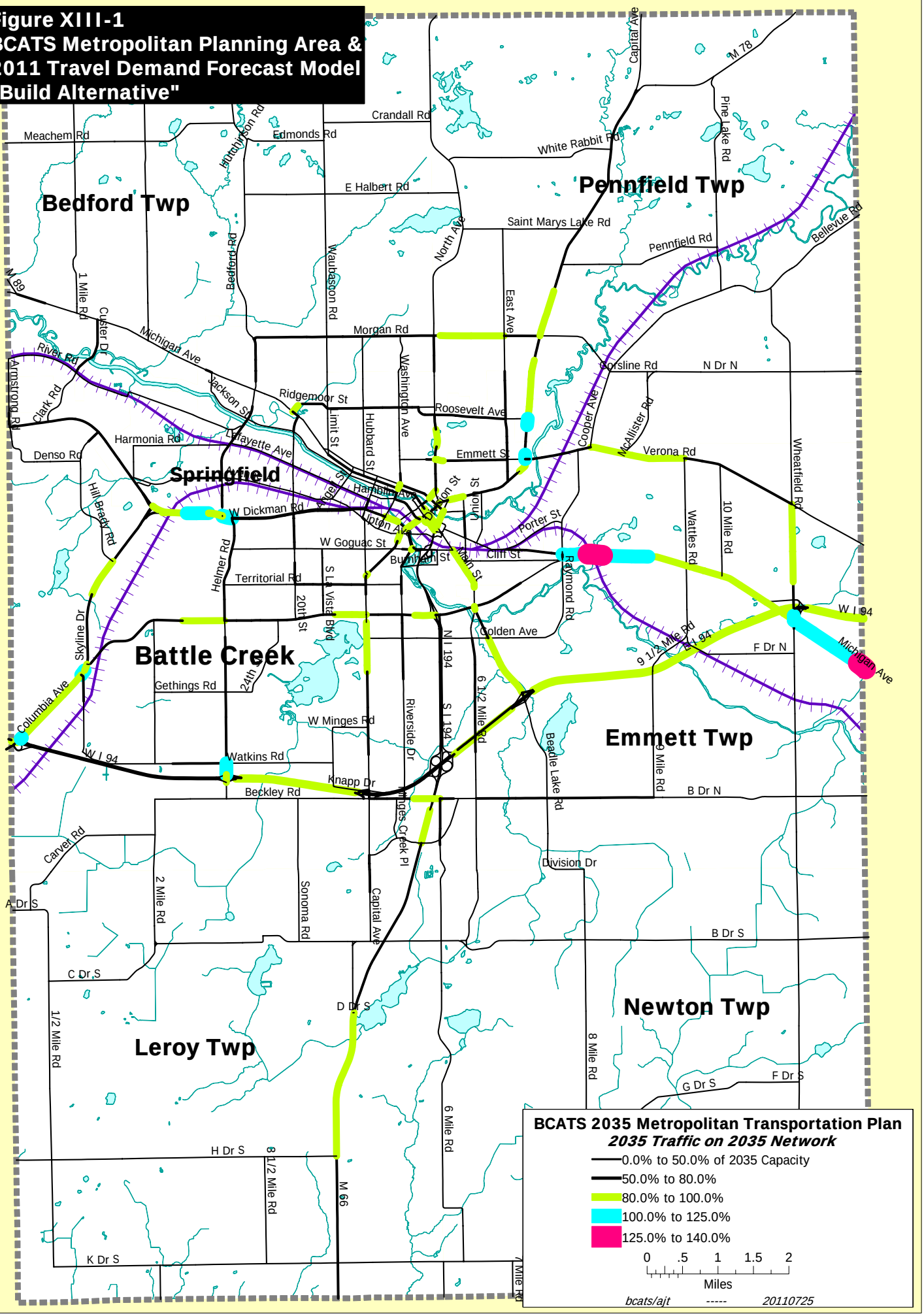
As typical for BCATS' TDFM, a limited number of significant future capacity deficient [volume/capacity (V/C) > 100%] corridors, that might warrant an expansion project in the *Plan,* were identified from the TDFM results. Only **M-96 (Michigan Ave E)** east of 11 Mile Rd, **I-94BL/M-96 (Michigan Ave E)** from Raymond to Wattles, **Verona Rd** from Cooper-Bellevue to Wattles, & **I-94BL/M-37 (Columbia/MLK)** from I-94 to Columbia were considered to be genuinely capacity deficient in 2035 based on the 2035 No-Build Alternative analysis described before in Chapter XII.

Minor expansion projects, basically adding a continuous center left-turn lane, were included in the 2035 TDFM Build Alternative to address the future deficiencies on **Verona Rd** from Cooper-Bellevue to Wattles, & **I-94BL/M-37 (Columbia/MLK)** from I-94 to Columbia. The volume to capacity (V/C) ratios for the 2035 traffic on the 2035 network, with those two projects and any other capacity-changing projects recommended in Chapter XVII incorporated into the "build" alternative, are depicted in the map Figure XIII-1 on the following page.

The inclusion of the I-94BL/M-37 project's implementation in 2014 in this *Plan* and in the TDFM mitigates that corridor's forecast deficiency and appears to have minimal impact on forecast volumes on the surrounding transportation network. The Verona Rd project, recommended in this *Plan* for 2020 implementation, and integrated into the TDFM, also mitigates the future deficiency on Verona Rd, and may also impact the forecast traffic on M-294 (Main St/Beadle Lake Rd). It is conceivable that the improved Verona Rd, along with the Morgan Rd Extension (2019), might prompt different preferred travel routes to approach the Firekeepers Casino (southeast of the I-94/11 Mile Rd interchange) on 11 Mile Rd (Wheatfield) from the northeastern metropolitan area.

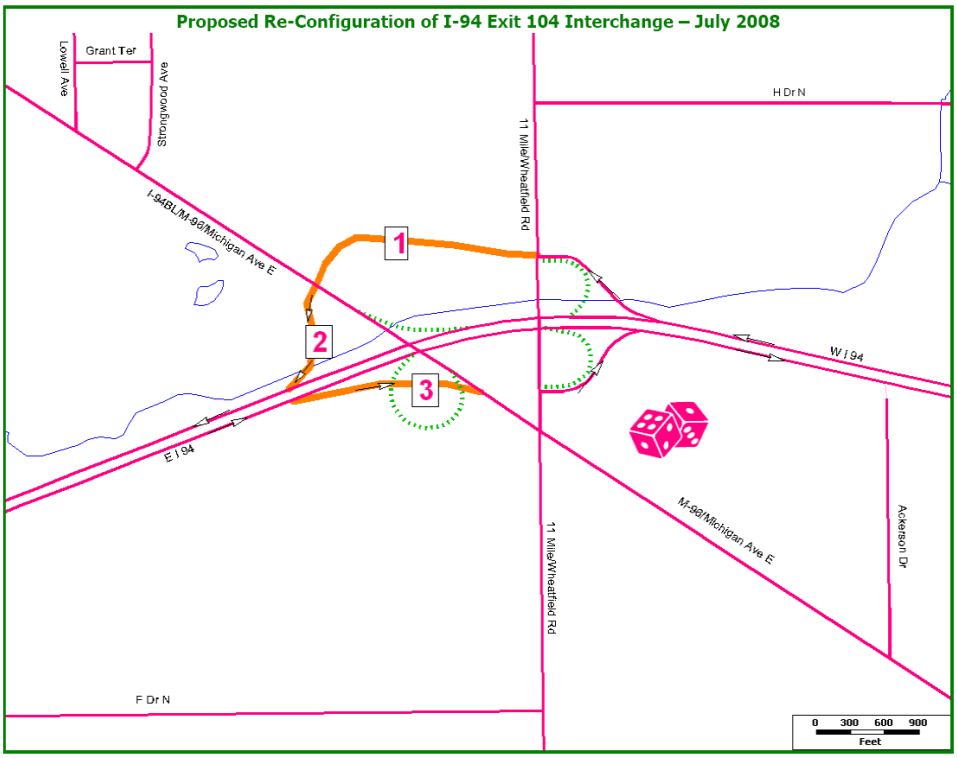
Given uncertainty of State & Federal funding levels and commitments, in this *Plan* it was not possible at this time to designate any future capacity expansion work on **M-96 (Michigan Ave E)** east of 11 Mile Rd, or **I-94BL/M-96 (Michigan Ave E)** from Raymond to Wattles. In comparing Figure XII-2 (No-Build Alternative) to Figure XIII-1

Figure XIII-1
BCATS Metropolitan Planning Area & 2011 Travel Demand Forecast Model "Build Alternative"



(Build Alternative), it is noticeable that the deficiency on M-96 (Michigan Ave E) east of 11 Mile Rd does appear somewhat "improved"; unfortunately, this is likely due to minor adjustment/correction of the capacities on each link along that corridor in the TDFM, and not any changed travel pattern. The deficiency on I-94BL/M-96 (Michigan Ave E) from Raymond to Wattles is forecast to grow in severity without any expansion to capacity, perhaps in part due to changed travel paths to the Firekeepers Casino related to Verona Rd and M-294 (Main St/Beadle Lake Rd) as discussed previously in this section.

Shortly after plans for the Firekeepers Casino were announced in 1999, possible capacity and safety-related issues at I-94 exits 103 & 104 at I-94BL/M-96 (Michigan Ave E) and 11 Mile Rd were recognized. At that time the existing configuration of the exit and entrance ramps on I-94 prompted challenging merge-weave conditions for vehicles simultaneously exiting and entering I-94 through the section. The frequent traffic conflicts were expected to become more problematic with increased traffic from the new casino in the southeast quadrant of the interchange. In response, the Managing Director of the Calhoun County Road Commission (CCRC), in consultation with BCATS and MDOT Marshall Transportation Service Center (TSC) staff, drafted a preliminary modified configuration, depicted in the diagram to the right, that would eliminate the undesirable merge–weave traffic movements.



The first phase of that modification, a "service drive" from the westbound I-94 exit 104 ramp at 11 Mile Rd westward to I-94BL/M-96 (Michigan Ave E), was completed by the CCRC in 2009 with the opening of the "Wheatfield Parkway" (the orange line labeled #1). About the same time, I-94 Exit 103 was closed, with removal of both the westbound I-94 exit ramp to Michigan Ave E, and the eastbound I-94 entrance ramp from Michigan Ave E (the green dotted lines at the I-94/Michigan Ave E "intersection"). Closure of the now-redundant exit effectively eliminated the merge-weave situation for I-94 traffic.

Additional phases of the proposed re-configuration (the orange lines labeled #2 & #3) were suggested to replace the loop ramps to westbound I-94 and from eastbound I-94 (green dotted lines) at the I-94/11 Mile Rd (Wheatfield Rd) interchange at I-94 Exit 104. It was thought that doing so would improve traffic flow, reduce congestion on 11 Mile Rd, and potentially delay the need to widen the 11Mile Rd bridge over I-94. Previously in Chapter XII's discussion of possible I-94 capacity deficiency, it was noted that the eastbound I-94 exit ramp to 11 Mile Rd (Wheatfield Rd) is forecast to operate at 90% of its single lane capacity in 2035, if unimproved from its current configuration. Accordingly, the option to serve that traffic with the new exit ramp labeled #3 above may warrant further consideration before developing a project to improve the existing ramp.

The projects proposed in this re-configuration are presented here only as possible alternatives among several options likely to be developed for the I-94 Exit 104 interchange area, and have not been endorsed in any way by the MDOT, CCRC, or BCATS. Like nearby capacity-adding projects expected to be needed by 2035 on **M-96 (Michigan Ave E)** east of 11 Mile Rd, and **I-94BL/M-96 (Michigan Ave E)** from Raymond to Wattles, any further re-configuration of the interchange itself should be considered an "illustrative" example of a project that might be a good candidate to be recommended in the next long-range plan update.

In anticipation of promoting such "illustrative" projects in the next *Plan*, traffic conditions around such possible projects will be closely monitored, and details for the travel demand forecast model (TDFM) will be updated & verified, in order for the TDFM results to accurately support preliminary development of projects. Within the BCATS metropolitan area, other "illustrative" projects have been identified, based on TDFM results for this *Plan* or other non-capacity factors that were evaluated. These additional "illustrative" project areas include:

- **M-66 (Capital Ave NE)**, 2 thru-lane section from Montford St north across Roosevelt Ave past Bailey Park to Bridge St, then north past Morgan Rd to Pennfield Rd. This corridor is forecast to operate at an acceptable 85.2% of capacity in this *Plan's* 2035 "build alternative", but will have to be re-evaluated upon the expected late 2012 opening of a new Wal-Mart retail store on the east side of M-66 north of Morgan Rd extended eastward.
- **M-66 (Capital Ave NE)**, 2 thru-lane section from Evans St northeastward thru "Verona Business District" across Emmett St to Hunter St/Stayman St. This corridor is forecast to operate at an acceptable 91.7% of capacity in this *Plan's* 2035 "build alternative", and historically has never been realistically considered for widening given the limited right-of-way and several commercial structures very close to the existing roadway.
- **M-311 (11 Mi Rd/Wheatfield Rd)**, from I-94BL/M-96 (Michigan Ave E) northward to wb I-94 entrance+exit ramp/Wheatfield Parkway. This corridor is forecast to operate at an acceptable 80.8% of capacity in this *Plan's* 2035 "build alternative", but includes a bridge over I-94 that should be evaluated for replacement & widening if warranted.
- **Helmer Rd**, 2 thru-lane section from Lakeview HS entrance southward to I-94 eb entrance/exit ramps. This corridor is forecast to operate at an acceptable 78.4% of capacity in this *Plan's* 2035 "build alternative", but includes a bridge over I-94 that should be evaluated for replacement & widening if warranted, along with geometric changes to improve sight lines at the bridge approaches' intersections with both I-94 exit ramps.
- **M-89 (Michigan Ave), @ Augusta Dr,** and **@ 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 adversely impacting sight distance and turning movements. The awkward geometrics at these locations prompts their consideration here as safety-related deficiencies, although undue delay on the State trunkline system could suggest these intersections also be considered congested or capacity deficient.
- **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 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 should be evaluated as means to address the potential safety-related & capacity deficiencies of this intersection.

"Deficiencies" for public transit are discussed in this *Plan* in Chapter VIII; the 25-year schedule of capital improvements and operating costs for Battle Creek Transit (BCT), referenced in that chapter, that served as the basis for the recommended transit projects in this *Plan*, follows in Table XIII-1. While expenditures are shown in 2011 dollars in Table XIII-1, they were expanded to "year of expenditure dollars" before inclusion in the listing of *Plan* improvements, and before being considered within the financial plan.

TABLE XIII-1
BATTLE CREEK TRANSIT
CAPITAL & OPERATING EXPENDITURES
2011–2035

YEAR	QUANTITY	PROJECT	ESTIMATED TOTAL PROJECT COST (2011 $)
2011	1	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 375,000
2011	4	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 268,000
2011	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2011	1	BCT OPERATIONS	$ 3,500,000
2011	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2012	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2012	1	BCT OPERATIONS	$ 3,500,000
2012	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2013	4	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 268,000
2013	1	AVL/CAD SYSTEM UPGRADE	$ 100,000
2013	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2013	1	BCT OPERATIONS	$ 3,500,000
2013	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2014	1	FAREBOX SYSTEM UPGRADE	$ 400,000
2014	3	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 201,000
2014	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2014	1	BCT OPERATIONS	$ 3,500,000
2014	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2015	1	RADIO SYSTEM REPLACEMENT	$ 200,000
2015	4	SPECIALIZED SERVICES VEHICLE (REPLACEMENT)	$ 160,000
2015	1	COMPUTER SYSTEM UPGRADE/REPLACEMENT	$ 50,000
2015	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2015	1	BCT OPERATIONS	$ 3,500,000
2015	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2016	2	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 134,000
2016	10	PASSENGER SHELTERS	$ 50,000
2016	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2016	1	BCT OPERATIONS	$ 3,500,000
2016	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2017	1	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 375,000
2017	1	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 67,000
2017	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2017	1	BCT OPERATIONS	$ 3,500,000
2017	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2018	5	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 1,875,000
2018	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2018	1	BCT OPERATIONS	$ 3,500,000
2018	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2019	5	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 1,875,000
2019	4	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 268,000
2019	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2019	1	BCT OPERATIONS	$ 3,500,000
2019	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2020	1	FACILITY RENOVATION	$ 1,000,000
2020	2	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 750,000
2020	3	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 201,000
2020	4	SPECIALIZED SERVICES VEHICLE (REPLACEMENT)	$ 160,000
2020	1	LARGE 28' MEDIUM-DUTY BUS (REPLACEMENT)	$ 130,000
2020	1	AVL/CAD SYSTEM UPGRADE	$ 100,000
2020	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2020	1	BCT OPERATIONS	$ 3,500,000
2020	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2021	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2021	1	BCT OPERATIONS	$ 3,500,000
2021	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2022	2	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 134,000
2022	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2022	1	BCT OPERATIONS	$ 3,500,000
2022	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2023	1	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 375,000
2023	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2023	1	BCT OPERATIONS	$ 3,500,000
2023	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2024	1	FAREBOX SYSTEM UPGRADE	$ 400,000
2024	1	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 67,000
2024	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2024	1	BCT OPERATIONS	$ 3,500,000
2024	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2025	4	SPECIALIZED SERVICES VEHICLE (REPLACEMENT)	$ 160,000
2025	1	COMPUTER SYSTEM UPGRADE/REPLACEMENT	$ 50,000
2025	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2025	1	BCT OPERATIONS	$ 3,500,000
2025	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2026	4	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 268,000
2026	10	PASSENGER SHELTERS	$ 50,000
2026	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2026	1	BCT OPERATIONS	$ 3,500,000
2026	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2027	3	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 201,000
2027	1	AVL/CAD SYSTEM UPGRADE	$ 100,000
2027	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2027	1	BCT OPERATIONS	$ 3,500,000
2027	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2028	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2028	1	BCT OPERATIONS	$ 3,500,000
2028	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2029	1	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 375,000
2029	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2029	1	BCT OPERATIONS	$ 3,500,000
2029	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2030	5	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 1,875,000
2030	1	FACILITY RENOVATION	$ 1,000,000
2030	4	SPECIALIZED SERVICES VEHICLE (REPLACEMENT)	$ 160,000
2030	1	LARGE 28' MEDIUM-DUTY BUS (REPLACEMENT)	$ 130,000
2030	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2030	1	BCT OPERATIONS	$ 3,500,000
2030	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2031	1	SMALL 10-15 PSNGR BUS/VAN (REPLACEMENT)	$ 67,000
2031	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2031	1	BCT OPERATIONS	$ 3,500,000
2031	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2032	4	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 1,500,000
2032	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2032	1	BCT OPERATIONS	$ 3,500,000
2032	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2033	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2033	1	BCT OPERATIONS	$ 3,500,000
2033	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2034	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2034	1	BCT OPERATIONS	$ 3,500,000
2034	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000
2035	1	FAREBOX SYSTEM UPGRADE	$ 400,000
2035	1	LARGE 30' HEAVY-DUTY BUS (REPLACEMENT)	$ 375,000
2035	1	RADIO SYSTEM REPLACEMENT	$ 200,000
2035	4	SPECIALIZED SERVICES VEHICLE (REPLACEMENT)	$ 160,000
2035	1	AVL/CAD SYSTEM UPGRADE	$ 100,000
2035	10	PASSENGER SHELTERS	$ 50,000
2035	1	SECURITY UPGRADES TO VEHICLES & FACILITIES	$ 9,540
2035	1	BCT OPERATIONS	$ 3,500,000
2035	1	SPECIALIZED SERVICES OPERATIONS	$ 93,000

BCATS

CHAPTER XIV

OPERATIONAL & MANAGEMENT STRATEGIES

SAFETEA-LU requires 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 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' 2035 Plan goals of safety, accessibility, preservation, efficiency, financial restraint, 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 each year by a trained team of field surveyors (including BCATS' staff) to determine deterioration levels. In 2005, BCATS also was involved in the surveying of all local roads in Calhoun County as part of a demonstration program under the MDOT asset management activity. Each of the local agencies has access to the PASER rating system and the RoadSoft software to utilize the results of the field data. In 2007, the City of Battle Creek chose to survey all of its local roads once again to determine changes since the 2005 review. Subsequently, the City of Battle Creek has been surveying its local roads every year to maintain an up-to-date database for scheduling of maintenance projects. The City of Battle Creek utilizes this information within its own pavement management and forecasting process. 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.

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 extent 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 identifies a general program account, called a "GPA", in each year of the Transportation Improvement Program (TIP) for its CPM activities. The local road agencies conduct these activities largely as maintenance work utilizing state and local funding. BCATS has promoted these activities through its support of the asset management program, its safety studies, and the inclusion of CPM for MDOT in the TIP.

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.)

BCATS supports these activities through funding of sign upgrade projects, local crack seal projects, certain enhancement projects, 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 is an ancillary benefit and 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, and promoting public education programs.

BCATS will continue to support safety activities through its local safety studies, selection and funding of periodic projects under the "local safety" program, and promoting national safety awareness promotions (such as National Drunk and Drugged Driving Prevention Month).

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 system, transit vehicle locator system, and a traffic management center with fiber connected optimized road corridors. Within the next year, a regional system of changeable message signs and traffic monitoring sensors will be installed by MDOT along I-94 and at the I-94/I-69 interchange in Calhoun County.

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 project. BCATS has also funded several traffic signal interconnect projects with a variety of funding sources, funded transit fare equipment upgrades and vehicle locator systems, and funded development of a local traffic management center 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.

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, 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 & Non-Motorized")

The recently passed “Complete Streets” legislation in the State of Michigan has many new 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, shared use paths, and bicycle lanes on roadways. BCATS expects these projects to continue, along with new ways of meeting the “Complete Streets” requirements. 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 extensive non-motorized plan and the County’s trails plan.

OTHER

BCATS promotes optimization of operation and management functions for public transit in the area’s of shelters and amenities, and route optimization. BCATS also promotes and funds the development and expansion of rideshare parking lots.

BCATS

CHAPTER XV
FINANCIAL PLAN

The revised planning regulations, which implement the SAFETEA-LU legislation, provide guidelines for the continuing requirement that all long range transportation plans be financially constrained documents. The SAFETEA-LU legislation continues, and adds to, the requirements of its predecessors, ISTEA and TEA-21, relative to the requirements for a planning process that is realistic in terms of the financial resources available to carry out the plan. The current 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.

(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. Starting December 11, 2007, revenue and cost estimates that support the metropolitan transportation plan must use an inflation rate(s) to reflect "year of expenditure dollars," based on reasonable financial principles and information, developed cooperatively by the MPO, State(s), and public transportation operator(s).

(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 nonattainment and maintenance areas, the financial plan shall address the specific financial strategies required to ensure the implementation of TCMs in the applicable SIP.

