

The Jackson Area Comprehensive Transportation Study

2045 Long Range Transportation

June 2018



Jackson Area Comprehensive Transportation Study

2045 Long Range Transportation Plan Jackson County, Michigan

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Jackson Area Comprehensive Transportation Study

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JACTS 2045 Long Range Transportation Plan

Table of Contents

	Executive Summary	
Chapter 1	Introduction.....	1.1
Chapter 2	Vision, Goals, & Objectives.....	2.1
Chapter 3	Public Participation & Consultation.....	3.1
	Transportation Participation Plan	
	Consultation	
Chapter 4	The Existing Transportation System.....	4.1
	The Road Network	
	Transit	
	Air Transportation	
	Rail Transportation	
	Freight	
	Non-Motorized Transportation	
	Emerging Technology within the Transportation System: Connected & Automated Vehicles	
Chapter 5	Coordination with Local & State Plans.....	5.1
Chapter 6	Performance Measures.....	6.1
Chapter 7	Socio-Economic Data.....	7.1
Chapter 8	Travel Demand Model Forecasting & Modeling.....	8.1
Chapter 9	Roadway Transportation Deficiencies & Recommended Projects.....	9.1
Chapter 10	Operational & Management Strategies.....	10.1
Chapter 11	Financial Analysis & Constraints.....	11.1
Chapter 12	Environmental Justice.....	12.1
Chapter 13	Environmental Mitigation.....	13.1
Chapter 14	Emergency Management & Natural Hazards.....	14.1
Appendix	Public Participation Documentation	
	Performance Measures FY2017-2020 Jackson MPO TIP Project List	
	Systems Performance Report	
	Glossary	

Executive Summary

The Jackson Area Comprehensive Transportation Study (JACTS), as the Metropolitan Planning Organization (MPO) for the City of Jackson and Jackson County, is charged by the United States Department of Transportation (USDOT) with maintaining a continuing, comprehensive, and cooperative transportation planning program. This includes the development of a long range transportation plan (LRTP) with a minimum horizon of 20 years that is fiscally constrained by reasonably available revenues.

The development and content of the plan is mandated by the federal transportation bill called Fixing America's Surface Transportation (FAST) Act. The last update of the Jackson MPO Long Range Transportation Plan was approved in June 2013. This update of the plan, with a horizon year of 2045, is required to meet federal transportation requirements. The JACTS 2045 Long Range Transportation Plan was approved by the Region 2 Planning Commission on June 14, 2018.

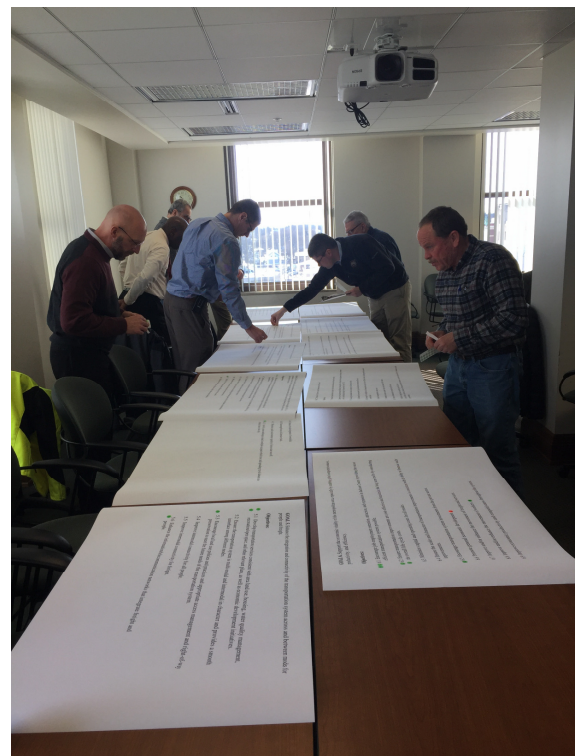
Chapter 1 Introduction

An overview of the need for the transportation planning process and the Jackson MPO structure is in the plan's first chapter. Understanding that the federal government provides federal aid transportation funding as an incentive to complete this work, local, state and federal agencies work collaboratively to accomplish this task.

Chapter 2 Vision, Goals, & Objectives

An important step in any planning effort is the development of vision, goals, and objectives to support and to provide direction for the planning work to come. They can reflect the values and desires of the community, and are also valuable in measuring the effectiveness and success of the plans that are developed.

Federal legislation requires that the Jackson plan involve all levels of government and all surface transportation modes. The plan goals and objectives specifically align with the federal requirements to ensure that the plan meets national initiatives and considers all modes of transportation and users. The Jackson MPO cannot implement projects or improvements to directly satisfy the stated goals and objectives, but can provide a forum for coordinated decisions to be made cooperatively between the City of Jackson and Jackson County for the vision, goals and projects to be realized.



Public participation in the planning process

Jackson MPO plans are coordinated with the state plans and the statewide planning process. The following goals were reaffirmed by the JACTS Technical, Policy and Region 2 Planning Commission committees to guide the update of the plan. A complete representation of the plan's goals and objectives is in Chapter 2.

Goal 1. Increase the safety and security of the transportation system for motorized and non-motorized users.

Goal 2. Increase the accessibility and mobility options available to people and freight.

Goal 3. Emphasize the preservation of the existing transportation system.

Goal 4. 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.

Goal 5. Enhance the integration and connectivity of the transportation system across and between modes for people and freight.

Goal 6. Support the economic vitality of Jackson County by enabling global competitiveness, productivity, and efficiency.

Goal 7. Promote efficient system management and operation.

Goal 8. Encourage the public to become involved in the planning and development of transportation facilities and services.

Goal 9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.

Goal 10. Enhance travel and tourism.

In developing the plan's goals and objectives, several existing plans, policy, goals and objectives were considered as input, including: JACTS' 2040 Long Range Transportation Plan, Michigan Department of Transportation (MDOT) MI Transportation Plan; MDOT Freight Plan; and MDOT Rail Plan, and the State of Michigan Strategic Highway Safety Plan. These plans, along with others, are reviewed in Chapter 5.

Chapter 3 Public Participation Plan & Consultation

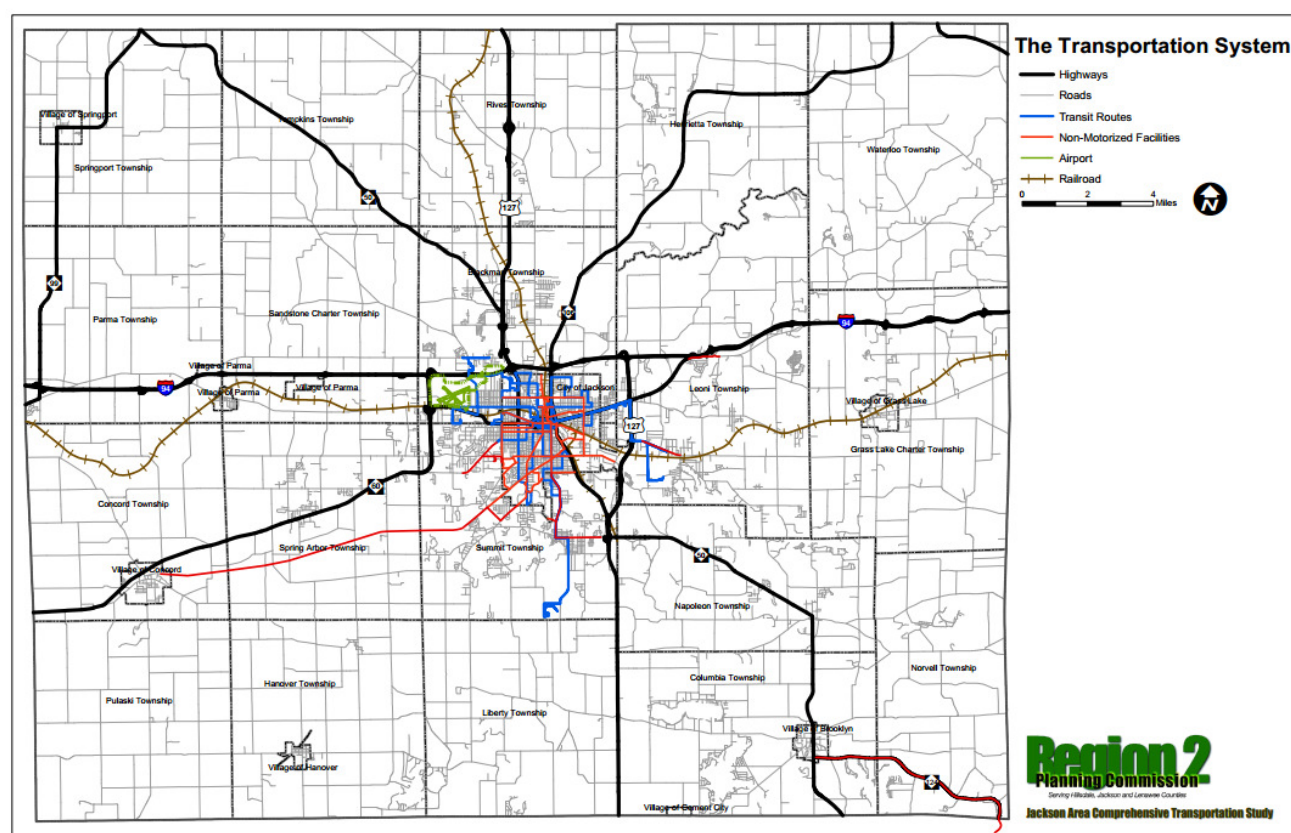
The Jackson MPO developed the required Transportation Participation Plan. The Jackson MPO provided updates relative to plan development throughout the process, including at monthly JACTS Technical and Policy committee meetings, periodic Project Steering Committee meetings and through email and mail notifications to the project Contact List. Public meetings and open public comment periods on each final draft

chapter of the plan were made known through advertisements in the local papers, the Region 2 Planning Commission website, and e-mail and mail notifications.

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 are in Chapter 3. The Contact List included in the notification process is in the appendix.

Chapter 4 The Existing Transportation System

The modes/systems reviewed in the plan include: road, air, rail, trucking, non-motorized, transit, taxicab, rideshare, and connected and automated vehicles. Existing plans, policies, and facility networks were recorded in Chapter 4 of the plan.



The transportation system within the Jackson MPO

Chapter 5 Coordination with Local and State Plans

The state's long range transportation plans, along with state and local transportation safety plans are reviewed in this chapter. The plans must be reviewed to ensure that local and state plans align. Reviewed plans include the 2040 Michigan Transportation Plan, the 2017-2018 State of Michigan Strategic Highway Safety Plan, and the 2017 Jackson, Hillsdale and Lenawee Regional Transportation Safety Plan. JATA, the Jackson Area Transportation Authority, the local public transit agency, did not have a plan available to review at the time of this document's development.

Chapter 6 Performance Measures

The federal transportation bill requires that transportation systems move toward a performance- and outcome-based program. The objective of this new program is that the investment of resources in projects will be monitored, help drive investment, and fulfill national goals. Public transit authorities, like JATA, are also required to start performance-based planning.

The transition to performance-based planning is underway at the Jackson MPO and will continue as the federally-required performance measures continue to be identified, understood, and move toward maturity, with guidance from MDOT. As planning agencies around the country gain experience in working with the federally-required measures, tools will likely be developed to help agencies understand the impact that investments will have on outcomes. This will allow for the consideration of the tradeoffs in pursuing or focusing on one measure over another to produce results that are important to the stakeholders in the Jackson MPO. A review of where Jackson is in demonstrating performance-based planning is in Chapter 6.

Chapter 7, 8 & 9 The State of Socio-Economics & Travel Congestion for the Jackson MPO

Socio-economic data from 2014 - population, households, and employment – were gathered, publically vetted, and analyzed to determine the model base year data for the plan's travel demand model. The model is used to develop a simulation of traffic volumes and conditions on Jackson roads. From that baseline information, the projection of future socio-economic data helps determine what future traffic volumes may be on local roads, and, therefore, identify locations of future potential congestion (too many vehicles for the road design). These future potential congestion areas can help inform what major improvements may need to take place on the road network, and these are called capacity improvement projects. Capacity improvement projects, a major component of the plan, come from this analysis.

For Jackson, there are no future congestion issues projected on the road network that meet local, state or federal road expansion criteria in this modelled and publically vetted information. This means that a majority of finances will be spent on preserving and maintaining the existing road network in the Jackson MPO. MDOT is still moving forward with the 5 recommended capacity projects for the I-94 Modernization Project that will address safety concerns on the interstate. A complete list of the proposed capacity improvement projects is in Chapter 9.

Chapter 10 Operation and Management Strategies

MAP-21 requires that the Jackson MPO 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.” A number of transportation strategies have been identified to meet this requirement. Some of these strategies include: asset management, capital preventative maintenance, general



West Michigan Avenue construction

maintenance, safety management, intelligent transportation system activities, access management, congestion management, pedestrian and non-motorized improvement, and public transit management. More can be found in Chapter 10.

Chapter 11 Financial Analysis

Federal legislation requires a review of the financial feasibility of projects and programs. The plan must be financially constrained, which means that there must be sufficient and reasonably available funds to complete projects listed in the document. The regulations require that all revenues and costs be inflated to “year of expenditure dollars.” In the two tables below, the costs for the operations and maintenance of the existing system for the life of the plan is shown for the Jackson MPO. For more details, see Chapter 11.

Table 1
Summary of 2045 Long Range Transportation Plan
Operations/Maintenance & Capital Expenditures 2015-2045

Operations/Maintenance (O/M) Expenditures for Local & State Roads	Total \$'s
Estimated Expenditures for O/M on Local Roads	\$ 303,312,995
Estimated Expenditures for O/M on State Roads	\$ 344,802,000
PLANNED CAPITAL EXPENDITURES	\$ 303,657,797
Local Road Projects	
Capacity Improvement Projects (0)	\$ 0
Preservation	\$ 16,685,566
Safety	\$ 0
Non-Motorized	\$ 442,023
Total	\$ 18,028,467
Transit Projects	
Operating Expenses	\$ 285,002,840
Vehicle Replacement (83 Vehicles)	\$ 15,589,603
Vehicle Addition	\$ 5,624,000
Other Capital	\$ 1,062,100
Security Improvements	\$ 703,862
Total	\$ 307,982,405
State Projects	
Capacity Improvement (5 Projects)	\$ 196,037,000
Preservation	\$ 880,762,884
Total	\$ 1,076,799,884
GRAND TOTAL EXPENDITURES	\$ 2,050,925,751

The total expenditures are within the total federal, state, and local revenues estimated for the Plan. As shown in Table 2 below, there is projected to be adequate revenue available for capital and operations, and maintenance expenditures for the transportation system.

Table 2
Demonstration of Financial Constraint for the
2045 Long Range Transportation Plan of the Jackson Area
Comprehensive 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 Jackson MPO.	\$ 3,452,885,539
Expenditures for Operations/Maintenance of Local & State Roads	\$ 648,114,995
Expenditures for Local Road Improvement Projects	\$ 18,028,467
Expenditures for Transit Improvement Projects	\$ 307,982,405
Expenditures for State Improvement Projects	\$ 1,076,799,884
REMAINING BALANCE	\$ 1,401,959,788

Chapter 12 Environmental Justice

In accordance with federal guidelines on Environmental Justice, there is a focus on the need to incorporate environmental justice principles into the transportation planning process. This is a regular component of the planning process and Transportation Improvement Program (TIP) evaluation. The analysis shows that there will be impacts to non-minority as well as minority and low-income populations as a result of the capacity improvement projects. However, 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 0.10 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. More information can be found in Chapter 12.

Chapter 13 Environmental Mitigation

MAP-21 requires that the plan includes a review of potential environmental mitigation activities and potential areas to carry out these activities. Areas of concern include: farmlands, wetlands, drainage, flood plains, threatened and endangered species, impaired streams and other water bodies, air quality, and noise. The goal of the process is to eliminate or minimize environmental impacts from the capacity improvement projects in the plan. Addressing this issue in the plan is not intended to be project specific, and the owners of any future project are still required to meet all of the necessary requirements of the National Environmental Policy Act (NEPA) process. The environmental guidelines, assessment table, and project overlay maps related to this issue are in Chapter 13.

Chapter 14 Emergency Management & Natural Hazards

The FAST Act requires that the Jackson MPO consider how natural hazards may impact local governments, transportation agencies, and the transportation system. The chapter includes a thorough review of existing plans, policies, and formal and informal agreements that have been used by area agencies in times of distress. There are also a set of recommendations to help improve coordination and management of the transportation system.



Winter weather on I-94 in Jackson

Chapter 1

Introduction

In December 2015, President Obama signed Fixing America's Surface Transportation Act (FAST Act), the current federal transportation funding legislation. This is the fifth bill for surface transportation that has shaped the program to meet the nation's changing transportation needs. The current legislation continues to supply the funds and refine the programmatic framework for investments needed to maintain and grow transportation infrastructure.

As the designated metropolitan planning organization (MPO) for the Jackson urbanized area, the Region 2 Planning Commission through the Jackson Area Comprehensive Transportation Study (JACTS) is responsible for the development of a multi-modal, long range transportation plan (LRTP). The plan identifies the Jackson area's transportation needs through the year 2045, including the projects and policies to meet those needs. The FAST Act continues to require the plan to be updated on a five-year cycle and cover at least a 20-year planning horizon.

The development of the JACTS 2045 Long Range Transportation Plan was a cooperative effort undertaken by the Region 2 Planning Commission, Jackson County Department of Transportation, Jackson Area Transportation Authority, City of Jackson, Michigan Department of Transportation, Federal Highway Administration, the Project Steering Committee, other local units of government and concerned residents throughout Jackson County. Development of the plan was initiated in July 2017 with a Project Steering Committee and a Public Kickoff meeting in August 2017.

The Jackson area transportation planning process examined and evaluated the existing transportation facilities and travel characteristics to measure the present operating efficiency. An understanding of the relationships between land use, population, and trip making characteristics is essential for anticipating future needs. The primary concern in the long range planning process is to develop a system that will meet the transportation demands of the Jackson area. In addition to safety and time considerations, emphasis will continue to be on preserving and maintaining the existing facilities.

The plan lays the groundwork for the proposed improvements to the area's transportation system in a safe, efficient and economic manner. The projects are then included in the 4-Year Transportation Improvement Program (TIP) which is a process for scheduling the implementation of projects selected through the long range transportation planning process in order to receive federal transportation funding for a particular year.

The Jackson MPO

Federal law requires that each urbanized area with a population of more than 50,000 persons establish a designated MPO to ensure that it has a continuing, cooperative, and comprehensive transportation planning process. The "3 C" process that the federal transportation bill ISTEA – the Intermodal Surface Transportation Efficiency Act of 1991 - outlined provides guidelines for consideration of all transportation interests. The

following are important to remember when engaging in the transportation planning process across jurisdictions:

- **Connections:** The convenient, rapid, efficient, and safe transfer of people and goods among modes that characterize comprehensive and economic transportation services.
- **Choices:** Opportunities afforded by the multi-modal system that allow transportation users to select their preferred means of travel.
- **Coordination and Cooperation:** Collaborative efforts of planners, users, and transportation agencies to address travel demands by investing in dependable, high-quality transportation services either by a single mode or by two or more modes in combination.

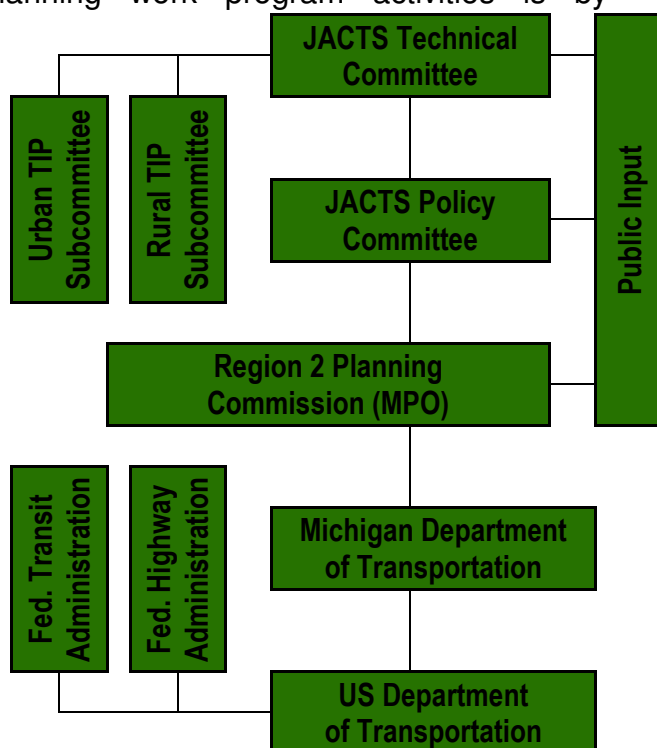
The JACTS Technical Committee is comprised of appropriate staff (planners, engineers, managers, etc) from units of government and modal agencies (transit and airport) within the metropolitan area boundary; representatives from the Michigan Department of Transportation; and, an ex-officio member representing the Federal Highway Administration. The Technical Committee reviews all plans and programs and makes technical recommendations to the JACTS Policy Committee.

The JACTS Policy Committee consists of elected and appointed officials from units of government within the metropolitan area boundary. They are involved in formulating and implementing policies pertaining to transportation matters. The Policy Committee serves as a forum for discussion and analysis of development and improvement issues.

The primary tool for addressing the planning work program activities is by recommendations passed onto the Policy Committee from the Technical Committee, and through public comment. The Region 2 Planning Commission is the designated MPO, and reviews and affirms the recommendations and decisions put forth by the Policy Committee. Together, the 3 MPO committees direct the work of the Region 2 Planning Commission staff in completing the annual Unified Work Program that describes the work to be completed during the fiscal year; the Transportation Improvement Program (TIP) that includes a list of the transportation and transit projects to be funded with federal funds within the subsequent 4-year time period; and, the Long Range Transportation Plan.

Study Area

The Plan study area encompasses the



Jackson metropolitan area boundary, which covers the entirety of Jackson County. The U.S. Census-designated urbanized area boundary for Jackson includes the City of Jackson and all or parts of Blackman, Leoni, Napoleon, Sandstone, Spring Arbor, and Summit Townships. All Census block areas within this core which have a population density of 1,000 or more persons per square mile are automatically included in the urbanized area, as well as adjacent areas that have developing “urban characteristics.”

Plan Development

This plan is anticipated to be updated in 2023, based on current state and federal transportation requirements.

Chapter 2

Vision, Goals, & Objectives

The vision, goals, and objectives are meant to guide the long range transportation planning process over the life of the plan. The development of these elements is a critical part of the planning process. They are used as a benchmark to determine if future projects align with the vision for the Jackson MPO, and are a means of measuring the success of implementing the plan. They also reflect the values and principles of the community, measuring the expectations for the quality of life.

The vision, goals, and objectives for the plan are listed in the section below. They were developed through meaningful public input to ensure that the Jackson MPO 2045 Long Range Transportation Plan correctly captured what the community envisions for the future ideal Jackson transportation system. The guidance from the new federal transportation legislation, Fixing America's Surface Transportation Act or FAST Act, that was signed into law by President Obama on December 4, 2015, also influenced these planning elements. The ten planning factors that come from the federal transportation bill provided a strong blueprint for the plan's goal. The goals align with the needs of the Jackson MPO and the local communities within the planning area, while also meeting state and federal requirements. The objectives are developed to ensure that the future needs of the local transportation system are considered.

The Jackson MPO also supports the state's mission to improve traffic safety by fostering effective communication, coordination and collaboration among public and private entities in support of the "Toward Zero Deaths" initiative on all federal, state, and locally maintained roads.

2045 Long Range Transportation Plan Vision

Create a transportation system that promotes safety and provides strong, multimodal connections to and within communities that is sustainably funded and well-maintained.

Goals & Objectives

Goal 1. Safety & Security

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

Objectives

- 1.1 Reduce vehicular crashes and eliminate hazardous locations.
- 1.2 Minimize crashes and conflicts among transportation modes and users.
- 1.3 Use best practices to increase safety.

- 1.4 Continue to administer funding through the Jackson Traffic Safety Program to improve all aspects of safety on the transportation system.

Goal 2. Accessibility & Mobility

Increase the accessibility and mobility options available to people and freight.

Objectives

- 2.1 Minimize transportation barriers for all people, especially the physically challenged, senior citizens, young people, and persons who do not have automobiles available, have limited economic means, or choose not to travel by automobile.
- 2.2 Provide appropriate transportation connections, especially for non-motorized modes, to major land uses and activity centers within Jackson County, including residence, employment, recreation, community facilities, and commercial centers.
- 2.3 Improve or increase facilities for pedestrians and bicyclists.
- 2.4 Design the transportation system to operate efficiently.
- 2.5 Provide enhanced, improved capacity accessibility to the transportation system to move freight and enhance the range of freight service options available.

Goal 3. Preservation

Emphasize the preservation of the existing transportation system.

Objectives

- 3.1 Based on the goals, policies and plans of local communities, preserve and maintain the existing transportation network.
- 3.2 Support transportation system maintenance.
- 3.3 Emphasize system rehabilitation rather than expansion, except for the provisions of the I-94 Modernization Study.
- 3.4 Incorporate new technologies in well-researched, purposeful ways.

Goal 4. Community Impact & Environment

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.

Objectives

- 4.1 Minimize disruptions made by the transportation system to neighborhoods, especially to ensure that they do not disproportionately affect low-income and minority populations.
- 4.2 Preserve historic sites and districts, and ensure minimal impact if necessary.
- 4.3 Conserve prime agricultural and natural resource areas and open spaces.
- 4.4 Minimize disruptions to natural resources, environmentally sensitive areas, wetlands, and other critical areas and habitats.
- 4.5 Support projects that reduce vehicle emissions and noise, including greenhouse gases and air pollutant concentrations.
- 4.6 Encourage policies, plans and projects that minimize energy resources consumed for transportation.