(vii) For illustrative purposes, the financial plan may (but is not required to) include additional projects that would be included in the adopted transportation plan if additional resources beyond those identified in the financial plan were to become available.

(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. Since this 2035 Transportation Plan is being developed and adopted after December 11, 2007, the revenue and expenditure projections have to be presented in cost adjusted/inflated dollars, termed "year-of-expenditure" dollars. The previous 2030 Transportation Plan 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 2035 Plan can not be predicted with much 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.

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 is currently $0.19 per gallon. However, as vehicles become more fuel efficient, and alternative fuel use increases, the revenue generated from this tax 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.

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. At present, there is not a local option for assessing these types of fees.

County and city MTF allocations have generally accounted for over half of locally available transportation revenues. Cities and villages may provide additional funding for transportation improvements. Typical sources for such funds include a community’s general fund, property tax millage, general obligation bonds, contributions from other units of government, tax increment financing, and special assessments. Revenue can also result from accumulated interest on MTF funding that has been distributed to the local road agencies.

County road commissions receive funding from their member townships for improvements to non-primary roads as road commissions are not allowed to pay for more than 50% of such improvements. Some counties 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, SAFETEA-LU continued the myriad of programs available to fund transportation improvements. The state utilizes the Interstate and National Highway System (NHS) program for high level facilities like 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 enhancement (which includes beautification, historic preservation, and non-motorized), bridge, and Congestion Mitigation Air Quality (CMAQ) categories of funding have also been continued under current federal legislation. Smaller programs include rail-highway crossing, Safe Routes to School, Scenic Byways, and recreational trails.

The Federal Transit Administration has separate programs to provide capital and operating funding for public transportation as well as other specific programs such as: New Freedom, Job Access Reverse Commute (JARC), and funding to support smaller providers of social service transportation.

Potential Sources of Revenue for Plan Development

Federal Funding
- Interstate Maintenance
- National Highway System (NHS)
- Surface Transportation Program (STP)
- Transportation Enhancement Funds
- Bridge Replacement and Rehabilitiation
- Congestion Mitigation & Air Quality (CMAQ)
- Safety
- High Risk Rural Roads
- Rail-Highway Crossings
- Safe Routes to School
- Scenic Byways
- Recreational Trails
- Border Infrastructure
- Federal Transit Administration Operating & Capital Programs
- New Freedom Program
- Job Access Reverse Commute Program
- Other federal

State Funding
- Motor Vehicle Tax (Act 51) Distribution
- Comprehensive Transportation Fund Distribution
- Transportation Economic Development Funds (TEDF)
- 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

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 2007 to 2009 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 XV-1
Average Per Year Major Street/Primary Road Revenues
for the Time Period 2007-2009

REVENUES	City of Battle Creek	Cal. Co. Rd. Comm. (est. 60% for BCATS area)	City of Springfield	Total
MI Transport. Fund	$3,783,450	$3,441,773	$285,344	$7,510,567
MI Econ. Dev. Fund	$0	$176,800	$0	$176,800
Federal funding	$0	$686,825	$140,852	$827,677
Local funding	$0	$8,809	$38,643	$47,452
Operating Transfers	$1,835,213	($571,031)	($115,899)	$1,148,283
Metro Act & Misc.	$188,150	$50,431	$45,301	$283,882
TOTAL	$5,806,813	$3,793,607	$394,241	$9,994,661

Table XV-2
Average Per Year Local Street/Secondary Road Revenues
for the Time Period 2007-2009

REVENUES	City of Battle Creek	Cal. Co. Rd. Comm. (est. 60% for BCATS area)	City of Springfield	Total
MI Transport. Fund	$983,807	$1,094,248	$100,553	$2,178,608
MI Econ. Dev. Fund	$0	$0	$0	$0
Federal funding	$0	$0	$0	$0
Local funding	$0	$77,446	$41,102	$118,548
Operating Transfers	$4,341,404	$571,031	$43,147	$4,955,582
Metro Act & Misc.	$48,287	$335,489	$23,080	$406,856
TOTAL	5,373,498	$2,078,214	$207,882	$7,659,594

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 at roughly the same levels as present. This will mean a loss of buying power, as the revenues will not keep pace with inflation. An increase of 3.2% per year is figured as the potential increase in federal STPU per an agreed upon rate statewide. Conservatively, no inflationary increase is applied to local funds available, as local agencies will likely not be increasing their contributions - due to decreasing state revenue sharing, shrinking local tax bases, local resistance to tax increases of any kind, and no legislative options for locally generated gas taxes. Using a conservative figure will not require counting on revenue sources that may not be available.

Therefore, based on their Act 51 reports, it is estimated that the local agencies, as a group, will have revenues available for transportation investments for major streets/primary roads averaging the following from each of these categories (based on Table XV-1):

MI Transportation Fund (MTF) - starting with a combined average of $7,510,567 in 2009, increasing 2% per year until 2013 and then increasing 4.04% each year thereafter until 2035 to reach a total of $299,151,000 for the overall time period of 2011-2035.

State Economic Development Categories - starting with a combined average of $176,800 in 2009, carrying forward at the same level for 2011 to 2035 (if the category survives the on-going state budget cuts) will yield a total of $4,071,000 in the category.

Local Funding - starting with a combined average of $47,452 in 2009, carrying forward at the same level for 2011 to 2035 (due to restricted local budgets) this category will provide a total of $1,081,000.

Operational Transfers - starting with a combined average of $1,148,283 in 2009, carrying forward with a 2% per year increase until 2035, this category will total $35,832,000 over the life of the Plan.

Once again, it should be noted that revenues and expenditures for local streets/secondary roads are not included in the calculations shown in the remainder of this chapter. The calculation of the cumulative total revenues by the above categories over the life of the 2035 Plan is shown in Table XV-3, below:

TABLE XV-3 – Cumulative Revenue Estimates for the Period of 2011-2035 for State and Local Sources used by LOCAL AGENCIES (Source: Act 51) ($ in 000's)

Year	MTF	Econ Develop.	Local	Transfers
2011	7,814	177	47	1,194
2012	7,970	177	47	1,218
2013	8,130	177	47	1,242
2014	8,458	177	47	1,267
2015	8,800	177	47	1,292
2016	9,155	177	47	1,318
2017	9,525	177	47	1,345
2018	9,910	177	47	1,372
2019	10,310	177	47	1,399
2020	10,727	177	47	1,427
2021	11,160	177	47	1,455
2022	11,611	177	47	1,485
2023	12,080	177	47	1,514
2024	12,568	177	47	1,545
2025	13,076	177	47	1,575
2026	13,604	177	47	1,607
2027	14,154	177	47	1,639
2028	14,726	177	47	1,672
2029	15,321	177	47	1,705
2030	15,940	177	47	1,739
2031	16,584	177	47	1,774
2032	17,254	177	47	1,810
2033	17,951	177	47	1,846
2034	18,676	177	47	1,883
2035	19,430	177	47	1,920
2011-35 Total	**314,934**	**4,425**	**1,175**	**38,243**
	TOTAL = $358,777 ($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 show up on the local agencies' Act 51 reports):

Surface Transportation Program (STP) - Based on an STP Urban amount of $1,342,000 in 2011 (from BCATS 2011-2014 TIP) (increasing 3.2% per year up until 2013 and 4.89% thereafter to 2035) to reach a total $57,345,000 available over the life of the Plan.

Congestion Mitigation Air Quality (CMAQ) - "Local" CMAQ funding for non-State projects in Calhoun County through 2014 has been estimated by MDOT to be $490,000 in 2011, $480,000 in 2012, $499,000 in 2013 and $518,000 in 2014. After 2014, the total has been held constant out to 2035. This is due to issues of new lower EPA standards for ozone and more local areas being designated as non-attainment. This will increase the pool of recipients and lessen the amount that the existing areas may receive, unless the total amount of funds for the CMAQ program is increased by Congress. Therefore, no increase (inflationary or otherwise) is built into this funding category. 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 Bridges - Federal funding for local bridges is now distributed by a regional bridge committee that assesses need within a multi-county area. MDOT is no longer providing 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.

Other Federal - Revenue estimates for several smaller federal funding categories are being estimated together for the purposes of the 2035 Plan. The 2011 general program account figures for local rail crossing, local bridge, local safety, and local enhancement have been used to calculate this total, again expanded 2% per year over the life of the Plan. There may be additional funding available in other miscellaneous categories (such as High Risk Rural Roads) that BCATS will not count toward available revenue totals at this time.

The calculation of these categories of funds over the life of the *2035 Metropolitan Transportation Plan* is shown in Table XV-4 on the following page.

Federal and State Revenues (for state system)

MDOT has provided revenue estimates for its program for the time frame of the 2035 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 SAFETEA-LU regulations.

BCATS has also included the state portion of CMAQ funding in Table XV-5 on the following page. The same methodology was used for the state's CMAQ revenue as for the local CMAQ revenue (Table XV-4), which included no increase after the 2011-2014 figures from the TIP were included.

TABLE XV-4 – Cumulative Revenue Estimates for the Period of 2011-2035 for FEDERAL Revenue Sources Used by Local Agencies ($ in 000's)

Year	Federal STP	CMAQ Local	Other Misc. Federal
2011	1,342	490	489
2012	1,385	480	499
2013	1,429	499	509
2014	1,499	518	519
2015	1,572	518	529
2016	1,649	518	540
2017	1,730	518	550
2018	1,814	518	561
2019	1,903	518	573
2020	1,996	518	584
2021	2,094	518	596
2022	2,196	518	608
2023	2,303	518	620
2024	2,349	518	632
2025	2,464	518	645
2026	2,585	518	658
2027	2,711	518	671
2028	2,844	518	684
2029	2,983	518	698
2030	3,129	518	712
2031	3,282	518	726
2032	3,442	518	741
2033	3,611	518	756
2034	3,787	518	771
2035	3,972	518	786
2011-35 Total	**60,071**	**12,865**	**15,657**
	Total Local (Federal) = $88,593 ($000's)		

Table XV-5 – Revenues Available for State Facilities ($ in 000's)

MDOT	Preserve	Capacity Improve and New Roads	State CMAQ
2011-2013	**23,364**	**0**	**1,469**
2014-2018	**42,940**	**0**	**2,590**
2019-2023	**51.050**	**0**	**2,590**
2024-2028	**60,130**	**3,000**	**2,590**
2029-2033	**70,830**	**34,200**	**2,590**
2034-2035	**31,750**	**54,100**	**1,036**
TOTAL BY CATEGORY	**229,065**	**91,300**	**12,865**
	TOTAL STATE FACILITIES = $333,230 ($000's)		

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. 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 XV-6 lists the estimated revenues for transit over the life of the 2035 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. Transit funding from state allocated sources is estimated to be approximately $97.98 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 much in recent years.

Table XV-6 – Revenues Available for Transit Services, Vehicles and Facilities ($ in 000's)

Year	Federal & State	Local, Farebox & Other
2011-2013	7,716	4,033
2014-2018	15,140	7,279
2019-2023	18,210	8,037
2024-2028	21,880	8,873
2029-2033	26,310	9,796
2034-2035	11,960	4,198
TOTAL	101,216	42,216
GRAND TOTAL	$143,432 ($000's)	

OPERATIONS & 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 2035 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, as of 2009, was approximately

$5.519 million per year. 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 3% 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 per se, and therefore the category is not inflated at the higher construction cost index used to develop the project list). **Based on this inflation rate, the total cost for operations and maintenance of the major street/primary road system in the BCATS area by the local agencies over the 2011 to 2035 time period of the 2035 Transportation Plan is expected to be approximately $229,188,000.**

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, and maintenance contract costs with local road agencies (including signal maintenance). Approximately 20% of the contract with the Calhoun County Road Commission covers roadways in the BCATS area. Therefore, 20% of the contact total is used toward MDOT's O+M costs. **Based on an average cost per year of $977,400 in 2007 (provided for the 2030 Transportation Plan), a total cost over the life of the 2035 Plan for state operations and maintenance is estimated at $40,105,000.** As with the local estimate, this category was expanded by 3% per year, for the same reasons as noted in the paragraph above.

NOTE: MDOT has not provided any revenue estimates for MTF dollars or other categories of funding that would support operations and maintenance expenditures by its TSC. However, the BCATS Plan is constrained even without these revenues being included in the totals in Table XV-5, above.

SUMMARY

Summaries of estimated available revenues and estimated expenditures over the life of the *2035 Plan* are shown in the following Tables XV-7 and XV-8:

Table XV-7 – Summary of Available Revenues for the BCATS *2035 Metropolitan Transportation Plan*

Projected Capital Revenues	Total $
Federal Transportation Funds for Construction of Local Roads	88,593,000
Federal and State Funding for State Controlled Roadways in BCATS area	333,230,000
Federal/State/Local Transit Funding (operating and capital)	134,166,000
State and Local Funding for Construction and Operations/Maintenance of Local Roads	358,777,000
TOTAL	914,766,000

Table XV-8 – Summary of *2035 Metropolitan Transportation Plan*
Operations/Maintenance & Capital Expenditures 2011-2035
(Individual Projects are described in a detailed listing in Chapter XVII)

Operations/Maintenance (O/M) Expenditures for Local & State Roads	Total $
Estimated Expenditures for O/M of Local Roads	**229,188,000**
Estimated Expenditures for O/M of State Roads	**40,105,000**
Planned Capital Expenditures	
Local Road Projects	
Improve/Expand (4 projects)	14,306,000
Preservation (38 projects)	61,374,000
Safety and Operations/Air Quality Improvements (15 projects)	3,934,000
Non-motorized (1 project)	1,793,000
Total	**81,407,000**
Transit Projects	
Preservation (operating expense projects) (51 projects)	113,867,000
Vehicle Replacement (82 total vehicles) (29 projects)	16,217,000
Vehicle Addition (1 total vehicle) (1 project)	21,000
Other Capital (13 projects)	2,938,000
Facility Project (2 projects)	2,652,000
Security (annual) (25 projects)	315,000
Total	**136,010,000**
State Projects	
Preservation (27 projects)	130,856,000
Operations/CMAQ (5 projects)	4,208,000
Safety (1 project)	584,000
Bridges (9 projects)	39,828,000
Total	**175,476,000**
TOTAL CAPITAL EXPENDITURES	**392,893,000**
Total Expenditures	**662,186,000**

DEMONSTRATION OF FINANCIAL CONSTRAINT

The total expenditures identified in the BCATS *2035 Metropolitan Transportation Plan* are within the total federal, state, and local revenues estimated for the *2035 Metropolitan Transportation Plan*. As shown in Table XV-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 *2035 Metropolitan Transportation Plan* is financially constrained.

Table XV-9 – Demonstration of Financial Constraint for the *2035 Metropolitan Transportation Plan* of 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	$914,766,000
Expenditures for Operations/Maintenance of Local & State Roads	($269,293,000)
Expenditures for Local Road Improvement Projects	($81,407,000)
Expenditures for Transit Improvement Projects	($136,010,000)
Expenditures for State Improvement Projects	($175,476,000)
REMAINING BALANCE	**$252,580,000**

CHAPTER XVI
ENVIRONMENTAL MITIGATION

SAFETEA-LU requires 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." (USDOT, Metropolitan Transportation Planning: Final Rule FHWA, Sec. 450.322(f)(7), effective 3/14/07).

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 of 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 the Plan, BCATS adopted a set of guidelines for "Considering Environmental Issues in the Transportation Planning Process" on September 26, 2007. The guidelines have since been distributed 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 have been provided to each of the road and transit agencies with projects in the Plan. The guidelines include areas of concern specifically identified by some of the agencies contacted under the "Consultation" efforts associated with the Plan. 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 *2030 Transportation Plan* development, as well as the current plan update (see Chapter V), led BCATS to information about the location of environmental and/or cultural factors to review relative to future transportation projects. The factors reviewed in the long-range planning process include Rivers & Streams, Lakes & Ponds, Wetlands, Forests, Farmland Preservation Areas, Endangered Species, Parks & Trails, Historic Districts & Properties, Wellhead Protection Areas, and Cemeteries.

The projects recommended in this *2035 Metropolitan Transportation Plan* are depicted in relation to the above factors, as identified for the *2030 Transportation Plan*, on Figures XVI-1 to XVI-6. 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 following the maps in Table XVI-1.

Relative to the factors dealing with 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 *2030 Transportation Plan* was adopted.

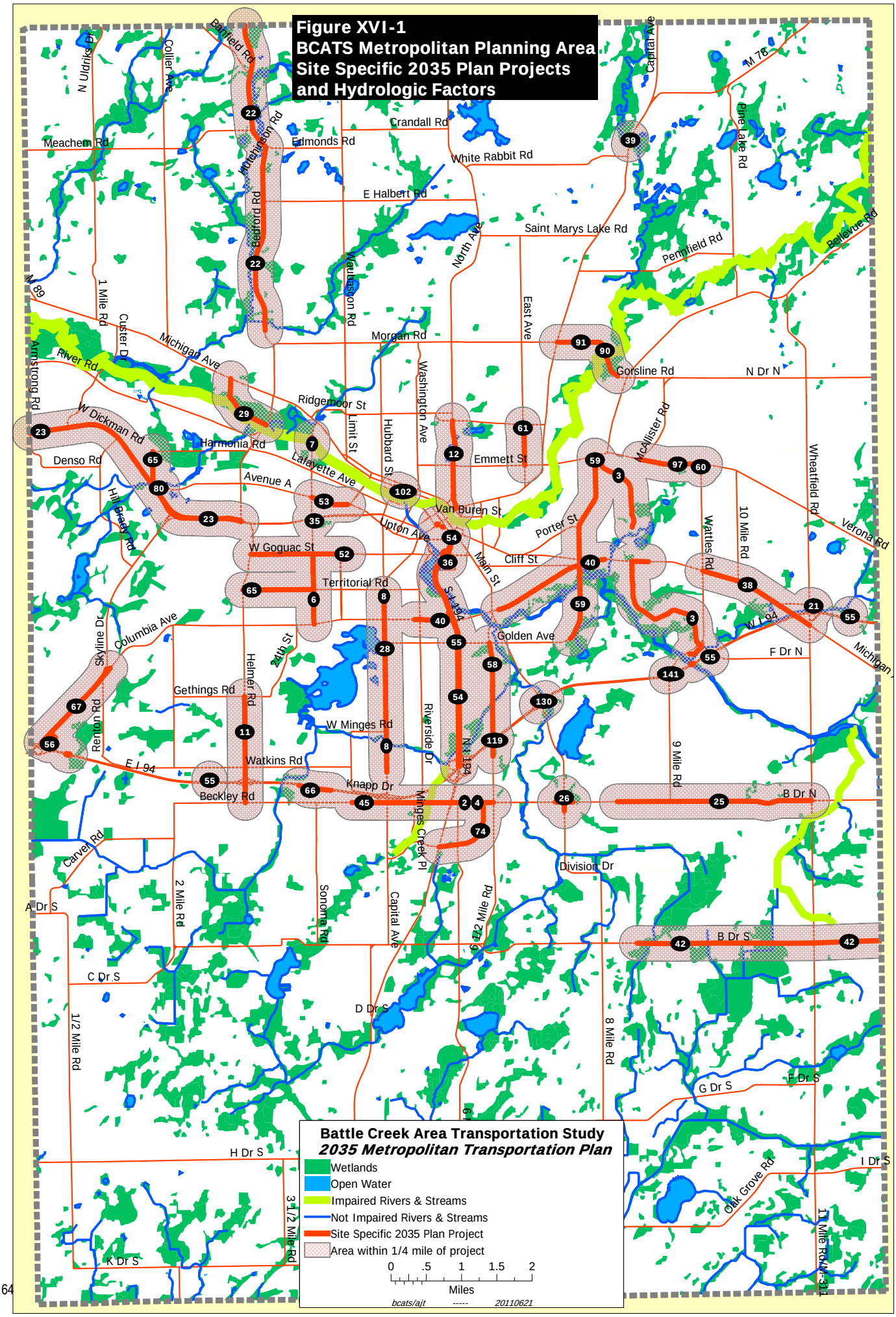


Figure XVI-1
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects
and Hydrologic Factors
Battle Creek Area Transportation Study
2035 Metropolitan Transportation Plan
Wetlands
Open Water
Impaired Rivers & Streams
Not Impaired Rivers & Streams
Site Specific 2035 Plan Project
Area within 1/4 mile of project
0 .5 1 1.5 2
Miles
bcats/ajt ----- 20110621
Bedford Rd
Hutchinson Rd
Crandall Rd
Edmonds Rd
White Rabbit Rd
E Halbert Rd
Saint Marys Lake Rd
Pennfield Rd
Bellevue Rd
Pine Lake Rd
Capital Ave
M 78
N Uldriks Dr
Collier Ave
Meachem Rd
1 Mile Rd
Custer Dr
N 89
Armstrong Rd
River Rd
Michigan Ave
Morgan Rd
Washington Ave
Limit St
Hubbard St
North Ave
East Ave
Gorsline Rd
N Dr N
Ridgemoor St
W Dickman Rd
Harmonia Rd
Denso Rd
Lafayette Ave
Avenue A
Emmett St
Van Buren St
Upton Ave
Porter St
McAllister Rd
Wheatfield Rd
Verona Rd
10 Mile Rd
Wattles Rd
Hill Brady Rd
W Goguac St
Cliff St
Main St
Territorial Rd
Columbia Ave
Skyline Dr
24th St
Helmer Rd
Golden Ave
W I 94
F Dr N
Michigan Ave
Gethings Rd
Renton Rd
W Minges Rd
Riverside Dr
Watkins Rd
E I 94
Beckley Rd
Knapp Dr
Minges Creek Pl
9 Mile Rd
B Dr N
Carver Rd
Division Dr
A Dr S
2 Mile Rd
Sonoma Rd
Capital Ave
1/2 Mile Rd
B Dr S
C Dr S
D Dr S
8 Mile Rd
G Dr S
F Dr S
1/2 Mile Rd
H Dr S
3 1/2 Mile Rd
Oak Grove Rd
I Dr S
11 Mile Rd
K Dr S