Goal 5. Integration & Connectivity

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

Objectives

- 5.1 Develop transportation services consistent with area land use, housing, water quality management, economic development, and recreation/open space plans.
- 5.2 Encourage land use policies and practices, access management, and right-of-way preservation to meet the future needs of the transportation system.
- 5.3 Ensure that the transportation system is multi-modal and intermodal in character.
- 5.4 Improve intermodal connectivity for people and freight.
- 5.5 Support the development of information technology networks that integrate freight and people.

Goal 6. Economic Vitality

Support the economic vitality of Jackson County by enabling global competitiveness, productivity, efficiency.

Objectives

- 6.1 Develop an efficient transportation system that encourages tourism and job employment retention and attraction.
- 6.2 Support projects and policies that enable transportation modes to be simultaneously considered as economic development and tourism investments.
- 6.3 Improve and enhance the movement of workers.
- 6.4 Improve economic productivity and competitiveness throughout the system.
- 6.5 Encourage transportation system investments from the private sector.

Goal 7. Operations & Maintenance

Promote efficient system management and operation.

Objectives

- 7.1 Promote transportation project and technologies that reduce distance and time spent traveling.
- 7.2 Improve on-road operating efficiency through the use of transportation management techniques where possible, including Intelligent Transportation Systems (ITS).
- 7.3 Coordinate the movement of goods and persons for maximum efficiency.
- 7.4 Encourage the multiple use of transportation rights-of-way by different modes, including pedestrian and bicyclists.
- 7.5 Minimize capital and operating costs for all modes.
- 7.6 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.

Goal 8. Public Involvement

Encourage the public to become involved in the planning and development of transportation facilities and services.

Objectives

- 8.1 Provide opportunities for the involvement of all segments of the community in the development of JACTS plans and programs through multiple outlets.
- 8.2 Allow for timely public review and comment at key decision points in the planning and project development process.
- 8.3 Look for ways to include traditionally under-represented communities, especially minority and low-income populations.

Goal 9. Resiliency & Reliability

Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.

Objectives

- 9.1 Maximize quality and minimize quantity of storm water run-off.
- 9.2 Support the development, integration, and use of local, regional, and state storm water mitigation plans and policies.
- 9.3 Consider the impact to the Upper Grand River watershed for any transportation project.
- 9.4 Consider the impact to local floodplains and wetlands for any transportation project.
- 9.5 Consider the impacts of extreme weather events to storm water mitigation on the transportation system.

Goal 10. Travel & Tourism

Enhance travel and tourism.

Objectives

- 10.1 Consider the impact on tourism when making investment decisions.
- 10.2 Provide and maintain economical non-motorized facilities in rural, suburban and urban areas that may transform the region into a non-motorized travel destination.
- 10.3 Integrate water trails into the transportation framework to promote travel and tourism in the region.
- 10.4 Emphasize context-sensitive designs that preserve historic character.

Chapter 3

Public Participation & Consultation

Public Participation Plan

Introduction and Purpose

Public participation is a critical part of the planning process. Without the involvement of local citizens, designing a program that effectively meets the needs of the public can be difficult. The Region 2 Planning Commission (R2PC), as the state designated Metropolitan Planning Organization (MPO) for the Jackson County census-designated Urbanized Area, acting through the Jackson Area Comprehensive Transportation Study/Jackson MPO actively seeks to incorporate the involvement of the public in its planning efforts pursuant to the Public Participation Plan that is designed to accomplish the following goals:

- Comply with the public participation requirements of the *FAST ACT* federal transportation legislation.
- Provide opportunities for Jackson County residents and citizen-based organizations to identify priorities, discuss views, and provide input into plans, projects, or policies of the MPO.
- Listen, inform, and educate citizens about the MPO's planning initiatives.
- Achieve participation and partnership among the public, the Region 2 Planning Commission, the Michigan Department of Transportation, Federal Highways Administration, and local governmental jurisdictions in the planning and execution of projects.

The purpose of this document is to provide a clear directive for the public participation activities undertaken by JACTS as it pertains to the MPO's primary responsibilities that include the development and implementation of the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Annual Unified Work Program (UWP).

This is accomplished by adhering to the following principles:

- early and continuous involvement
- reasonable public availability of technical data and other information
- collaborative input on alternatives, evaluation criteria, and mitigation needs
- open meetings where matters related to transportation policies, programs, and projects are being considered
- open access to the decision-making process prior to closure

Compliance with Federal Requirements

The JACTS Public Participation Plan was originally adopted in 1994 to meet the requirements of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). In 1998, ISTEA was succeeded by the Transportation Equity Act for the 21st Century (TEA-21). These federal acts required that MPOs develop and use a proactive public participation process that provides complete information, timely public notice, full public access to key decisions, and supports early and continuing involvement in development of metropolitan transportation plans and transportation improvement programs. In 2006, the Safe, Affordable, Flexible and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) expanded public participation provisions requiring MPOs to develop enhanced participation plans, have public meetings at accessible locations and at convenient times, include visualization techniques in transportation plans and TIPs, and make plans available online. “Moving Ahead for Progress in the 21st Century” (MAP-21) further emphasizes these requirements when it passed in 2012, and the FAST Act continues to stress the importance of public participation.

Description of Public Participation Activities

JACTS will consult with governmental units within the MPO, local economic development organizations, freight related businesses, non-motorized transportation organizations, local transportation providers, and other interested parties in the development of the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Work Program (UWP). The Jackson MPO will also conduct outreach, public comment periods, and public meetings.

The three documents in the above paragraph will be published for a minimum of 30 days to receive public comment before adoption. For any amendments that are deemed necessary once any of the publications are adopted, the Jackson MPO shall publish at least one notice in a local news publication of general circulation within the Jackson Urbanized Area prior to approval of the amendment.

The JACTS Participation Plan consists of the following tools:

- | | |
|--|-----------------------------|
| 1. Notice of Meetings and Public Comment Periods | 5. Outreach |
| 2. Annual Report | 6. Visualization Techniques |
| 3. Public Hearings | 7. Environmental Justice |
| 4. Internet, Newspaper & Other Media | 8. Development and Analysis |
| | 9. Performance Measures |

1. NOTICE OF MEETINGS AND PUBLIC COMMENT PERIODS

The Jackson MPO maintains two standing committees to advise R2PC, the designated MPO for Jackson County. The JACTS Technical Committee members include engineers, planners, and other technical staff from the Jackson County Airport, transit agencies and local units of government within the metropolitan area boundary, representatives from MDOT, and the Federal Highway Administration. The committee reviews plans and programs, and makes technical recommendations to the JACTS

Policy Committee.

The JACTS Policy Committee members are elected and appointed officials representing local units of government within the metropolitan area boundary. The Policy Committee acts on recommendations from the Technical Committee, and recommends formal action to the R2PC.

The R2PC is composed of the local units of government within Jackson, Hillsdale, and Lenawee counties that contribute annually to the operating costs of the commission. All members of the R2PC have representation on the R2PC Board and final authority over all Jackson MPO decisions. All meetings of JACTS and the MPO are open to the public and held at locations which comply with the Americans with Disabilities Act (ADA) regulations. Individuals with disabilities may request aids/services within a reasonable time period to participate in the meeting. A public comment item is included on all agendas for any person wishing to address committee members.

Meeting notifications including date, location, and agenda are published in the local newspaper (*Jackson Citizen Patriot*) and its digital presence www.mlive.com along with the R2PC website www.region2planning.com. Meeting notices are also mailed and/or emailed to each unit of government within the MPO boundary. Interested citizens may also have their name added to the agency mailing list to receive meeting notifications.

a. Special Meetings, Workshops, and Public Meetings

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

Environmental justice (EJ) is an important part of the planning process and must be considered in the development of the LRTP, TIP, and other JACTS projects. There are three fundamental principles of environmental justice:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority and low-income populations;
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3. To prevent the denial of, reduction in, or significant delay in the receipt of, benefits by minority and low-income populations.

Staff will identify residential, employment, and transportation patterns of low-income and minority populations so that their needs can be identified and addressed and the benefits and burdens of transportation are fairly distributed.

Staff will continue to evaluate and improve the Public Participation Plan to eliminate barriers to low-income and minority involvement. However, the Jackson MPO cannot do this alone. Agencies and individuals who are connected to these communities are welcomed to participate and facilitate public involvement. Only by the participation of these individuals and groups can JACTS/R2PC advance the letter, spirit, and intent of environmental justice in transportation.

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The Jackson MPO will continue to analyze and update the demographic profile of the transportation planning area that includes the location of minority and low-income populations as required by environmental justice legislation. Maps will be developed showing the proposed LRTP projects in relationship with these areas.

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R2PC will determine the success of the Public Participation Plan by evaluating the number and diversity of citizens involved in the public involvement process.

Conclusion

The R2PC Public Participation Plan will be reviewed and monitored on a regular basis to maintain its timeliness and effectiveness. Following the principles of the Public Participation Plan will ensure the opportunity for access by the public and encourage proactive public participation in all aspects of the transportation planning process. This increased access for local citizens and other groups will help foster the continuous improvement of the Jackson MPO plans and programs to best serve the citizens of Jackson County.

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Chapter 3

Public Participation & Consultation

Public Participation Plan

Introduction and Purpose

Public participation is a critical part of the planning process. Without the involvement of local citizens, designing a program that effectively meets the needs of the public can be difficult. The Region 2 Planning Commission (R2PC), as the state designated Metropolitan Planning Organization (MPO) for the Jackson County census-designated Urbanized Area, acting through the Jackson Area Comprehensive Transportation Study/Jackson MPO actively seeks to incorporate the involvement of the public in its planning efforts pursuant to the Public Participation Plan that is designed to accomplish the following goals:

- Comply with the public participation requirements of the *FAST ACT* federal transportation legislation.
- Provide opportunities for Jackson County residents and citizen-based organizations to identify priorities, discuss views, and provide input into plans, projects, or policies of the MPO.
- Listen, inform, and educate citizens about the MPO's planning initiatives.
- Achieve participation and partnership among the public, the Region 2 Planning Commission, the Michigan Department of Transportation, Federal Highways Administration, and local governmental jurisdictions in the planning and execution of projects.

The purpose of this document is to provide a clear directive for the public participation activities undertaken by JACTS as it pertains to the MPO's primary responsibilities that include the development and implementation of the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Annual Unified Work Program (UWP).

This is accomplished by adhering to the following principles:

- early and continuous involvement
- reasonable public availability of technical data and other information
- collaborative input on alternatives, evaluation criteria, and mitigation needs
- open meetings where matters related to transportation policies, programs, and projects are being considered
- open access to the decision-making process prior to closure

Compliance with Federal Requirements

The JACTS Public Participation Plan was originally adopted in 1994 to meet the requirements of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). In 1998, ISTEA was succeeded by the Transportation Equity Act for the 21st Century (TEA-21). These federal acts required that MPOs develop and use a proactive public participation process that provides complete information, timely public notice, full public access to key decisions, and supports early and continuing involvement in development of metropolitan transportation plans and transportation improvement programs. In 2006, the Safe, Affordable, Flexible and Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU) expanded public participation provisions requiring MPOs to develop enhanced participation plans, have public meetings at accessible locations and at convenient times, include visualization techniques in transportation plans and TIPs, and make plans available online. “Moving Ahead for Progress in the 21st Century” (MAP-21) further emphasizes these requirements when it passed in 2012, and the FAST Act continues to stress the importance of public participation.

Description of Public Participation Activities

JACTS will consult with governmental units within the MPO, local economic development organizations, freight related businesses, non-motorized transportation organizations, local transportation providers, and other interested parties in the development of the Long Range Transportation Plan (LRTP), the Transportation Improvement Program (TIP), and the Unified Work Program (UWP). The Jackson MPO will also conduct outreach, public comment periods, and public meetings.

The three documents in the above paragraph will be published for a minimum of 30 days to receive public comment before adoption. For any amendments that are deemed necessary once any of the publications are adopted, the Jackson MPO shall publish at least one notice in a local news publication of general circulation within the Jackson Urbanized Area prior to approval of the amendment.

The JACTS Participation Plan consists of the following tools:

- | | |
|--|-----------------------------|
| 1. Notice of Meetings and Public Comment Periods | 5. Outreach |
| 2. Annual Report | 6. Visualization Techniques |
| 3. Public Hearings | 7. Environmental Justice |
| 4. Internet, Newspaper & Other Media | 8. Development and Analysis |
| | 9. Performance Measures |

1. NOTICE OF MEETINGS AND PUBLIC COMMENT PERIODS

The Jackson MPO maintains two standing committees to advise R2PC, the designated MPO for Jackson County. The JACTS Technical Committee members include engineers, planners, and other technical staff from the Jackson County Airport, transit agencies and local units of government within the metropolitan area boundary, representatives from MDOT, and the Federal Highway Administration. The committee reviews plans and programs, and makes technical recommendations to the JACTS

Policy Committee.

The JACTS Policy Committee members are elected and appointed officials representing local units of government within the metropolitan area boundary. The Policy Committee acts on recommendations from the Technical Committee, and recommends formal action to the R2PC.

The R2PC is composed of the local units of government within Jackson, Hillsdale, and Lenawee counties that contribute annually to the operating costs of the commission. All members of the R2PC have representation on the R2PC Board and final authority over all Jackson MPO decisions. All meetings of JACTS and the MPO are open to the public and held at locations which comply with the Americans with Disabilities Act (ADA) regulations. Individuals with disabilities may request aids/services within a reasonable time period to participate in the meeting. A public comment item is included on all agendas for any person wishing to address committee members.

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Chapter 4

The Existing Transportation System

The JACTS area is served by several forms of transportation. Though the focus of transportation planning tends to be on the road network, considering how to safely move goods and people must also be addressed in the long range transportation plan. The chapter is an overview of the transportation system within the Jackson Metropolitan Planning Area.

The Road Network

The road network is the largest component of the transportation system within the Jackson Metropolitan Planning Area. The roads are used by people every day by vehicle for work, travel and recreation. They are used by the trucking industry to haul freight. They are used by pedestrians to travel in areas where there is no sidewalk. The road is used by bicyclists who ride on them as part of the non-motorized system. They are the most critical part of the area's transportation infrastructure.

The following is an overview of previous plans, the existing road network, maintenance and funding strategies, important policies, existing traffic conditions and future needs and considerations for the road system.

Existing Plans

City of Jackson Thoroughfare Plan 2002

The 2002 Thoroughfare Plan looked at how traffic moved through the downtown and the rest of the City. A series of one-way to two-way conversions were outlined, including Lansing Avenue and Steward Avenue, Cooper Street and Milwaukee Street. Many of the recommendations have been addressed as of early 2018.

City of Jackson Master Street Plan 2010

The 2010 City of Jackson Master Street Plan was an update from the 1972 Master Street Plan. In the 2010 plan, Louis Glick Highway was identified as Business I-94 only, and Washington Avenue was converted to a two-way street. Most of the work from this plan has been implemented, and a new plan may be considered soon.

City of Jackson Community Master Plan 2016

The City of Jackson Community Master Plan, completed in 2016, proposes a framework focused on the City's long-term stability and redevelopment based on an assessment of the community's existing conditions. The mission of the plan is to build a better future community based on existing facilities and resources. The road network is seen as

valuable infrastructure that can influence growth and development. The plan acknowledges the role the national functional classification system has in providing funding for federal-aid eligible roads. The City also considers street design for the transportation system through proposed “Transportation Typologies,” tying together the needs of the different transportation modes available, the City’s Complete Streets policy, a broader land use context, and community priorities.

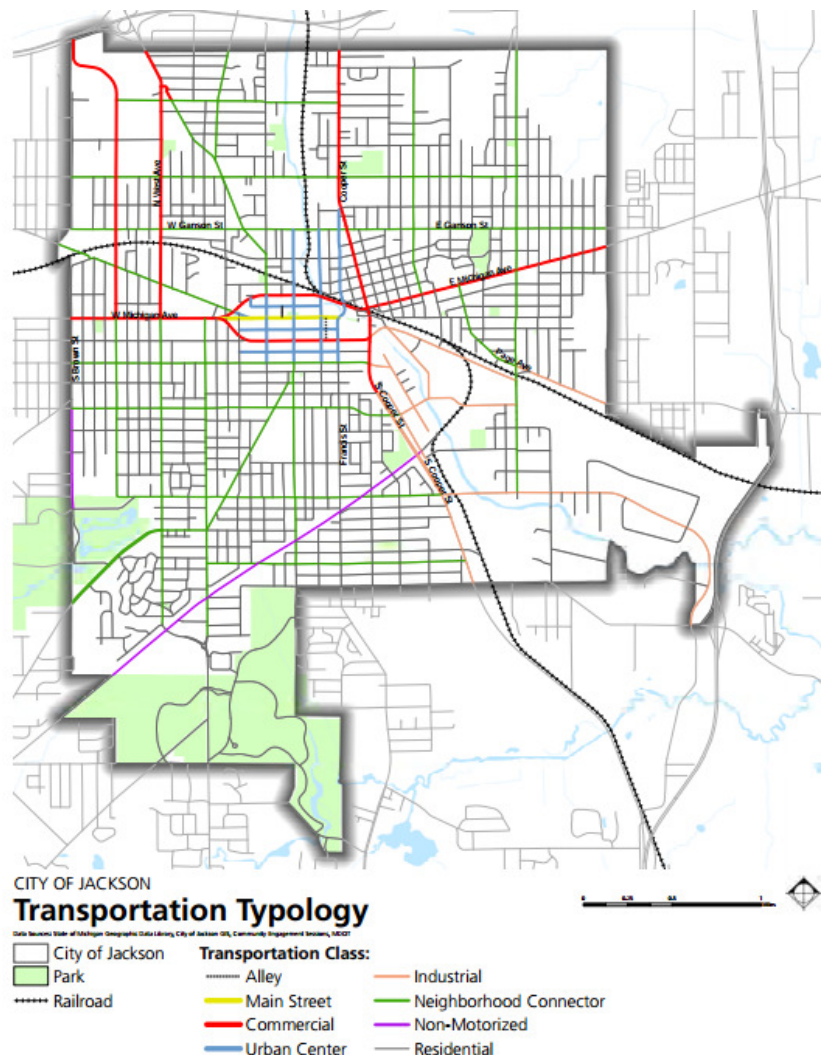
Goals and strategies in the plan related to transportation include:

- The City of Jackson will continue to capitalize on its connection to regional and interstate transportation system through good stewardship and by integrating its intra-city transportation network with them. Within the City, all users and modes of transportation will be accommodated in a safe, complete network that balances efficiency of movement with appropriate access to the land uses it supports.
- Decisions will facilitate coordination between land use and transportation and among transportation modes.
- Institute a “culture of complete streets” in which all users are explicitly identified, prioritized and planned for in all transportation projects.

Plan implementation recommends that improvements occur in phases in different areas of the City. Phase I calls for investments in the transportation system downtown, including:

- Continue to implement the Downtown Jackson Streetscape Plan.
- Implement the recommendations from the 2010 Jackson Rail Passenger State Development Study, including consolidating local bus and bicycle services into a location easily accessible from the Amtrak station.
- Convert the Louis Glick Highway/Washington Street loop to two-way streets.

Phase II focuses on housing and neighborhoods and includes the



following priorities for the road network:

- Develop a vision for a “gateway treatment” along N Cooper Street to welcome visitors from the north, provide wayfinding and introduce the Jackson brand.

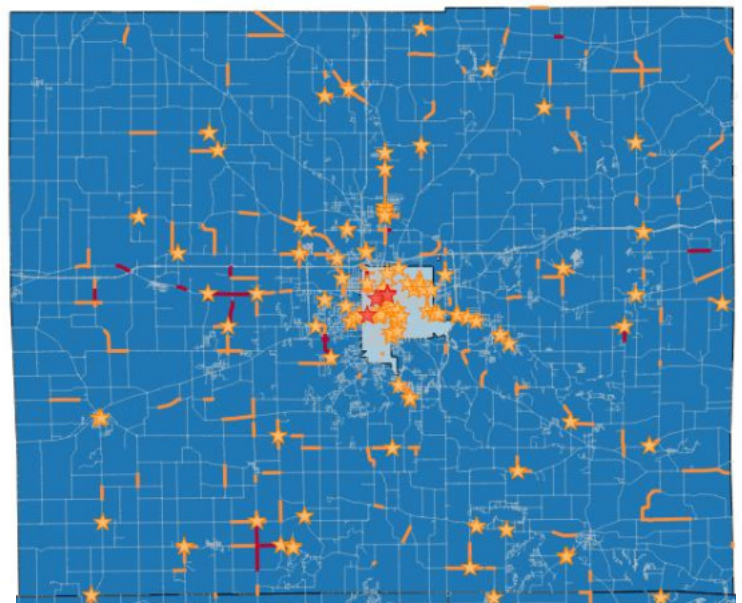
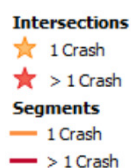
Phase III highlights Citizen-Government relations, including:

- Using visioning session data from the 2016 Master Plan as a starting point, make preliminary investigations into the feasibility of a node at the corner of High and Francis Streets that is specifically designed to meet the daily commercial and service needs of the residents of the south side of Jackson.

2017 Regional Transportation Safety Plan

The 2017 Regional Transportation Safety Plan provides guidance on how to address safety on local roads in Jackson, Lenawee, and Hillsdale counties. Paid for by MDOT, the Jackson County Department of Transportation (JCDOT) championed the plan. The overarching goal is the reduction of fatal and serious crash injuries within the three county area by addressing risk within the following 6 emphasis areas:

- At-risk drivers age groups
- Driver behavior
- Impaired drivers
- Intersection related crashes
- Single vehicle crashes
- Non-motorized crashes



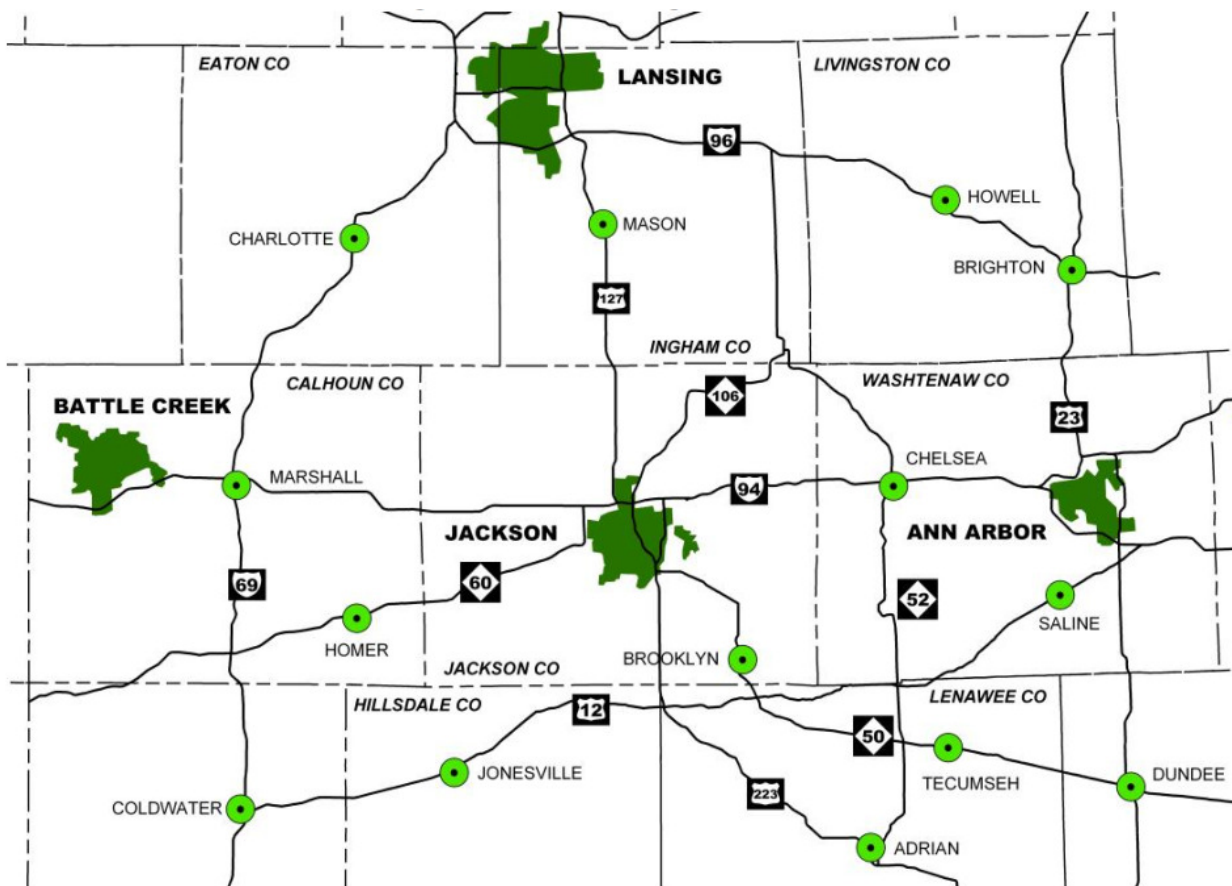
Driver Behavior Related Fatal & Incapacitating Injury Crashes

Existing Road Network

Regional Road Network

Jackson County, located in south-central Michigan, is fortunate to be positioned on the freeway network linking Michigan and the Midwest to other areas of the United States. Interstate 94 (I-94), connects the JACTS area to Ann Arbor, Detroit, and Canada to the east and Battle Creek, Kalamazoo and Chicago to the west. The City of Detroit is approximately 73 miles east of the City of Jackson and the City of Chicago is approximately 205 miles west of Jackson.

US 127 provides a connection to Lansing to the north and continues south into Ohio, traversing Jackson County. M-50 is a state trunkline highway that runs from the northwest to the southeast through the County, connecting the City of Jackson to the Village of Brooklyn. M-50 provides connections outside the County to Charlotte and to the Grand Rapids metropolitan area to the northwest and to Tecumseh and Monroe to the southeast. M-60 is another state trunkline highway that connects Jackson to southwest Michigan. M-60, terminating at I-94, runs through Spring Arbor and Concord before extending beyond the County through the rural countryside to Niles. M-106 is another state trunkline that begins in downtown Jackson and extends beyond the County to the northeast.



Regional Road Network Map

National Functional Classification System

The National Functional Classification (NFC) System is used to identify how individual roads serve the County's road system, including factors like roadway design, speed, capacity, and the relationship to existing and future land use development. Designating roads as a part of this system also plays a role in determining eligibility for federal aid funding. Transportation agencies can describe roadway system performance, benchmarks, and targets by functional classification, too. As agencies continue to move towards a more performance-based management approach, functional classification will be an increasingly important consideration in setting expectations and measuring outcomes for preservation, mobility, and safety. A map can be found on the next page.

There are approximately 1,955 miles of roadway within the NFC system in Jackson County. The Federal Highway Administration (FHWA) provides guidelines for assigning roadways a classification. The Michigan Department of Transportation tracks the number of miles within each county that are a part of the functional classification system. Jackson County's total mileage from the most recent update in 2014 is listed below.

Table 4-1 NCF Roadway System Length/Centerline Miles for Jackson MPO Roads (2014)

National Function Type	Classification	National Classification Function Number	Urban Miles	Rural Miles	Total Miles
Interstate		1	10	21	
Other Freeway		2	15	5	
Other Principal Arterial		3	36	7	
Minor Arterial		4	80	71	
Major Collector		5	67	280	
Minor Collector		6	10	160	
Local Collector		7	382	811	
Total Mileage			600	1,355	1,955

A map of the NFC system in Jackson County is on the next page.

Road Types

There are eight different road classifications within the system. Classes 1-7 are used to identify roads within the system. The higher the class number, the more important the road is to the road network. Class 0 roads are other roads in a county, but are not a part of the system. An overview of the system within Jackson is listed below.

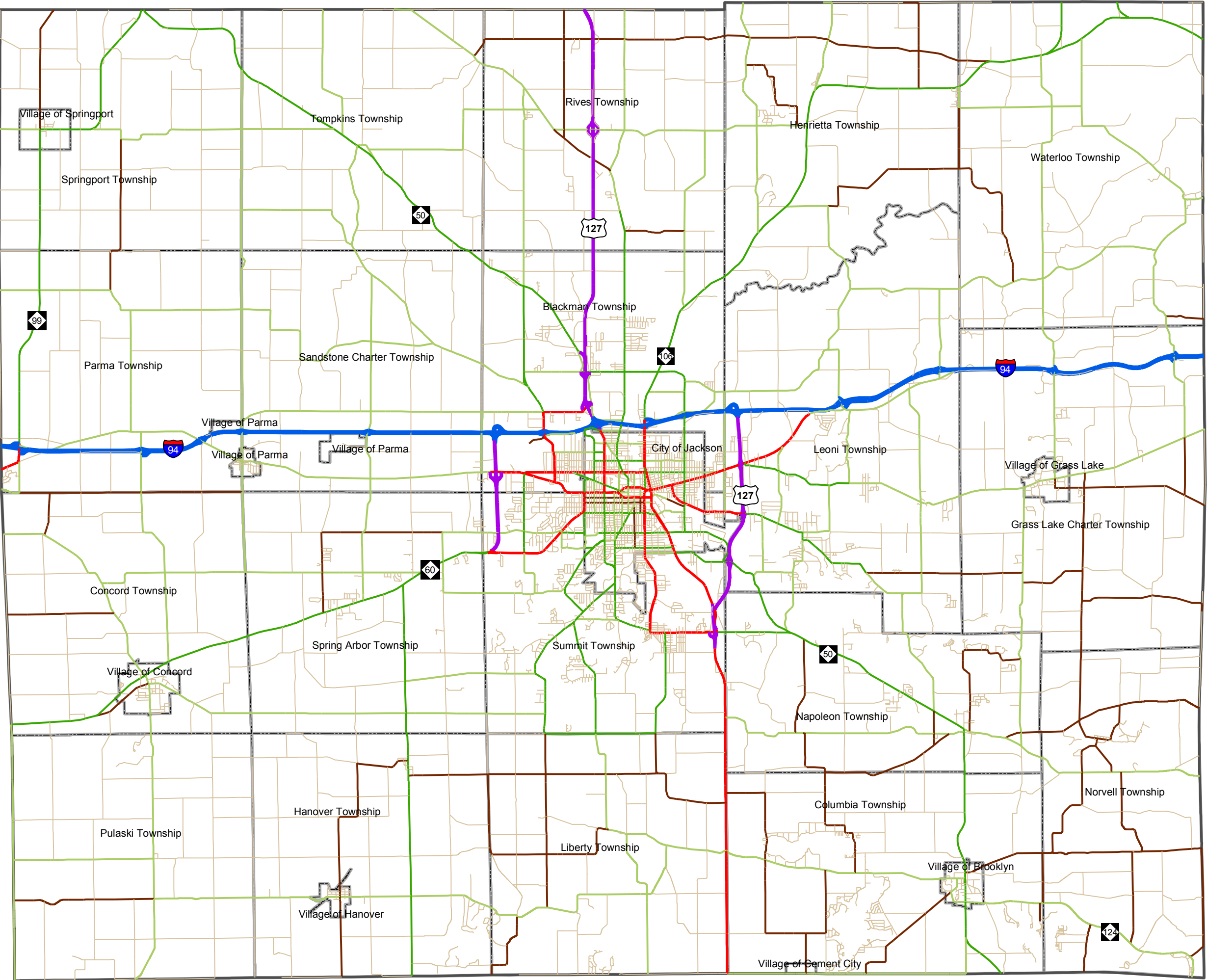
Interstates and Other Freeways. The principal arterial road system includes freeways and non-freeway classifications. The National Classification Function Numbers for the

National Function Classification Map

National Function Classification Class

- 1 = Interstate
- 2 = Other Freeway
- 3 = Other Principal Arterial
- 4 = Minor Arterial
- 5 = Major Collector
- 6 = Minor Collector
- 7 = NFC Local

0 2 4 Miles



Region 2
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roads found in these categories are 1 for “interstate” and 2 for “other freeway.” In the Jackson area, that includes portions of I-94, US-127, and M-60.

Other Principal Arterials. Principal arterial roads in the Jackson area serve the major centers of activity of the metropolitan area, have high traffic volumes, and the longest trip desires. The National Classification Function Number for the roads found in this category is 3. They also carry a high proportion of the total urban area travel on a minimum amount of mileage.

Urban principal arterials that connect to rural minor arterials have been identified as portions of M-99/West Michigan Avenue, Spring Arbor Road, Springport Road/Airport Road/Laurence Avenue, M-50/North West Avenue/Business US-127, Cooper Street/Business US-127, West and East Michigan Avenue/Business 94, Louis Glick Highway, US-127 South, East McDevitt Avenue and Francis Street. The routes also serve major centers of activity and have high traffic volumes. These routes differ from the interstate by allowing automobile access to adjacent property.

Minor Arterials. The minor arterial street system interconnects and augments the principal arterial system, providing service for trips of moderate length at a lower level of travel mobility than major arterials. The National Classification Function Number for the roads found in this category is 4

Major, Minor, and Local Collectors. The collector street system provides land access and traffic circulation within residential neighborhoods, commercial, and industrial areas. Collector streets may penetrate residential neighborhoods, distributing traffic from the arterial roads through an area to the ultimate destination. The National Classification Function Number for the roads found in these categories are 5 for “major rural collector,” 6 for “minor rural collector,” and 7 for “local collector.”

Existing Policies & Programs

Road Maintenance & Funding

The responsibility for maintaining the roads and streets within the City of Jackson lies with the Engineering Division, Department of Neighborhood and Economic Operations, and the Department of Public Works. The division routinely collects Average Daily Traffic (ADT) volumes and maintains an inventory of pavement conditions in order to develop program improvement and maintenance projects.

Township roads in Jackson County are the responsibility of JCDOT, however, townships work with the County to ensure that the needs of the local



Robinson Road under construction

community are being addressed. The assessment and determination of road maintenance and improvement project needs is facilitated through the collection of Average Annual Daily Traffic (AADT) volumes and pavement condition inventories (also called PASER). The six villages - Brooklyn, Concord, Grass Lake, Hanover, Parma and Springport - are responsible for the maintenance and operation of their street systems.

Funding improvements include appropriations from city and village general funds, state funding for general use on major and local streets through the Act 51 Michigan Transportation Fund (MTF) gas tax program, and federal transportation funds for use on the federal-aid eligible roadways. Because of the pattern and rate of development in Jackson County, the majority of the road improvement projects within the Jackson MPO have been and are likely to continue to be focused on the preservation and maintenance of the existing road system.

Complete Streets

Complete Streets is the idea that roads should be designed for all users. The Region 2 Planning Commission, the Jackson County Department of Transportation, and the City of Jackson passed Complete Streets resolutions in 2006. The Michigan Legislature passed Complete Streets legislation in 2010. State law requires that transportation projects consider all users of the roadway system.

Existing Traffic Conditions

From the basis of traffic volumes in the study area, the major traffic movements identified within Jackson County are as follows:

1. To and from retail and hotel establishments at US-127 North near I-94 to retail and office activities along W. Michigan Avenue and the City of Jackson Central Business District (CBD)
2. From US-127 South to commercial and industrial areas along E. Michigan Avenue, High Street and the CBD
3. From US-127 South into the CBD along S. Cooper Street (US-27 BR /M-50)
4. From the southwest at M-60 north to Michigan Avenue
5. From the southwestern residential areas along Horton Road and Kibby Road to S. West Avenue and Fourth Street into retail areas on N. West Avenue, W. Michigan Avenue and the CBD

Other notable traffic movements in the area include Airport Road from County Farm Road to Wildwood Avenue; Brown Street from Michigan Avenue to Spring Arbor Road; and, along the Francis Street corridor which carries traffic from M-50 and Jackson College. Some of the issues include the north-south movement on the west side of the City, movement from I-94 into Downtown, access into Downtown from the east, and movement between the southeast and the southwest parts of the City. These challenges are characterized by discontinuous north/south and east/west routes.

West Avenue provides access from the urban center to the major commercial areas to the north and the residential areas to the south. A new bridge over the Norfolk Southern

railroad at N. West Avenue was completed in 2012, and intersection improvements at Ganson Street, improving traffic flow. Traffic traveling to or from Downtown with destinations at commercial uses along N. West Avenue can also use Wildwood Avenue or West Michigan Avenue.

Lansing Avenue is a minor arterial which provides for travel between the urban center and the north. The route terminates near the urban center. A moderately traveled route, Lansing Avenue experiences some delays for northbound traffic at the intersection of Lansing Avenue and North Street during peak periods. Traffic flow between Lansing Avenue and Downtown is occasionally interrupted by the railroad at Steward Avenue and Blackstone Street. Access to the north along Lansing Avenue is good as the route extends into Ingham County.

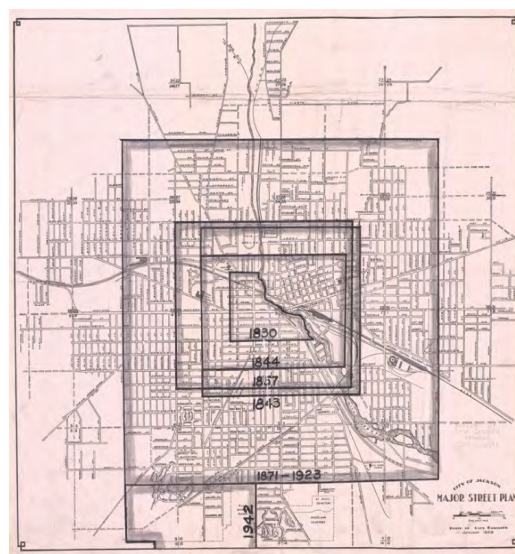
Cooper Street (M-106) provides the best access from I-94 and the northeast Jackson County area into Downtown, linking I-94 traffic to industrial areas east of Cooper Street near the urban center. Travel from Cooper Street traverses through Downtown and continues south as M-50/US-127 BR (Brooklyn Road) eventually connecting to US-127 South. A railroad crossing exists at the Cooper Street/E. Michigan Avenue intersection compounds access problems between the CBD and I-94. The City completed the conversion of Washington Street and Louis Glick Highway from one-way to two-way between Michigan Avenue and Cooper Street in early 2018.

The I-94 Freeway Modernization Study, completed in 2005, evaluated the need and feasibility of upgrading nine miles of the interstate between M-60 and Sargent Road in Jackson County. The Hawkins Road, Dettman Road and Sargent Road bridges have been replaced.

Future Forecasts and Needs

The City of Jackson will be considering an update to the 2002 Thoroughfare Plan and the 2010 Master Street Plan, as most of the recommendations of each of the plans have been implemented. The City is continuing to look at what it can do to provide a street system for moving goods and people.

JCDOT staff is considering a number of projects to enhance the road system. With the change to becoming a Department of Transportation from a Road Commission in January 2013, there has been a larger focus on long-term planning. Based on the recommendations of the Regional Safety Plan, the department is considering doing an inventory, analysis, and improvements to the top 50 worst intersections in the county. Doing a corridor study along Airport Road and considering modernizing traffic signals county wide is another priority. JCDOT is also supportive of installing non-motorized facilities, and looks to plan recommendations to invest in strategic projects.



City of Jackson boundaries and years

Transit

Public transit is a critical element of the transportation system, providing the public access to jobs, shopping, health care services, and recreational activities especially the elderly, youth, individuals with disabilities, and the economically disadvantaged. Millennials and Baby Boomers are also demanding fixed routes and shared rider services at increased rates, which creates additional stress on transit services. Transit services also play a role in reducing congestions, pollution, and energy consumption.

As the role of public transit evolves in Michigan, having reliable funding sources become critical to meeting local demand. The expense of maintaining a viable public transit system can only be maintained with commitments from Federal, State, and local jurisdictions.

Existing Studies

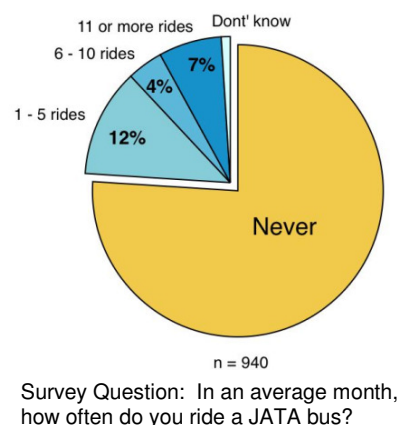
Coordinated Mobility Plan: Region 9 2016

Michigan 2-1-1 and their partners were trying to develop in the mid-2010s the joint capacity to provide One-Call/One-Click service to Michigan residents to assist with individual trip planning and to address transportation barriers limiting opportunities for employment, health care, recreation and other personal needs. The statewide study identified regional gaps in mobility, particularly for people with limited transportation options such as veterans, older adults, individuals with disabilities, and people with lower incomes. The study also involved identifying actions that can be taken by local transportation providers and Michigan 2-1-1 to increase regional mobility.

The statewide transit study led to the development of 10 different regional transit studies. Michigan 211 and MDOT's Office of Passenger Transportation collaborated to develop the Coordinated Mobility Plan for Region 9, which included Jackson, Hillsdale, Lenawee, Livingston, Monroe and Washtenaw counties. The Coordinated Mobility Plan is designed to meet the coordinated transportation planning requirements for MAP-21. The plan provides a review of existing plans and transit services for each of the 6 counties. The plan presents strategies and potential projects to meet transportation needs as identified and prioritized by regional stakeholders. Finally, there is an overview of how to continue coordinated mobility planning within and across the region.

Jackson Area Transit Authority (JATA) Countywide Survey 2015

The JATA Countywide Survey was a project to gather customer and community market research to understand the priorities and needs of current JATA users over the next decade. In a two month period in early 2015, telephone interviews and online surveys were conducted with county residents. Through the survey, JATA determined that many county residents did not know much about the transit system and services they provide. Priorities that were determined from the study included expanding JATA's routes and schedules throughout the county, increasing the level of awareness of services, and improving information distribution or outreach to customers.



Connecting Jackson County Study 2017

The Connecting Jackson County Study identified the gaps and issues with the JATA transit service within the City of Jackson and across Jackson County. Completed in early 2018, this study was a deeper analysis of some of the findings from the 2015 JATA Countywide Survey. The study looked at fixed-route and reserve-a-ride services, operations, capital budgeting and funding, inter-city travel, and the confluence of the non-motorized transportation system. Conclusions of the study are listed later in this section.

City of Jackson Community Master Plan 2016

The City of Jackson Community Master Plan 2016 proposes a framework that is focused on the long-term stability and redevelopment based on an assessment of the community's existing conditions. Acknowledging the role that transit plays in the community, the plan calls for the City to address the lack of municipal bus services across the southwest corner of the City.

Existing Transit Services

Intercity Bus Service

Jackson County is serviced by Greyhound Bus Lines which operates out of the Jackson Area Transportation Authority's Downtown Jackson Transfer Center. JATA acts as the agent for Greyhound. There are seven weekly routes that pass through Jackson County primarily serving the I-94 corridor between Ann Arbor/Detroit and Chicago, and include connections to Albion, Battle Creek, Kalamazoo, and Benton Harbor. Northbound travel from Jackson includes a bus departure to East



Greyhound route map

Lansing. Hoosier Rides, a part of Miller Transportation, is another intercity bus services that provides daily connections into and out of Jackson.

Rideshare Services

MDOT offers ridesharing and commuter vanpool programs throughout the state. As of 2017, there were no official ridesharing programs set up to accommodate the needs within the Jackson MPO. The MichiVan Commuter Vanpools are operated by Enterprise and open to members of the public and can help employers establish a service for employees.

Uber and Lyft started offering rideshare services within Jackson in 2017. Both are private companies that offer alternative curb-to-curb services for any consumer. The companies connect an employee-driver to a customer seeking an on-demand ride. This kind of service has been transformed by the use of smart phones.

Taxi Cabs and Limousine Services

Ten taxicab companies operate in the greater Jackson area. These services are licensed and must be registered with the City of Jackson in order to operate within the city limits. In addition to transit and taxicab services, there are several limousine services and car rental agencies in the Jackson area.

The Jackson Area Transportation Authority (JATA)

Public transportation services in Jackson have a long and varied history. Dating as far back as the 1890s, streetcar service was provided by the Jackson Street Railway Company. This service continued through 1936 when the first buses were purchased and began operating under the company name “Jackson City Lines.” Since then, public transit services have been operated by both private and public entities. In 1986, the existing public transportation system was restructured under Michigan Public Act 196 and renamed the City of Jackson Transportation Authority (JTA). By becoming an authority, JTA was able to levy taxes to the residents within the City of Jackson to sustain both demand-response and fixed-route transit operations. Demand-responsive public transportation services are also provided on a limited basis to the remainder of Jackson County residents on a contractual basis. In 2011, the JTA changed its name to the Jackson Area Transportation Authority (JATA) to reflect the importance of providing more regional service.

JATA is governed by a nine-member Board of Directors consisting of three members representing the City of Jackson and one representative from Jackson County, Blackman Township, Leoni Township, Summit



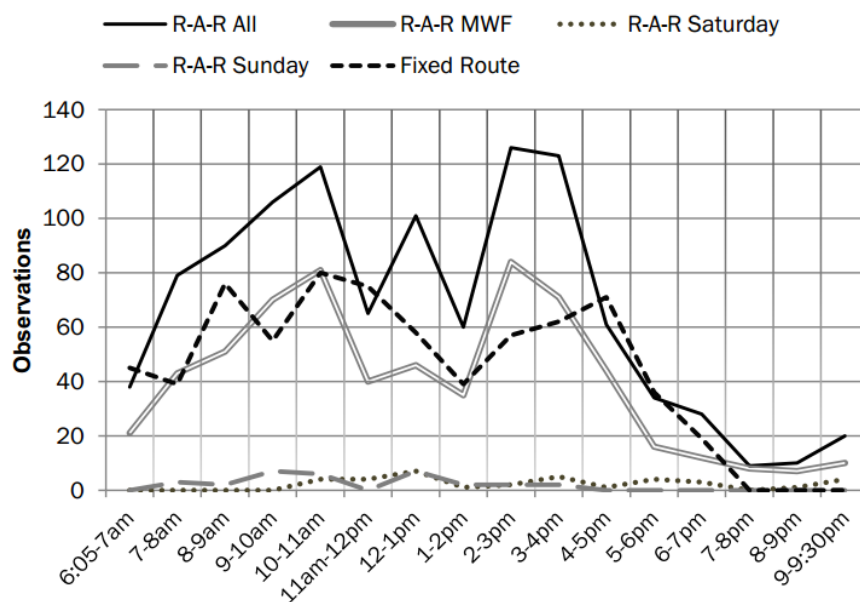
JATA Bus in downtown Jackson

Township, and two at-large members. The JATA Board meets monthly to oversee the public transportation system. The Local Transportation Advisory Council (LTAC) assists in the development of JATA services, as required by the Americans with Disabilities Act (ADA) Plan and subsequent updates; the 10(e)18 Accessibility Plan and updates required under State law; as well as coordination and consolidation issues. The LTAC reviews and provides recommendations on services provided to senior citizens and individuals with disabilities. The LTAC reviews proposed service changes including route modifications and fare increases which affect services provided to seniors and/or the disabled. They meet quarterly.

Existing Service Levels

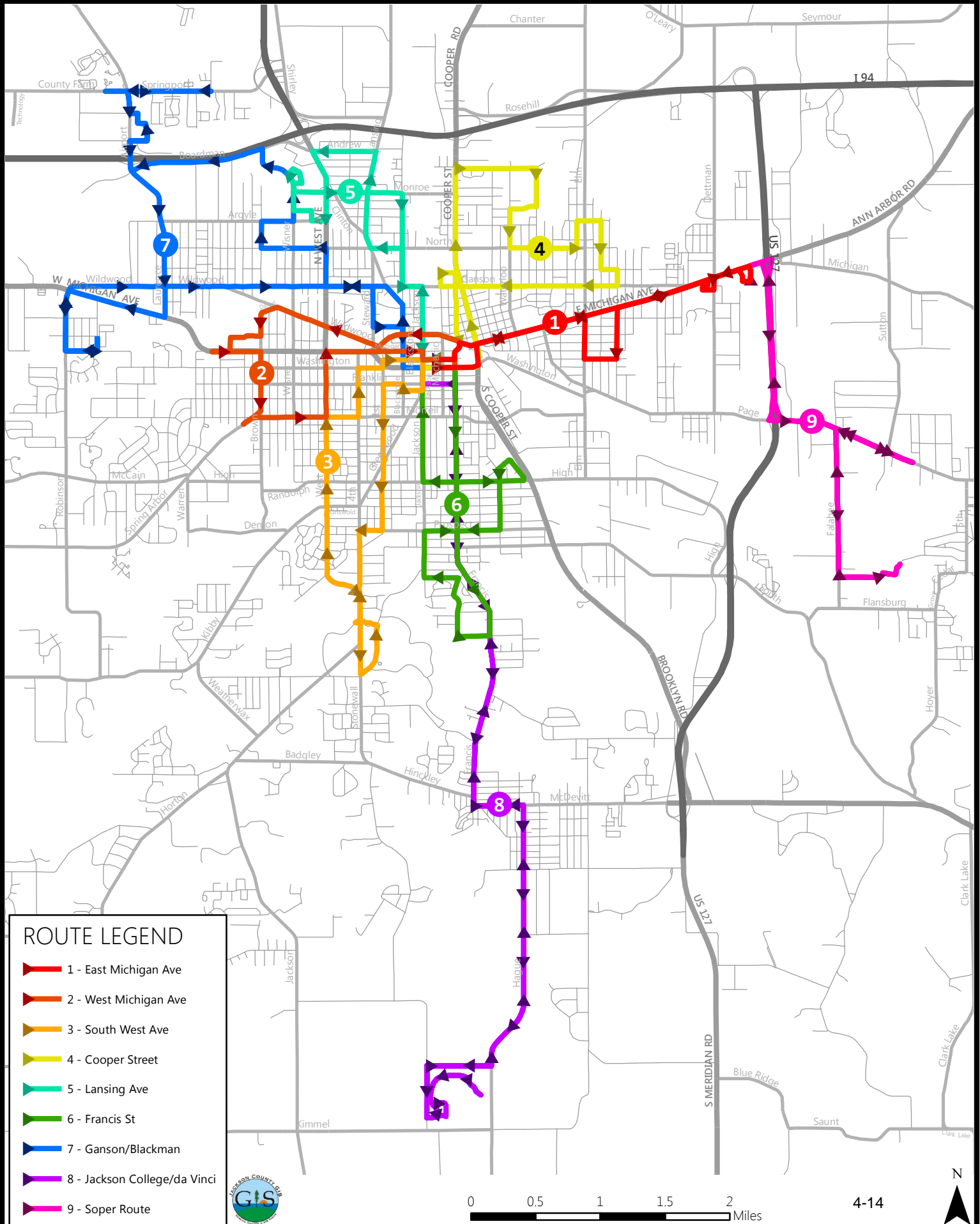
JATA operates fixed route service on seven major routes Monday through Friday from 6:15 AM to 6:15 PM. Saturday service runs from 10:15 AM to 6:15 PM. JATA operates two additional routes which have more defined purposes than the major routes and operate at much lower service levels based on demand. To maximize efficiency, the system is set up as a hub and spoke system. Buses meet for timed transfers at the system hub, located in downtown Jackson. All fixed route buses are handicap accessible and have senior/disabled priority seating. Vehicles are equipped with bike racks to expand the service reach. Fixed route service is focused on the urban area in and around the City of Jackson.

JATA also operates demand-response curb-to-curb services throughout the City and County. Weekday service operates from 6:15 AM to 10:15 PM; Saturday service operates from 10:00 AM to 10:00 PM; and Sunday service operates from 7:00 AM to 4:00 PM.



Ridership levels on JATA

A map of the JATA transit service system route is on the next page.