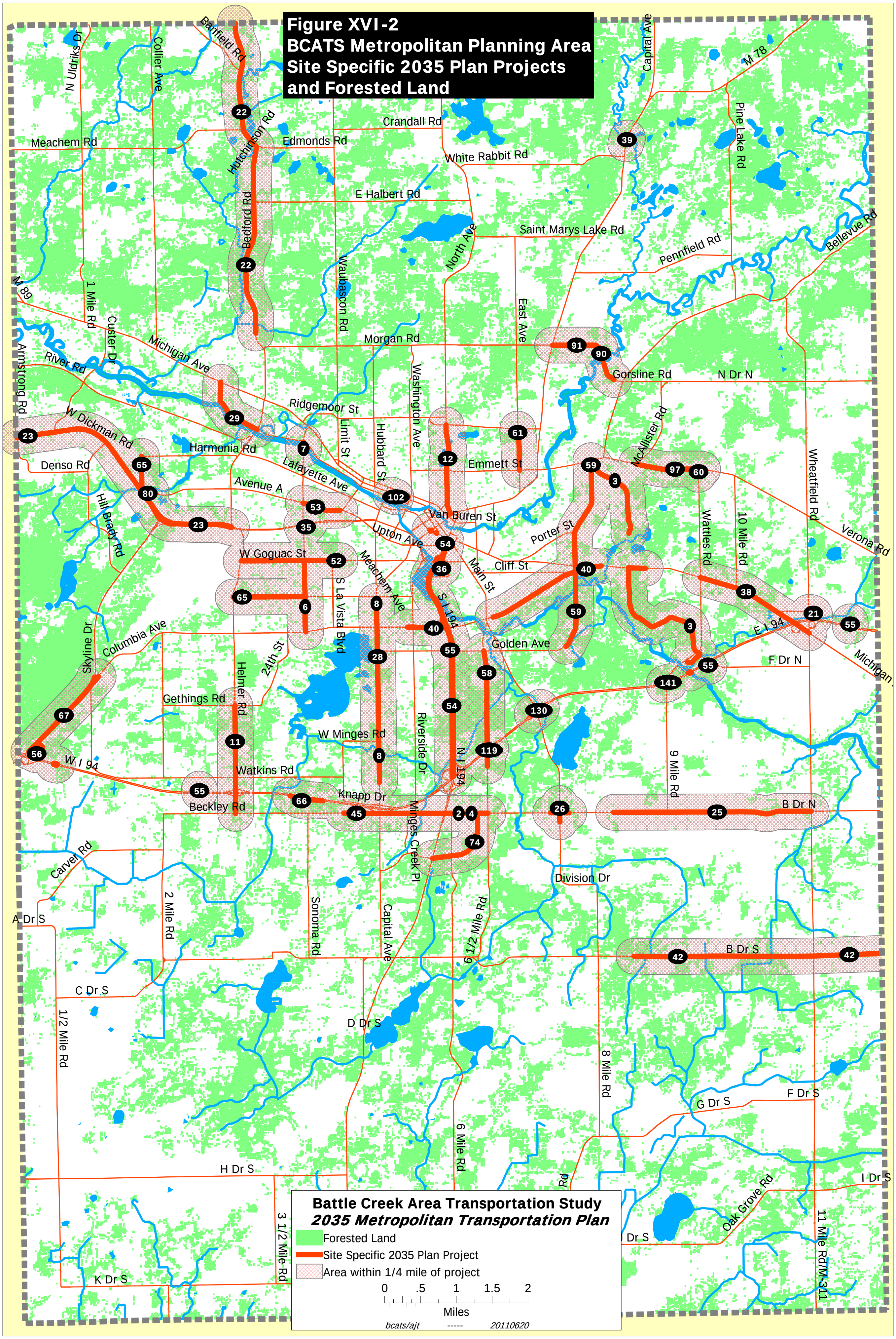


Figure XVI-2
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects
and Forested Land
Battle Creek Area Transportation Study
2035 Metropolitan Transportation Plan
Forested Land
Site Specific 2035 Plan Project
Area within 1/4 mile of project
0 .5 1 1.5 2
Miles
bcats/ajt ----- 20110620
Banfield Rd
N Uldriks Dr
Collier Ave
Capital Ave
M 78
Crandall Rd
Meachem Rd
Edmonds Rd
Hutchinson Rd
White Rabbit Rd
Pine Lake Rd
E Halbert Rd
Bedford Rd
Saint Marys Lake Rd
North Ave
Bellevue Rd
Pennfield Rd
Waubascon Rd
East Ave
M 89
1 Mile Rd
Custer Dr
Michigan Ave
River Rd
Armstrong Rd
Morgan Rd
Gorsline Rd
N Dr N
Ridgemoor St
W Dickman Rd
Harmonia Rd
Limit St
Hubbard St
Washington Ave
Emmett St
McAllister Rd
Wheatfield Rd
Denso Rd
Lafayette Ave
Avenue A
Hill Brady Rd
Van Buren St
Wattles Rd
10 Mile Rd
Upton Ave
Porter St
Verona Rd
W Goguac St
Meachem Ave
Main St
Cliff St
S La Vista Blvd
S I 194
E I 94
Golden Ave
Skyline Dr
Columbia Ave
24th St
F Dr N
Michigan
Helmer Rd
Gethings Rd
W Minges Rd
Riverside Dr
N I 194
W I 94
Watkins Rd
9 Mile Rd
Knapp Dr
Beckley Rd
Minges Creek Pl
B Dr N
Carver Rd
Division Dr
2 Mile Rd
Sonoma Rd
Capital Ave
6 1/2 Mile Rd
A Dr S
B Dr S
C Dr S
1/2 Mile Rd
D Dr S
8 Mile Rd
G Dr S
F Dr S
6 Mile Rd
H Dr S
I Dr S
Oak Grove Rd
3 1/2 Mile Rd
11 Mile Rd/M-311
K Dr S
Dr S
Rd
22
39
91
90
23
29
7
61
12
59
3
97
60
65
80
102
53
23
35
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52
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38
21
55
65
6
8
59
3
40
55
28
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130
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119
56
55
66
45
2
4
26
25
74
42
42

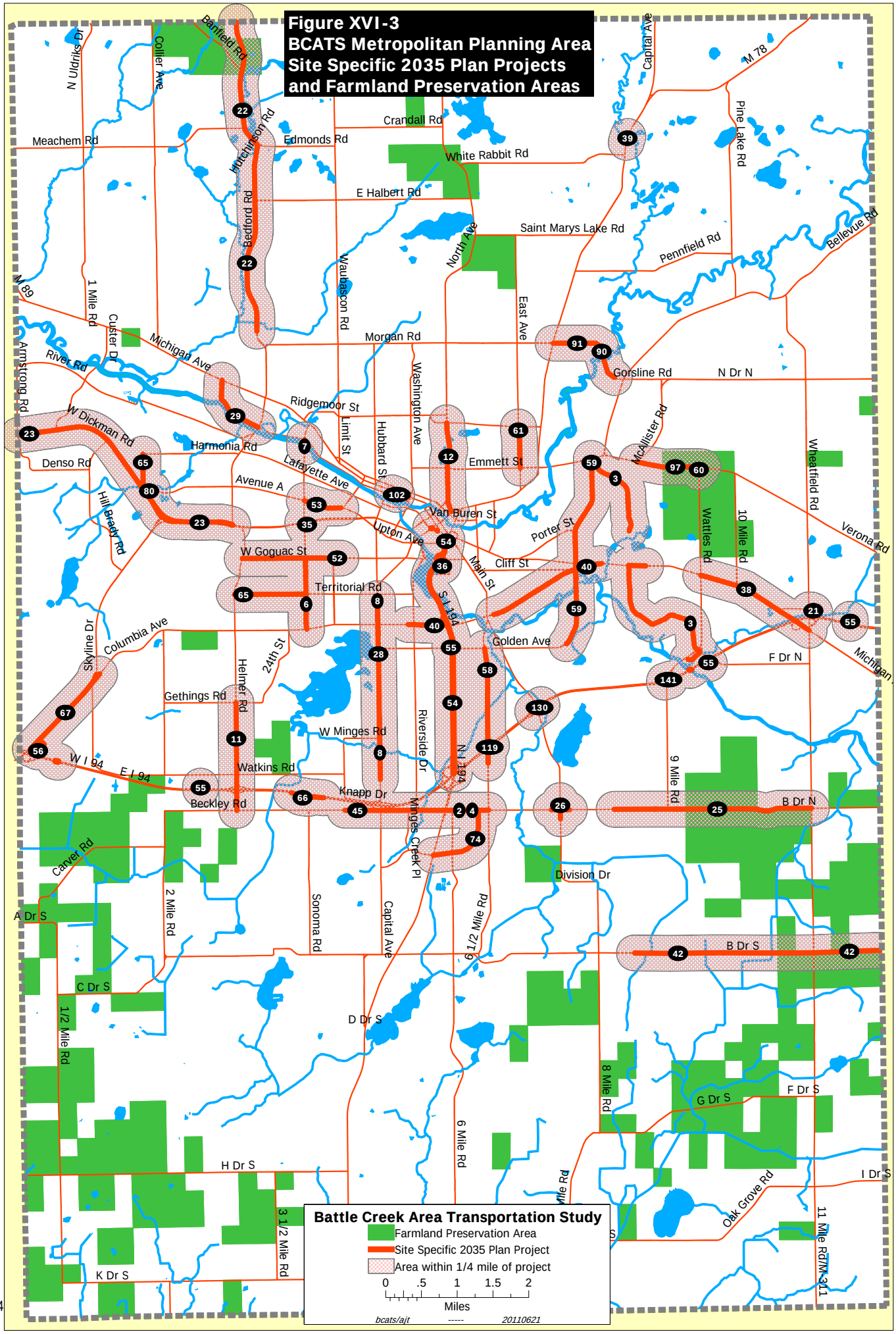


Figure XVI-3
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects
and Farmland Preservation Areas
Battle Creek Area Transportation Study
Farmland Preservation Area
Site Specific 2035 Plan Project
Area within 1/4 mile of project
0 .5 1 1.5 2
Miles
bcats/ajt ----- 20110621
Banfield Rd
Coller Ave
N Uldriks Dr
Meachem Rd
Crandall Rd
Edmonds Rd
White Rabbit Rd
E Halbert Rd
Hutchinson Rd
Bedford Rd
Waubascon Rd
North Ave
Saint Marys Lake Rd
Pennfield Rd
Bellevue Rd
Capital Ave
M 78
Pine Lake Rd
M 89
1 Mile Rd
Custer Dr
Armstrong Rd
River Rd
Michigan Ave
Morgan Rd
East Ave
Gorsline Rd
N Dr N
Ridgemoor St
Limit St
Hubbard St
Washington Ave
Emmett St
McAllister Rd
Wheatfield Rd
W Dickman Rd
Harmonia Rd
Denso Rd
Lafayette Ave
Avenue A
Van Buren St
Porter St
Wattles Rd
10 Mile Rd
Verona Rd
Hill Brady Rd
Upton Ave
W Goguac St
Cliff St
Main St
Territorial Rd
S I 194
Golden Ave
F Dr N
Michigan
Skyline Dr
Columbia Ave
24th St
Helmer Rd
Gethings Rd
W Minges Rd
Riverside Dr
N I 194
W I 94
E I 94
Watkins Rd
Beckley Rd
Knapp Dr
Minges Creek Pl
9 Mile Rd
B Dr N
Carver Rd
Division Dr
A Dr S
2 Mile Rd
Sonoma Rd
Capital Ave
6 1/2 Mile Rd
B Dr S
C Dr S
1/2 Mile Rd
D Dr S
8 Mile Rd
F Dr S
G Dr S
6 Mile Rd
H Dr S
I Dr S
Oak Grove Rd
11 Mile Rd/M-311
3 1/2 Mile Rd
K Dr S

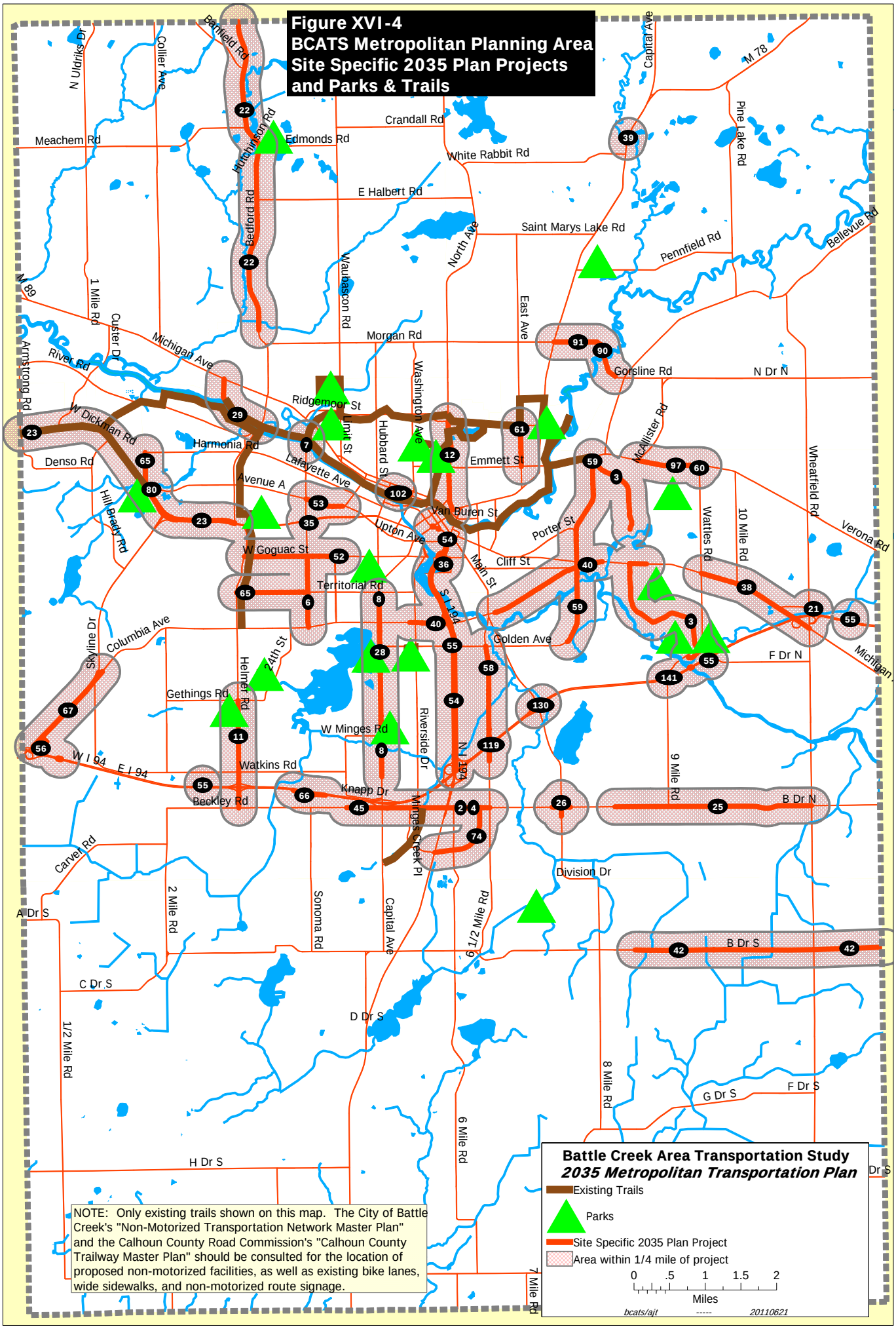
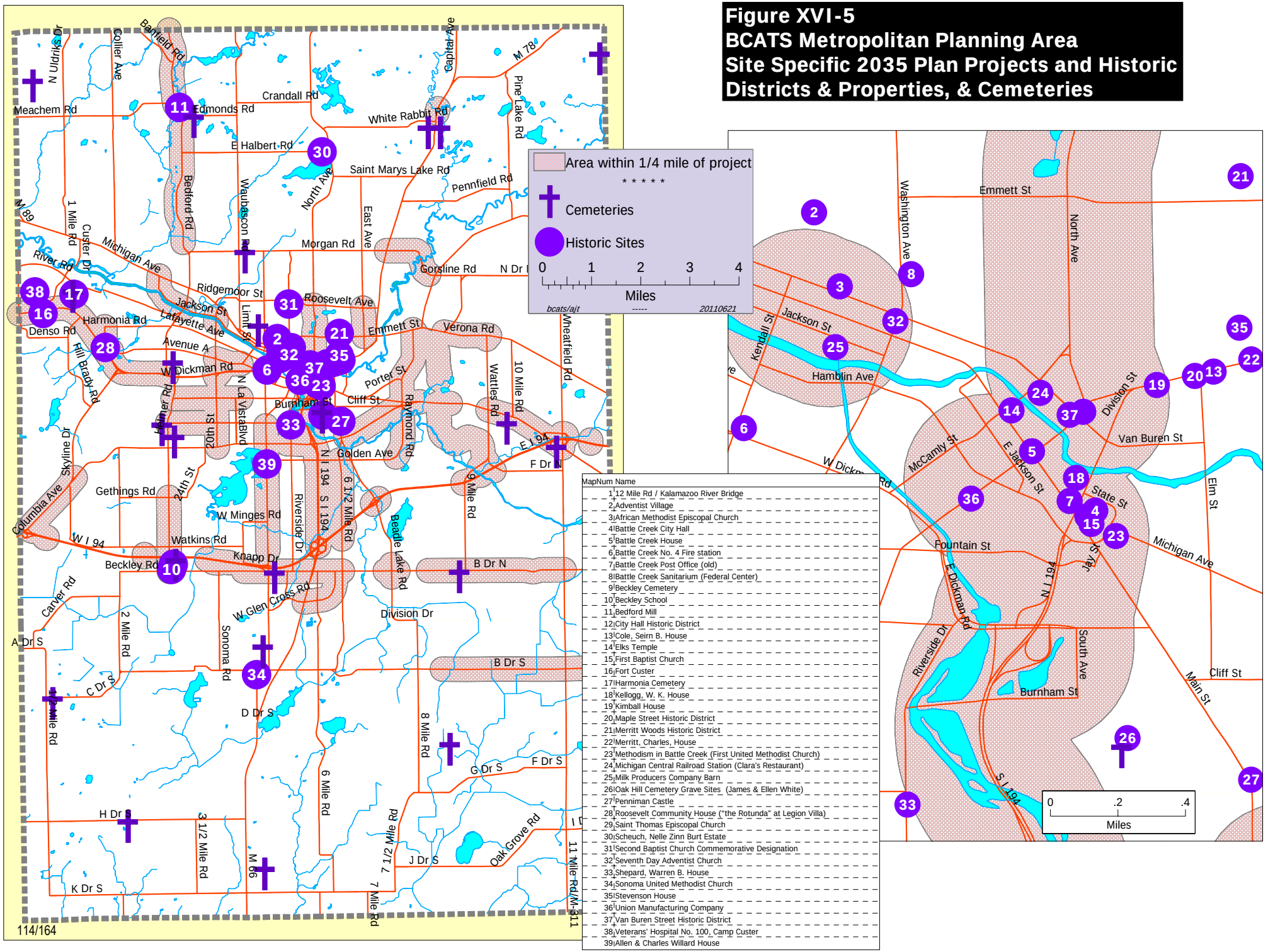


Figure XVI-4
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects
and Parks & Trails
Battle Creek Area Transportation Study
2035 Metropolitan Transportation Plan
Existing Trails
Parks
Site Specific 2035 Plan Project
Area within 1/4 mile of project
0 .5 1 1.5 2
Miles
bcats/ajt ----- 20110621
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 Commission'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.
Meachem Rd
Crandall Rd
Edmonds Rd
White Rabbit Rd
E Halbert Rd
Saint Marys Lake Rd
Pennfield Rd
Morgan Rd
Gorsline Rd
N Dr N
Ridgemoor St
Harmonia Rd
Denso Rd
Avenue A
Lafayette Ave
Emmett St
Van Buren St
Upton Ave
Porter St
W Goguac St
Territorial Rd
Cliff St
Golden Ave
F Dr N
Columbia Ave
Gethings Rd
W Minges Rd
Watkins Rd
Knapp Dr
Beckley Rd
B Dr N
Carvel Rd
A Dr S
Division Dr
B Dr S
C Dr S
D Dr S
G Dr S
F Dr S
H Dr S
Bedford Rd
Hutchinson Rd
Waubascon Rd
North Ave
East Ave
Washington Ave
Hubbard St
Limit St
Main St
Riverside Dr
Minges Creek Pl
Capital Ave
Sonoma Rd
Helmer Rd
24th St
Skyline Dr
Hill Brady Rd
Custer Dr
Michigan Ave
Rivet Rd
Armstrong Rd
W Dickman Rd
1 Mile Rd
2 Mile Rd
1/2 Mile Rd
6 1/2 Mile Rd
6 Mile Rd
7 Mile Rd
8 Mile Rd
9 Mile Rd
10 Mile Rd
McAllister Rd
Wattles Rd
Wheatfield Rd
Verona Rd
Pine Lake Rd
Bellevue Rd
Capital Ave
M 78
M 89
W I 94
E I 94
N I 194
S I 194
Collier Ave
N Uldriks Dr
Barfield Rd

Figure XVI-5
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects and Historic Districts & Properties, & Cemeteries