Existing Vehicle Fleet

The 2017 JATA fleet consists of 14 full-sized buses, ranging from 29 feet long to 40 feet long. Almost 80% of these will be eligible for replacement within the next five years based on their age. There are 19 medium and light duty vehicles used for demand response, and are eligible for replacement. A few other vehicles are pending disposal by the Spring 2018. JATA also has five non-revenue vehicles used by staff in maintaining day-to-day operations. All vehicles are handicapped accessible with lifts or ramps and several have additional wheelchair stations that can accommodate up to six wheelchair passengers.

**Table 4-2 JATA Ridership – Number of Trips
1991 - 2017**

YEAR	FIXED ROUTE	DEMAND RESPONSE	SEMI-FIXED (contract)	HEAD START (contract)	TOTAL
1991-1992	685,272	49,721	59,287	0	794,280
1992-1993	760,093	53,229	59,458	0	872,780
1993-1994	761,155	63,398	56,049	0	880,602
1994-1995	708,577	68,124	41,294	0	817,995
1995-1996	665,312	66,796	35,835	0	767,943
1996-1997	626,665	66,336	37,128	0	730,129
1997-1998	618,988	73,121	36,051	0	728,160
1998-1999	597,980	80,499	38,499	0	716,978
1999-2000	593,459	96,978	37,967	0	728,404
2000-2001	585,446	119,895	18,030	87,847	811,218
2001-2002	512,621	115,378	1,605	84,948	714,552
2002-2003	516,741	107,790	0	67,584	692,115
2003-2004	495,064	98,625	0	52,418	646,107
2004-2005	513,116	95,533	0	46,189	654,838
2005-2006	559,412	89,637	0	26,292	675,341
2006-2007	480,475	74,551	0	0	555,026
2007-2008	504,390	57,105	0	0	561,495
2008-2009	505,934	52,422	0	0	558,356
2009-2010	557,561	46,444	0	0	604,005
2010-2011	582,512	44,997	0	0	627,509
2011-2012	545,384	41,829	0	0	587,213
2012-2013	530,363	42,092	0	0	572,455
2013-2014	548,102	40,476	0	0	588,578
2014-2015	549,311	39,230	0	0	588,541
2015-2016	510,768	32,232	0	0	543,000
2016-2017	486,262	34,316	0	0	520,578
TOTAL	15,000,963	1,750,754	421,203	365,278	17,538,198

Future Forecasts, Issues and Needs

JATA is expected to continue providing public transit service to the residents of Jackson County. This will include fixed route and ADA demand-response service to City of Jackson residents with additional demand-response service operating throughout the County. Transit operations are expected to continue with funding provided by passenger fares, federal and state grants, citywide millage, and service contracts.

Table 4-3 provides a list of JATA's capital and operational funding projects proposed for the 2045 Long Range Transportation Plan. The JATA capital program is based on fleet replacement schedules and programs. The only service expansion anticipated is for the purchase and operation of several over-the-road coaches for a possible commuter service between Jackson and Ann Arbor. However, the Connecting Jackson County study found that there is not a substantial interest in the service.

The replacement cycles represent the replacement policies, in terms of age and miles, as established by the Federal Transit Administration (FTA) for specific vehicle types. For the purpose of this Plan, JATA proposes to continue to operate their system at their current level of service. Although the focus of JATA will be to preserve and continue at the current level of service, this is not to imply that JATA will not be exploring service enhancement and delivery changes. However, similar to the road recommendations, only those projects which have an identified funding source are included in the list of projects.

The capital and operating costs and revenue projections used to develop the future projects list were provided by JATA. These operating and capital costs cover the fixed-route system and associated ADA and countywide demand-response operations. Cost projections are based on current (2017) dollars and are inflated by 2 percent each year.

**Table 4-3 Jackson Area Transportation Authority
Projected Capital & Operating Expenditures
(FY 2016 – 2045)**

Year	Project	Est. Cost	Year	Project	Est. Cost
2016	Shop Equipment	\$10,000	2022	1 – 35 ft. Bus	\$393,000
	Tow Truck	\$100,000		CPU Upgrades	\$104,000
	Operation Program	\$6,153,000		Operating Program	\$7,568,000
2017	3 - Vans	\$132,000	2023	3 – Vans	\$143,000
	2 - 45 ft. Hwy Coaches	\$1,200,000		2 – Service Vehicles	\$94,000
	Operating Program	\$6,528,000		1 – 35 ft. Bus	\$400,000
2018	3 – Med. Duty Buses	\$350,000		Security Imprv	\$56,000
	2 - 45 ft. Hwy Coaches	\$1,224,000		Operating Program	\$7,795,000
	CPU Upgrades	\$100,000	2024	3 – Med. Duty Buses	\$386,000
	Operating Program	\$6,724,000		Operating Program	\$7,950,900
2019	3 – Med. Duty Buses	\$350,000	2025	1 – 35 ft. Bus	\$416,000
	3 – Vans	135,000		Shop Equipment	\$18,000
	2 – 35 ft. Buses	\$740,000		Operating Program	\$8,110,000
	Maintenance Equipment	\$100,000		1 – 35 ft. Bus	\$416,000
	Operating Program	\$6,926,000	2026	3 – Vans	\$149,000
				1 – 35 ft. Bu	\$425,000
2020	1 – 35 ft Bus	\$377,400		Operating Program	\$8,272,100
	Shop Equipment	\$13,000	2027	CPU Upgrades	\$114,400
	3 – Med. Duty Buses	\$364,000		Operating Program	\$8,438,000
	Operating Program	\$7,134,000	2028	3 – Med. Duty Buses	\$400,000
2021	1 – 35 ft. bus	\$385,000		Security Impr.	\$59,000
	3- Vans	\$140,000		Operating Program	\$8,606,300
	Security Impr.	\$52,000	2029	3 – Med. Duty Buses	\$405,000
	Operation Program	\$7,348,000			

Year	Project	Est. Cost
2029	1 – 35 ft. Bus	\$450,300
	Shop Equipment	\$20,000
	Operating Program	\$8,778,400
2030	1 – 35 ft. Bus	\$460,000
	Service Vehicle	\$54,000
	Operating Program	\$8,954,000
2031	1 – 35 ft. Bus	\$478,000
	3 – Vans	\$166,400
	Operating Program	\$9,133,000
2032	CPU Upgrades	\$125,800
	Security Imprv.	\$63,500
	Operating Program	\$9,316,000
2033	1 – 35 ft. Bus	\$487,000
	3 – Medium Duty Buses	\$448,000
	Operating Program	\$9,502,000
2034	2 – 45 ft. Hwy Coaches	\$1,600,000
	1 – 35 ft. Bus	\$506,000
	Security Imprv.	\$62,700
	Operating Program	\$9,692,000
2035	3 – Vans	\$180,000
	2 – 45 ft. Hwy Coaches	\$1,600,000
	1 – 35 ft. Bus	\$516,000
	Operating Program	\$9,886,000
2036	1 – 35 ft. Bus	\$526,000
	Service Vehicle	\$60,000
	Operation Program	\$10,084,000

Year	Project	Est. Cost
2037	1 – 35 ft. Bus	\$537,000
	Shop Equipment	\$23,200
	CPU Upgrades	\$138,400
	Operating Program	\$10,285,000
2038	1 – 35 ft Bus	\$548,000
	3 – Med. Duty Buses	\$493,000
	Operating Program	\$10,491,000
2039	1 – 35 ft. Bus	\$559,000
	3 Vans	\$194,000
	Operating Program	\$10,701,000
2040	Security Imprv.	\$70,000
	1 – 35 ft. Bus	\$570,000
	Operating Program	\$10,915, 000
2041	3 – Med. Duty Buses	\$507,790
	Security Imprv.	\$75,600
	Operating Program	\$11,133,300
2042	Service Vehicle	\$63,000
	Security Imprv.	\$81,648
	Operating Program	\$11,355,966
2043	1 – 35 ft. Bus	\$587,100
	Service Vehicle	\$65,200
	Maintenance Equipment	\$150,000
	Operating Program	\$11,583,085
2044	Security Imprv.	\$88,180
	CPU Upgrades	\$145,300
	3 - Vans	\$203,700

Year	Project	Est. Cost
2044	1 – 35 ft. Bus	\$450,300
2045	1-35 ft. Bus	\$604,713
	Security Imprv.	\$95,234
	Operating Program	\$12,501,042

The consultant team that completed the Connecting Jackson County Transit study determined the following list of gaps and opportunities to improve the JATA system and operations.

Service

- **Span of Service.** One of the main requests/complaints from the customer questionnaire that was completed during the study was that JATA fixed route services should be extended to later evening hours and on weekdends. There are some Reserve-A-Ride trips that originate in the fixed route service area beyond the fixed route service hours that also demonstrate this demand. Extending the service hours of existing routes or providing a limited service of supplemental evening routes should be considered.
- **Changeover of Routes.** The interlining of fixed routes (e.g. Route 1 turns into Route 2 etc.) may contribute to undercounting trips. Customers that do not get off the buses at the transfer station should be counted as transfer passengers. Once the Automatic Passenger Counter system is in place, it may provide a data set that could be used for cross referencing this data. Undercounting trips directly affects JATA's external subsidies.

Maintenance

- **Vehicles beyond useful life.** Many of the JATA Reserve-A-Ride vehicles are in service beyond their expected life span. The maintenance costs for these vehicles have shown a steady increase over the last few years. JATA requested two new buses in 2017 by a TIP amendment. Some vehicles may show to be operating efficiently beyond a useful expectancy, while others may not. The expanded reserve-a-ride service area also adds additional stress due to the extra miles to the maintenance situation of these already aging vehicles.

Operational

- **Reserve-A-Ride Trip Scheduling.** A better tracking mechanism may be helpful for Reserve-A-Ride trips. The existing services seem to operate like a taxi service rather than a traditional paratransit system which would serve multiple customers simultaneously.

- **JATA's trip denial rate.** There are too many trips being provided that only carry one passenger at a time. This inefficiency lessens the ability for all trip needs to be met.
- **Timing of Route Transfers.** There are a few route crossings that could allow for transfers to occur outside of the Transfer Center, however the timing of these routes need adjustment to make these connections more useful.

Marketing / Branding

- **Awareness of services County wide.** There is reasonably high awareness for public transit services among the transportation disadvantaged population; however it is based largely on word of mouth and information from drivers. There is a desire for better sources of information, especially the case for the rural parts of Jackson County. The limited understanding of services might be cause for some with transit needs to be utilizing other avenues that might not be as cost efficient for their limited budgets.
- **The JATA Brand.** The agency, though now known as JATA, was once operating as JTA. Many signs and shelters still include the JTA logo and branding. This may become confusing to riders trying to differentiate the two. This may also turn away potential advertisers who wish to display their advertisements on JATA buses or benches. Additionally, the JATA drivers are very knowledgeable, and prove to be a huge resource to riders. Customers indicated that the drivers are what they like best about JATA service - more than double that of the next highest response for this question. The knowledge and friendliness of these drivers could be used in a marketing campaign to attract and inform riders.

Coordination with other Agencies

- **Ridesharing and bicycling are just as important as public transit.** Carpools and vanpools have significantly more flexibility for certain types of trips than public transit. There would appear to be an opportunity to build on the already high level of ridesharing developing in Michigan and around the Country. Ridesharing services and matching could be useful in filling many of the mobility gaps. Additionally, the new bike share program could better supplement the existing transit system to provide more mobility by expanding with new locations in areas served by JATA fixed route service. Coordination with the appropriate agencies could make this a reality.
- **Medical Programs and Social Service Agencies are providing services in rural communities.** There are currently a number of trips that are denied in the reserve-a-ride program due to lack of availability. Many of the JATA services to the rural parts of the County are used on medical trips that in many cases are needed 3 times a week which is all that JATA serves the area. Coordination with hospitals to better align the appointments for the patients.

- **Additional Service Providers.** Services such as Michigan Flyer (AirRide) and Michivan (vRide) offer additional mobility options. The Michigan Flyer is currently investigating opportunities to add additional stop locations in Livingston County. If agencies in Jackson, including JATA, worked with them, Jackson might be able to show the need for service that once existed. This would include the City of Jackson, the Region 2 Planning Commission, Jackson County and others working together to achieve a common goal and need. Similarly the Michivan service could be a rideshare option for Jackson residents who need to travel to other counties for their daily job commute. This could benefit those without vehicles but could also prove to be more cost effective to existing riders. This service is already active in Jackson County with 18 current vans that travel to and from Jackson to Lansing, Ann Arbor, Plymouth, and Novi at differing times and locations.

Funding

- **Service to Rural portions of Jackson County.** The Reserve-A-Ride system serves the entirety of Jackson County despite the fact that no outside agency in the County is contributing funds for this service. While JATA should be commended for continuing this service, it is financially not feasible to continue this for much longer without additional funding. JATA is obligated to serve areas within three quarters of a mile of its fixed route service area to stay in compliance with FTA requirements. However, if they allow residents in those areas to use their services to access destinations county-wide, then they are obligated to offer residents county-wide to request service. JATA should consider reviewing these practices and consider alternative service models that might be more feasible for the future of the agency. Alternative models might include seeking funding from townships, private partners, and restricting their services to the urbanized area amongst others.
- **Additional Funding Providers.** There are a number of areas in Jackson County that might benefit from fixed route transit access. For routes to exist to these areas however, funding partners need to be identified to make it feasible. Places like Jackson Northwest Public Schools already have an extensive advertisement campaign to attract new students to their district which allows school of choice opportunities. Spring Arbor University may also benefit from providing a route for its students similar to Jackson College. A route in this direction might also benefit Jackson Lumen Christi High School. Reaching out to these institutions for partnering opportunities might allow the JATA fixed route system to expand, gain new riders, and provide more mobility to County residents.

Jackson Area Transportation Authority's Long Range Transportation Plan

A summary of the JATA's Long Range Transportation Plan proposed activities that currently do not have a funding source include:

- Continuation of specialized Medical Services.

- Provision of all Human Service Agency transportation in Jackson County:
 - personal and medical trips
 - nutrition sites
 - other specialized services
- Provision of maintenance for non-profit agency vehicles.
- Increased demand responsive service.
- Extension of fixed-route service within the expanding urbanized area including the communities of Michigan Center, Grass Lake, and other satellite centers.
- Provision of corridor service to Lansing, Ann Arbor, and Battle Creek.
- Training facility to accommodate JATA, school, and other agencies.
- Coordination of intercity bus / rail / public transportation operations.

Rail

Rail plays a significant role in transportation planning, especially when considering economic development, safety, freight, and intermodal connectivity. Jackson has two rail lines serving the area, including passenger and commerce services. This section addresses the existing conditions and future needs of rail in the community.

Existing Plans

Chicago-Detroit/Pontiac Passenger Rail Corridor Program Study

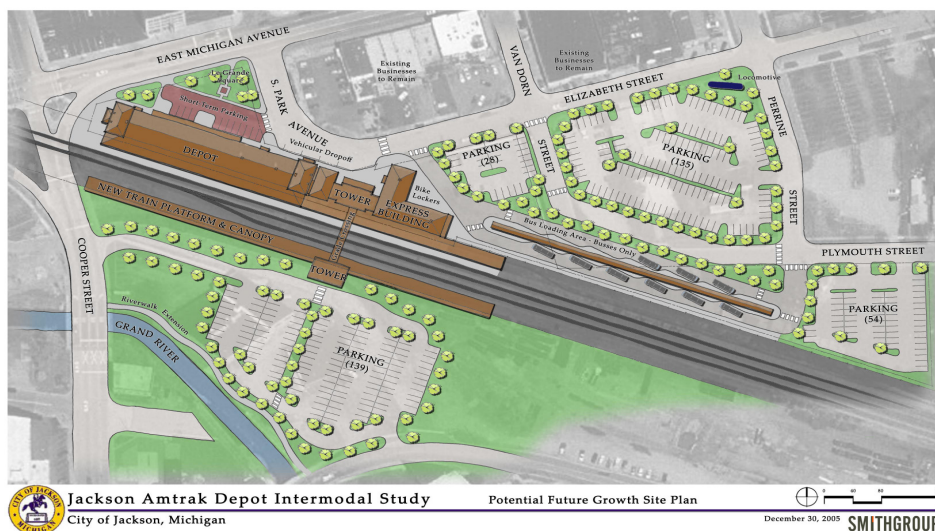
The Michigan Department of Transportation initiated a \$4 million Chicago-Detroit/Pontiac Passenger Rail Corridor Program study. The vision of the study is to provide safe and reliable passenger rail service that offers frequent, daily round trips at speeds up to 110 miles-per-hour. Passenger rail improvements will be evaluated along the corridor as well as the following three program components:

1. Evaluation of route and service alternatives;
2. Tier 1 Environmental Impact Analysis; and
3. Service Development Plan.

A Draft Environmental Impact Statement (DEIS) was completed in September, 2014. At this time, the only phase of the project that is funded is the environmental impact statement. Funding is not identified for futures phases of this project such as design, right of way acquisition or construction and there is no estimated timeframe for the funding to be identified.

The 2005 City of Jackson Amtrak Depot Intermodal Feasibility Study

The Jackson Michigan Central Railroad Depot, now the Jackson Amtrak Station, was once a highly utilized facility. However, as modes of transportation shifted, the use of the Depot declined. In 2005 Jackson Amtrak Depot Intermodal Feasibility Study was completed for the City of Jackson to develop a multi-modal center at the site. The study provided an assessment of the existing historical structures and their potential for use as an intermodal facility, identified needs, developed conceptual plans, and discussed potential costs and funding sources.



Jackson Amtrak Depot Intermodal Study
City of Jackson, Michigan

Potential Future Growth Site Plan

December 30, 2005
SMITHGROUP

Existing Rail Service

Passenger Service

Jackson is located on the Detroit-Chicago intercity rail passenger corridor. AMTRAK operates the *Wolverine Line* which consists of three daily passenger trains between downtown Detroit and Chicago over the Norfolk-Southern tracks paralleling I-94. Passenger use of the Detroit – Chicago rail corridor has fluctuated slightly with more than 888,638 passengers in 2006 to 782,652 passengers in 2012 and back up to 803,170 in 2016. At the Jackson AMTRAK Station, ridership continued to increase from 26,708 in 2006 to 29,987 in 2012, an increase of 10%. However, Jackson AMTRAK Station ridership decreased by 32% to 21,582 in 2016. Additionally, revenues across the Detroit-Chicago corridor have decreased from \$18,366,072 in 2012 to \$17,358,660 in 2016.



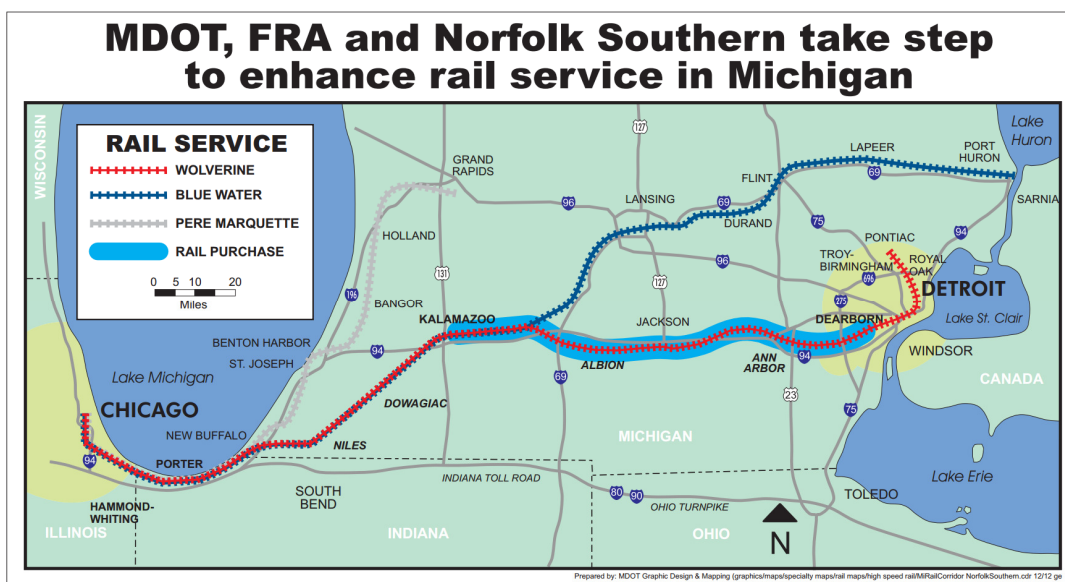
The partnership of AMTRAK, Norfolk-Southern, and MDOT continues to make significant operational and marketing improvements to this passenger rail corridor. In summer 2011, the State of Michigan and Norfolk Southern (NS) came to an agreement on the terms for the sale of the Dearborn-Kalamazoo portion of the *Wolverine* corridor. The State purchased the corridor from AMTRAK partially with \$150 million from the federal High Speed Intercity Passenger Rail Program. This track segment joins directly on the west with the AMTRAK-owned Kalamazoo-Porter segment of the same corridor. The sale was completed in 2012 and full transfer of ownership was completed in 2013.

High-speed rail

The State received \$196.5 million to upgrade and engineer Dearborn-Kalamazoo improvements to bring track speeds to 110 mph, improving safety, comfort, and travel times for passengers along the *Wolverine* corridor. With improvements on the AMTRAK-owned segment, over 200 miles of the corridor will be under the control of AMTRAK and MDOT, with the aim of reducing travel times between Chicago and Detroit from 5 hours, 15 minutes to less than 4 hours. AMTRAK, under contract to MDOT, took over maintenance functions of the Dearborn-Kalamazoo segment from Norfolk Southern in February 2013. Construction on infrastructure improvements to increase track speeds began in September 2013. Planned upgrades include replacement of ties, rails, and switches, improvements to grade crossings, and extension of an advanced signal system.

AMTRAK through an ongoing partnership with the Federal Railroad Administration and the State of Michigan, developed a radio-based train communication system, the Incremental Train Control 4 System (ITCS). It is currently in high-speed revenue service on 80 miles of AMTRAK-owned track in Michigan and works to prevent train-to-train collisions, train over-speed conditions, and protect track workers. ITCS is a form of Positive Train Control (PTC), an advanced signal system required by 2018 on most routes with passenger train service.

The development of high-speed rail would spur business productivity along the rail corridor and in Jackson by strengthening the local region's connection to economically vital megaregions such as Chicago and Detroit. Faster service and increased transfer points will expand options for citizens in rural and small urban communities. High-speed rail could also alleviate congestion on the Region's roadway network.



Future Forecasts and Needs

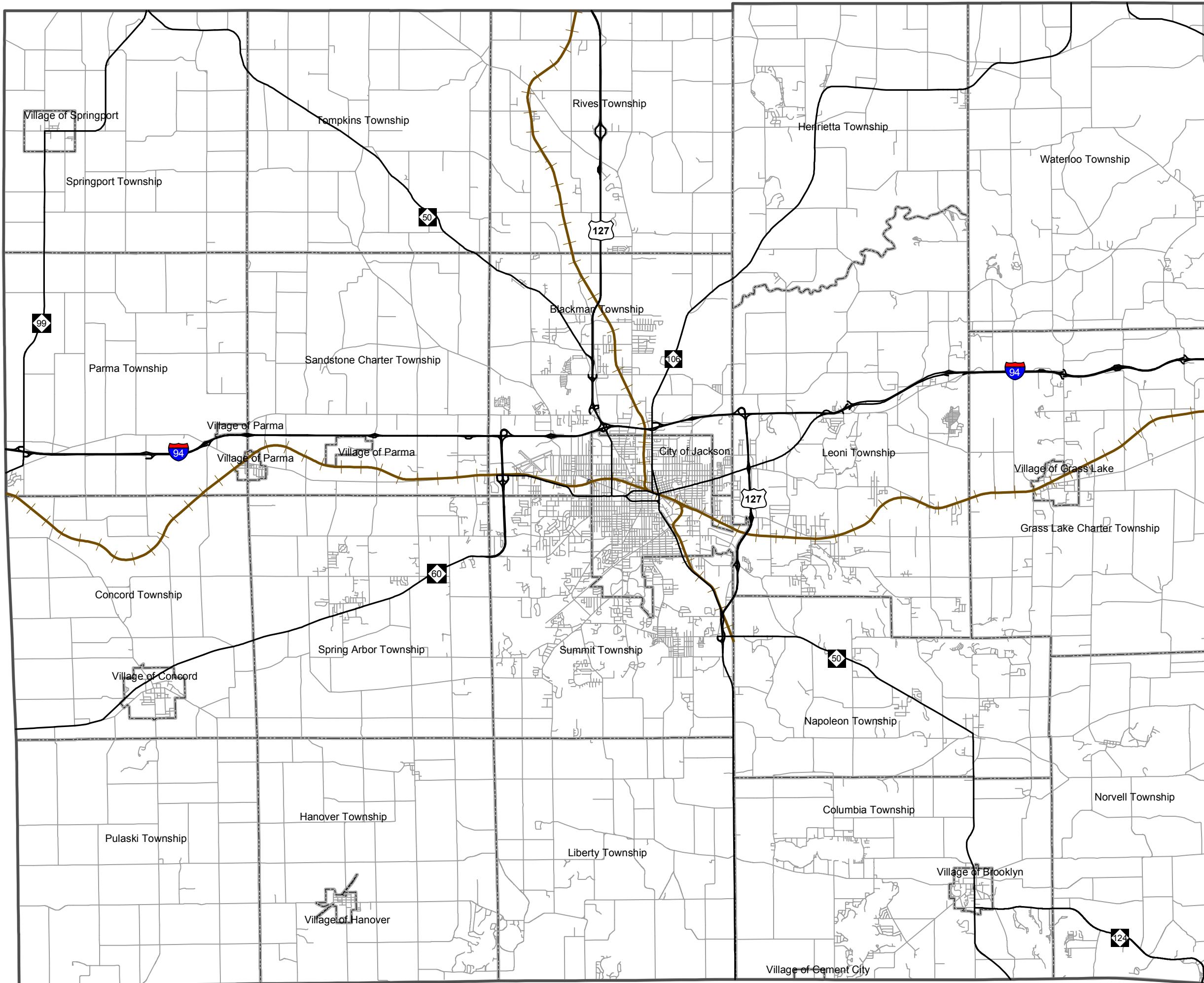
Freight and passenger rail transportation will continue to be available to the residents of Jackson County, with any future investment decisions determined by the private sector. The continuing efforts to develop high-speed passenger service along the Chicago-Detroit corridor is encouraged for the successful advancement of rail service as an alternate mode of transportation. The City should also continue to revisit and explore the recommendations of the 2005 Jackson Amtrak Depot Intermodal Feasibility Study.

A map of the railroads is on the next page.

The Railroad Network

 Railroad

0 2 4 Miles



Region 2
Planning Commission
 Serving Hillsdale, Jackson and Lenawee Counties

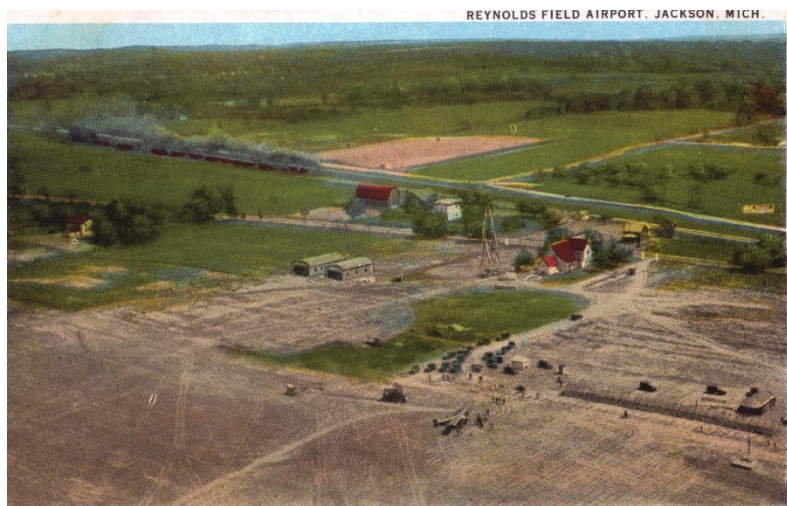
Jackson Area Comprehensive Transportation Study

Air Transportation

The Jackson County Airport-Reynolds Field serves the Jackson area by accommodating non-commercial charter and freight flights. There are more than 43,000 landings and takeoffs per year. Located just beyond the northwest corner of the City of Jackson, the airport is an important part of the transportation system, and is a significant contributor of handling the Region's goods and services.

Existing Airport Conditions

Jackson County Airport-Reynolds Field was established in 1927 when Mr. and Mrs. Wiley Reynolds donated 160 acres of a family farm to the City of Jackson for use as a municipal landing field. The airport now comprises 960 acres of land located between M-60, I-94, Airport Road and Wildwood Avenue. The City of Jackson operated the airport until 1976 when the need for a broader tax base to support the airport became evident. In 1976, after two years of joint operation by the City of Jackson and Jackson County, the airport was sold to Jackson County for \$1.00.



The airport has two paved runways: Runway 7-25 is 5,350 feet long and 100 feet wide and Runway 14-32 is 4,000 feet long and 100 feet wide. The airport also owns and maintains two corporate style aircraft hangars plus 15 hangar bays in two other hangar structures. Additionally, the terminal building, tower building, administration building and two maintenance buildings are owned and maintained by the airport. The airport is an all-weather airport with precision approaches as well as visual navigational aids on all runways. The airport has 103 based aircraft, most of which are housed in privately owned hangars on airport owned land. The hangar owners pay an annual lease fee for the land. Runway 7-25 has an Instrument Landing System.

Additionally, the airport has a general aviation/passenger/charter terminal, as well as a rotating beacon for night navigation, a segmented circle and lighted wind indicators on runways 7-25, measuring wind speed and direction, and an automated 24-hour weather station linked to the National Weather Service. The airfield has pilot controlled runway lighting after hours when the tower is not staffed by air traffic controllers. The airport also has several fixed based operators who provide aviation support services.

The airport is characterized by the Federal Aviation Administration as a Regional General Aviation Airport and is one of only fourteen airports in Michigan with an

operating air traffic control tower. The air traffic control services are provided by a private contractor, Midwest Air Traffic Services, Inc., and operate from 7:00 AM until 9:00 PM daily. After hours, arriving and departing aircraft utilize the assigned radio frequency for this airport to announce their intentions to other aircraft in the area.

The airport is estimated to have an economic impact on its service area of approximately \$18 million annually. This impact is due to the use by airport and non-airport businesses, general aviation sector use, and the general overall economic impact as a major transportation hub.

Future Forecasts and Needs

Regional air carrier airports will continue to function as the primary passenger facilities providing national and international passenger service for the residents of the Jackson metropolitan area. Lansing Capital Region, Detroit Metropolitan, Flint Bishop and Kalamazoo-Battle Creek international airports are all within 90 minutes travel time from Jackson and provide passenger service options for Jackson area residents.

The annual economic value of the airport to the greater Jackson area is determined to be \$18 million (2017). The airport is expected to continue to provide air services to Jackson County businesses and private individuals by being a major player in the economic development of the region and being a significant transportation hub. The airport also plays a significant role in local and regional pilot training.

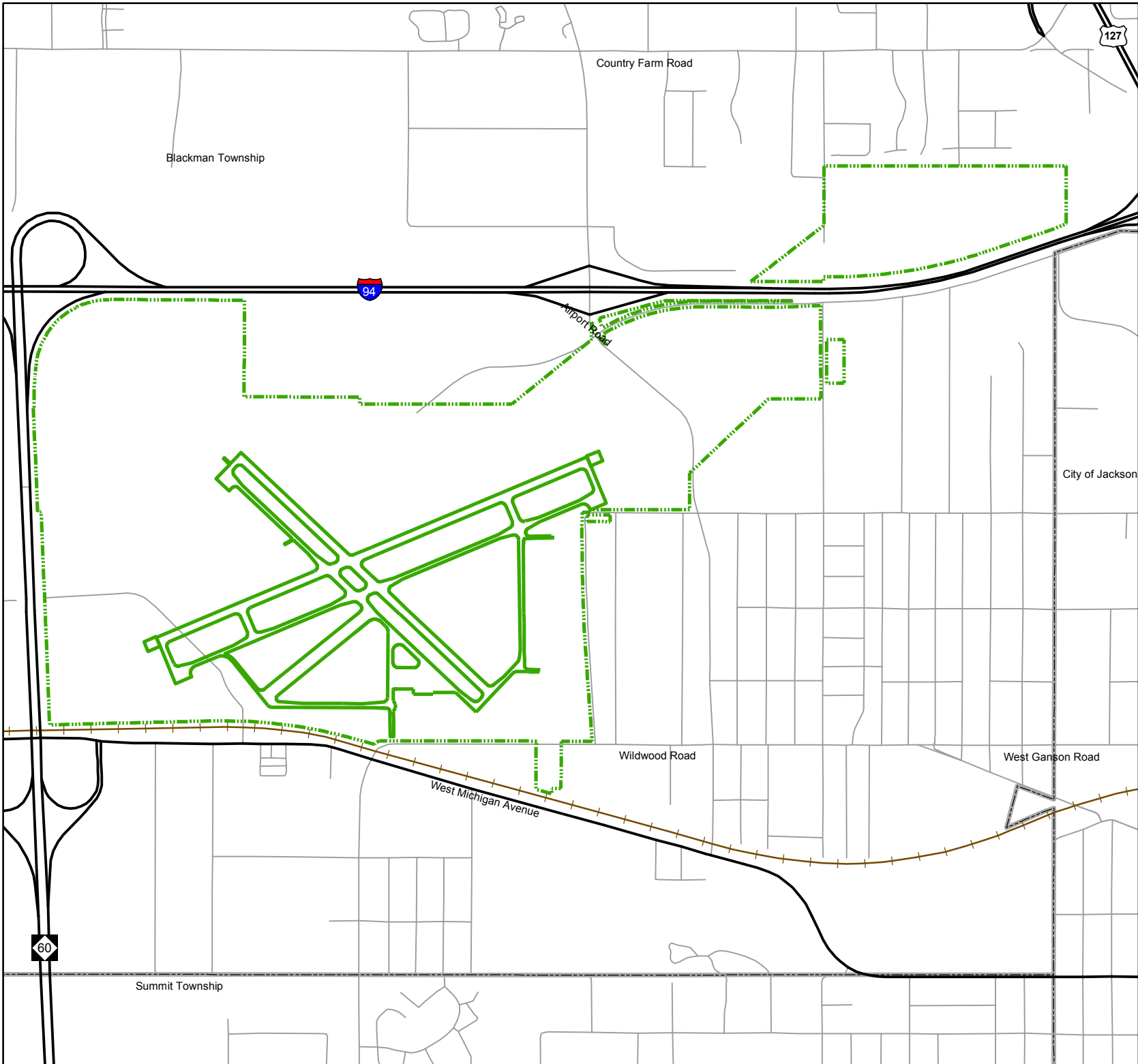
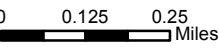
In 2017, a new primary runway on a new alignment (7-25) to a length of 5,350 feet was completed and replaced former runway 6-24. This runway shift will allow proper safety areas (1000') on both ends of the runway. This recommended set of alternatives provides full safety areas to all runways. The crosswind runway (14-32) was extended from the original 3500' in 2008 in its original orientation to provide a 4,000 foot runway with required safety areas. The combination of these changes to the two runways provides the airport with a runway system that addresses the FAA runway safety area criteria and provides future growth and development opportunities.

In 2017, the airport completed a Business Plan identifying key planning areas for the future, including: predevelopment of hangar sites with all utilities for enhanced revenue; marketing excess airport property for development and income through lease or sale; enhancing the airport as a "destination"; and funding key capital purchases through these new revenue streams.

The map of the airport runways and property boundary is on the next page.

**Jackson County
Reynolds Field Airport**

- Airport Boundary
- Airport Runway



Freight

The movement of freight has a significant impact on the transportation system. Of the more than 479 millions of tons of freight moved through the state in 2014, trucking accounted for 65%, rail handled 21%, water handled 14% and aviation handled less than 1%. Of the \$862 billion freight moved, trucks moved 73%, rail moved 23%, aviation moved 3%, and rail handled 1%. These modes work together to achieve the safe and efficient delivery of goods across the state and within Jackson.

The movement of goods has increased over time, and commodity forecasts project the increase to continue. The nature of that movement will continue to change along with technology as consumer's demand change. Freight traffic impacts congestion, safety, pavement life, air quality, and quality of life. This section takes a look at freight in the Jackson area.

Existing Plans

MDOT Freight Plan

The Michigan Freight Plan provides a comprehensive overview of the state's freight transportation system. A multi-modal and intermodal resource, the plan provides a framework to consider the impact, improvements, and priorities related to freight. The plan outlines statewide strategic goals, the economic context of freight planning, policies, assets, system condition and performance, a 20-year forecast, overview of trends, needs and issues, and the Freight Investment Plan. Written to address freight at a state-level, the plan can help Jackson understand the current state of freight and consider how local infrastructure and policies can contribute to the future success of accommodating freight locally.

Critical Rural Freight Corridors and Critical Urban Freight Corridors are identified in the plan. They are sections of the National Highway Freight Network that are important to the road freight network and have been identified as eligible for National Highway Freight Program formula funds and Infrastructure for Rebuilding American Grant Programs Funds. The state takes the lead in identifying the rural and urban corridors in metropolitan areas with a population less than 500,000, like those within the Jackson MPO. There are 3 Critical Urban Freight Corridors and 2 Critical Rural Freight Corridors in Jackson County.

A map of the Critical Rural and Critical Freight Corridors in the Jackson MPO can be found on the next page.

Existing Network & Conditions

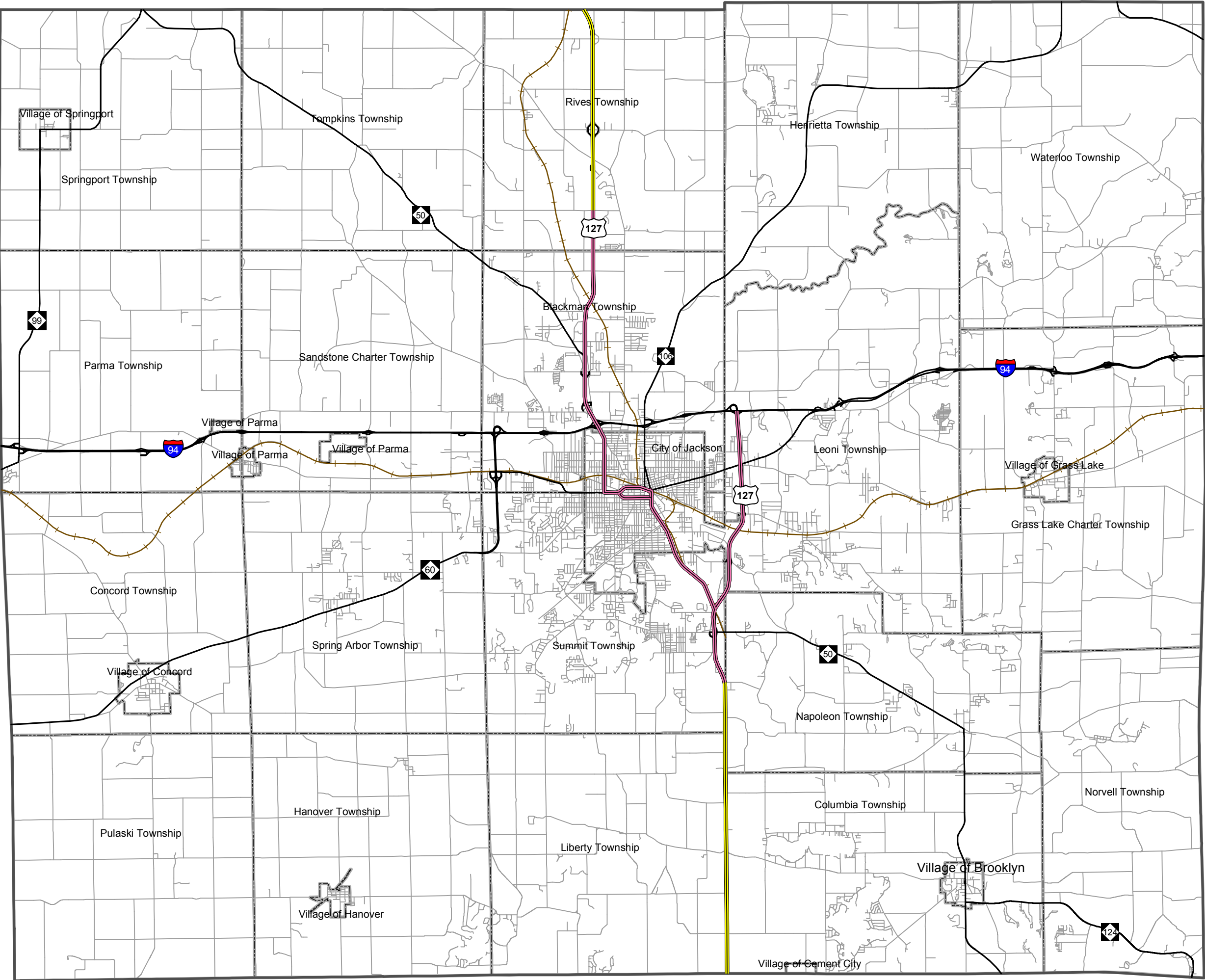
Freight on the City Road Network

Some of the roads in Jackson are specifically dedicated to routing truck traffic. A tiered and classified system provides a means of determining the best routes to accommodate

Critical Freight Corridors

- Critical Urban Freight Corridor
- Critical Rural Freight Corridor

0 2 4 Miles



truck traffic in urban and rural areas. The “heavy” truck category, with six or more tires on the road, is directed to specific routes. The city and county of Jackson both have specific listings of streets that can accommodate the heavy trucks.

There are approximately 12 trucking operations of varying sizes in Jackson County. They account for hundreds of truck movements daily. There also are several major businesses and corporations like Walmart which generate truck traffic at their facilities. The JACTS area will need to continue to track and maintain its freight infrastructure to keep up with the growth projections, especially along the Critical Urban and Rural Freight Corridors.

Jackson County Airport

The Jackson County Airport is used daily for small cargo deliveries by aircraft primarily for “just-in-time” services. Though not a large part of the airport’s operations, current facilities adequately meet the needs of industry in the Jackson area. There are no plans to expand operations or capacity for freight shipments, however, those plans may change as the need arises.

Rail Freight

A Detroit/Chicago mainline rail is located parallel to I-94 in Jackson County. Norfolk-Southern (NS) operates through and local freight service on approximately 642 miles of track within the state daily. The main transported commodity is coal from the mines in the eastern half of the country. Coal transported by NS is exported to steel mills and power plants around the world.

A secondary mainline in Jackson County, the Jackson and Lansing Railroad Company, connects with Norfolk Southern in Jackson and CSX and Canadian National (CN) in Lansing with daily “freight only” service.

Future Forecasts, Issues and Needs

The American Trucking Association (ATA) identified key areas and issues that the trucking industry is facing. Along with congestion and access issues, the ATA has also identified the following areas of concern which can impact transportation planning:

- Agriculture & Food
- Autohaulers
- Cross Border
- Energy
- Engineering
- Environment
- Government Traffic
- Hazardous Materials
- Highway Infrastructure & Funding
- Intermodal
- Labor
- Regional Carriers
- Risk Management
- Safety Security
- Tax and Registration

The MDOT Freight Plan identified a significant amount of growth in freight across the state out to 2040. The Jackson MPO should consider how it could play a part and prepare for the growth in freight traffic across the state. The projections are as follows.

Table 4-4 MDOT's Freight Projections

Movement Type	2014*	2040*	Growth Percent
Highway Freight Forecast			
Overall	308	486	58%
Intrastate (Michigan to Michigan)	111	146	31%
Outbound (Michigan to Other)	82	108	31%
Inbound (Other to Michigan)	85	144	69%
Rail Freight Forecast			
Overall	101	148	50%
Intrastate (Michigan to Michigan)	5	6	5%
Outbound (Michigan to Other)	21	28	28%
Inbound (Other to Michigan)	33	31	-6%
Air Freight			
Overall	0.266	0.462	73%
Intrastate (Michigan to Michigan)	0.002	0.003	85%
Outbound (Michigan to Other)	0.143	0.262	82%
Inbound (Other to Michigan)	0.121	0.197	63%

*Tons in Millions

Non-Motorized Transportation

Non-motorized facilities are important components to the transportation system. They provide an environmentally-friendly, low-cost mode of travel. Some of the facilities can double as recreational assets. Jackson has invested a number of resources since 2002 to develop an impressive non-motorized network.

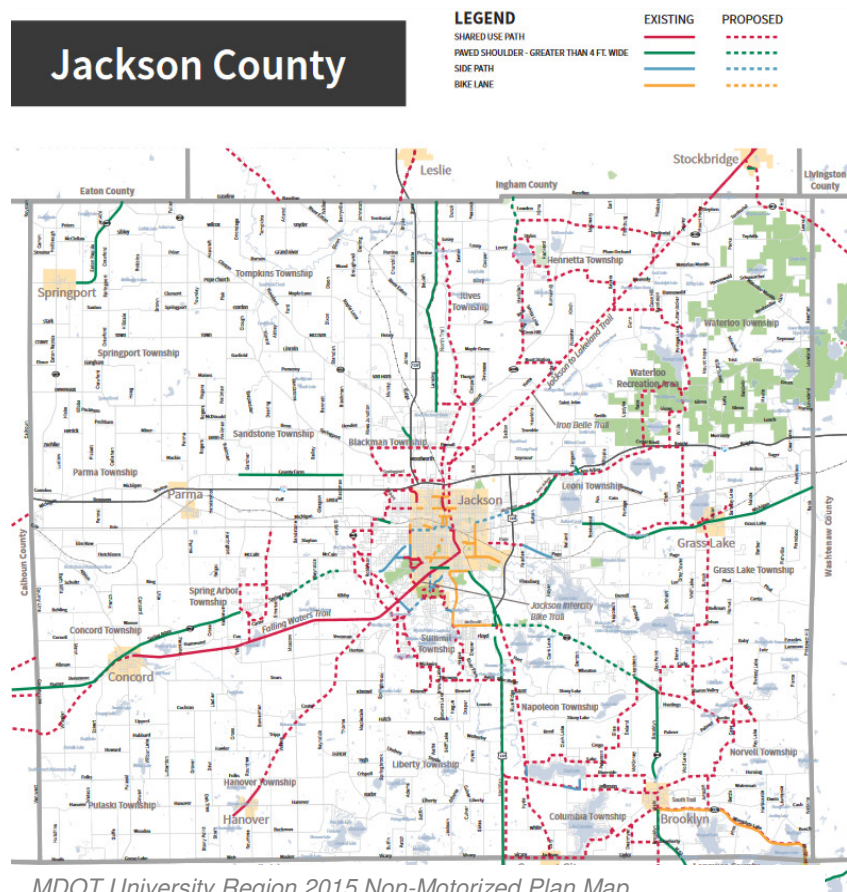
Existing Plans

University Region Non-Motorized Plan 2015

The Michigan Department of Transportation University Region led the development of the MDOT University Region: Regional Non-Motorized Plan in 2015. The region is comprised of 10 counties, including Jackson County. The focus of the plan is how developing a regional network of trails, paths and streets can provide connections between communities, counties and adjacent regions. The primary goals of the plan are to:

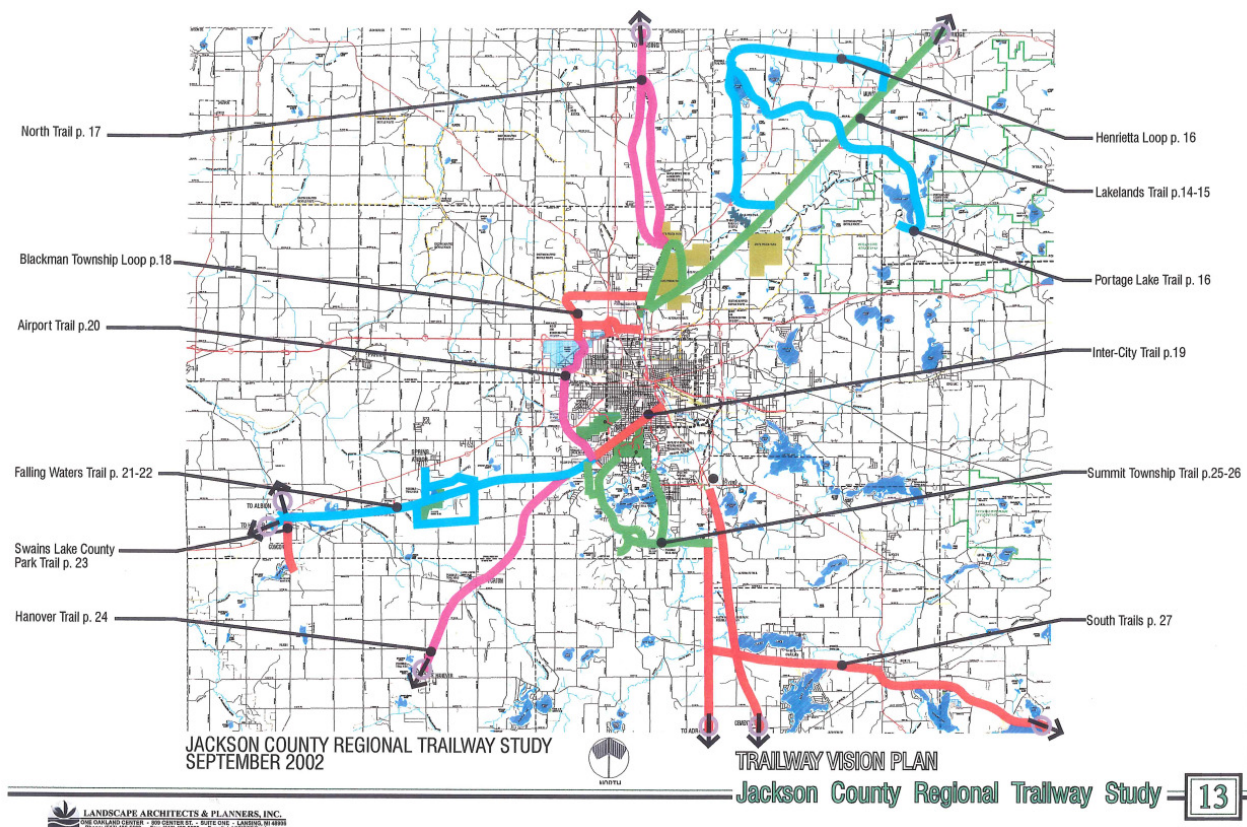
- Document the existing and proposed network
- Identify opportunities to enhance non-motorized transportation
- Help prioritize non-motorized investment
- Foster cooperative planning across municipal/county boundaries and continue to coordinate these efforts

The plan provides a map of the existing and proposed non-motorized facilities for the 10 county region, including Jackson County. Stated priorities for Jackson County include the completion of trail routes that are on the Iron Belle and the Great Lakes to Lakes trails along with the development of connections to Brooklyn, Clarklake, and through the Heart of the Lakes Recreation Commission Plan area.



Jackson County Regional Trailway Study 2002

The 2002 Jackson County Regional Trailway Study was a county-wide non-motorized plan for local communities to build a trail network. Routes for more than twelve different trails are highlighted, and has served as the backbone for trail projects in the area that were developed from 2002 – 2017, including the Martin Luther King Jr. Equality trail and the Falling Waters trail. Local recreation plans and master plans have reaffirmed the recommendations from this study many times over since the plan's completion.



Jackson Trail Connector Feasibility Study 2017

The Michigan Department of Natural Resources, the Michigan Department of Transportation, Jackson County and Blackman Township worked together on the Jackson Trail Connector Feasibility Study in 2017 to examine an extension of the Lakelands Trail to the Martin Luther King Jr. Equality trail. The study identified the location, benefits, and challenges for several routes, and identified a preferred trail option.