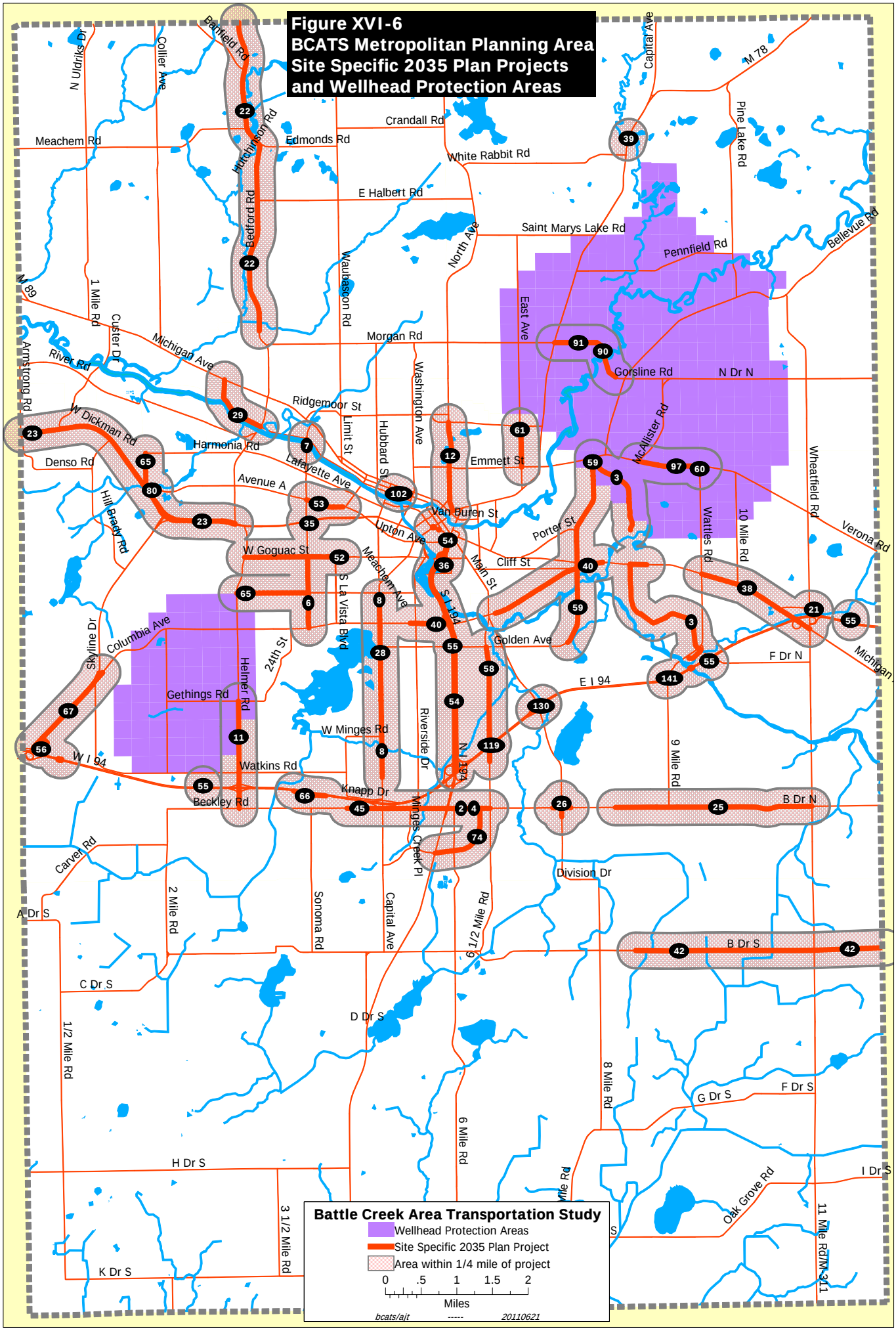


Figure XVI-6
BCATS Metropolitan Planning Area
Site Specific 2035 Plan Projects
and Wellhead Protection Areas
Battle Creek Area Transportation Study
Wellhead Protection Areas
Site Specific 2035 Plan Project
Area within 1/4 mile of project
0 .5 1 1.5 2
Miles
bcats/ajt ----- 20110621
Bartlett Rd
Collier Ave
N Uldriks Dr
Meachem Rd
Crandall Rd
Edmonds Rd
White Rabbit Rd
Capital Ave
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Pine Lake Rd
Hutchinson Rd
Bedford Rd
E Halbert Rd
Saint Marys Lake Rd
Pennfield Rd
Bellevue Rd
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10 Mile Rd
Verona Rd
Hill Brady Rd
Upton Ave
W Goguac St
Meachem Ave
Cliff St
Main St
S La Vista Blvd
S I 194
Golden Ave
F Dr N
Michigan
Skyline Dr
Columbia Ave
24th St
Helmer Rd
Gethings Rd
E I 94
W Minges Rd
Riverside Dr
N I 194
9 Mile Rd
W I 94
Watkins Rd
Beckley Rd
Knapp Dr
Minges Creek Pl
B Dr N
Carver Rd
Division Dr
A Dr S
2 Mile Rd
Sonoma Rd
Capital Ave
6 1/2 Mile Rd
B Dr S
C Dr S
D Dr S
1/2 Mile Rd
8 Mile Rd
G Dr S
F Dr S
6 Mile Rd
H Dr S
I Dr S
Oak Grove Rd
11 Mile Rd/M-311
3 1/2 Mile Rd
K Dr S

TABLE XVI-1 (page 1 of 2)
Michigan County Elements Lists
Calhoun County - Threatened and Endangered Species
Current as of 12/10/2010

Scientific Name	Common Name	State Status	Federal Status
Acella haldemani	Spindle lymnaea	SC	
Acris crepitans blanchardi	Blanchard's cricket frog	T	
Agrimonia rostellata	Beaked agrimony	T	
Alasmidonta marginata	Elktoe	SC	
Alasmidonta viridis	Slippershell	T	
Ammodramus henslowii	Henslow's sparrow	E	
Ammodramus savannarum	Grasshopper sparrow	SC	
Amorpha canescens	Leadplant	SC	
Angelica venenosa	Hairy angelica	SC	
Baptisia lactea	White or prairie false indigo	SC	
Bog			
Cacalia plantaginea	Prairie indian-plantain	SC	
Clemmys guttata	Spotted turtle	T	
Corydalis flavula	Yellow fumewort	T	
Cuscuta pentagona	Dodder	SC	
Cypripedium candidum	White lady slipper	T	
Dendroica cerulea	Cerulean warbler	T	
Dichanthelium leibergii	Leiberg's panic grass	T	
Dichanthelium microcarpon	Small-fruited panic-grass	SC	
Dry-mesic Prairie	High Prairie, Midwest Type		
Dry-mesic Southern Forest			
Eleocharis compressa	Flattened spike rush	T	
Eleocharis engelmannii	Engelmann's spike rush	SC	
Eleocharis radicans	Spike rush	X	
Emydoidea blandingii	Blanding's turtle	SC	
Erimyzon claviformis	Creek chubsucker	E	
Eryngium yuccifolium	Rattlesnake-master or button snakeroot	T	
Eupatorium sessilifolium	Upland boneset	T	
Falco peregrinus	Peregrine falcon	E	
Filipendula rubra	Queen-of-the-prairie	T	
Floodplain Forest			
Fontigens nickliniana	Watercress snail	SC	
Fraxinus profunda	Pumpkin ash	T	
Galearis spectabilis	Showy orchis	T	
Geum virginianum	Pale avens	SC	
Great Blue Heron Rookery	Great Blue Heron Rookery		
Haliaeetus leucocephalus	Bald eagle	SC	
Helianthus hirsutus	Whiskered sunflower	SC	
Helianthus mollis	Downy sunflower	T	
Hydrastis canadensis	Goldenseal	T	
Isotria verticillata	Whorled pogonia	T	

State status: E= endangered -- T=threatened -- SC=special concern

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 XVI-1 (page 2 of 2)
Michigan County Elements Lists
Calhoun County - Threatened and Endangered Species
Current as of 12/10/2010

Scientific Name	Common Name	State Status	Federal Status
Lechea minor	Least pinweed	X	
Lepisosteus oculatus	Spotted gar	SC	
Lepyronia angulifera	Angular spittlebug	SC	
Liparis liliifolia	Purple twayblade	SC	
Mertensia virginica	Virginia bluebells	E	
Moxostoma carinatum	River redhorse	T	
Myotis sodalis	Indiana bat	E	LE
Nerodia erythrogaster neglecta	Copperbelly water snake	E	LT
Notropis anogenus	Pugnose shiner	E	
Notropis chalybaeus	Ironcolor shiner	X	
Notropis texanus	Weed shiner	X	
Oecanthus laricis	Tamarack tree cricket	SC	
Panax quinquefolius	Ginseng	T	
Papaipema beeriana	Blazing star borer	SC	
Platanthera ciliaris	Orange- or yellow-fringed orchid	E	
Platanthera leucophaea	Prairie white-fringed orchid	E	LT
Pleurobema sintoxia	Round pigtoe	SC	
Poor Conifer Swamp			
Prairie Fen	Alkaline Shrub/herb Fen, Midwest Type		
Protonotaria citrea	Prothonotary warbler	SC	
Rallus elegans	King rail	E	
Silene stellata	Starry campion	T	
Sistrurus catenatus catenatus	Eastern massasauga	SC	C
Southern Hardwood Swamp			
Southern Shrub-carr			
Speyeria idalia	Regal fritillary	E	
Spiza americana	Dickcissel	SC	
Stenelmis douglasensis	Douglas stenelmis riffle beetle	SC	
Terrapene carolina carolina	Eastern box turtle	SC	
Utterbackia imbecillis	Paper pondshell	SC	
Venustaconcha ellipsiformis	Ellipse	SC	
Villosa iris	Rainbow	SC	
Viola pedatifida	Prairie birdfoot violet	T	
Wilsonia citrina	Hooded warbler	SC	
Zizania aquatica var. aquatica	Wild rice	T	

State status: E= endangered -- T=threatened -- SC=special concern

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: http://web4.msue.msu.edu/mnfi/data/cnty_dat.cfm?county=Calhoun

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.

ANALYSIS

Potential impact issues for each location specific Plan project (except signal interconnect projects) are noted on the summary table of “Potentially Impacted Environmental Resources”, Table XVI-2, on the next page.

The purpose of Table XVI-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.

The projects in the 2035 Plan involving the location of new roadway facilities or widening of existing roads have the greatest potential for impacting multiple resource areas. The long time-frame until proposed implementation for most of these projects will allow for adequate review and assessment relative to their impact on the natural and human environments.

Following Table XVI-2 (on the next page) are the "Guidelines" that have been provided to all of the road agencies in the BCATS area, and to Battle Creek Transit, for use in developing future projects.

TABLE XVI-2

Potentially Impacted Environmental Resources

Site Specific
2035 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 and Streams	Other Rivers and Streams	Lakes and Ponds	Wetlands	Forests	Farmland Preservation Areas	Endangered Species	Parks and Trails	Historic Districts & Properties	Wellhead Protection Areas	Cemeteries
2	Beckley Road/B Drive N	from M-66 to 6.5 Mile Rd	✔				✔			✔			✔
3	Calhoun Co. Trail Phase 1	from Emmett St through Ott Preserve to Bridge Park		✔		✔	✔			✔		✔	
4	Beckley Road/B Drive N	from M-66 to 6.5 Mile Rd					✔						
6	20th Street	from Goguac St to Columbia Ave					✔						
7	20th Street Bridge	over Kalamazoo River	✔				✔			✔			
8	Capital Ave. SW	from Fairfield to Rebecca					✔			✔	✔		
9	Capital/Hamblin Signal Upgrade	Approaches & traffic signal devices at intersection of Capital Ave & Hamblin Ave in downtown Battle Creek									✔		
10	Hamblin/Jackson Intersection (2010 ARRA)	Intersection & approaches									✔		
11	Helmer Road	from Beckley Rd to Gethings Rd					✔			✔	✔	✔	
12	North Avenue	from Capital Ave NE to Roosevelt Ave	✔				✔			✔	✔		
19	I-194/M-66 Bridge	over GTWRR									✔		
20	I-194/M-66 Bridges	over Dickman Road and Fountain Ave.									✔		
21	I-94 Interchange (exit 104)	at 11 Mile Road		✔									✔
22	M-37 (Bedford Rd.)	from Creekview Dr to north county line		✔		✔	✔	✔		✔	✔		✔
23	M-96 (Dickman Rd.)	from Armstong Rd to Helmer Rd					✔			✔	✔		✔
25	B Drive N	from 8.5 Mile Rd to 11 Mile Rd	✔			✔	✔	✔					✔
26	B Drive N/Beadle Lake Road Intersection	Intersection & Approaches				✔	✔						
28	Capital Ave. SW	from Weeks Rd to Cascade Dr			✔		✔			✔	✔		
29	Jackson St./Stringham Road	from Bedford Rd to M-89 (Michigan Ave)	✔				✔			✔			
35	I-94BL/20th Street Intersection	Crossovers in SE quadrant of inters.					✔						
36	I-194 Interchange	at Dickman Road					✔				✔		
37	I-194/M-66 southbound off ramp onto M-96 (Columbia Ave E)	I-194/M-66 exit 2 interchange					✔						
38	I-94BL/M-96 (E. Michigan Ave)	from Wattles Rd to M-311 (11 Mile Rd)		✔		✔	✔						✔
39	M-66 (Capital Ave NE) bridge over Wanondaga Creek	over Wanondaga Creek		✔			✔						✔
40	M-96 (Columbia Ave E)	from west of Riverside Dr eastward to I-194/M-66, and from east of M-294 (Main St/Beadle Lake Rd) eastward to junction at I-94BL (Michigan Ave)					✔				✔		
41	M-96 (Columbia Ave E) bridge over Raymond Rd	Bridge over Raymond Rd.					✔						
42	B Drive S	from 8.5 Mile Rd to 12 Mile Rd	✔	✔		✔	✔	✔					
45	Beckley Road	from Minges Rd to M-66	✔				✔			✔			✔
52	Goguac Street	from Helmer Rd to Carl Ave					✔						
53	Upton Ave/Avenue A	from Avenue A eastward to city limits / from 20th St eastward to Upton					✔						
54	I-194 Freeway Signing	from I-94 to Hamblin Ave	✔				✔				✔		
55	I-94 & I-194 ITS Project	In BCATS area		✔			✔			✔	✔	✔	
56	I-94BL Carpool Lot	NE quadrant at Exit 92				✔	✔						
58	6 1/2 Mile Road	from Christian Dr to G Dr N		✔		✔	✔						
59	Raymond Road	from Verona Rd to Golden Ave		✔		✔	✔			✔		✔	
60	Wattles Road/Verona Road Intersection	Intersection & Approaches					✔	✔		✔		✔	
61	East Avenue	from Emmett St to Roosevelt Ave					✔			✔	✔	✔	
65	Territorial Rd & Evergreen Ave	from Helmer Rd eastward to 20th St & from Avenue A northward to Harmonia Rd		✔		✔	✔			✔	✔	✔	
66	I-94 EB Rest Area	Rest Area #703		✔		✔	✔						
67	I-94BL/M-37 (Climax Rd/Columbia Ave W)	from I-94 exit 92 interchange to Columbia Ave W turnoff					✔						
74	Glen Cross Road Extension	from M-66 east and north to B Dr N		✔			✔						
80	Avenue A re-alignment / Military Ave extension	from M-96 (Dickman Rd) to Avenue A		✔		✔	✔			✔	✔		
90	Morgan Road Bridge Over Battle Creek River	at Battle Creek River	✔			✔	✔					✔	
91	Morgan Road Extension	from M-66 (Capital Ave NE) to Bellevue Rd at N Dr N	✔			✔	✔					✔	
97	Verona Rd	from McAllister Rd to Wattles Rd				✔	✔	✔		✔		✔	
102	Transit facility renovation	for Battle Creek Transit	✔							✔	✔		
110	EB and WB Bridges on I-94	over GTWRR					✔						
119	EB and WB Bridges on I-94	over 6 1/2 Mile Rd.				✔	✔						
130	EB and WB Bridges on I-94	over M-294 (Beadle Lake Rd.)		✔		✔	✔						
141	EB and WB Bridges on I-94	over 9 Mile Road		✔			✔			✔			
152	Transit facility renovation	for Battle Creek Transit	✔								✔		
156	EB and WB Bridges on I-94	over Kalamazoo River		✔		✔	✔						

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 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.*)

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 rate 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

Michigan Natural Features Inventory
www.web4.msue.msu.edu/mnfi/

BCATS

CHAPTER XVII

RECOMMENDED IMPROVEMENTS
2035 METROPOLITAN TRANSPORTATION PLAN

Every project identified as a preferred alternative in Chapter XII or Chapter XIII was included in the "package" of projects tested for fiscal constraint (Chapter XV). The results of the financial analysis permits the selection of all the projects for inclusion in this Plan, as listed in the project list, Table XVII-1, following Figure XVII-1 on the next page. The "BCATS ID" project numbers correspond to the map locations depicted on Figure XVII-1.

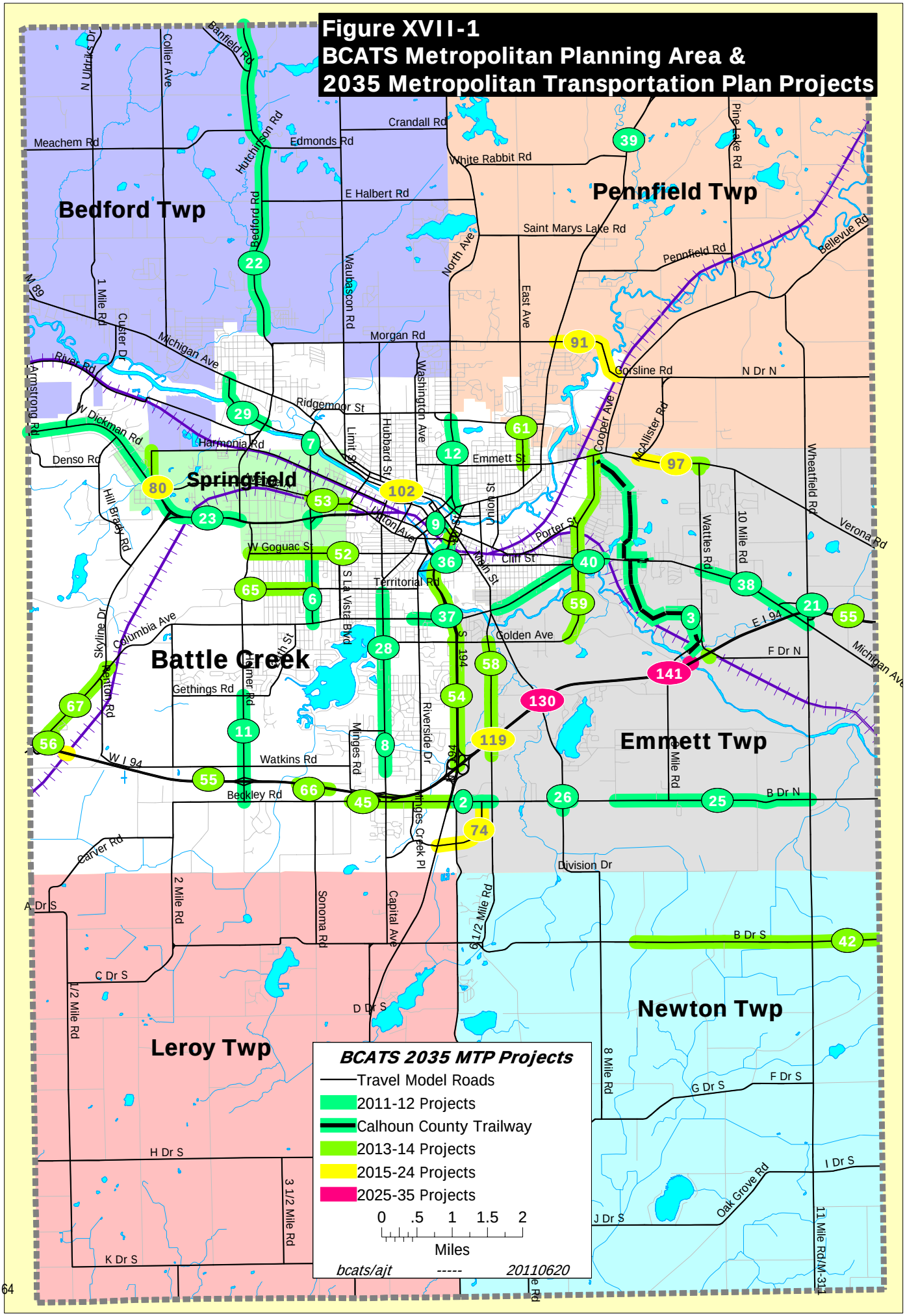
For discussion and evaluation, the proposed projects were designated one or more of ten project "Types":

1. Non-motorized
2. Expansion (new or widened roads)
3. Preservation (of pavement)
4. Security (generally for transit)
5. Safety-Related
6. Traffic Operations
7. Transit Operating
8. Transit Capital
9. Bridges
10. Air Quality

For projects of multiple "Type", the first category listed is the predominant focus of the project and the category used in tabulating numbers of projects and total project costs by category. At the end of this chapter, Figure XVII-2 graphically displays a breakdown by project type, by the number of projects and by the total estimated costs of projects in each category. Figure XVII-3 presents the distribution of proposed Transit Capital expenditures by item.

Note that the last five "projects" on the list are recommended annual expenditures, summed over 2011-2035 for the three transit "projects", and over 2015-2035 for the Local and the MDOT road "Preserve Strategies".

Figure XVII-1
BCATS Metropolitan Planning Area & 2035 Metropolitan Transportation Plan Projects



2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2011	1		1 (one) Clean Diesel Dump Truck	within Calhoun County & adjacent counties as necessary	Replace existing double-axle, with box+blade, dump truck with new clean diesel model	$ 185	CCRC	Air Quality
2011	**2**	0.60	Beckley Road/B Drive N	from M-66 to 6.5 Mile Rd	Resurface	$ 296	CCRC	Preservation
2011	**3**	4.10	Calhoun Co. Trail Phase 1	from Emmett St through Ott Preserve to Bridge Park	New multi-modal trailway	$ 1,793	CCRC	Non-motorized
2011	**4**	0.60	Beckley Road/B Drive N	from M-66 to 6.5 Mile Rd	Modify geometrics & signals at 6 Mile Rd & at Harper Village Dr intersections	$ 200	CCRC & City of BC	Traffic Operations, Safety-Related, & Air Quality
2011	5		1 (one) Clean Diesel Utility Truck	traffic signal maintenance within Calhoun County & adjacent counties as necessary	Replace existing signal maintenance truck with new clean diesel model with upgraded overhead boom (vertical lift AND horizontal reach) to reduce work time & congestion at signalized intersections.	$ 120	City of BC	Air Quality
2011	**6**	1.00	20th Street	from Goguac St to Columbia Ave	Resurface	$ 249	City of BC	Preservation
2011	**7**	0.10	20th Street Bridge	over Kalamazoo River	Rehabilitation	$ 556	City of BC	Preservation
2011	**8**	1.70	Capital Ave. SW	from Fairfield to Rebecca	Resurface	$ 375	City of BC	Preservation
2011	**9**	0.10	Capital/Hamblin Signal Upgrade	Approaches & traffic signal devices at intersection of Capital Ave & Hamblin Ave in downtown Battle Creek	Replace 2 & add 2 steel strain poles to support new mast arm design signal system. Add signal faces for left-turn phasing (new), and detector cameras on for full signal actuation on each approach. Appurtenant signage & lane markings.	$ 254	City of BC	Air Quality & Traffic Operations
2011	**10**	0.10	Hamblin/Jackson Intersection (2010 ARRA)	Intersection & approaches	Rsurface all roadway pavement; minor widening to accomodate improved curb, gutter, & pedestrian facilities.	$ 85	City of BC	Safety-Related
2011	**11**	1.50	Helmer Road	from Beckley Rd to Gethings Rd	Resurface	$ 261	City of BC	Preservation
2011	**12**	1.30	North Avenue	from Capital Ave NE to Roosevelt Ave	Resurface	$ 337	City of BC	Preservation
2011	16		Transit Small Bus/ Van	for Battle Creek Transit	purchase 2 replacement vehicles	$ 160	City of BC Transit	Transit Capital
2011	17		Transit Small Bus/ Van	for Social Service Agencies	purchase 6 replacement vehicles	$ 198	City of BC Transit	Transit Capital
2011	18		Transit Small Bus/ Van	for Social Service Agency	purchase 1 addition vehicle	$ 21	City of BC Transit	Transit Capital
2011	**19**	0.10	I-194/M-66 Bridge	over GTWRR	Rehabilitation	$ 1,918	MDOT	Bridges
2011	**20**	0.10	I-194/M-66 Bridges	over Dickman Road and Fountain Ave.	Rehabilitation	$ 2,756	MDOT	Bridges