City of Jackson and Jackson County Joint Recreation Plan 2015 – 2019 Edition

A priority of Jackson County and the City of Jackson Joint Recreation Plan 2015 – 2019 Edition was to develop and implement a joint recreation plan that responds to the desire of the public and enhances local parks and programs. A Citizen Opinion Survey

highlighted the strong support for non-motorized trails within the community. 88% of respondents showed support for developing a coordinated trail system. Impacts to the local transportation system include the support of developing a non-motorized trail network, including implementing the recommendations from the Jackson County Regional Trailway Study and encouraging local governments to plan for and develop additional non-motorized trails to supplement the Trailway Study proposed framework.

City of Jackson Community Master Plan 2016

The City's 2016 Master Plan highlights improvements for the non-motorized network. Non-motorized goals, recommendations and strategies from the plan include:

- Complete the non-motorized transportation network to connect downtown to all major areas of the City.
- Reduce dependence on the automobile for all transportation needs.
- Make connections on existing non-motorized routes to provide access throughout the City.
- Implement the recommendations from the 2010 Jackson Rail Passenger State Development Study, including consolidating local bus and bicycle services into a location easily accessible from the Amtrak node.

2003 City of Jackson Bike Route Map

The City of Jackson approved a Bike Route map to accommodate bicycle trips on low-volume roads between potential bicycle trip generators. These generators include park and recreational facilities, entertainment and shopping centers, large employers, and other areas. Specific facilities were developed with input from the Walkable Communities Task Force, bicycling organizations, traffic engineers, planners and the public. Most of these facilities have been implemented over the last 10 years.



Existing Non-Motorized Network

Sidewalks

Pedestrian movement is generally accommodated by the presence of sidewalks and non-motorized paths along with pedestrian crossing accommodations at major intersections. The City of Jackson has implemented pedestrian “countdown signals” that provide pedestrians with a safe timeframe to cross the street as well as Americans with Disabilities Act (ADA) requirements for sidewalk ramps at crosswalks and detectable warning surfaces within the sidewalk ramp. Pedestrian crossing islands and curb extensions have also contributed to improved safety features in some parts of Jackson.

Bike Lanes

Dedicated bicycle facilities create opportunities for a range of users. Bike lanes are found on a number of streets near and within the City of Jackson. They provide a separated space for bicycles to operate, helping drivers understand where they can expect bicyclists to be in the roadway. Bike lanes discourage wrong way riding, and are useful on collector and arterial roads.

Trails

Trails also serve as a recreation facility and are a significant part of the non-motorized network. The following is a list of trails within the Jackson MPO area:

- Martin Luther King Jr. Equality Trail (formerly known as the Inter-City Trail): 3 mile paved trail that traverse the city from Weatherwax Drive through East Washington Street. The trail connects to the Falling Waters Trail. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the City.
- Falling Waters Trail: a 10 mile paved asphalt trail extending from the City of Jackson to the Village of Concord and connects the City of Jackson, Summit, Spring Arbor and Concord townships and crosses Lime Lake on an old Michigan Central railroad rail bed. The trail connects to Jackson’s Martin Luther King Jr. Equality Trail. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the County.
- Armory Arts Walk: a 1 mile paved trail from West Monroe Street to North Mechanic Street. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the City.
- Lakeland Trail: a 11 mile unpaved recreational trail that begins in the Waterloo State Recreation Area and extends to the Stockbridge area. Future plans include paving this trail.
- Sparks Foundation County Park: 2 miles of paved trail that runs through the park.

- PAKA Trail: a 1 mile paved trail that connects the Martin Luther King Jr Equality Trail to Ella Sharp Park.
- Spirit Trail: a 7 mile paved and unpaved trail around Clark Lake.
- Unnamed Trails: There are a number of unnamed trails, most of which parallel roads including Weatherwax Drive, Horton Road, Ann Arbor Road, Spring Arbor Road, Page Avenue and Probert Road.

Other Facilities

The City of Jackson has a number of signed bike routes. They are identified by the Manual on Uniform Traffic Control Devices (MUTCD) standard “bike route” green sign with white letters. Bicycle traffic is encouraged to follow these routes throughout the City. The signed bike routes do not have bike lanes nor are marked with any other indicator like a shared lane marking or “sharrow.”

Paved shoulders are another option for some bicyclists. Paved shoulders are typically found on roads in rural areas and widths can vary from 4 to 8 feet. They may or may not be marked, and bicyclists are allowed to use them.

Bike parking is accommodated through bike racks that are located throughout the City and County. All of the JATA fixed-routes buses have bicycle racks to help accommodate intermodal travel for its customers.

Jackson County supports one bike share station at the parking lot/trailhead where the Falling Waters Trail meets the Martin Luther King Jr. Equality Trail on Weatherwax Drive. The BCycle bike share station was installed in May 2017. In the first four months after installation, there were over 600 bicycle trips taken. The program is generating modest revenue.



Jackson County Bike Share Station

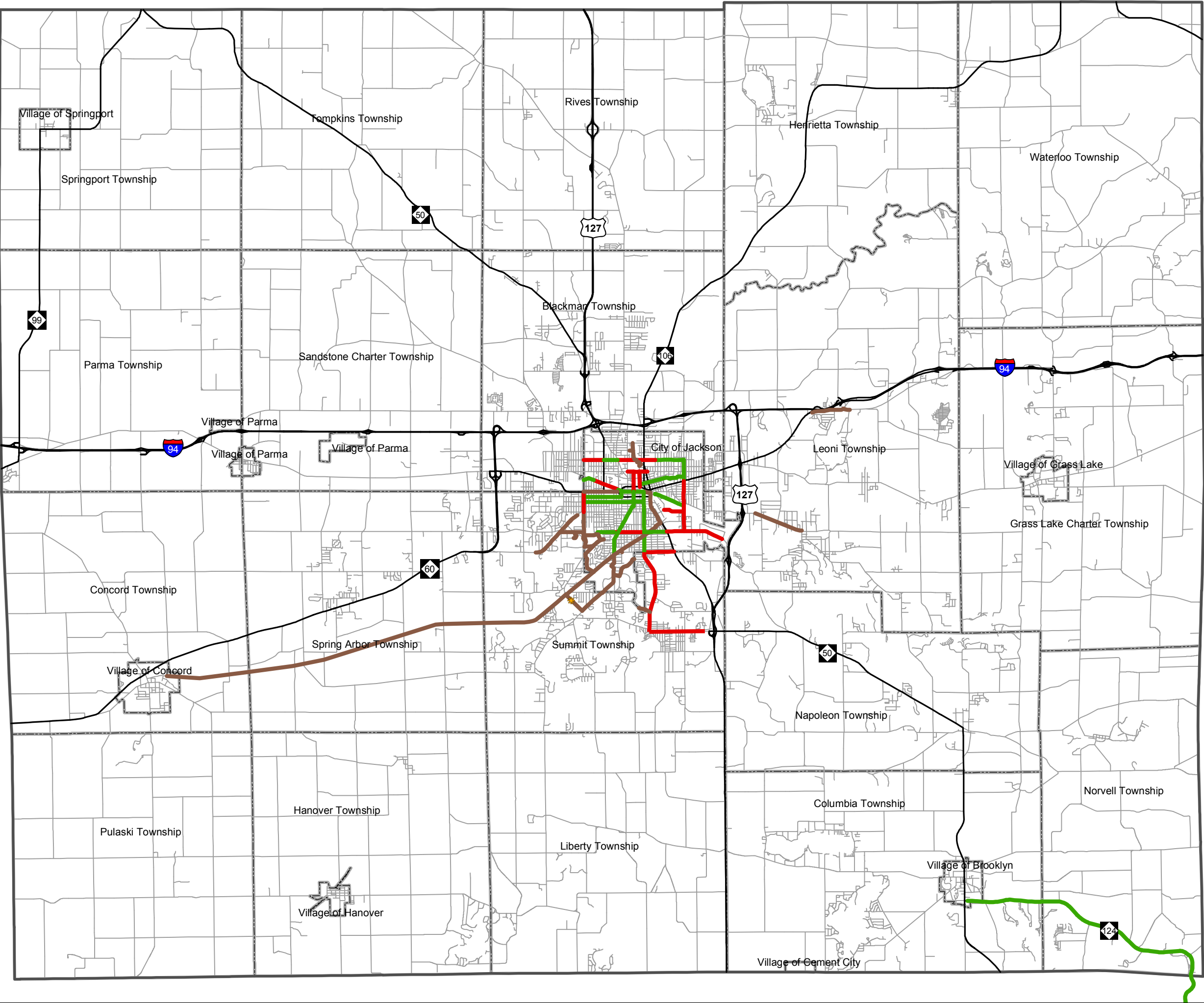
A map of the existing non-motorized facilities can be found on the next page.

Non-Motorized Facilities

Facility

- Bike Lane
- Signed Bike Route
- Trail
- * Bike Share Station

0 2 4 Miles



Region 2
Planning Commission
Serving Hillsdale, Jackson and Lenawee Counties

Policies & Programs

The state transportation law requires that each local unit of government receiving Motor Vehicle Highway Funds (Act 51 funds derived from gasoline and car registration taxes) spend at least one percent of these funds each year for non-motorized facilities. The law also requires that each administering road agency prepare a five-year program for expenditure of available funds. The City of Jackson and the Jackson County Department of Transportation review the need for non-motorized facilities when programming future road paving and reconstruction projects. Both agencies also review future locations for the addition of non-motorized facilities that meet funding requirements through the Transportation Alternatives Program (TAP).

Safe Routes to School

The City of Jackson began working on Safe Routes to Schools with some Jackson Public Schools in 2007. Over the last ten years, sidewalk improvements were made to the areas near Cascades Elementary School, Frost Elementary School, Northeast Elementary School and the School for the Arts. The City paid for the planning and engineering of the projects. Jackson County has begun meeting with some of the schools in the County in hopes of addressing the needs of the schools outside of the City.

JCDOT has been active in the Safe Routes to School program. Several elementary and middle schools have received funding through this program and many others are developing their “walk to school” plans in order to secure funding. JCDOT has assisted in the development of grant applications, and continues to be a resource to schools outside the City of Jackson.

Future Forecasts, Issues and Needs

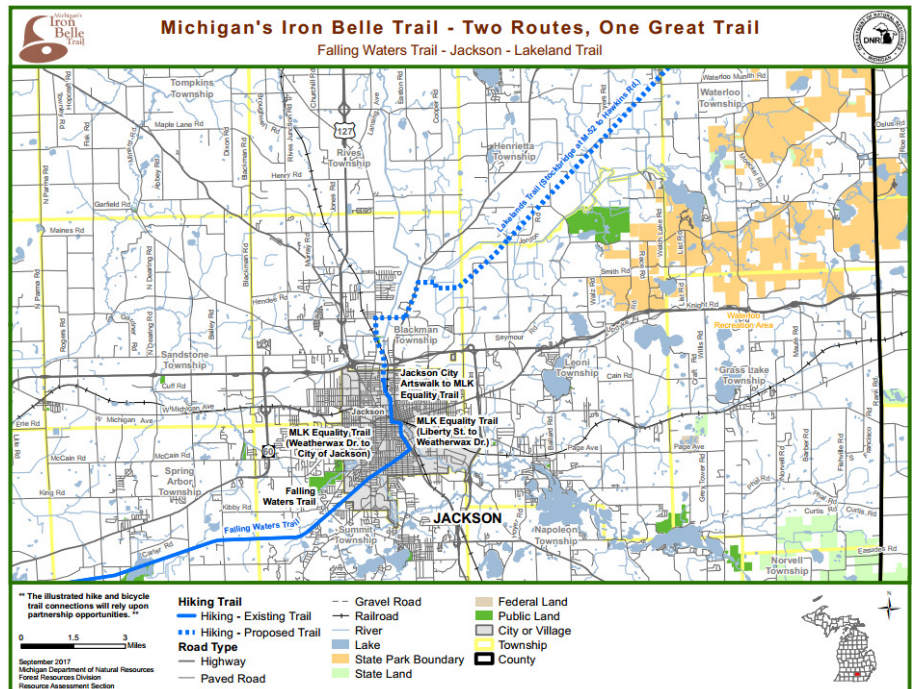
Future Planning Studies

An update to the 2002 Jackson County Regional Trailway Study is planned in the near-term. Many of the facilities have been implemented from the 2002 plan, and local leaders and the public are supportive of a new planning effort to consider the future of non-motorized facilities. Energy and interest continue to grow to support the development of these kinds of facilities for transportation and recreation. Proposed improvements from the 2015 MDOT University Region Non-motorized Plan will be considered along with the involvement of local villages, townships, the City of Jackson, Jackson County, and the Region 2 Planning Commission.

Iron Belle Trail

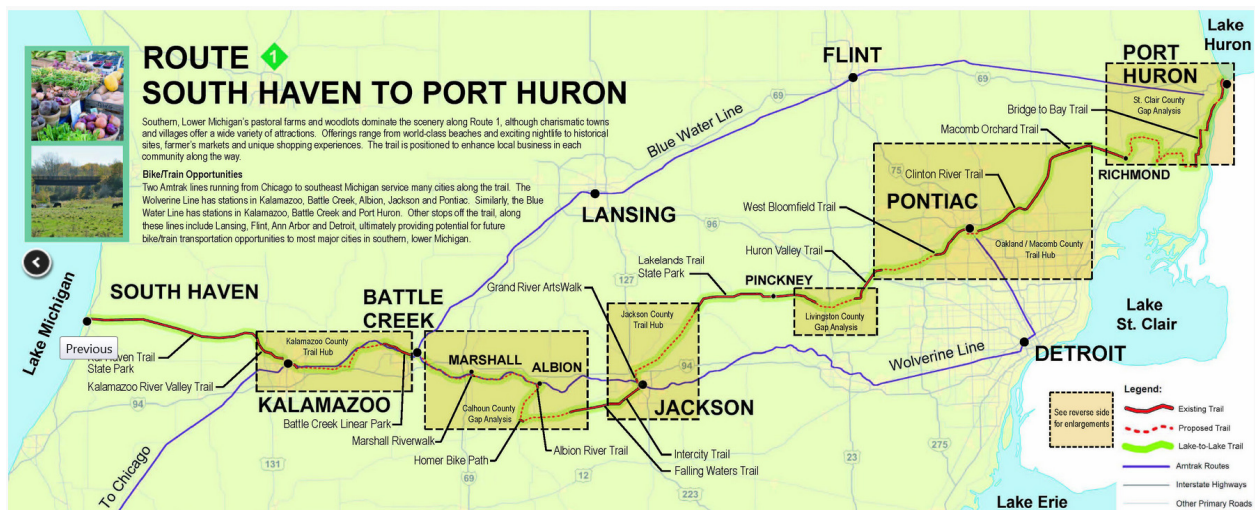
The Department of Natural Resources announced the plan for the Iron Belle Trail in 2015. The trail, which has two routes, one biking and one hiking, will run from Belle Isle Park in Detroit to Ironwood in the Upper Peninsula. The hiking route will follow the existing unpaved Lakeland Trail from Stockbridge, running along a proposed route into

the City of Jackson. The route would follow the existing Armory Arts Walk, Grand River Walk and the Martin Luther King Jr. Equality Trail. From there, it would connect to the Falling Waters Trail, and continue along a proposed route to Homer in Calhoun County.



The Great Lake to Lake Trail

The Great Lake to Lake Trail is a collection of existing and proposed trails that will stretch 250 miles from the shore of Lake Michigan in South Haven to the shore of Lake Huron in Port Huron. The trail passes through Jackson County using the existing Falling Waters Trail and the proposed Lakeland Trail, following the same corridor as the Iron Belle Trail would follow.



Policies

In the 2040 Long Range Transportation Plan, policies to address improvements to non-motorized facilities in Jackson were included. Some of those policies that are still important to consider include:

- Strategies and actions in residential areas should be aimed at improving pedestrian safety and the overall quality of life. Projects that would limit undesirable vehicular activity on specific residential streets as a way of improving the pedestrian environment are encouraged.
- Special care should be given to address the removal of built-in barriers that limit access to pedestrian facilities
- Pedestrian safety in school zones should be considered through a coordinated effort involving school officials, parents, police, traffic engineers and planners.
- Identify routes that would act as connectors between existing non-motorized trails.
- Improve bicycle facilities including storage, shelters, comfort stations and trail heads at major trip generators, destinations, and transit hubs.
- Improve safety issues such as drainage gate replacement, rail crossings, pavement markings, and signals.
- Promote access between non-motorized and other modes of transportation.

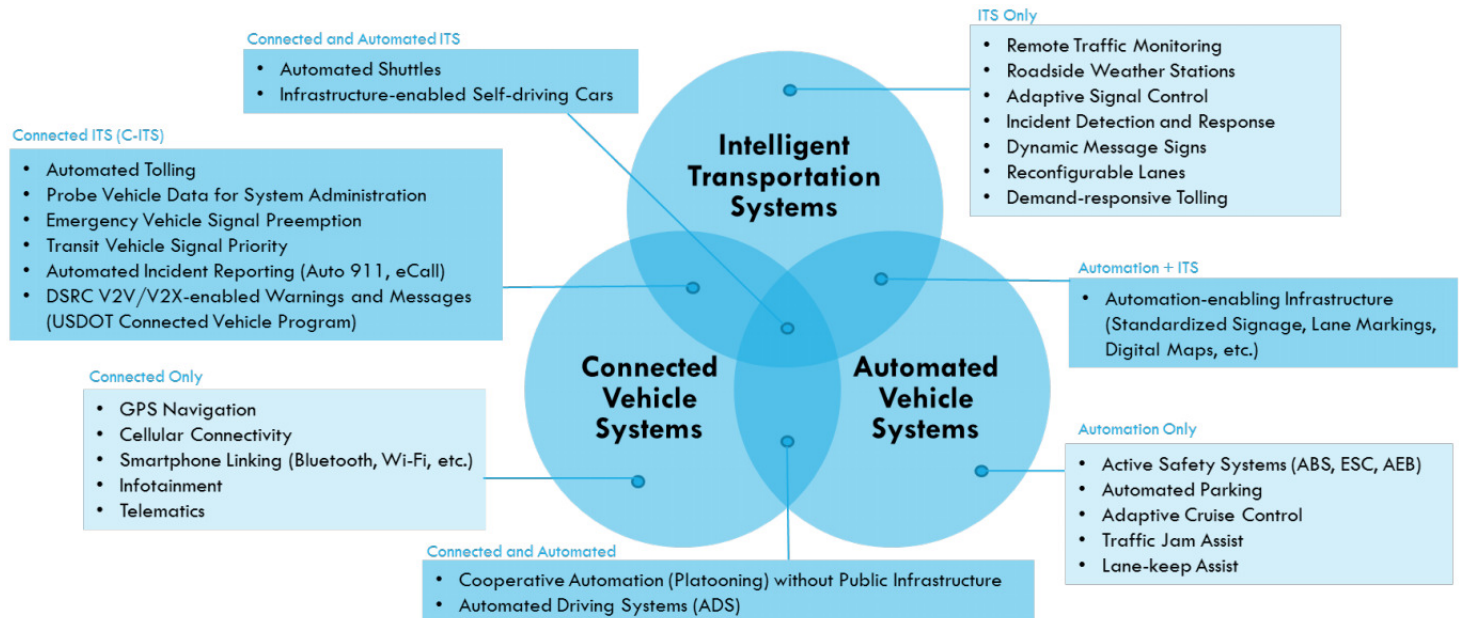
Emerging Technology within the Transportation System: Connected and Automated Vehicles

Connected and automated vehicles (CAVs) are already impacting the state of Michigan. MDOT has a connected vehicle program that is supported by GM, Ford, the University of Michigan, Oakland County Road Commission, and others. Program assets and testing areas are currently just east of the Jackson MPO. A report prepared for the Region 9 Prosperity Initiative in 2017 called “Planning for Connected and Automated Vehicles” looked at the impact of the technologies for southeast Michigan. The report found that the impacts of CAVs will be broad. They will change the commuting behaviors and patterns; government decisions related to land use, zoning, and infrastructure; and equity and social welfare issues for local communities. This section addresses the emerging technology of CAVs.

Defining Connected and Automated Vehicles

The term “connected and automated vehicles” refers to a variety of vehicle technologies and systems. There are different ways that vehicles can be connected and/or automated. Intelligent Transportation Systems (ITS) is another component of this emerging technology that can interact and influence CAVs. These technologies are explained in the text and image below.

- **Automated Vehicle Systems** are any electronic system that influences the lateral and/or longitudinal motion of a vehicle. If the influence is continuous, this is referred to as a driving automation system.
- **Connected Vehicle Systems** enable the exchange of digital communication between a vehicle and another entity. Some vehicles may only be able to receive information while others may only be able to send it.
- **Intelligent Transport Systems** are electronics, communications, or information processing used to improve the efficiency or safety of a transportation system. ITS is typically implemented by a public or quasi-public entity.



CAVs could potentially allow for a more robust and efficient flow of traffic. The same amount of traffic could be accommodated by fewer lanes because vehicles can operate closer together. In mixed traffic situations, risky driving behavior may decrease with CAVs because their behavior is less erratic. Bicyclists have reported feeling safer next to CAVs because their behavior is easier to predict.

The number of vehicle miles traveled may also be affected. Vehicle miles traveled (VMT) is defined by the federal government as a measurement of miles traveled by vehicles within, and is used as a standard to track how much people drive. Below are some factors that may affect VMT.

Factors potentially increasing VMT

- **Zero occupancy VMT.** Vehicular miles traveled could increase due to vehicles traveling without passengers between drop-off and pick-up locations.
- **Shift away from mass transit and non-motorized modes:** Increased conveniences and affordability could make CAVs more attractive options than mass transit, biking or walking.
- **Reduced trip chaining.** For example, one vehicle could take a family member to work, return home empty to take another to school, etc. This would mean less vehicle ownership, but may still increase vehicle miles traveled.
- **Increased mobility of non-drivers.** CAVs would offer underserved populations – the elderly, the young, and people with disabilities - access to travel.
- **Urban form and development patterns.** People might be more willing to accept longer commute times because they would be able to engage in other activities while traveling, and, therefore, live in a more affordable home farther from their workplace. This could give way to an increase in urban sprawl development patterns.

Factors potentially decreasing VMT

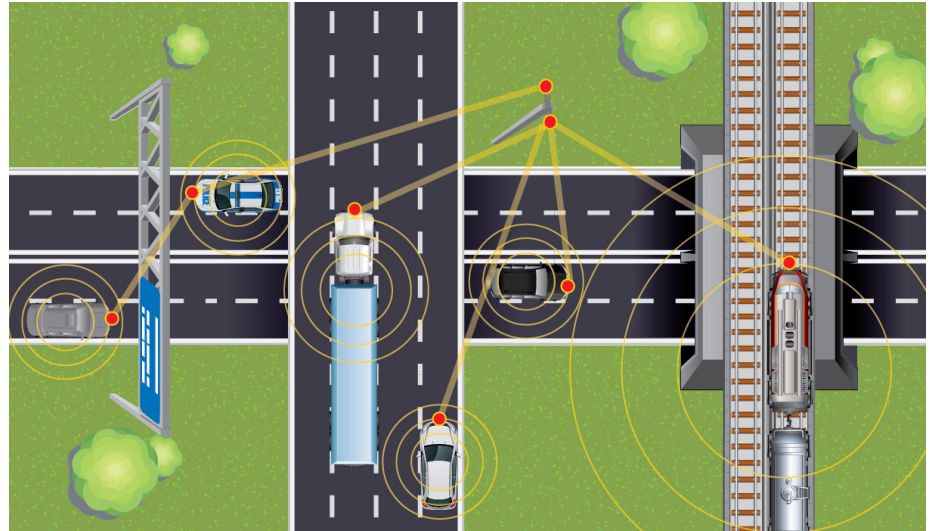
- **Lower car ownership.** If people own fewer vehicles due to carsharing options, unnecessary travel could be reduced.
- **Increased vehicle occupancy.** More people will be interested in carsharing, as technology evolves to make it more convenient and less expensive, including suburban and rural areas. More people in fewer vehicles would decrease the total vehicle miles travelled.
- **CAVs used as first and last mile solution along with mass transit.** If CAVs are used to help get people to and from transit routes, and not replace a trip by mass transit, travel may be reduced.

Parking may also be affected. If a CAV does not need a human driver, there may be few reasons to need to park a car. Municipal parking facilities could be reduced. As parking demands diminish, communities may no longer need to invest in new parking

structures. Parking areas could be related to areas with lower land values. Communities could lower minimum parking requirements. Reduced parking demand may reduce the need for parking requirements.

Intermodal Implications

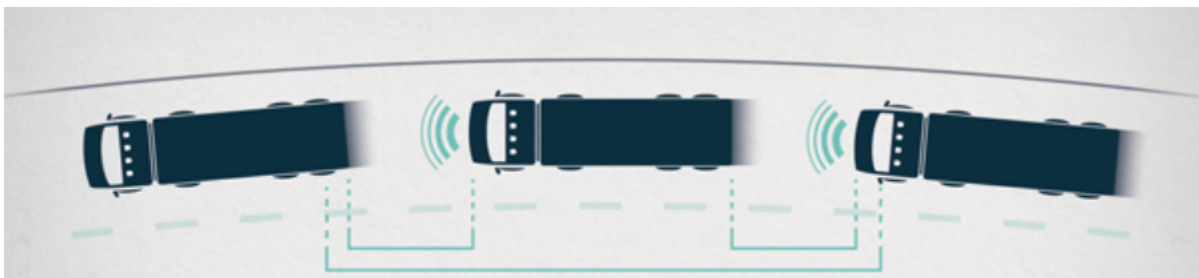
Some forms of rail have been partial or fully automated for some time. Rail infrastructure is optimally designed to take advantage of these technologies, though maintaining connection and automation through tunnels and in extreme weather conditions can be challenging. As technology advances continue, there is incentive to update transportation facilities to increase safety and efficiency.



Example of how technology can allow for communication among modes of travel

The USDOT, through the Connected Vehicle Safety for Rail initiative, is researching how CAVs and rail will safely interact at railroad crossings.

Drones, or remote-controlled aircrafts, have been around for a period of time. Retail businesses have been exploring how to use them to deliver goods to customers. Videographers and photographers are using them to capture unique perspectives of landscapes. Drones are under the complete control and jurisdiction of the Federal Aviation Administration (FAA). Though drone operation is not limited to airports, the Jackson County Airport specifically addresses drone operations on its website. Drone hobbyists are referred to review the FAA's "Know Before You Fly" campaign, along with following the recommended federal safety guidelines.



An example of freight platooning

The delivery of goods via automated truck convoy, or platooning, has also been under development for nearly a decade. Recent improvement in technologies has made this idea more likely for deployment in the near term, much like CAVs. This will change the

appearance and operations of how truck freight will travel on the road network. Platooning will make freight delivery via trucks cleaner by reducing emissions, safer due to less brake time needed, and more efficient use of resources. Platooning will look like a number of trucks have joined a road train, but act as a single unit. Automation may make interacting with human-driven, connected, and automated vehicles more predictable.

Understanding how CAVs will relate to pedestrians and bicyclists has yet to be deeply researched. Experts are raising a number of issues as to how these modes will interact. The Pedestrian and Bicycle Information Center, which is supported by the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA), have identified key issues on this topic.

- Address how CAVs will be able to detect and predict the movement of pedestrians and bicyclists.
- Determine the ways that pedestrians and bicyclists will identify and communicate to CAVs.
- Address how CAVs will accommodate yielding to pedestrians and bicycles.
- Consider how CAVs will adapt to the varying speed at which bicycles operate and pedestrians move in various environments.
- Since vehicle speed is a critical factor in crashes with non-motorized modes and mortality rates, consider how CAVs will be instructed to operate within environments at which the posted speed limit is not appropriate.

Recommendations

Full deployment of CAVs in Jackson is years away, however, they may be within the planning horizon of the plan. Models, engineering projects, and local policies have not yet begun to consider their role within the community, however, there are important things to consider.

In the near term, local government entities within the Jackson MPO should consider the following:

- Reduce minimal parking standards
- Consider how new streetscape design specification and standards will accommodate pick-up and drop-off areas
- Track how CAVs will reshape road right-of-way and access management
- Review how the Complete Streets policy could accommodate the needs of CAVs

Over the mid-term:

- Encourage the Region 2 Planning Commission to account for CAVs in long range transportation plans
- Work with public transit to investigate the role of CAVs as part of the transit network
- Encourage the state to update the travel demand model and roadway design manuals to take CAVs into account

- Attend regional and state trainings, meetings, and seminars where the impact of CAVs are discussed

Over the long-term:

- Consider policies and pricing that encourages shared deployment of automated vehicles
- Continue to work with public transit agencies to consider how to integrate shared automated vehicle programs with mass transit
- Manage transportation facilities in terms of people throughput, not vehicle throughput
- Consolidate transportation markets at a regional level

More information on CAVs will be revealed as engineers, government officials, and the public have more experience with this emerging technology. Local communities should consider staying abreast of current conversations and follow the state-level conversations to understand how CAVs will impact local communities.

Chapter 5

Coordination with the State & Local Transportation Plans

FAST Act legislation provides funding certainty for surface transportation through 2020, and requires that state long range transportation plans must be reviewed by the local MPO. A review of state and local safety plans must also be undertaken. This chapter includes a review of these documents and the Jackson Traffic Safety Program.

2040 Michigan Transportation Plan

Michigan's State Long Range Transportation Plan is a broad policy-oriented document which can be used to guide transportation investment decisions at all levels of government. The state plan has identified "Corridors of Highest Significance" along with general policy strategies, but has not programmed any specific projects or funding. The plan is flexible to accommodate the rapidly changing transportation demands of its citizens operating in a competitive global economy.

MDOT extended its State Long Range Plan, or MI Transportation Plan (MITP) to 2040. Public meetings were held to determine that the assumptions in the plan were consistent with the public's perception. As a result of these meetings, MDOT developed the following long range vision for the state's transportation system:

"MI Transportation Plan focuses on the important link between transportation and Michigan's economic vitality and quality of life. It presents options to achieve Michigan's goals for the future by providing an efficient, integrated transportation system."



The 2040 MITP for MDOT

Goals and Objectives

The transportation planning process historically defines goals and objectives, identifies problems, generates and evaluates alternatives, and develops short and long term plans. The goals and objectives identified in the prior year's MITP continue to reflect the public's vision for Michigan's transportation system and are reaffirmed in 2040 State Long Range Plan:

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

- Goal 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 its partners.
- Goal 3 *Safety and 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.

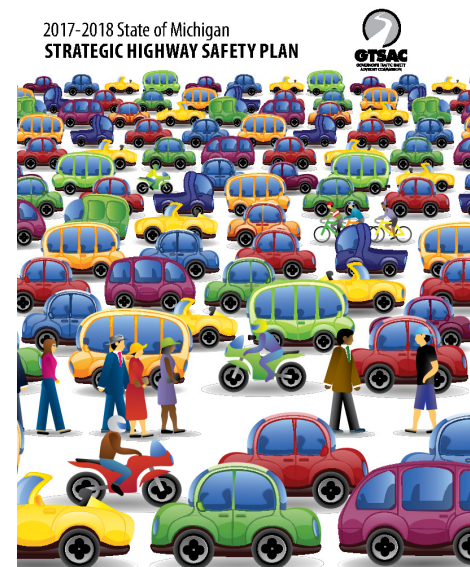
The state's goals were reviewed and are consistent with those included in the JACTS 2045 Long Range Transportation Plan.

In the 2040 MITP, MDOT has identified nineteen multi-modal corridors statewide as "Corridors of Highest Significance" including the Detroit/Chicago I-94 corridor through Jackson County. Although only broad strategies are identified for this corridor, MDOT has improved several bridges to accommodate future expansion and has other projects on this corridor currently identified in their 5-Year Plan. The Grayling/Jackson and Jackson/Toledo corridors were also mentioned in the Plan. The Grayling/Jackson corridor starts in Grayling, follows I-75 to US-127 through Lansing and ends in Jackson. The Jackson/Toledo corridor starts in Jackson, follows US-127 to US 223 through Adrian to US-23, follows US-23, and ends at the Ohio border.

The Michigan Department of Transportation has stated its continuing commitment to on-going public involvement in its current planning activities as well as in future MITP updates.

The 2017-2018 State of Michigan Strategic Highway Safety Plan

The 2017-2018 State of Michigan Strategic Highway Safety Plan (SHSP) was completed by the Governor's Traffic Safety Advisory Commission in 2016. Four emphasis areas were identified with the mission to "Improve traffic safety in Michigan by fostering effective communication, coordination, and collaboration among public and private entities." The overall vision of the document is to work "Toward Zero Deaths on Michigan Roadways" with the specific goal of preventing the state crash fatalities from reaching 967 in 2018 and preventing serious traffic injuries from reaching 4,600 in 2018. Data from the Office of Highway Safety Planning shows an upward trend in fatalities and a downward trend in serious injuries. Deaths in 2015 were up 8.32% since 2011 however, incapacitating injuries were down 14.74% in 2015 since 2011.



The 2017 – 2018 Strategic Highway Safety Plan

Emphasis Areas and Action Teams

The 2017-2018 SHSP is focused on addressing four broad emphasis areas: High-Risk Behaviors, At-Risk Road Users, Engineering Infrastructure, and System Administration. Within the emphasis areas, action teams were created to provide targeted guidance on area-specific safety issues. The emphasis areas and action teams are listed below:

- High-Risk Behaviors
 - Distracted Driving
 - Impaired Driving
 - Occupant Protection
- At-Risk Road Users
 - Commercial Motor Vehicle Safety
 - Pedestrian and Bicycle Safety
 - Senior Mobility and Safety
 - Drivers Age 24 and Younger
- Engineering Infrastructure
 - Traffic Safety Engineering
- System Administration
 - Traffic Incident Management
 - Traffic Records and Information Systems

Strategies

Strategies have been outlined for each action team. Some strategies that are pertinent to the Jackson MPO are identified below:

- Support public information and education campaigns regarding all action teams
- Evaluate the effectiveness of occupant protection programs.
- Identify and promote the use of best practices when designing and operating facilities.
- Raise awareness of pedestrian and bicycle safety.
- Recognize successful pedestrian and bicycle safety initiatives.

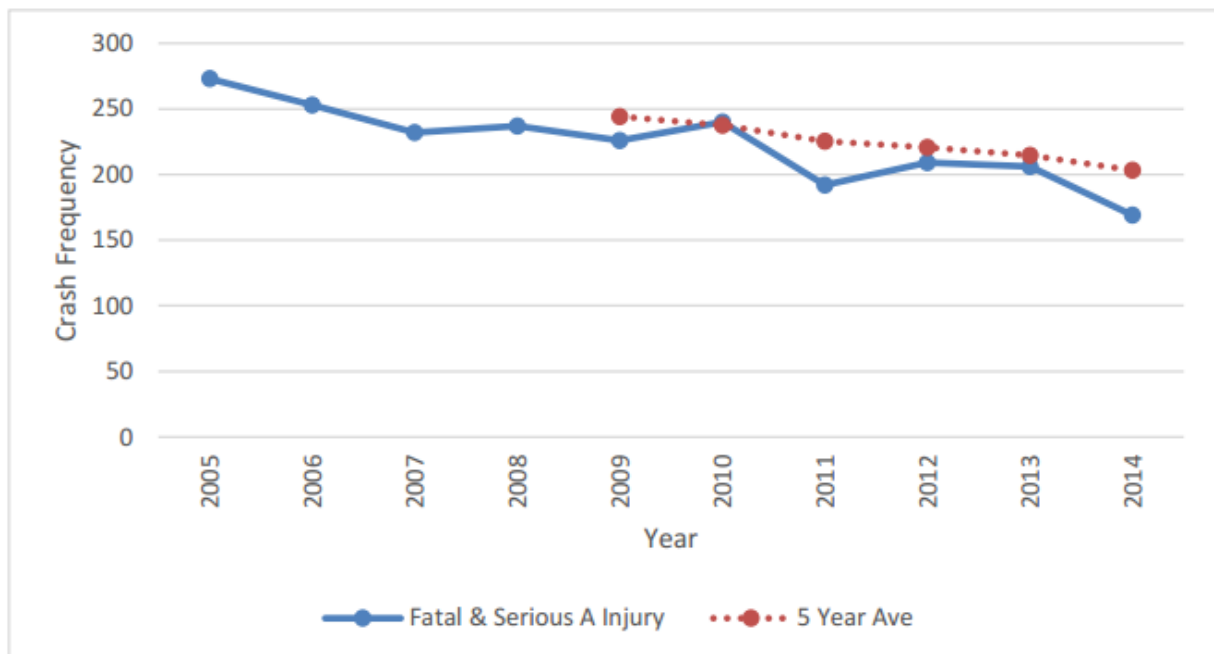
The Region 2 Planning Commission agrees with the data and strategies presented in the 2017-2018 State of Michigan Strategic Highway Safety Plan. For more information and a full list of strategies please refer to the 2017-2018 State of Michigan SHSP.

2017 Regional Transportation Safety Plan

The overarching goal of the Regional Transportation Plan is the reduction of fatal and serious injury crashes within Hillsdale, Jackson, and Lenawee Counties which form the region boundaries. The vision and mission of the plan are guided by the SHSP and are as follows: “Move towards zero deaths” and “Improve traffic safety on local roads by fostering improved safety, communication, coordination, collaboration, and education within the three counties.”

Three goals were created based on crash history data in the region and concerns raised by local stakeholders:

- Identify three safety partners to increase awareness.
- Reduce traffic fatality crash rates per 100 million vehicle miles travelled (MVMT) from .0035 in 2015 to .0026 in 2025.
- Reduce serious traffic injury crash rates per 100MVMT from .0148 in 2015 to .0081 in 2025.



2017 Regional Safety Plan's Region's Historic Fatal and Serious Injury Crash Frequencies

The plan identifies six emphasis areas: at-risk driver age groups, driver behavior, impaired drivers, intersection related, non-motorized, and single vehicle crashes. The emphasis areas and guidance from stakeholders were used to categorize practical treatment strategies for addressing the identified target crashes. Strategies were identified for each emphasis area. The document is intended to provide guidance to local agencies regarding local areas of concern.

Jackson Traffic Safety Program

The Region 2 Planning Commission administers the Jackson Traffic Safety Program (JTSP) which is funded through a portion of district court costs on paid citations as well as through the Office of Highway Safety Planning. The purpose of the JTSP is to reduce the impact of traffic crashes in the County by increasing occupant protection through education and enforcement, reducing incidents of impaired and distracted driving, reducing the number and severity of all traffic-related crashes, providing safety education and training programs, and promoting and encouraging cooperative efforts among all agencies. JTSP has been committed to identifying issues and improving traffic safety awareness and education in Jackson County. With the funding provided, numerous programs are funded annually that address the emphasis areas, action teams, and strategies stated in the Jackson Traffic Safety Program Policies. In 2017, grants totaling \$135,555 (\$45,272 in JTSP funds) were awarded to the following agencies:

- **Blackman-Leoni Department of Public Safety and Jackson County Office of the Sheriff (\$2,400):** In cooperation with other county enforcement agencies, the Safe Communities Program aggressively enforces impaired driving and occupant restraint usage.
- **Family Services and Children's Aid (\$2,480):** Utilizes strategies that are proven to reduce recidivism, strengthen family communication, and reduce adolescent alcohol and other drug use.
- **Jackson County Health Department (\$18,600):** Provide funding for Safetyville, Underage and Distracted Driving Programs, and the Infant and Child Car Seat Program for low-income families.
- **Jackson County Office of the Sheriff (\$4,042):** Provide funds for software upgrades and maintenance for the county-wide E-Ticketing program.
- **Springport Township Police Department (\$3,100):** Enforcement at high crash locations, impaired driving enforcement, and education.

The projects are a vital asset to the region, and support the mission, vision, and goal of the JTSP.

The Jackson Area Transit Authority does not currently have a safety plan.

The 2017 Regional Transportation Safety Plan and Jackson Traffic Safety Program demonstrate coordination with the State's 2017-2018 State of Michigan Strategic Highway Safety Plan through alignment of goals and the funding of safety programs.

Chapter 6

Performance Measures

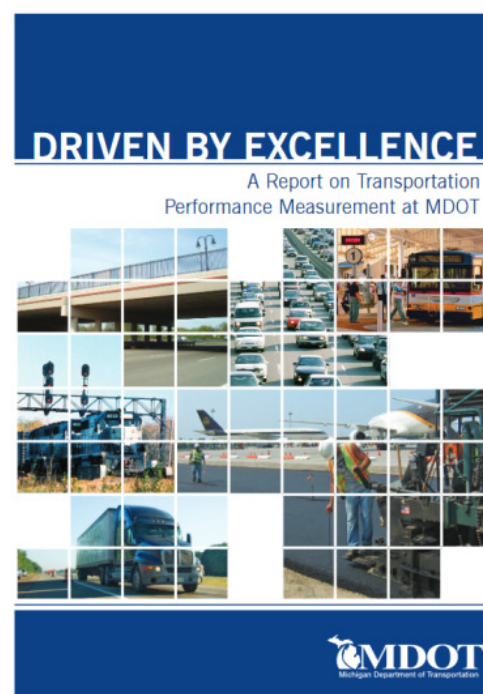
Transportation legislation developed by Congress provides a vision and direction for all transportation agencies. In July 2012, President Obama signed MAP-21 that established transportation systems move toward a performance- and outcome-based program. The objective of the performance and outcome-based program is for the investment of resources in projects that collectively make progress toward the achievement of nationally set goals. The emphasis continues in the FAST Act. As part of the bill, national performance goals were created for roads, highways, and public transportation.

Program Overview

Roads and Highways National Performance Goals

The performance measures were created around monitoring the federal aid highway program. They are designed to be national goals to help monitor the success of the transportation system and help drive investment. Below is a brief summary of the seven national goals included in MAP-21.

1. **Safety** - To achieve a significant reduction in traffic fatalities and serious injuries on all public roads
2. **Infrastructure Condition** - To maintain the highway infrastructure asset system in a state of good repair
3. **Congestion Reduction** - To achieve a significant reduction in congestion on the National Highway System
4. **System Reliability** - To improve the efficiency of the surface transportation system
5. **Freight Movement** - To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development
6. **Environmental Sustainability** - To enhance the performance of the transportation system while protecting and enhancing the natural environment
7. **Reduced project delivery delay** - To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies/work practices.



Performance Measures report by MDOT

Public Transportation National Performance Goals

MAP-21 also mandated the Federal Transit Administration (FTA) to develop a rule establishing a strategic and systematic process of operating, maintaining, and improving public capital assets effectively through their entire life cycle. The Transit Asset Management Final Rule became effective October 1, 2016 and established four performance measures. The performance management requirements are a minimum standard for transit operators. Providers with more data and sophisticated analysis expertise are allowed to add performance measures. Below are the asset categories that are the focus of the transit asset management performance measures:

1. Rolling Stock - means a revenue vehicle used in providing public transportation, including vehicles used for carrying passengers on fare-free services.
2. Equipment - means an article of nonexpendable, tangible property has a useful life of at least one year.
3. Facilities - means a building or structure that is used in providing public transportation
4. Infrastructure - means the underlying framework or structures that support a public transportation system.



JATA Bus

In addition to transit asset management goals and performance measures, FTA is also expected to identify performance measures for safety and safety planning that transit agencies must address.

National Goals Implementation Schedule

The timeline for implementation of the national performance measures is determined when a final rule establishing the date for the rule is effective. The table outlines the effective date of the final rule and when States and MPOs must take action.

Table 6-1 National Goals & Implementation Schedule

Final Rule	Effective Date	States Set Targets By (1 year)	MPOs Set Targets By	MTP and TIP Inclusion
Safety Performance Measures	April 14, 2016	August 31, 2017	Up to 180 days after the states set targets, but not later than Feb. 27, 2018	Updates or amendments on or after May 28, 2018
Pavement/Bridge Performance Measures	May 20, 2017	May 20, 2018	No later than 180 days after the State(s) sets target November 16, 2018	Updates or amendments on or after May 20, 2019

Reliability & Freight Performance Measures	May 20, 2017	May 20, 2018	November 16, 2018	Updates or amendments on or after May 20, 2019
Statewide non-metropolitan and metropolitan planning	May 27, 2016	There are no measures associated with the planning rule.		
Asset Management Plan	October 2, 2017	By April 30, 2018 State DOTs submit initial plans describing asset management plan processes. By June 30, 2019 State DOTs submit fully compliant asset management plan.		
Transit Asset Management Plan	October 1, 2016	January 1, 2017	Optional reporting year for 2017 and mandatory for 2018. State will set targets for rural transit providers and urban providers will set own targets.	
Transit Safety Plan	Currently no regulation has been adopted to enact this rule.			

Targets

Within one year of the USDOT final rule on performance measures, states are required to set performance targets in support of those measures. To ensure consistency, each state must to the maximum extent practicable:

- Coordinate with an MPO when setting performance targets for the area represented by that MPO
- Coordinate with public transportation providers when setting performance targets in an urbanized area not represented by an MPO

Target Coordination with MDOT

Performance target coordination between MPOs and MDOT began in January 2017. As Michigan MPOs, MDOT, and FHWA staff met monthly as part of the Michigan Transportation Planning Association (MTPA), it was convenient to follow scheduled MTPA meetings with a Target Coordination Meeting led by MDOT. The Target Coordination Meetings give MDOT and FHWA the opportunity to provide updates on performance measures and target setting to the MPOs. The meetings also give the MPOs an opportunity to ask questions and provide feedback on the methods used to set performance targets. MTPA members have been meeting with various MDOT agencies in the development of language and timelines to implement the targets. This MDOT Transportation Performance Measures Metro Planning Team has met monthly to ensure the timely delivery of these targets for MPOs to incorporate into their local planning documents. MPOs have also been coordinating with MDOT to develop a process for reporting MPO performance targets and the recommended action to be taken by MPO Policy Committees on setting performance targets.

Performance Reporting Requirements

MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis. The reports are due October 1 of each even numbered year.

Federal regulations require the use of four-year performance periods over which progress toward attaining targets is tracked and reported. The first performance period runs from January through December 2022 for all performance measures. The exception to the four-year performance period is for the safety performance measures, which are required to be established and reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

MPOs are not required to provide annual reports other than MPO decisions on targets. MPOs are required to report MPO performance targets to MDOT in accordance with the documented procedures for MPO reporting targets. This will result in MPOs reporting MPO safety targets annually to MDOT, and other performance targets as they are established.

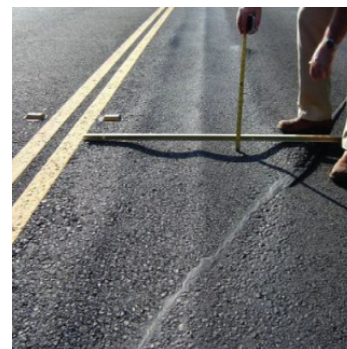
Road and Highway Future Targets

There are additional performance measures that do not have published targets as of the adoption of this plan. The dates of inclusion can be found below. As the targets are set and published by MDOT, the MPOs will take action either through adoption of the state targets or development of MPO specific targets. The following are the performance measures that do not currently have set targets to date.

1. Interstate and National Highway System Pavements

Current coordination efforts include evaluation of the pavement condition on the interstate and non-interstate National Highway System (NHS). The evaluation of the pavement will be evaluated by four metrics:

- International Roughness Index (IRI)
- Cracking Percent
- Rutting
- Faulting



Pavement rutting

The rule designates that MDOT is required to establish two and four year targets for pavement condition on the NHS. There are two sets of targets, one for the Interstate System, and the other for the Non-Interstate NHS. The first performance period takes place from January 1, 2018 to December 31, 2022, with MDOT targets due on May 20, 2018. MDOT is required to submit biennial progress reports to FHWA. There are four performance measures for assessing pavement condition based on composite analysis of the metrics. MDOT has provided the following information on performance measure baselines and targets:

Pavement Condition Metric	Statewide Baseline	State Target
% of Interstate pavement of Good Condition	46%	To be determined
% of Interstate pavement in Poor Condition	9%	To be determined
% of Non-Interstate NHS pavement in Good Condition	49%	To be determined
% of Non-Interstate NHS pavement in Poor Condition	19%	To be determined

2. NHS Bridges

Current coordination efforts include evaluation of the condition of the substructure, superstructure, deck, and culverts for bridges on the NHS system. The evaluation of the bridges will use the National Bridge Inspection Standards (NBIS). Each substructure, superstructure, deck, and culvert are rated on a 0-9 scale and recorded in the National Bridge Inventory (NBI) database. The NBI Condition ratings are broken up into three categories below:

- Good Condition: Rating of 7-9
- Fair Condition: Rating of 5-6
- Poor Condition: Rating of 0-4
 - Serious or Critical Condition: Rating of 2-3
 - Imminent Failure/Failed Condition: Rating of 0-1



Cooper Street Bridge on I-94

The rule designates that MDOT is required to establish two and four year targets for bridge condition on the NHS. MDOT targets were due on May 20, 2018. MDOT is required to submit three performance reports to FHWA within the four year performance period. There are two performance measures for assessing bridge condition:

- % of NHS bridges in Good Condition
- % of NHS bridges in Poor Condition

The minimum penalty threshold requires that no more than 10% of NHS bridges measured by deck area be classified as structurally deficient.

NHS Bridge Condition	Statewide Baseline			State Target		
	Good	Fair	Poor	Good	Fair	Poor
% by deck area	33%	57%	10%	TDB	TDB	TDB
% by count	31%	63%	6%	TDB	TDB	TDB

As of the adoption of this plan, MDOT was still working on the development of this target.

3. Interstate and NHS Reliability

In 2015, MDOT formed the Statewide Congestion Management Group (SCMG) to coordinate efforts between the Department and MPO's that address federal system performance measures. Since that time, this group has produced a congestion analysis white paper, reviewed and commented on draft performance measures, provided comment on a RFP for vehicle probe data, and discussed best practices and issues with measuring congestion.

By May 2018, MDOT will submit statewide targets for the federal system performance measures. MPO's will have six months to either support the statewide targets or develop their own. MDOT is working with the MPO's to discuss the process and methods for setting the targets, and the RITIS and INRIX platforms that can help agencies set their own targets if they desire. The performance measures for assessing interstate and NHS reliability is as follows. MDOT has provided the following information on performance measure baselines and targets:

Reliability Metrics	Statewide Baseline	State Target
% of person-miles traveled on interstate that are reliable	84%	75%
% of person-miles traveled on non-interstate NHS that are reliable	80%	70%

As of the adoption of this plan, MDOT was still working on the development of this target.

4. Freight movement on the Interstate

Freight movement will be assessed by a Truck Travel Time Reliability (TTTR) Index by analyzing freight travel over several time periods. The measure comes from the recognition that the industry's use of the transportation system during all times of day. MDOT and the Jackson MPO will have the choice of using FHWA's National Performance Management Research Data Set or an equivalent data set. MDOT has provided the following information on performance measure baselines and targets:

Freight Movement Metric	Statewide Baseline	State Target
Truck Travel Time Reliability Index - Interstate	1.36	1.75

MDOT must establish 2- and 4- year targets by May 20, 2018. The targets will be reported in the State's baseline performance period report due by October 1, 2018. MDOT will have the option to adjust the 4-year target in their mid performance period progress report, due October 1, 2020. As of the adoption of this plan, MDOT was still working on the development of this target.

Infrastructure Alignment

The transition to performance-based planning is underway at the Jackson MPO and will continue as the federally-required performance measures continue to be identified, understood, and move toward maturity. At the time of the plan's adoption, there remain several performance measures that have yet to be finalized by MDOT. The only performance measures that MPOs have been required to address are the transit asset management measures and the five highway-related safety measures. MPOs will be working through the remaining performance measures throughout the rest of this year.