2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2011	**21**	0.70	I-94 Interchange (exit 104)	at 11 Mile Road	Ramp work and center left turn lane on southbound Michigan Ave at Wheatfield Parkway	$ 584	MDOT	Safety-Related
2011	**22**	6.10	M-37 (Bedford Rd.)	from Creekview Dr to north county line	Double Chip Seal	$ 375	MDOT	Preservation
2011	**23**	3.50	M-96 (Dickman Rd.)	from Armstong Rd to Helmer Rd	Resurface	$ 1,054	MDOT	Preservation
2012	24		1 (one) Clean Diesel Dump Truck	within Calhoun County & adjacent counties as necessary	Replace existing double-axle, with box+blade, dump truck with new clean diesel model	$ 189	CCRC	Air Quality
2012	**25**	2.80	B Drive N	from 8.5 Mile Rd to 11 Mile Rd	Resurface	$ 800	CCRC	Preservation
2012	**26**	0.10	B Drive N/Beadle Lake Road Intersection	Intersection & Approaches	Modify geometrics & upgrade signals	$ 250	CCRC	Traffic Operations, Safety-Related, & Air Quality
2012	27		BC Traffic Management Center (TMC) Operating Assistance	TMC facility at City of BC DPW	Federal Congestion Mitigation Air Quality (CMAQ) funding (80%) for operation of TMC	$ 100	City of BC	Air Quality & Traffic Operations
2012	**28**	0.90	Capital Ave. SW	from Weeks Rd to Cascade Dr	Resurface	$ 285	City of BC	Preservation
2012	**29**	0.90	Jackson St./Stringham Road	from Bedford Rd to M-89 (Michigan Ave)	Resurface	$ 250	City of BC	Preservation
2012	30		Beckley Rd Corridor Circulator & I-194 Express Service Operating Assistance	for Battle Creek Transit	Federal Transit Administration Section 5316 "Job Access/Reverse Commute" (JARC) funding (50%)	$ 427	City of BC Transit	Transit Operating
2012	34		Transit Small Bus/ Van	for Social Service Agencies	purchase 5 replacement vehicles	$ 310	City of BC Transit	Transit Capital
2012	**35**	0.10	I-94BL/20th Street Intersection	Crossovers in SE quadrant of inters.	Redesign SE quadrant to traditional 4-leg intersection	$ 396	City of Springfield	Traffic Operations
2012	**36**	0.40	I-194 Interchange	at Dickman Road	Interchange Lighting upgrade	$ 935	MDOT	Traffic Operations
2012	**37**	0.07	I-194/M-66 southbound off ramp onto M-96 (Columbia Ave E)	I-194/M-66 exit 2 interchange	Widen terminal ending to create a right turn lane onto M-96	$ 75	MDOT	Air Quality & Traffic Operations
2012	**38**	1.70	I-94BL/M-96 (E. Michigan Ave)	from Wattles Rd to M-311 (11 Mile Rd)	resurface/restripe and minor widening along 4/10ths mile at eastern edge of project	$ 1,607	MDOT	Traffic Operations & Air Quality
2012	**39**	0.80	M-66 (Capital Ave NE) bridge over Wanondaga Creek	over Wanondaga Creek	Replacement of bridge and rehab of approaches	$ 1,248	MDOT	Bridges
2012	**40**	2.30	M-96 (Columbia Ave E)	from west of Riverside Dr eastward to I-194/M-66, and from east of M-294 (Main St/Beadle Lake Rd) eastward to junction at I-94BL (Michigan Ave)	1.5" cold milling & 1.5" HMA resurfacing, ADA ramps	$ 1,100	MDOT	Preservation
2012	**41**	0.10	M-96 (Columbia Ave E) bridge over Raymond Rd	Bridge over Raymond Rd.	Bridge replacement	$ 1,810	MDOT	Bridges

2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2013	**42**	3.50	B Drive S	from 8.5 Mile Rd to 12 Mile Rd	Resurface	$ 800	CCRC	Preservation
2013	43		2 (two) Clean Diesel Dump Trucks	within City of Battle Creek & adjacent areas as necessary	Replace two existing single-axle, with box+blade, dump trucks with new clean diesel models	$ 289	City of BC	Air Quality
2013	44		BC Traffic Management Center (TMC) Phase 2 (expansion)	TMC facility at City of BC DPW	Federal Congestion Mitigation Air Quality (CMAQ) funding (80%) for expansion of TMC	$ 190	City of BC	Air Quality & Traffic Operations
2013	**45**	1.40	Beckley Road	from Minges Rd to M-66	Resurface	$ 500	City of BC	Preservation
2013	46		Fare System Upgrade	for Battle Creek Transit	update and upgrade fare syst.	$ 500	City of BC Transit	Transit Capital
2013	50		Transit Small Bus/ Van	for Battle Creek Transit	purchase 1 replacement vehicle	$ 82	City of BC Transit	Transit Capital
2013	51		1 (one) Clean Diesel Dump Truck	within City of Springfield & adjacent areas as necessary	Replace one existing single-axle, with box+blade, dump truck with new clean diesel model	$ 144	City of Springfield	Air Quality
2013	**52**	1.40	Goguac Street	from Helmer Rd to Carl Ave	Resurface	$ 284	City of Springfield	Preservation
2013	**53**	0.60	Upton Ave/Avenue A	from Avenue A eastward to city limits / from 20th St eastward to Upton 20th St.	Resurface	$ 121	City of Springfield	Preservation
2013	**54**	3.40	I-194 Freeway Signing	from I-94 to Hamblin Ave	Signing upgrade	$ 460	MDOT	Traffic Operations
2013	**55**		I-94 & I-194 ITS Project	In BCATS area	Installation of 4 ITS mess. signs on I-94 and 1 sign on I-194	$ 1,131	MDOT	Traffic Operations
2013	**56**	0.10	I-94BL Carpool Lot	NE quadrant at Exit 92	Resurface	$ 43	MDOT	Preservation
2014	57		1 (one) Clean Diesel Dump Truck	within Calhoun County & adjacent counties as necessary	Replace existing double-axle, with box+blade, dump truck with new clean diesel model	$ 208	CCRC	Air Quality
2014	**58**	1.60	6 1/2 Mile Road	from Christian Dr to G Dr N	Resurface	$ 440	CCRC	Preservation
2014	**59**	2.70	Raymond Road	from Verona Rd to Golden Ave	Resurface	$ 879	CCRC	Preservation
2014	**60**	0.10	Wattles Road/Verona Road Intersection	Intersection & Approaches	Modify geometrics & upgrade signals	$ 225	CCRC	Traffic Operations, Safety-Related, & Air Quality
2014	**61**	0.60	East Avenue	from Emmett St to Roosevelt Ave	Resurface	$ 160	City of BC	Preservation
2014	**65**	1.50	Territorial Rd & Evergreen Ave	from Helmer Rd eastward to 20th St & from Avenue A northward to Harmonia Rd	Resurface	$ 365	City of BC/Spr.	Preservation
2014	**66**	0.50	I-94 EB Rest Area	Rest Area #703	Reconstruction	$ 4,202	MDOT	Preservation
2014	**67**	1.60	I-94BL/M-37 (Climax Rd/Columbia Ave W)	from I-94 exit 92 interchange to Columbia Ave W turnoff	HMA overlay and minor widening	$ 4,560	MDOT	Preservation

2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2015	69		Transit Computer System Upgrade	for Battle Creek Transit	upgrade/replacement of transit computer system	$ 54	City of BC Transit	Transit Capital
2015	71		Transit Radio System	for Battle Creek Transit	Radio system replacement	$ 216	City of BC Transit	Transit Capital
2015	73		Transit Small Bus/ Van	for Social Service Agencies	purchase 4 replacement vehicles	$ 173	City of BC Transit	Transit Capital
2016	**74**	1.00	Glen Cross Road Extension	from M-66 east and north to B Dr N	New Route	$ 2,138	CCRC	Expansion
2016	77		Transit Passenger Shelters	for Battle Creek Transit	purchase 10 replacement shelters	$ 55	City of BC Transit	Transit Capital
2016	79		Transit Small Bus/ Van	for Battle Creek Transit	purchase 2 replacement vehicles	$ 148	City of BC Transit	Transit Capital
2016	**80**	0.13	Avenue A re-alignment / Military Ave extension	from M-96 (Dickman Rd) to Avenue A	Close M-96/Avenue A intersection, extend Military Ave northeastward to meet Avenue A	$ 228	City of Springfield	Expansion, Safety-Related, Traffic Operations, & Air Quality
2017	81		30' Transit Vehicle	for Battle Creek Transit	Purchase 1 large bus - replace.	$ 422	City of BC Transit	Transit Capital
2017	85		Transit Small Bus/ Van	for Battle Creek Transit	purchase 1 replacement vehicle	$ 75	City of BC Transit	Transit Capital
2018	86		30' Transit Vehicle	for Battle Creek Transit	purchase 5 replacement vehicles	$ 2,154	City of BC Transit	Transit Capital
2019	**90**	0.10	Morgan Road Bridge Over Battle Creek Riv	at Battle Creek River	New Bridge	$ 5,970	CCRC	Expansion
2019	**91**	1.30	Morgan Road Extension	from M-66 (Capital Ave NE) to Bellevue Rd at N Dr N	New Route	$ 5,970	CCRC	Expansion
2019	92		30' Transit Vehicle	for Battle Creek Transit	purchase 5 replacement vehicles	$ 2,197	City of BC Transit	Transit Capital
2019	96		Transit Small Bus/ Van	for Battle Creek Transit	purchase 4 replacement vehicles	$ 314	City of BC Transit	Transit Capital
2020	**97**	0.90	Verona Rd	from McAllister Rd to Wattles Rd	minor widening for center left turn lane and resurfacing	$ 1,099	CCRC	Traffic Operations & Air Quality
2020	98		28' Transit Vehicle	for Battle Creek Transit	purchase 1 replacement vehicle	$ 155	City of BC Transit	Transit Capital
2020	99		30' Transit Vehicle	for Battle Creek Transit	purchase 2 replacement vehicles	$ 896	City of BC Transit	Transit Capital
2020	100		AVL/CAD System Upgrade	for Battle Creek Transit	upgrade AVL/CAD system	$ 120	City of BC Transit	Transit Capital
2020	**102**		Transit facility renovation	for Battle Creek Transit	renovation of facilities	$ 1,195	City of BC Transit	Transit Capital
2020	105		Transit Small Bus/ Van	for Social Service Agencies	purchase 4 replacement vehicles	$ 191	City of BC Transit	Transit Capital
2020	106		Transit Small Bus/ Van	for Battle Creek Transit	purchase 3 replacement vehicles	$ 240	City of BC Transit	Transit Capital

2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

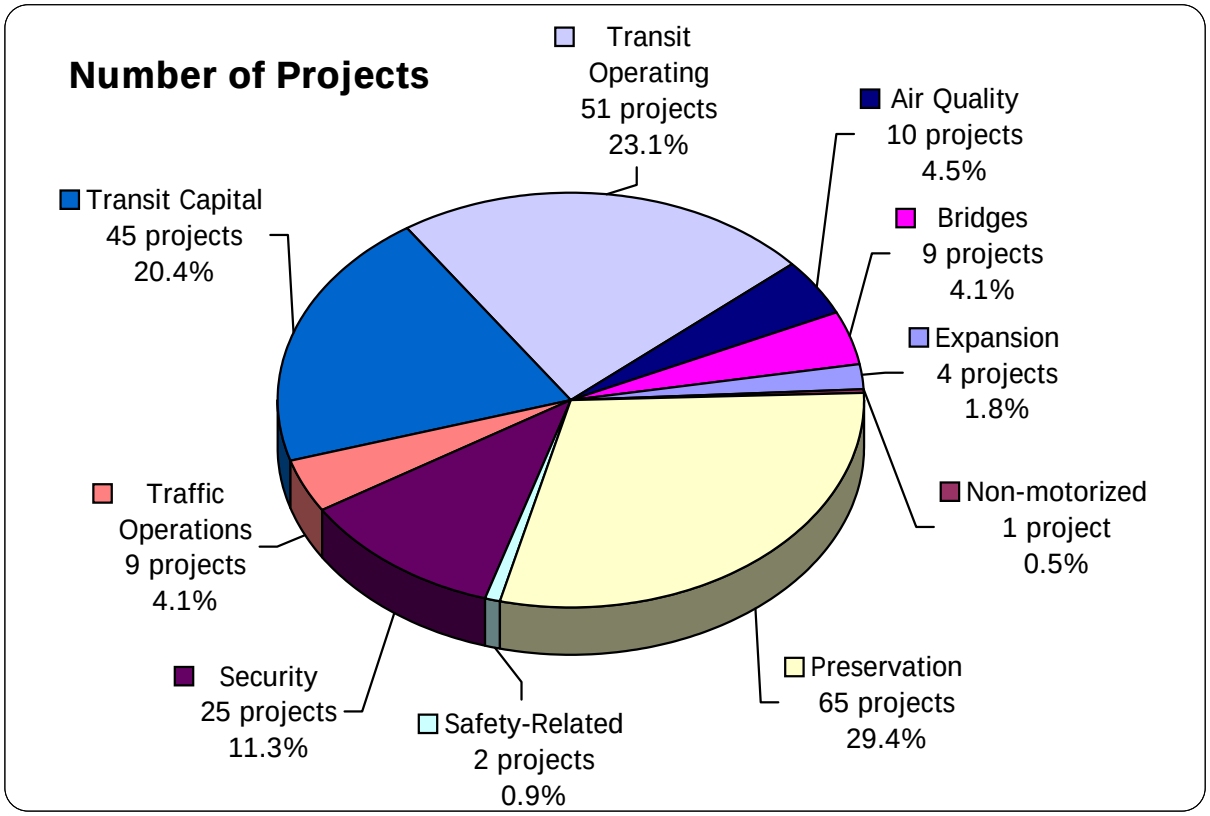
YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2021	**110**		EB and WB Bridges on I-94	over GTWRR	minor widening and rehabilitation	$ 3,668	MDOT	Bridges
2022	114		Transit Small Bus/ Van	for Battle Creek Transit	purchase 2 replacement vehicles	$ 167	City of BC Transit	Transit Capital
2023	115		30' Transit Vehicle	for Battle Creek Transit	purchase 1 replacement bus	$ 476	City of BC Transit	Transit Capital
2023	**119**		EB and WB Bridges on I-94	over 6 1/2 Mile Rd.	minor widening and rehabilitation	$ 4,618	MDOT	Bridges
2024	120		Fare System Upgrade	for Battle Creek Transit	update and upgrade fare syst.	$ 517	City of BC Transit	Transit Capital
2024	124		Transit Small Bus/ Van	for Battle Creek Transit	purchase 1 replacement vehicle	$ 87	City of BC Transit	Transit Capital
2025	126		Transit Computer System Upgrade	for Battle Creek Transit	upgrade/replacement of transit computer system	$ 66	City of BC Transit	Transit Capital
2025	129		Transit Small Bus/ Van	for Social Service Agencies	purchase 4 replacement vehicles	$ 211	City of BC Transit	Transit Capital
2025	**130**		EB and WB Bridges on I-94	over M-294 (Beadle Lake Rd.)	minor widening and rehabilitation	$ 3,884	MDOT	Bridges
2026	133		Transit Passenger Shelters	for Battle Creek Transit	purchase 10 replacement shelters	$ 67	City of BC Transit	Transit Capital
2026	135		Transit Small Bus/ Van	for Battle Creek Transit	purchase 4 replacement vehicles	$ 361	City of BC Transit	Transit Capital
2027	136		AVL/CAD System Upgrade	for Battle Creek Transit	upgrade AVL/CAD system	$ 137	City of BC Transit	Transit Capital
2027	140		Transit Small Bus/ Van	for Battle Creek Transit	purchase 3 replacement vehicles	$ 276	City of BC Transit	Transit Capital
2027	**141**		EB and WB Bridges on I-94	over 9 Mile Road	minor widening and rehabilitation	$ 4,162	MDOT	Bridges
2029	145		30' Transit Vehicle	for Battle Creek Transit	purchase 1 replacement vehicle	$ 536	City of BC Transit	Transit Capital
2030	149		28' Transit Vehicle	for Battle Creek Transit	purchase 1 replacement vehicle	$ 189	City of BC Transit	Transit Capital
2030	150		30' Transit Vehicle	for Battle Creek Transit	purchase 5 replacement vehicles	$ 2,732	City of BC Transit	Transit Capital
2030	**152**		Transit facility renovation	for Battle Creek Transit	renovation of facilities	$ 1,457	City of BC Transit	Transit Capital
2030	155		Transit Small Bus/ Van	for Social Service Agencies	purchase 4 replacement vehicles	$ 233	City of BC Transit	Transit Capital
2030	**156**		EB and WB Bridges on I-94	over Kalamazoo River	replacement of bridges	$ 15,764	MDOT	Bridges
2031	160		Transit Small Bus/ Van	for Battle Creek Transit	purchase 1 replacement vehicle	$ 100	City of BC Transit	Transit Capital
2032	161		30' Transit Vehicle	for Battle Creek Transit	purchase 4 replacement vehicles	$ 2,274	City of BC Transit	Transit Capital
2035	171		30' Transit Vehicle	for Battle Creek Transit	purchase 1 replacement vehicle	$ 603	City of BC Transit	Transit Capital

2035 Metropolitan Transportation Plan -- Table XVII-1
Recommended Improvements

bolded ID # = mapped project

YEAR	BCATS ID	LENGTH (miles)	NAME	LIMITS	DESCRIPTION	COST ($ in thousands)	AGENCY	PROJECT TYPE*
2035	172		AVL/CAD System Upgrade	for Battle Creek Transit	upgrade AVL/CAD system	$ 161	City of BC Transit	Transit Capital
2035	173		Fare System Upgrade	for Battle Creek Transit	update and upgrade fare syst.	$ 643	City of BC Transit	Transit Capital
2035	176		Transit Passenger Shelters	for Battle Creek Transit	purchase 10 replacement shelters	$ 80	City of BC Transit	Transit Capital
2035	177		Transit Radio System	for Battle Creek Transit	replace transit radio system	$ 322	City of BC Transit	Transit Capital
2035	179		Transit Small Bus/ Van	for Social Service Agencies	purchase 4 replacement vehicles	$ 257	City of BC Transit	Transit Capital
2011-2035	180		Annual Transit Security (total expected over 2011-2035, average $12,600/year)	for Battle Creek Transit	Security related improvements (1% of federal operating assistance annually)	$ 315	City of BC Transit	Security
2011-2035	181		Annual Specialized Services Operating Assistance (total expected over 2011-2035, average $118,900/year)	for Social Service Agencies	Assistance to Human Service Agencies	$ 2,973	City of BC Transit	Transit Operating
2011-2035	182		Annual Transit Operating Assistance (total expected over 2011-2035, average $4.4M/year)	for Battle Creek Transit	Fed., State, Local Operating Assistance	$ 110,467	City of BC Transit	Transit Operating
2015-2035	183		Annual Preserve Strategy Local Agencies (total planned over 2015-2035, average $2.6M/year)	On Federal-Aid eligible roadways	resurfacing and reconstruction	$ 54,416	BC, CCRC, & Springfield	Preservation
2015-2035	184		Annual Preserve Strategy MDOT (total planned over 2015-2035, average $5.7M/year)	On state system	resurfacing and reconstruction	$ 119,522	MDOT	Preservation
					TOTAL	**$ 392,893**		

Figure XVII-2
2035 Metropolitan Transportation Plan
Projects by Type



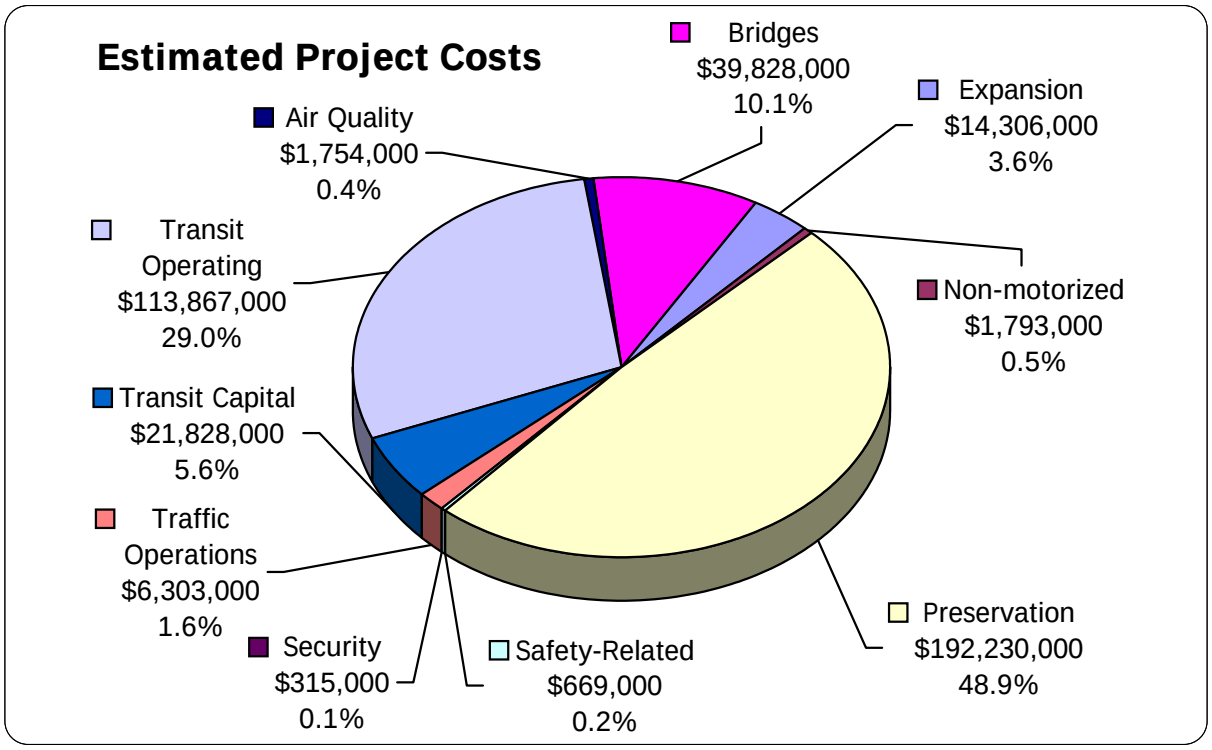
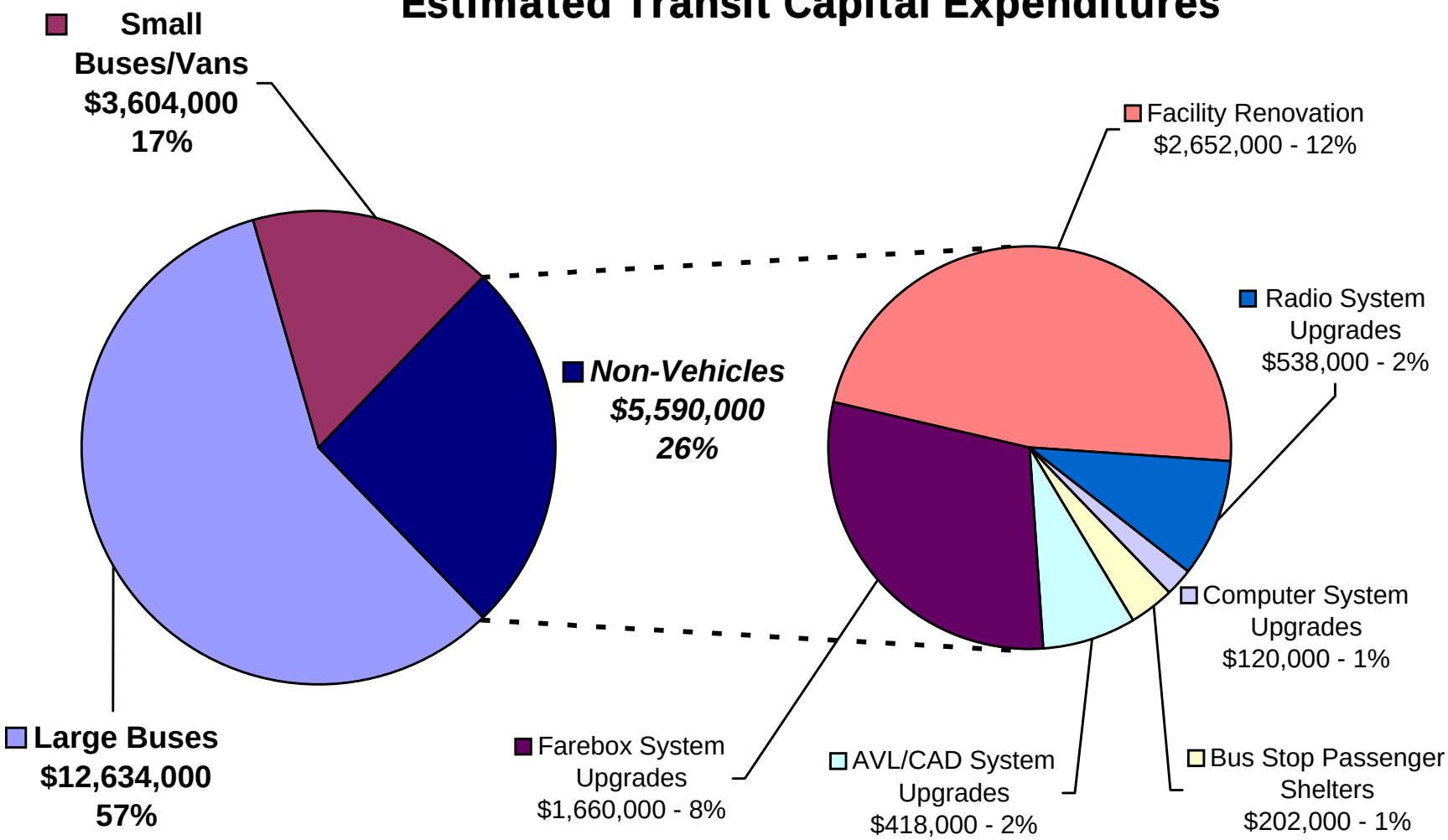


Figure XVII-3
Estimated Transit Capital Expenditures



CHAPTER XVIII

AIR QUALITY CONFORMITY

KALAMAZOO-BATTLE CREEK MI NON-ATTAINMENT AREA

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 nonattainment and maintenance areas be subject to an air quality conformity determination. The purpose of this determination is to demonstrate that the Transportation Plan and Transportation Improvement Program (TIP) conform to the intent and purpose of the State Implementation Plan (SIP). The intent of the SIP is to achieve and maintain clean air and meet National Ambient Air Quality Standards (NAAQS). Therefore, the Transportation Plan and the TIP must demonstrate that the implementation of these projects do not result in greater mobile source emissions than the emissions budget. The Kalamazoo - Battle Creek - MI Non-Attainment Area for the eight hour ozone standard was designated a Basic Non-Attainment area effective June 15, 2004. On May 16, 2007, the area was redesignated to Attainment/ Maintenance with a 2018 mobile source emissions budget.

This Attainment/Maintenance area includes the counties of Kalamazoo, Calhoun, and Van Buren. Ozone is formed when volatile organic compounds (VOC) and oxides of nitrogen (NOx) combine with sunlight and high temperatures. One way to reduce the amount of ozone is to reduce the amount of VOC and NOx which are produced in the region. VOC and NOx emissions originate, in part, from highway motor vehicles and can be reduced by decreasing congestion and/or providing for alternatives to the automobile, such as transit and ridesharing.

Air quality analyses were performed in March 2011 on the Battle Creek Area Transportation Study 2035 Transportation Plan, Kalamazoo Transportation Study 2035 Transportation Plan, and the State Transportation Improvement Program (STIP) for the non-urban portion of the non-attainment area, in order to determine the impact of the transportation system improvements on vehicle emissions. The Federal Highway Administration (FHWA) and the United States Environmental Protection Agency (EPA) require that the implementation of projects in the Transportation Plans and TIPs do not result in mobile source emissions greater than the emissions budget. The conformity determination conducted for the Transportation Plans were prepared in accordance with EPA's transportation conformity rule. The conformity demonstration was performed by comparing emissions from year 2011, 2018, 2025, and 2035 to the emission budget.

AIR QUALITY ASSESSMENT CRITERIA

Kalamazoo and Battle Creek's 2035 Transportation Plans and the Van Buren County proportion of the STIP conformity demonstration was made in compliance with all applicable conformity requirements and has been determined to satisfy the following conformity criteria and procedures set forth in the EPA's Transportation Conformity Rule:

1. The conformity demonstration was based on the latest planning assumptions.
2. The conformity demonstration was based on the latest emission model available.
3. The conformity demonstration was made according to the consultation procedures of the final conformity rule and the SIP conformity procedures.

4. The demonstration was made that completing the components of the LRPs and TIPs do not exceed the approved 8-hour conformity budget.
5. Each project contained in the LRPs and TIPs was reviewed by the Interagency Work Group (IAWG), being consistent with the consultation procedures established in the SIP. During the review, a determination was made by the IAWG on each project as to whether it needed to be modeled or was exempt from emission modeling.

BACKGROUND

The following describes the procedures used to estimate and analyze travel demand for the Kalamazoo - Battle Creek - MI Non-Attainment Area. The Kalamazoo Area Transportation Study (KATS) and Battle Creek Area Transportation Study (BCATS) and the Michigan Department of Transportation (MDOT) developed socio-economic data for 2002, 2008, 2011, 2018, 2025 and 2035.

These data are the basis for forecasting in the travel demand models which, in turn, generate the inputs required for the air quality conformity analysis.

These inputs are the amount of travel expressed as vehicle miles of travel (VMT) and average speed by National Functional Classification (NFC) by county. Individual NFCs by county are then grouped to provide the needed data structure required for EPA's Mobile6.2.

Air quality conformity analysis must be performed on a countywide basis. The urban travel demand forecast models do not cover the whole of all three counties. Kalamazoo County is covered entirely by an urban travel demand model and uses one of the latest travel demand modeling technologies, TransCAD. For Calhoun County, an urban travel demand model covers the cities of Battle Creek and Springfield and the townships of Bedford, Pennfield, Emmett, and Leroy and Newton townships, using TransCAD. In Van Buren County and for the portion of Calhoun County not covered by the urban travel demand model, the MDOT statewide model is used to estimate travel.

The VMT and speed data generated by the KATS model, BCATS model, and the statewide model are normalized using county Highway Performance Monitoring System (HPMS) VMT figures to provide the basis for the estimation of present and future VMT and speeds by NFC for each county. The air quality conformity analysis performed assumes that transportation projects are included in the milestone year they are presumed to be open to traffic. The following table demonstrates and summarizes the data resulting in the conformity determination for the Kalamazoo 2035 Transportation Plan and 2011-14 TIP, and the Battle Creek 2035 Transportation Plan and 2011-14 TIP, and the for the non-urban portion of Van Buren and Calhoun Counties covered by the STIP.

Table XVIII-1
Results for the Kalamazoo-Battle Creek MI Non-Attainment Area 8 Hour Ozone Standard
March 2011

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**26,916.6200**	**49,315.3900**
2011 Action	11,388.0916	18,016.8318
2018 Action	7,793.8609	9,268.0277
2025 Action	6,183.1643	6,531.0889
2035 Action	6,180.8517	5,563.1903

The remainder of this chapter provides additional technical details and documentation as necessary to support this determination.

MODELING PROCEDURES

MDOT developed and calibrated the travel demand models used in this analysis. Urban travel demand models were developed for Kalamazoo County and part of Calhoun County. The remainder of Calhoun County and all of Van Buren County was modeled with the statewide model. The travel demand models use the standard four-step transportation modeling process:

1 - Trip generation model
2 - Trip distribution model
3 - Mode choice model
4 - Highway assignment model

KATS Urban Travel Demand Model:

The trip generation model uses a combination of local and (NCHRP 365) trip generation rates. The trip generation variables used in the model are dwelling units, average household size, average household auto, retail employment, service employment, and other (non-retail-non-service) employment. The trip distribution model uses the standard gravity model to estimate origin-destination tables. It also uses Friction Factors for trip attractiveness. The mode choice model is a single mode model. It uses vehicle occupancy rates to convert person trips to vehicle trips on the network. The trip assignment model uses an equilibrium algorithm. The model was calibrated according to the strict calibration standards used by MDOT and suggested by FHWA. The model includes 515 internal and 30 external traffic analysis zones. The network is coded to output information based on area type, facility type, number-of- lanes, speeds, NFC, capacity, street names, and vehicle assignment.

BCATS Urban Travel Demand Model:

The trip generation model uses a combination of local and NCHRP 365 trip generation rates. The trip generation variables used in the model are households, retail employment, service employment, and non-retail - non-service employment. The trip distribution model uses the standard gravity model to estimate origin-destination tables. It also uses Friction Factors for trip attractiveness. The mode choice model is a single mode model. It uses vehicle occupancy rates to convert person trips to vehicle trips. The trip assignment model uses an equilibrium algorithm. The model was calibrated according to the strict calibration standards used by MDOT and suggested by FHWA. The model includes 311 traffic analysis zones. The network is coded to output information based on area type, facility type, number-of-lanes, speeds, NFC, capacity, street names, and vehicle assignment. The BCATS model covers the greater Battle Creek area; for the portion of the county not covered by the BCATS model the MDOT statewide model is utilized.

Statewide Travel Demand Model:

MDOT developed and calibrated the statewide model. The model was developed in TransCAD and calibrated for year 2005. The model covers all counties of the state and includes NFC collectors and above; local roads are excluded. Trip generation employs a cross classification lookup table with trip rates developed from a combination of local models, National Cooperative Highway Research Program Report 187, Nationwide Personal Transportation Survey (NPTS), and the Transportation Management Area (TMA) model trip generation rates. The trip generation variables used in the model are households by three income groups and five size categories along with six categories of employment. The *trip distribution model* uses a gravity model to estimate origin/destination tables. The *mode choice model* converts person trips to vehicle trips by removing transit trips and applying auto occupancy factors,

which are sensitive to the length of the trip (longer trips having higher occupancies). The *trip assignment model* uses an all-or-nothing algorithm. The model was calibrated according to the strict calibration standards used by MDOT and suggested by FHWA. The model includes 2,392 traffic analysis zones and the network is coded to provide as output VMT, VHT, and speeds by NFC.

HIGHWAY PERFORMANCE MONITORING SYSTEM (HPMS) DATA

The EPA and the United States Department of Transportation (USDOT) have both endorsed HPMS as the appropriate source of VMT estimates. HPMS is the FHWA's annual program to collect roadway data in all 50 states to assess the condition of the highway system in terms of traffic congestion, accessibility, and pavement condition. The FHWA requires counts to determine the areawide VMT for all Federal Aid Urban Areas (FAUA). MDOT supplements the counts outside the FAUA with additional counts in small cities, rural areas, and especially in rural areas of counties with nonattainment status. These supplemental counts follow the same random selection procedures as those inside the FAUA. The HPMS data used is from MDOT"s Universe file and is stratified by NFC. MDOT is currently undertaking a data improvement process to update the HPMS Universe, non-sample traffic data.

MODEL VEHICLE MILES OF TRAVEL (VMT)

HPMS Universe data provides the VMT estimates for the calibration year of the travel demand model, 2008 for Kalamazoo County, 2002 for Calhoun County, and 2005 for Van Buren County. To maintain consistency between HPMS and modeled VMT and among milestone years (as an example for Kalamazoo County) model VMT is scaled. The 2008 HPMS VMT distribution was used to scale the 2011, 2018, 2025, and 2035 VMT. Thus, the 2008 total HPMS VMT remained the same while future modeled VMT distributions changed to reflect the HPMS distribution. Then the scaled VMT by NFC are collapsed into four groups, to meet the requirements of Mobile6.2. These groups are: 1) rural interstate, 2) rural major and minor arterials/ collectors/local streets, 3) urban interstate/freeway, and 4) urban principal and minor arterials/ collectors/local streets. This is done for all interim and future analysis years. This same process is used for vehicle hours of travel (VHT). The following are the scaled travel demand modeled VMT for each county.

Table XVIII-2 – Calhoun County Vehicle Miles of Travel

NFC	HPMS 2002	2002	2011	2018	2025	2035
Rural Interstate Freeway	1,352,653	1,352,653	1,390,721	1,430,082	1,466,421	1,505,444
Rural Major & Minor Arterial/Collector/Local Street	1,049,599	1,049,599	1,107,514	1,165,304	1,207,429	1,265,667
Urban Interstate/Freeway	613,280	613,280	674,094	748,368	773,263	824,298
Urban Principal & Minor Arterial/Collector/Local Street	1,745,004	1,745,004	1,956,482	2,189,515	2,319,975	2,360,230
TOTAL	**4,760,536**	**4,760,536**	**5,128,813**	**5,533,269**	**5,767,087**	**5,955,639**

Table XVIII-3 – Kalamazoo County Vehicle Miles of Travel

NFC	HPMS 2008	2008	2011	2018	2025	2035
Rural Interstate Freeway	353,310	353,310	356,496	369,066	382,272	397,637
Rural Major & Minor Arterial/Collector/Local Street	1,114,541	1,114,541	1,136,375	1,182,513	1,203,444	1,304,009
Urban Interstate/Freeway	1,185,160	1,185,160	1,275,087	1,308,329	1,340,799	1,382,668
Urban Principal & Minor Arterial/Collector/Local Street	4,092,361	4,092,361	4,155,769	4,279,263	4,399,411	4,599,411
TOTAL	**6,745,372**	**6,745,372**	**6,923,727**	**7,139,171**	**7,325,925**	**7,683,725**

Table XVIII-4 – Van Buren County Vehicle Miles of Travel

NFC	HPMS 2005	2005	2011	2018	2025	2035
Rural Interstate Freeway	680,794	680,794	694,463	707,914	722,480	741,572
Rural Major & Minor Arterial/Collector/Local Street	1,320,475	1,320,475	1,380,208	1,429,128	1,469,272	1,502,684
Urban Interstate/Freeway	382,463	382,463	396,826	418,017	426,606	436,063
Urban Principal & Minor Arterial/Collector/Local Street	390,132	390,132	413,515	438,270	451,442	457,601
TOTAL	**2,773,864**	**2,773,864**	**2,884,648**	**2,993,329**	**3,069,800**	**3,137,919**

MODEL SPEED

The modeled speed is derived by dividing the total aggregated scaled VMT by the total aggregated scaled VHT, except for local roads estimated by the statewide model. For Van Buren County and rural Calhoun County speeds for local roads were estimated by averaging speeds generated by the urban models. The speeds for each county are summarized in the next three tables.

Table XVIII-5 – Calhoun County Speed

NFC	2002	2011	2018	2025	2035
Rural Interstate Freeway	69.4	69.3	69.3	69.3	69.2
Rural Major & Minor Arterial/Collector/Local Street	50.5	50.6	50.5	50.4	50.2
Urban Interstate/Freeway	66.2	64.6	62.2	61.0	58.1
Urban Principal & Minor Arterial/Collector/Local Street	39.7	38.5	36.9	37.2	36.4
TOTAL	**50.9**	**49.7**	**48.1**	**48.0**	**47.2**

Table XVIII-6 – Kalamazoo County Speed

NFC	2008	2011	2018	2025	2035
Rural Interstate Freeway	65.7	65.5	64.6	63.6	62.3
Rural Major & Minor Arterial/Collector/Local Street	46.4	46.4	46.0	45.8	45.2
Urban Interstate/Freeway	52.4	52.4	51.8	50.5	50.1
Urban Principal & Minor Arterial/Collector/Local Street	32.3	32.0	31.7	31.2	30.8
TOTAL	**37.7**	**37.6**	**37.2**	**36.6**	**36.2**

TABLE XVIII-7 - Van Buren County Speed

NFC	2005	2011	2018	2025	2035
Rural Interstate Freeway	69.6	69.5	69.5	69.5	69.5
Rural Major & Minor Arterial/Collector/Local Street	48.0	47.9	47.9	47.9	47.9
Urban Interstate/Freeway	68.9	68.8	68.7	68.6	68.6
Urban Principal & Minor Arterial/Collector/Local Street	41.1	41.1	41.0	41.2	41.3
TOTAL	**53.0**	**52.8**	**52.7**	**52.7**	**52.8**

CONFORMITY ANALYSIS

The conformity analysis was performed using the Mobile6.2 program. Mobile6.2 is a computer program that estimates VOC and NOx emission factors for gasoline and diesel -fueled on road motor vehicles. The model was developed by the USEPA.

Mobile6.2 calculates emission factors for twenty-eight individual vehicle types in two regions of the country. Mobile6.2 emission factor estimates depend on various conditions such as average travel speed, operating modes, fuel volatility, and mileage accrual rates. Many of the variables affecting vehicle emissions can be specified by the user. The analysis is based on comparing the emissions budget to the analysis years 2011, 2018, 2025, and 2035.

Critical Mobile6.2 inputs assumptions are:
- Temperature: Maximum temperature = 95.0^{o} F, Minimum temperature = 71.0^{o} F
- The Reid Vapor Pressure (RVP) value = 9.0
- Emission factors are based on an average day during the month of July.

Sample Mobile6.2 inputs and outputs files are available upon request.

Mobile6.2 - Inputs
The inputs to the Mobile6.2 emissions factor model are VMT and average speed by NFC grouped as shown in the previous tables.

Mobile6.2 - Results
The following tables provide the results of Mobile6.2 emissions. The emission impact for each analysis year 2011, 2018, 2025, and 2035 is compared to the emission budget. To attain conformity, the emissions for the whole area must be less than the emission budget.

Table XVIII-8 – Calhoun County Emissions

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**n/a**	**n/a**
2011 Action	3,801.1643	6,525.5238
2018 Action	2,687.6893	3,405.4232
2025 Action	2,143.6194	2,398.4101
2030 Action	2,138.3631	2,020.4677

Table XVIII-9 – Kalamazoo County Emissions

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**n/a**	**n/a**
2011 Action	5,478.1224	7,800.2788
2018 Action	3,680.0808	4,002.9865
2025 Action	2923.3390	2844.2809
2030 Action	2968.0934	2487.9417

Table XVIII-10 – Van Buren County Emissions

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**n/a**	**n/a**
2011 Action	2,108.8048	3,691.0292
2018 Action	1,426.0908	1,859.6180
2025 Action	1,116.2059	1,288.3978
2030 Action	1,074.3952	1,054.7810

CONFORMITY DEMONSTRATION

The following table sums the emission values of the three counties that comprise the non-attainment area, and clearly demonstrates that the Transportation Plans, the Transportation Improvement Programs, and regionally significant projects result in lower emissions in each of the milestone years than the approved maintenance budget, consistent with USDOT/EPA conformity rules. These results support the determination of conformity with applicable requirements of the SIP following and in accordance with the Clean Air Act, as amended and SAFETEA-LU.

Table XVIII-1
Results for the Kalamazoo-Battle Creek MI Non-Attainment Area 8 Hour Ozone Standard
March 2011

	Emissions in kilograms/day	
Scenario	**VOC**	**NOx**
Attainment Budget	**26,916.6200**	**49,315.3900**
2011 Action	11,388.0916	18,016.8318
2018 Action	7,793.8609	9,268.0277
2025 Action	6,183.1643	6,531.0889
2035 Action	6,180.8517	5,563.1903

MPO ACTION

A summary of the results were presented and considered by the Technical Committees of BCATS and KATS, and was also considered by their respective Policy Committees, each a designated metropolitan planning organization (MPO) for the urbanized portions of this non-attainment area. Public comment on the completed air quality conformity analysis was requested at BCATS' June 2011 meetings by a notice, displayed on the following page, published in the *Battle Creek Enquirer* on May 25, 2011

Based on the materials contained in this document, the BCATS and KATS committees have determined that their respective *2035 Metropolitan Transportation Plans* and 2011-2014 TIPs demonstrate conformity with the SIP. The rural areas of Calhoun and Van Buren counties followed their public participation process.

REQUEST FOR COMMENTS ON TRANSPORTATION PROJECTS

THE BATTLE CREEK AREA TRANSPORTATION STUDY (BCATS) HEREBY GIVES NOTICE of opportunity for public involvement in the final development & adoption of its ***2035 Metropolitan Transportation Plan*** for the BCATS' metropolitan area, comprised of the Cities of Battle Creek & Springfield, and the townships of Bedford, Pennfield, Emmett, Newton, & Leroy. The Plan identifies future transportation (including transit & non-motorized transportation) needs & appropriate projects for 2011–2035, and also includes an Air Quality Conformity Analysis demonstrating that the areawide transportation system, with the recommended projects, would result in lower emissions over the course of the Plan. That result is consistent with USDOT/EPA conformity rules, and supports the determination of conformity with the Federal Clean Air Act. Details of the Air Quality Conformity Analysis, and of projects recommended in the *Plan*, can be provided upon request, and may also be available online at ***www.bcatsmpo.org***. Several draft chapters of the *Plan*, as Adobe "pdf" files, are posted online already, and more will be added as completed & available, with the intent of the full draft *Plan* document being available by June 15, 2011 for review online, or paper copy upon request. Discussion and action regarding the 2035 *Metropolitan Transportation Plan* is anticipated to be conducted at the regular meetings of BCATS' Technical Committee on Wednesday, June 8, 2011, and Policy Committee on Wednesday, June 22, 2011. Both meetings begin at 1:30 pm in the Council Chambers of Springfield City Hall at 601 Avenue A. Public comment on BCATS' 2035 *Metropolitan Transportation Plan* is encouraged before or at those meetings; BCATS' regular meetings are open to the public. Comments will be accepted for 30 days following publication of this notice. Direct questions and/or comments to: BCATS, 601 Avenue A, Springfield, MI 49037; ph 269-963-1158, fax 269-963-4951, *e-mail bcats@bcatsmpo.org*.

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CHAPTER XIX

ENVIRONMENTAL JUSTICE ANALYSIS

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 2000 Census. The distribution of Hispanic residents has also been assessed. Transportation improvements recommended for 2011-2035 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 (by Census block) 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 project 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 road projects proposed in this Plan for 2011-2035.

TABLE XIX-1	BCATS Metropolitan Planning Area		EJ Zones - Distance from FY 2011-2035 Site-specific Plan project					
			within .50 mile		within .25 mile		within .10 mile	
Area (sq mi)	216.86	----	61.31	28.3%	30.34	14.0%	11.11	5.1%
Total Population	**97,014**	----	**62,032**	63.9%	**31,558**	32.5%	**10,992**	11.3%
White	79,195	81.6%	51,777	83.5%	27,323	86.6%	9,642	87.7%
African-American	12,823	13.2%	8,146	13.1%	3,242	10.3%	1,013	9.2%
American Indian & Alaska Native	1,441	1.5%	983	1.6%	464	1.5%	154	1.4%
Asian, Native Hawaiian, & Other Pacific Islander	1,687	1.7%	1,306	2.1%	649	2.1%	250	2.3%
Other Race or 2+ Races	1,868	1.9%	1,384	2.2%	628	2.0%	196	1.8%
Individuals of Hispanic Origin	3,261	3.4%	2,480	4.0%	1,208	3.8%	389	3.5%
Individuals Below Poverty Level	11,030	11.4%	8,007	12.9%	3,773	12.0%	1,248	11.4%

The above table displays the composition of the 2000 Census population within the three EJ Zones, or "bands" within .50, .25, and .10 mile of 2011-2035 site-specific Plan projects. The bands, or “buffer” zones, surrounding the proposed site-specific Plan projects are shown shaded in orange in Figure XIX-1 on the 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, 11.4% of the metropolitan area total population is below poverty level, while 12.9% of the population within .50 mile of a 2011-2035 site-specific Plan project is below poverty level.

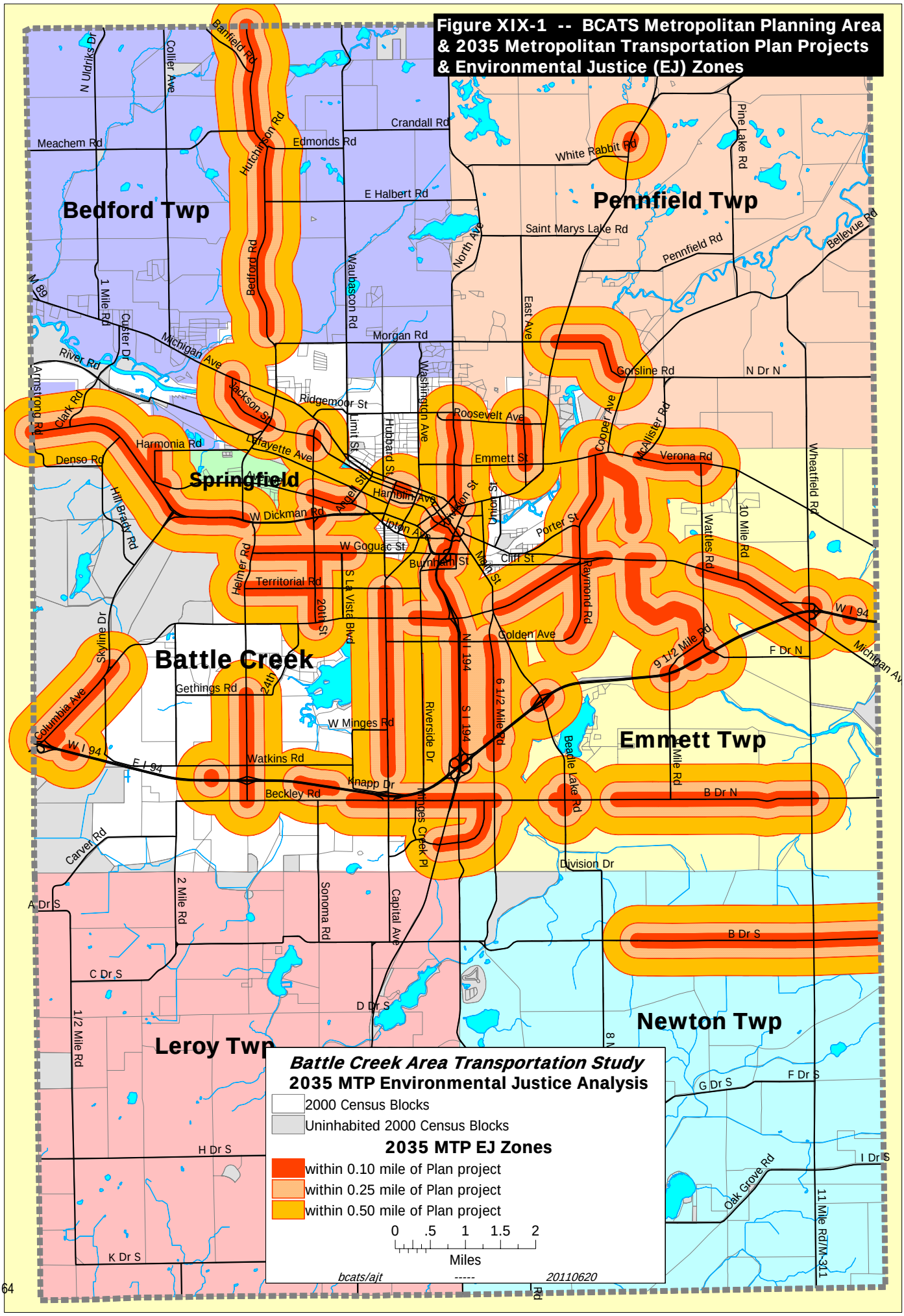


Figure XIX-1 -- BCATS Metropolitan Planning Area & 2035 Metropolitan Transportation Plan Projects & Environmental Justice (EJ) Zones
Bedford Twp
Pennfield Twp
Springfield
Battle Creek
Emmett Twp
Newton Twp
Leroy Twp
Banfield Rd
Collier Ave
N Uldriks Dr
Meachem Rd
Hutchinson Rd
Edmonds Rd
Crandall Rd
White Rabbit Rd
Pine Lake Rd
E Halbert Rd
Saint Marys Lake Rd
Bellevue Rd
Pennfield Rd
North Ave
Bedford Rd
Waubascon Rd
M 89
1 Mile Rd
Custer Dr
Michigan Ave
River Rd
Morgan Rd
East Ave
Gorsline Rd
N Dr N
Armstrong Rd
Clark Rd
Jackson St
Ridgemoor St
Limit St
Hubbard St
Washington Ave
Roosevelt Ave
Cooper Ave
McAllister Rd
Harmonia Rd
Denso Rd
Lafayette Ave
Emmett St
Verona Rd
Wheatfield Rd
Hill Brady Rd
Angell St
Hamblin Ave
Upton Ave
Union St
Porter St
W Dickman Rd
W Goguac St
Cliff St
Watties Rd
10 Mile Rd
Helmer Rd
Territorial Rd
S La Vista Blvd
20th St
Raymond Rd
W I 94
Skyline Dr
Golden Ave
9 1/2 Mile Rd
F Dr N
Michigan Ave
N I 194
Gethings Rd
24th
Columbia Ave
W Minges Rd
Riverside Dr
S I 194
W I 94
E I 94
Watkins Rd
Knapp Dr
Beckley Rd
Beadle Lake Rd
Mile Rd
B Dr N
Carver Rd
Minges Creek Pl
Division Dr
A Dr S
2 Mile Rd
Sonoma Rd
Capital Ave
B Dr S
C Dr S
D Dr S
1/2 Mile Rd
F Dr S
G Dr S
H Dr S
I Dr S
Oak Grove Rd
11 Mile Rd/M-311
K Dr S
Battle Creek Area Transportation Study
2035 MTP Environmental Justice Analysis
2000 Census Blocks
Uninhabited 2000 Census Blocks
2035 MTP EJ Zones
within 0.10 mile of Plan project
within 0.25 mile of Plan project
within 0.50 mile of Plan project
0 .5 1 1.5 2
Miles
bcats/ajt
20110620

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 32.5% of the total metropolitan area population resides within .25 mile of a 2011-2035 site-specific Plan project, only 25.3% of the area's African-American individuals do so.

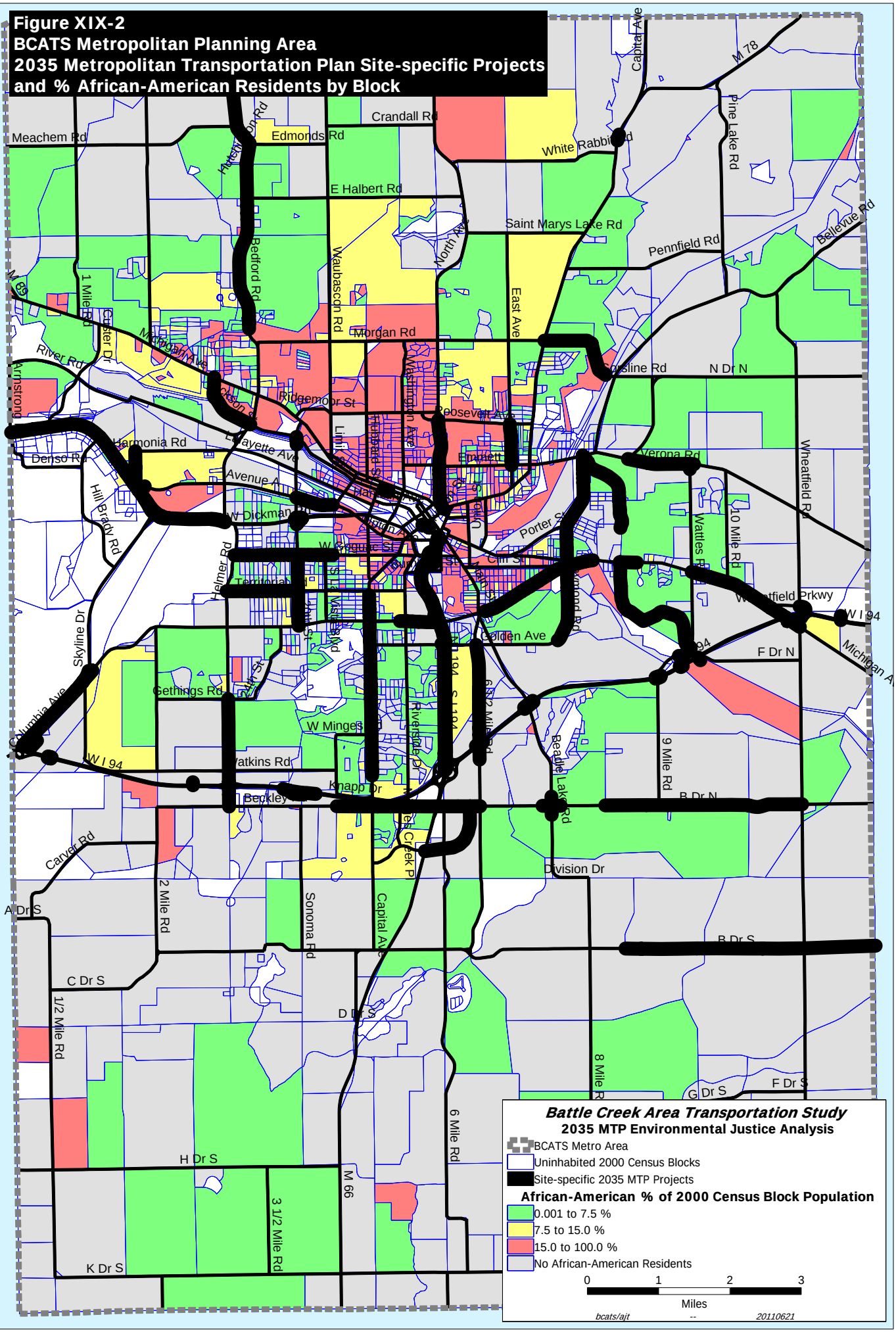
TABLE XIX-2	BCATS Metropolitan Planning Area	EJ Zones - Distance from FY 2011-2035 Site-specific Plan project					
		within .50 mile		within .25 mile		within .10 mile	
Area (sq mi)	216.86	61.31	28.3%	30.34	14.0%	11.11	5.1%
Total Population	97,014	62,032	63.9%	31,558	32.5%	10,992	11.3%
White	**79,195**	51,777	65.4%	27,323	34.5%	9,642	12.2%
African-American	**12,823**	8,146	63.5%	3,242	25.3%	1,013	7.9%
American Indian & Alaska Native	**1,441**	983	68.2%	464	32.2%	154	10.7%
Asian, Native Hawaiian, & Other Pacific Islander	**1,687**	1,306	77.4%	649	38.5%	250	14.8%
Other Race or 2+ Races	**1,868**	1,384	74.1%	628	33.6%	196	10.5%
Individuals of Hispanic Origin	3,261	2,480	76.1%	1,208	37.0%	389	11.9%
Individuals Below Poverty Level	11,030	8,007	72.6%	3,773	34.2%	1,248	11.3%

Maps on the following pages (Figures XIX–2-6) depict concentrations of racial minorities, Hispanic, and below poverty level populations with the major road projects proposed in this Plan for 2011-2035. Figure XIX-1 on the previous page highlights the .10, .25, and .50 mile zones around each project. The bold, black lines on the maps are roads that comprise the network for BCATS' "Travel Demand Forecast Model", or TDFM.

Review of the preceding tables and the maps indicates that BCATS' site-specific 2035 Plan projects will impact non-minority as well as minority and low-income populations. The figures in the tables suggest that a slightly larger percentage of the non-white populations may be impacted during the construction phase of the projects. However, the completion of these projects will, in turn, provide a higher benefit to those project areas than the overall population. None of the planned 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 planned improvements), there is no glaring disproportional impact to any of the identified groups as compared to the area as a whole (see highlighted columns of Tables XIX-1 & XIX-2).

Figure XIX-2
BCATS Metropolitan Planning Area
2035 Metropolitan Transportation Plan Site-specific Projects and % African-American Residents by Block



Battle Creek Area Transportation Study
2035 MTP Environmental Justice Analysis

BCATS Metro Area
Uninhabited 2000 Census Blocks
Site-specific 2035 MTP Projects

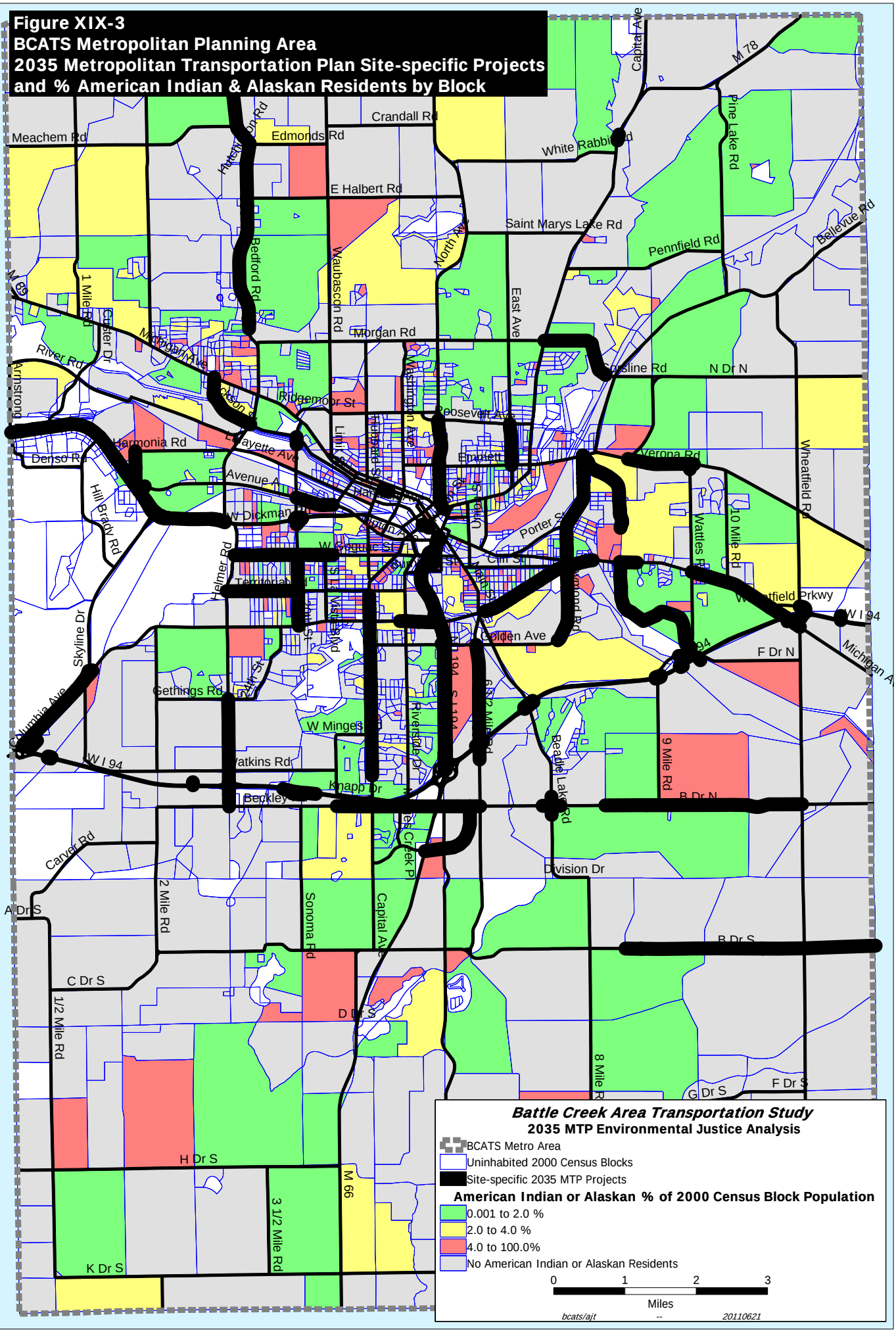
African-American % of 2000 Census Block Population

0.001 to 7.5 %
7.5 to 15.0 %
15.0 to 100.0 %
No African-American Residents

0 1 2 3
Miles

bcats/ajt -- 20110621

Figure XIX-3
BCATS Metropolitan Planning Area
2035 Metropolitan Transportation Plan Site-specific Projects and % American Indian & Alaskan Residents by Block



Battle Creek Area Transportation Study
2035 MTP Environmental Justice Analysis

BCATS Metro Area
Uninhabited 2000 Census Blocks
Site-specific 2035 MTP Projects

American Indian or Alaskan % of 2000 Census Block Population

0.001 to 2.0 %
2.0 to 4.0 %
4.0 to 100.0%
No American Indian or Alaskan Residents

0 1 2 3
Miles

bcats/ajt -- 20110621

Figure XIX-4
BCATS Metropolitan Planning Area
2035 Metropolitan Transportation Plan Site-specific Projects and % Asian & Hawaiian Residents by Block

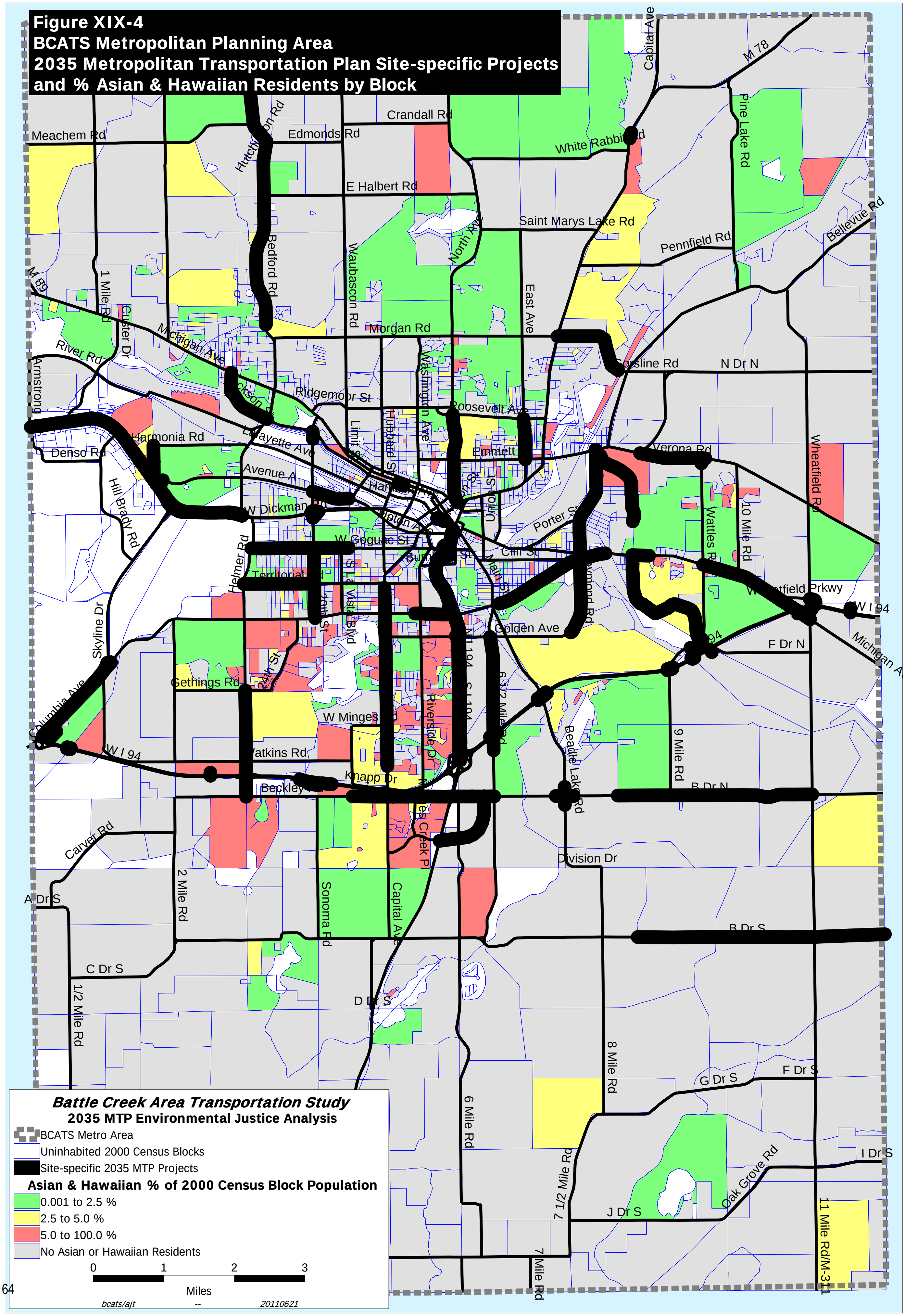


Figure XIX-5
BCATS Metropolitan Planning Area
2035 Metropolitan Transportation Plan Site-specific Projects and % Hispanic Residents by Block

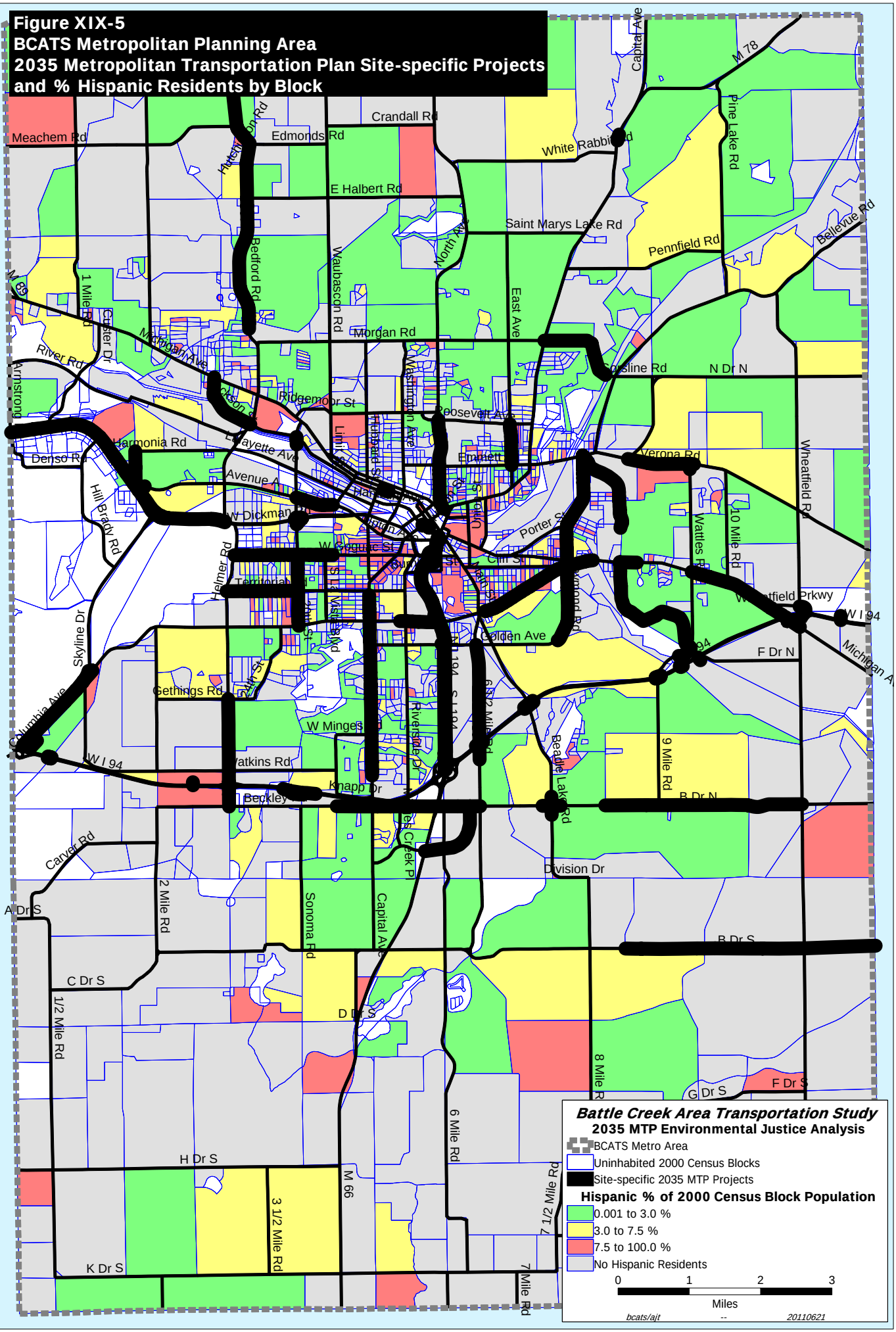
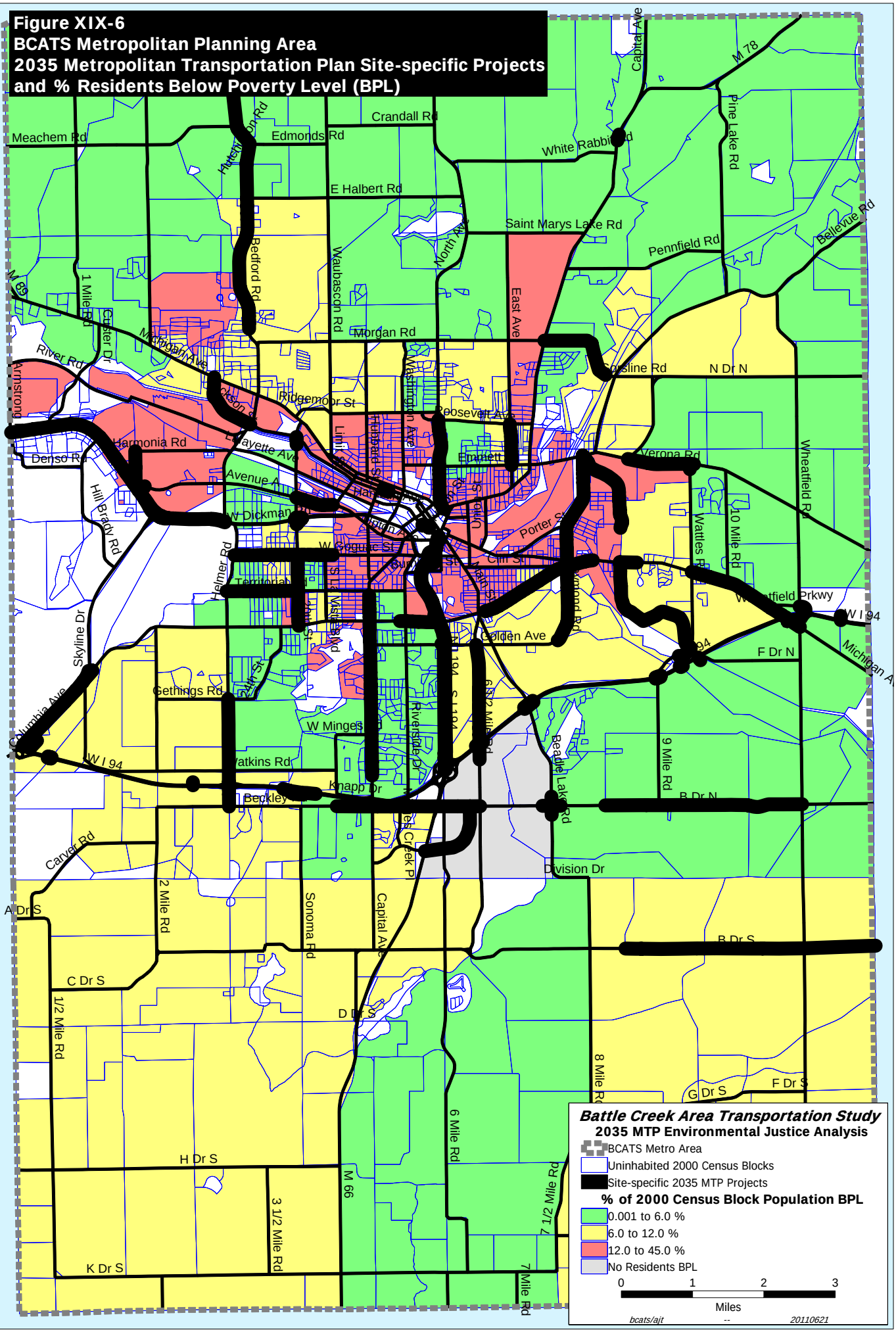


Figure XIX-6
BCATS Metropolitan Planning Area
2035 Metropolitan Transportation Plan Site-specific Projects and % Residents Below Poverty Level (BPL)



APPENDIX A

BCATS

COMMITTEE LISTS

The membership of the BCATS Policy and Technical Committees as of June 22, 2011, the date of local *Plan* adoption, is shown below:

POLICY COMMITTEE

Voting Members

Sue Anderson, Mayor - Tom Matson Permanent Alternate (Chair), City of Springfield
Tom Sprau (Vice-Chair), Supervisor, Charter Township of Bedford
Rob Behnke (Sec./Treas.), Supervisor, Charter Township of Pennfield
Pat Dougherty, Supervisor, Charter Township of Emmett
Susan Baldwin, Mayor - Greg Rickmar Permanent Alternate, City of Battle Creek
Hugh Coward, Road Commissioner, Calhoun County Road Commission
Mark Dionise, Manager, MDOT Transportation Service Center, Marshall
Pam Boyd, Unit Supervisor, MDOT Planning, Lansing
Laveta Hardish, Supervisor, Leroy Township
Chris Simmons, Commissioner, Battle Creek City Commission
Terris Todd, County Commissioner, Calhoun County Board of Commissioners

Non-Voting Members

Rachael Tupica, Federal Highway Administration
Chair, Southcentral Michigan Planning Council

TECHNICAL COMMITTEE

Voting Members

Tom Matson (Chair), Public Works Director, City of Springfield
Glenn Perian (Vice-Chair), Planner, City of Battle Creek
Chris Dopp, City Engineer, City of Battle Creek
Rick Fowler, Planner, MDOT Planning, Lansing
Darrell Harden, Planner, MDOT SW Region, Kalamazoo
Angela Kline, Assistant County Highway Engineer, Calhoun County Road Commission
Rich Werner, Transit Administrator, Battle Creek Transit

Non-Voting Members

Rachael Tupica, Federal Highway Administration
Rand Bowman, Southcentral Michigan Planning Council

STAFF

Patricia Karr, Executive Director
Andrew Tilma, Principal Planner

BCATS

BATTLE CREEK AREA TRANSPORTATION STUDY
Policy Committee
Minutes of June 22, 2011 Meeting

VOTING MEMBERS PRESENT:
Alissa Hubbell (for Mark Dionise), Hugh Coward, Rick Fowler (for Pam Boyd), Greg Rickmar (for Susan Baldwin), Tom Matson, Rich Werner (for Chris Simmons), and Tom Sprau
NON-VOTING MEMBERS PRESENT: Rachael Tupica
VOTING MEMBERS ABSENT: Pat Dougherty, Rob Behnke, Laveta Hardish, and Terris Todd
NON-VOTING MEMBERS ABSENT: Southcentral Michigan Planning Council
OTHERS PRESENT: Pat Karr, Andrew Tilma, and Virginia MacPherson

Chair Matson called the meeting to order at 1:35 p.m. in the Council Room of Springfield City Hall.

ROLL CALL

It was determined that a quorum was present (see above for voting members who were present).

APPROVAL OF THE AGENDA

It was moved by Sprau, supported by Hubbell, to approve the agenda, as presented. MOTION CARRIED UNANIMOUSLY.

Res.
11-23

PUBLIC COMMENTS

There were no public comments.

APPROVAL OF THE MINUTES

It was moved by Sprau, supported by Coward, to approve the minutes of the May 25, 2011 meeting, as presented, subject to any additions, corrections or changes. MOTION CARRIED UNANIMOUSLY.

Res.
11-24

COMMUNICATIONS

Karr reported the following items of communication:

- There has been legislation introduced at the national level termed the “Safe and Complete Streets Act of 2011". This topic was discussed at Technical Committee and it remains to be seen how national legislation would interact with (or contradict) the state legislation regarding complete streets already in effect in Michigan.
- Notices were published in the Battle Creek Enquirer for the TIP amendment and for the air quality conformity finding and 2035 Metropolitan Transportation Plan on the agenda today.

- Per approval of the Policy Committee, BCATS staff are registered for the upcoming MTPA event and will be out of the office from July 12th through July 15th.
- Karr indicated that she had hoped Behnke could provide an update on the WalMart development in Pennfield Township. Bids for construction on the building are expected to occur soon with construction to start potentially in August.
- Karr noted that reauthorization of federal transportation legislation could begin to be introduced as soon as early July. There are some prospective issues associated with a new bill that will be discussed later on the agenda.

UNFINISHED BUSINESS

There was no unfinished business to come before the Committee.

NEW BUSINESS

A. FY 2011-2014 Transportation Improvement Program (TIP) Amendment #5

Tilma discussed the TIP amendment, material was made available in advance of the meeting. He reviewed the cover memo, the public notice (published June 1, 2011), and the changes to the project table that are covered in this amendment.

Hubbell noted that part of the M-96 (Columbia Ave.) Project will not be completed as proposed. Only the work from Riverside Drive to I-194 will be completed. The section from M-294 to I-94BL no longer qualifies for CPM due to its deteriorating condition. The project will be taken out of this amendment until the revised cost is determined. It will be added during the next amendment process in August or the first amendment of FY 2012, in October. This should work for the letting schedule planned for the remaining part of the project.

It was moved by Werner, supported by Sprau, to approve Amendment #5 to the FY 2011-2014 TIP, with the changes as discussed. MOTION CARRIED UNANIMOUSLY.

Res.
11-25

B. 2035 Air Quality Conformity Analysis Resolution for BCATS' 2035 Transportation Plan

Tilma reviewed the proposed resolution and the fact that the Plan update, as developed, meets the air quality conformity requirements for not negatively impacting air quality as a result of the planned improvements. The resolution attests to this finding.

It was moved by Werner, supported by Coward, to approve the Conformity Analysis Resolution as presented. MOTION CARRIED UNANIMOUSLY.

Res.
11-26

C. BCATS' 2035 Transportation Plan

Karr stated the members have seen various sections of the Plan update over the past several months. Several of the key components such as the financial analysis and project list were previously provided, with the project list being approved by the Policy Committee last month. Karr referred to the final Environmental Mitigation chapter, which was distributed, as well as the Environmental Justice material provided to the members. She indicated that although many of the Plan's projects are located near environmental factors, very few would be expected to have any significant impact on those factors. As projects are developed, the project owners are expected to address any environmental factors encountered. Tilma stated that the methodology for the environmental justice analysis is the same as was used in the previous plan. The 2000 U.S. Census figures are still being used since the data is readily available by block for that information. The next Plan update will allow for 2010 U.S. Census data to be used when the block level data from that census are available. Tilma indicated that impacts on affected groups are assessed within a 1/10 mile, 1/4 mile and ½ mile of each site-specific project. Karr noted that in addition to possible negative impacts, the analysis also indicates that the benefits of the proposed projects are well distributed across the study area. Tilma noted that there are some minor items to updates in these two chapters that will be attended to shortly.

Karr noted that Tilma has been uploading the Plan material to the BCATS website.

Tilma reviewed the status of documenting the travel demand model part of the analysis for inclusion in the Plan document. There was discussion about the length of time allowed for public comment on the Plan material. The notice was published and will allow for comment until about the end of the month.

It was moved by Sprau, supported by Coward, to approve the 2035 Metropolitan Transportation Plan, including the approval resolution, with the items to be added by staff. MOTION CARRIED UNANIMOUSLY.

Res.
11-27

D. Resolution of Support for Current Population Thresholds for Metropolitan Planning Organizations

Karr noted that this topic is related to an unofficial, draft, anonymous, leaked document at the federal level that is a proposal for reauthorization of the federal transportation legislation. Tupica stated that apparently this draft was from the Administration staff, not DOT staff. Karr relayed that this draft has major changes in the way the current transportation program is administered, including the provision that all metropolitan planning agencies serving areas with populations under 200,000 persons be dissolved. This would dramatically change the delivery of any federal program by giving responsibility for the smaller urban areas to the state. Local elected officials would be disenfranchised from the process and would no longer be making the decisions about where or how transportation funds are spent in their area. There is a very different approach in the draft that was leaked as compared to the current process. The draft is more of a top-down approach that would focus primarily on national goals and emphasis areas.

Karr reported that the Michigan Transportation Planning Association is very supportive of maintaining the current population thresholds and passed a resolution similar to the one recommended to Policy Committee.

It was moved by Sprau, supported by Coward, to approve the Resolution of Support, as presented. MOTION CARRIED UNANIMOUSLY.

Res.
11-28

COMMENTS

A. Next Meeting

Chair Matson announced that the next Policy Committee meeting is scheduled for Wednesday, July 20, 2011, 1:30 p.m. in the City of Springfield Council Chambers. Karr indicated that, based on agenda items, the July meeting may be cancelled. Committee members will be notified of the status of the next meeting.

B. Committee Member Comments

Sprau announced that Phase 2 of the Veteran's Silver Star apartment complex development is moving ahead with plans for 100 new units. He attended a public hearing on this topic. Karr asked how this development is treated in the Census as to where the population is accounted for in the totals. It was not immediately known where the residents are counted. Battle Creek Transit serves the current veteran's apartment complex and will have to review the location of this next phase for possible provision of service.

Matson reported that the remodeling of the Springfield Farmer's Market, including the development of a commercial kitchen, is completed.

There was discussion about MDOT using toll revenues as local match for federal funds to revive their FY 2012 project list.

Coward reported that, as a result of the storm damage from May 29th, the Calhoun County Road Commission has already expended $100,000 for clean-up and a large number of personnel have been assigned to the clean-up. This has taken staff away from the filling of potholes and other necessary activities. There is concern from all of the governmental units as to where assistance may come from to help with these unanticipated expenses that are not in their budgets. Coward asked about the process used by the county emergency management team and stated that the townships and the county need to be included in the process. The disaster may not meet the threshold for coverage through FEMA. There was additional discussion on this item.

C. Public Comments

There were no public comments.

ADJOURNMENT

Chair Matson adjourned the meeting at 2:33 p.m.

Resolution #11-26

Resolution to Accept the 8-Hour Ozone Transportation Conformity Analysis for the *2035 Metropolitan Transportation Plan* for the Battle Creek Area Transportation Study

WHEREAS, the United States Environmental Protection Agency has designated Kalamazoo County, Calhoun County, and Van Buren County (hereafter referred to as Kalamazoo-Battle Creek MI Non-Attainment Area) as a Non-Attainment Area for ozone in Michigan; 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 BCATS *2035 Metropolitan Transportation Plan* will be pending approval by the Federal Highway Administration after local action on the document by the BCATS Policy Committee; and

WHEREAS, the Interagency Work Group for the Kalamazoo-Battle Creek MI Non-Attainment Area has acknowledged the necessity of Air Quality Conformity Analysis Testing for some of the proposed projects in the BCATS *2035 Metropolitan Transportation Plan*; and

WHEREAS, the results of the conformity analysis conducted by the Michigan Department of Transportation demonstrates that the forecasted volatile organic compound (VOC) and nitrogen oxide (NOx) emissions for the Kalamazoo-Battle Creek MI Non-Attainment Area are significantly below the levels allowed under the SIP budget established for the area over the course of the Plan's time-line, thereby demonstrating conformity.

NOW THEREFORE BE IT RESOLVED, that the Policy Committee of the Battle Creek Area Transportation Study accepts the results of the 8-Hour Ozone Transportation Conformity Analysis for the Kalamazoo-Battle Creek MI Non-Attainment Area for use with the BCATS *2035 Metropolitan Transportation Plan*; and

BE IT FURTHER RESOLVED, that the 8-Hour Ozone Transportation Conformity Analysis for the Kalamazoo-Battle Creek MI Non-Attainment Area demonstrates conformity with the State Implementation Plan; and

BE IT FURTHER RESOLVED, that the Policy Committee of the Battle Creek Area Transportation Study hereby authorizes inclusion into the *2035 Metropolitan Transportation Plan* a chapter entitled "Air Quality Conformity: Kalamazoo-Battle Creek MI Non-Attainment Area" containing a description and summary of the analysis findings.

(signed original on file) Date: June 22, 2011
Tom Matson, Chairperson
Battle Creek Area Transportation Study Policy Committee

Adopted by the Battle Creek Area Transportation Study Policy Committee at its meeting of June 22, 2011

BCATS

Resolution #11-27
Resolution to Approve the *2035 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 *2035 Metropolitan Transportation Plan* as been developed pursuant to USC 23 Section 134, as amended by the Safe, Accountable, Flexible, Efficient, Transportation Act: A Legacy for Users (SAFETEA-LU) federal transportation legislation, with a planning horizon of at least 20 years; and

WHEREAS, the BCATS *2035 Metropolitan Transportation Plan* identifies transportation facilities that should function as an integrated metropolitan transportation system; and

WHEREAS, the BCATS *2035 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 *2035 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 *2035 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 *2035 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, the BCATS *2035 Metropolitan Transportation Plan* was analyzed as a part of the Kalamazoo-Battle Creek-MI Maintenance Area and has been shown to conform with the State Implementation Plan (SIP) for air quality; and

WHEREAS, this Plan can be amended periodically upon request and with appropriate documentation supporting such a request;

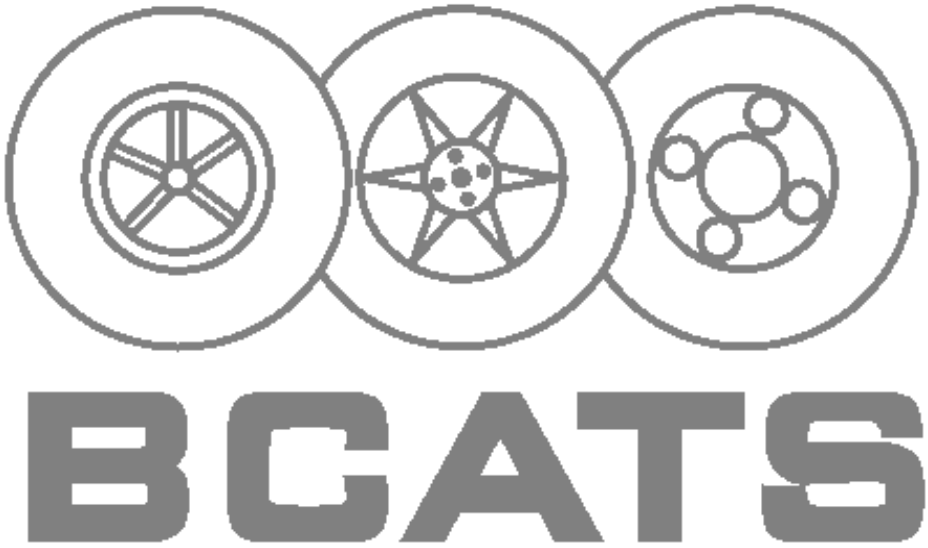
NOW THEREFORE BE IT RESOLVED, that the Policy Committee of the Battle Creek Area Transportation Study finds the *2035 Metropolitan Transportation Plan* to be SAFETEA-LU compliant and approves its submission to the Michigan Department of Transportation for consideration by the Federal Highway Administration, Federal Transit Administration and the Environmental Protection Agency, as necessary.

ATTEST: (signed original on file) Date: June 22, 2011
Tom Matson
Chairperson, BCATS Policy Committee

Adopted by the Battle Creek Area Transportation Study Policy Committee at its meeting of June 22, 2011

BCATS

BCATS



2035 Metropolitan Transportation Plan

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