MDOT is working with the Jackson MPO to better understand the expectations of the federally-required measures. For planning agencies to maximize the benefits of performance-based planning, good data is needed on the current and desired transportation system. The data is important to set strategic directions, analyze how funds are invested and programmed, and evaluate program outcomes. For many performance measures there is not a lot of good information to base decisions on. The lack of data makes it difficult to determine how projects or a program of projects will impact future performance.

As planning agencies around the country gain experience in working with the federally-required measures, tools will likely be developed to help agencies understand the impact that investments will have on outcomes. This will allow for the consideration of the tradeoffs in pursuing or focusing on one measure over another to produce results that are important to the stakeholders in the Jackson MPO.

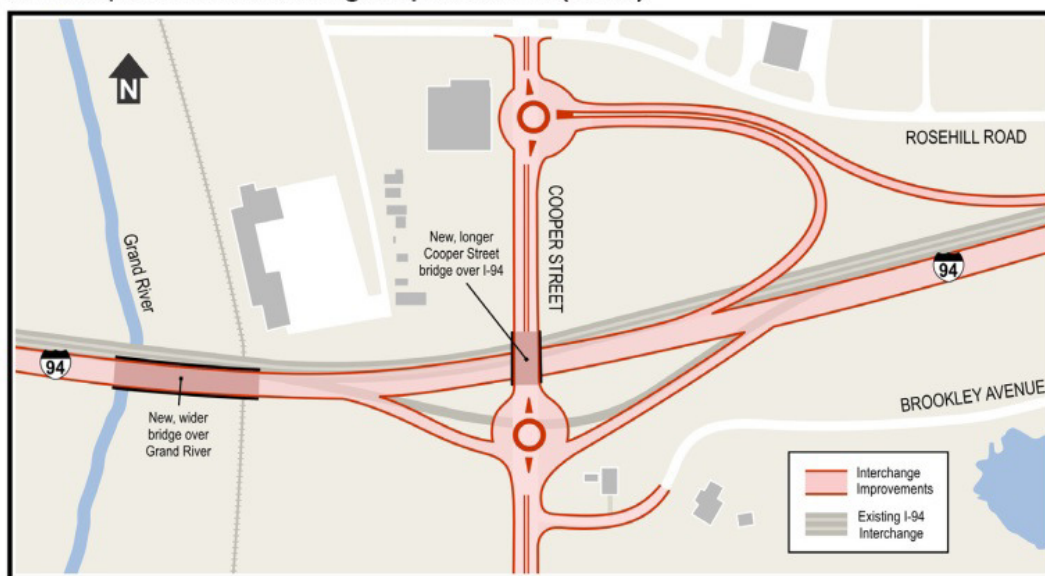
A list of the FY 2017 – 2020 TIP projects and the performance areas that they align with is found in the appendix. Information in the project description, primary work type and other narrative associated with the project in the TIP were used to determine if a project aligns with the performance areas. The Region 2 Planning Commission staff assessed the local (City of Jackson and Jackson County) projects, MDOT assessed MDOT projects, and the JATA assessed the transit agency projects. The performance areas for which targets have been considered by the Jackson MPO appear in the uncolored columns – safety, transit safety, and transit asset management. The performance areas that have not yet been considered – pavement, bridge, and reliability – are in gray.

A major project initiative currently underway by MDOT is the I-94 modernization project. This long-term project will significantly impact the Jackson MPO performance-based planning measures. The currently programmed work found in the FY 2017 – 2020 TIP includes: reconstructing 1.4 miles of freeway between Lansing Avenue and Elm Road, resurfacing 3.5 miles of freeway between Lansing Avenue and M-60, redesigning and rebuilding of the I-94/Cooper St interchange, including the addition of new roundabouts

and reconstructing the Cooper St bridge and ramps, and replacing the bridge over the Grand River.

The I-94 project work will positively impact several of the national targets, including Safety, Pavement/Bridge, and System Performance Measures. The planned work along the nine-mile corridor will include the addition of a “merge-weave” lane, widened median and shoulders, reconstructed interchange ramps and bridges adhering to modernized standards. These planned improvements will serve to increase the safety of the corridor for both passenger vehicles as well as freight traffic. These improvements will positively contribute towards improving the Safety Performance Targets. The nearly five miles of newly reconstructed or resurfaced pavement will contribute to both the Jackson MPO and Statewide Interstate and National Highway System Pavement Targets. The programmed replacement of the Cooper Street and Grand River bridge, as well as planned future bridge replacements will also contribute NHS Bridges Target. Lastly, the planned “merge-weave” lane, widened median and shoulders, reconstructed interchange ramps and bridges should also positively impact the Interstate and NHS reliability and Freight movement on the Interstate Targets.

I-94/Cooper Street interchange improvements (in red)



Chapter 7

Socio-Economic Conditions

For MDOT to develop the Travel Demand Forecast Model (the model) for the Jackson MPO roadway network, an analysis of the 2014 and 2045 projected land use and socio-economic conditions in the area was used to estimate future traffic volumes and travel behavior. The estimates were presented in the form of projections that describe the extent and location of growth likely to occur within Jackson County. The projections also help to predict potential travel problems which are important when considering priorities for transportation facility improvements.

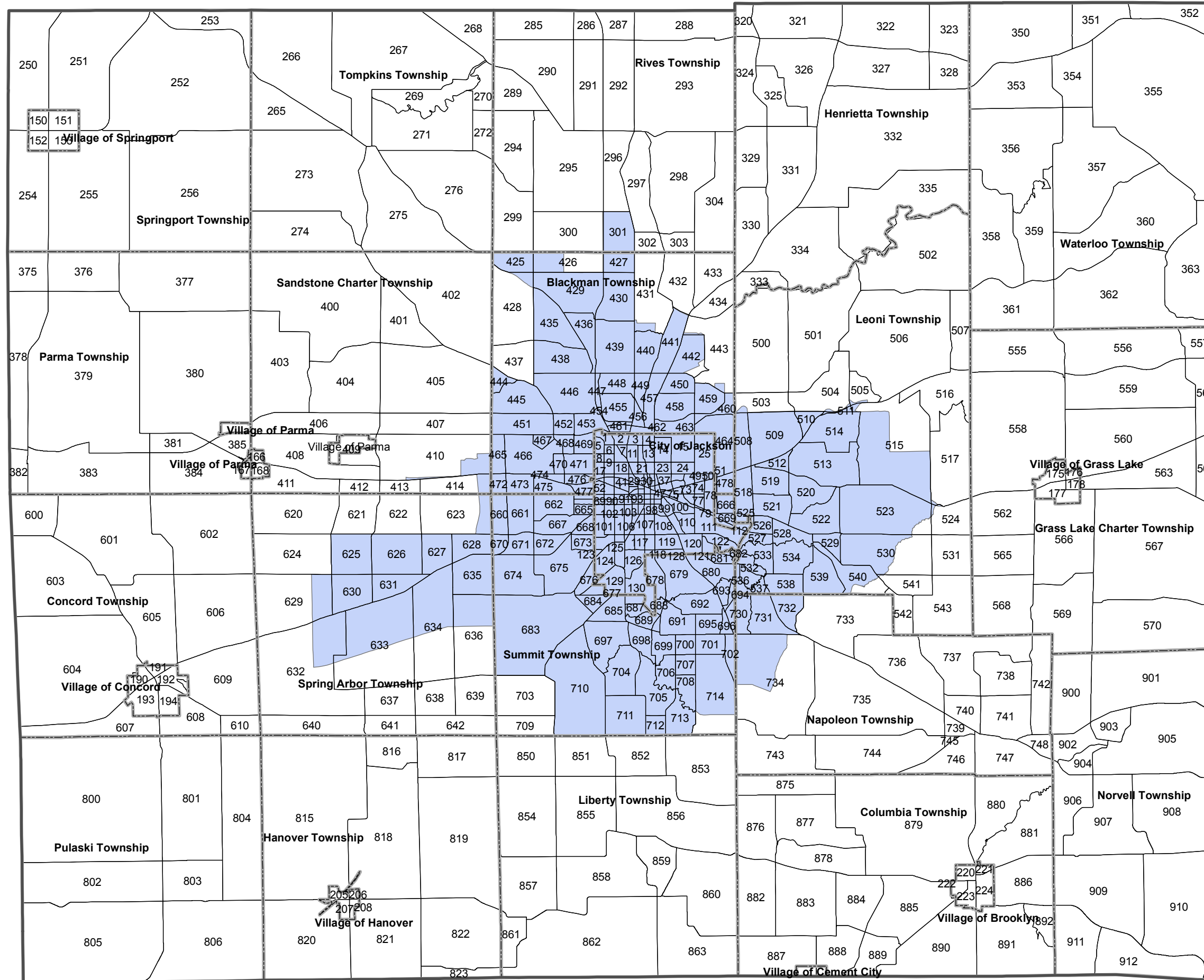
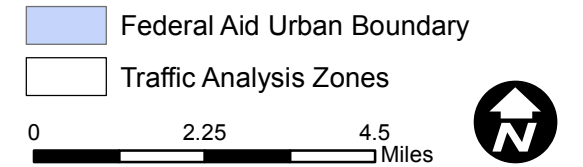
Data on population, number of occupied housing units, and retail/non-retail employment have been projected to the year 2045 and distributed to the 534 Traffic Analysis Zones (TAZs) that comprise the model area. TAZs are groups of the area generally based on the localized road network, and act as a simplification of origin and destination points within the community. TAZs are different in each community, and change in size over time. TAZs are established to obtain a meaningful representation of traffic behavior.

Maps of the TAZ's for Jackson are on the following pages.

Land use is a major influence on travel patterns. Estimating future travel patterns was done by projecting future population, the number of occupied housing units, and retail/non-retail employment totals for each TAZ. Growth assumptions were based on the TAZ's potential for increased development, availability of vacant land, current zoning regulations, and recent developments in the area that would encourage additional growth. Socio-economic information, including future year growth factors by TAZ, was provided to each governmental jurisdiction for comment and review.



The population, occupied housing units, and retail/non-retail employment projections were developed by MDOT and the Region 2 Planning Commission staff up to the year 2045. Information from the 2010 Census and the 2014 American Community Survey (ACS) 5-Year Estimate to develop the Regional Econometric Models, Incorporated, or REMI model. Memorandums, spreadsheets, and area-specific TAZ maps of the socio-economic data by analysis year, were provided to members of the JACTS Technical and Policy committees, local planners, city and county officials, township supervisors, and the Enterprise Group for their input in reviewing local trends. The socio-economic projections were applied to each TAZ, reviewed and approved by the JACTS Technical and Policy committees, and included into the model to develop the future year travel patterns.

Traffic Analysis Zones (TAZs)

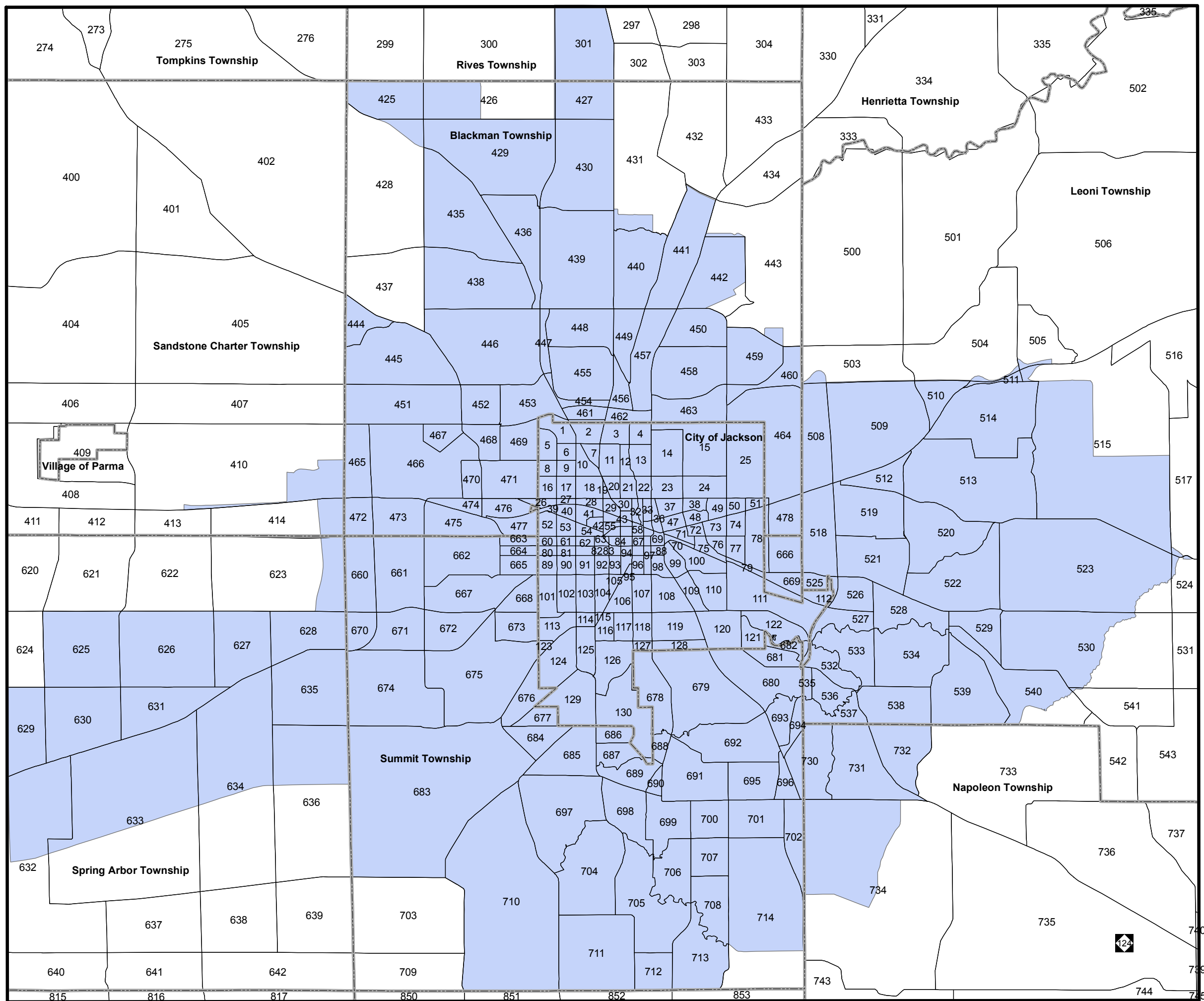


Region 2
Planning Commission
 Serving Hillsdale, Jackson and Lenawee Counties

Traffic Analysis Zones (TAZs)

 Federal Aid Urban Boundary
 Traffic Analysis Zones

0 1 2 Miles



Region 2
Planning Commission
Serving Hillsdale, Jackson and Lenawee Counties

Jackson Area Comprehensive Transportation Study

Population

The population projections for the plan were based on previous trends as depicted by the 2010 Census, 2014 ACS figures, and on the REMI forecast data. The population projections were developed for all jurisdictions within the County and then broken down to the TAZ level.

**Table 7-1 2014 & 2045 Population Estimates
By Local Unit of Government**

Local Government	2014	2045	% Change
Blackman Township	23,646	24,647	4.2%
Columbia Township ^a	7,410	7,877	6.3%
Concord Township ^a	2,568	2,656	3.4%
Grass Lake Township ^a	5,650	6,255	10.7%
Hanover Township ^a	3,796	4,007	5.6%
Henrietta Township	4,705	5,066	7.7%
City of Jackson	33,316	30,509	-8.4%
Leoni Township	13,808	14,225	3.0%
Liberty Township	2,961	3,209	8.4%
Napoleon Township	6,776	7,094	4.7%
Norvell Township	2,963	3,019	1.9%
Parma Township ^b	3,271	3,522	7.7%
Pulaski Township	2,075	2,143	3.3%
Rives Township	4,683	4,803	2.6%
Sandstone Township	3,437	3,664	6.6%
Spring Arbor Township	8,267	8,665	4.8%
Springport Township ^a	2,179	2,134	-2.1%
Summit Township	22,859	24,402	8.2%
Tompkins Township	2,671	2,800	4.8%
Waterloo Township	2,856	2,953	3.4%
Jackson County	159,917	163,650	2.3%

^a Township population includes village residents

^b Parma Village residents included in the Parma Township Total

The 5-year 2014 ACS data for Jackson County indicated a population of 159,917, a small decrease of 0.2% from the 2010 Census population total of 160,248. However, this is an increase from the 2000 Census population of 158,422. The estimates provided by MDOT and REMI for the plan base year of 2014 agreed with the ACS population estimates for 2014. By the year 2045, the County's population is projected to be 163,650, an increase of 2.3%.

Occupied Housing Units

Occupied housing unit projections and population projections are used to identify the TAZs where future increases or decreases in the population may potentially occur. Population increases in an area translate into relative increases in housing units. The ratio is defined as the total number of persons residing in occupied housing units within a TAZ divided by the total number of occupied housing units within the TAZ.

**Table 7-2 2014 & 2045 Occupied Housing Units
By Local Unit of Government**

Local Government	2014	2045	% Change
Blackman Township	7,950	8,788	10.5%
Columbia Township ^a	2,959	3,343	13.0%
Concord Township ^a	957	1,021	6.7%
Grass Lake Township ^a	2,180	2,570	17.9%
Hanover Township ^a	1,423	1,548	8.8%
Henrietta Township	1,801	2,041	13.3%
City of Jackson	12,833	13,020	1.5%
Leoni Township	5,681	6,065	6.8%
Liberty Township	1,159	1,343	15.9%
Napoleon Township	2,715	2,897	6.7%
Norvell Township	1,230	1,313	6.8%
Parma Township ^b	1,203	1,310	8.9%
Pulaski Township	762	805	5.6%
Rives Township	1,666	1,777	6.7%
Sandstone Township	1,259	1,390	10.4%
Spring Arbor Township	2,646	2,891	9.3%
Springport Township ^a	847	887	4.7%
Summit Township	9,069	9,714	7.1%
Tompkins Township	1,074	1,257	17.1%
Waterloo Township	1,130	1,190	5.3%
Jackson County	60,544	65,170	7.6%

^a Township population includes village residents

^b Parma Village residents included in the Parma Township Total

The U.S. average household size has been steadily declining since 1970 when the persons per household was 3.14, falling to 2.76 in 1980, 2.63 persons in 1990, 2.59 in 2000, and 2.54 in 2014. The rate of decline is expected to continue over the next 30 years, but at a slower rate. In Jackson County, the average household size has reflected the national decline falling from 3.23 in 1970 to 2.62 in 1990, and continuing to decline to 2.55 persons per household in 2000, 2.48 persons per household in 2010, and 2.31 in 2014. The average household size in Jackson County is projected to see a slight increase to approximately 2.39 persons per household by the year 2045. Michigan is expected to see an increase in employment over the next 20 years, returning to pre-2008 recession employment levels, which will encourage more people to remain or

move to Michigan. Jackson County is expected to see an increase in population as a result of the positive economic changes, creating a demand for housing.

The 2014 ACS 5-Year data estimates that there were 60,485 occupied housing units within the study area, which is slightly below the 2010 number of 60,771 occupied housing units. By the year 2045, there will be an estimated 65,170 occupied housing units, which is an increase of 7.8%. The projected growth in occupied housing units was allocated to the TAZs by examining local land use plans and discussions with city, village, and township officials regarding current residential development trends. The trends indicate moderate growth in the urban and outlying townships.

Employment

Based on proprietary employer-survey vendor data, and Michigan Employment Security Commission data, 2014 employment for Jackson County was approximately 68,996 people, with a breakdown of 58,622 in non-retail (manufacturing, service, government-related) and 10,374 in retail jobs.

**Table 7-3 2014 & 2045 Employment Estimates
By Local Unit of Government**

Local Government	Retail 2014	Retail 2045	% Change	Non- Retail 2014	Non- Retail 2045	% Change	Total 2014	Total 2045	% Change
Blackman Township	4,401	3,641	-17.3	12,267	12,281	0.1	16,668	15,922	-4.5
Columbia Township ^a	444	481	8.3	1,877	2,005	6.8	2,321	2,486	7.1
Concord Township ^a	52	45	-13.5	693	674	-2.7	745	719	-3.5
Grass Lake Township ^a	137	125	-8.8	1,533	1,554	1.4	1,670	1,679	0.5
Hanover Township ^a	31	26	-16.1	511	528	3.3	542	554	2.2
Henrietta Township	70	61	-12.9	404	403	-0.2	474	464	-2.1
City of Jackson	3,419	3,255	-4.8	24,210	28,332	17.0	27,629	31,587	14.3
Leoni Township	685	752	9.8	3,743	4,320	15.4	4,428	5,072	14.5
Liberty Township	43	44	2.3	231	279	20.8	274	323	17.9
Napoleon Township	71	67	-5.6	1,362	1,493	9.6	1,433	1,560	8.9
Norvell Township	5	4	-20	134	134	0	139	138	-0.7
Parma Township ^b	30	30	0	417	434	4.1	447	464	3.8
Pulaski Township	5	5	0	78	69	-11.6	83	74	-10.8
Rives Township	24	23	-4.2	343	364	6.1	367	387	5.5
Sandstone Township	14	14	0	1,606	1,600	-0.4	1,620	1,614	-0.4
Spring Arbor Township	143	125	-12.6	1,743	1,866	7.1	1,886	1,991	5.6
Springport Township ^a	22	18	-18.2	316	289	-8.5	338	307	-9.2
Summit Township	703	642	-8.7	6,764	7,344	8.6	7,467	7,986	7.0
Tompkins Township	14	12	-14.3	76	72	-5.3	90	84	-6.7
Waterloo Township	61	56	-8.2	314	334	6.4	375	390	4.0
Jackson County	10,374	9,426	-9.1	58,622	64,375	9.8	68,996	73,801	7.0

^a Township population includes village residents

^b Parma Village residents included in the Parma Township

In the year 2045, the total labor force for the study area is projected to increase by 7.0% to a total of 73,801 workers with 64,375 workers in non-retail and 9,426 in retail jobs. Retail jobs are expected to decrease over the next 30 years by 9.1%, or 948 jobs. Other non-retail employment sectors are expected to see an increase of 9.8%, or 5,753 additional jobs. The study area employment by type was applied to the 534 TAZs based on assumptions of growth, stabilization, and decline of employment for certain time periods and based on current trends for each employment sector.

Socio-economic forecasting is the mixing of objective and subjective data. Judgment is required in selecting the type of forecast to be implemented, determining the procedures for making the forecast, and developing a process for reviewing population and employment factors. The influx or loss of a new employer or industry can have a considerable impact on an area's development.

Although socio-economic projections can be a helpful tool in planning for future growth and development, projections can be modified as time progresses to reflect actual development impacts. The projections used in the development of the Jackson 2045 LRTP will be re-evaluated periodically to address changes in the population.

**Table 7-4 Jackson County Totals
2014 & 2045**

Year	Population		Occupied	Employment		Total
	Total	In Households	Housing Units	Retail	Non-Retail	
2014	159,917	152,193	60,544	10,374	58,622	68,996
2045	163,650	155,703	65,170	9,426	64,375	73,801

Chapter 8

Travel Demand Forecasting & Modeling

The Travel Demand Forecasting and Modeling process for the Jackson MPO was developed in cooperation between the Region 2 Planning Commission (R2PC) and the Urban Travel Analysis unit within the MDOT. MDOT was the lead role in the development, calibration, validation, and application of the Travel Demand Forecast Model (TDFM or “model”). The Jackson MPO acted as the liaison among members of the public, local agencies, and the JACTS Technical Committee, the JACTS Policy Committee, and the Region 2 Planning Commission. R2PC and MDOT collaborated on the development schedule of the model, as well as dissemination and distribution of model input and output data for review, comment, and subsequent approval.

Travel Demand Forecasting Models are used to identify and evaluate the capacity demands of a region’s Federal-aid roadway system. Identification of roadway capacity deficiencies and analysis of the system as whole, both for the current year through and up to the Horizon Year of the plan, is vital in the development of the plan. A thorough review of the capacity demands of the roadway system is conducted at the regional level and then evaluated with the goals associated with the plan, along with anticipated financial outlooks. The assessments, priorities, and overall strategies included in the plan are used to guide decision-makers in developing the Transportation Improvement Plan (TIP), which is used to program current and upcoming transportation projects, as well as to identify investments of these projects on the Federal-aid roadway system within the MPO.

As economic conditions, transportation system trends, financial outlooks, and land use environments change, it is important that the plan be updated to reflect and account for these changes. The plan, following federal laws and regulations, is reevaluated and/or updated every five years to reassess the travel demands on the federal-aid transportation system. Along with the plan update, the TDFM is also redeveloped or updated to include the changes associated with the new plan. Socio-economic trends and forecasts are also reexamined, which alters travel behavior and demand on the Federal-aid roadway system, and may potentially change overall strategies of the Jackson MPO.

The TDFM is a valuable tool used to identify and analyze the capacity demand of the Jackson MPO transportation system. Model results are useful in aiding the decision-making process. The modeling process and resultant outputs are provided at a regional level and are not necessarily applicable to small areas. The identification and analysis of corridor capacity deficiencies and associated travel projections are intended to serve as the basis for forming decisions regarding system improvement, expansion, or for other roadway capacity changes.

Travel Demand Modeling and Forecasting Process Description

The Jackson MPO TDFM is currently developed and maintained on a computer platform using the TransCAD Transportation Planning Software Package, as provided by Caliper. The TDFM is a computerized tool used to replicate current roadway conditions and travel demand, as well as to evaluate potential future roadway conditions and travel demand on the road system. The TDFM is a regional-level transportation planning model, focusing on long term transportation planning concerns and regional travel characteristics. Model results provide road link traffic volumes (known in the modeling tool as “traffic flow”) for a generalized 24-hour time period. The traffic flows are then compared to the 24-hour capacity allowance of the road link which is used to calculate the level of relative congestion on the road link.

The typical process used for developing the TDFM involves several inter-related steps. Steps #2 through #5 are the traditional “Four-Step” Trip-end based model structure. The output from each step is used as the input in the following step.

1. Data Development, Collection, and Organization
Regional socio-economic data (SE-data) and the transportation system characteristics are collected. This step also includes the development of the model road network and the Travel Analysis Zone (TAZ or “zone”) structure.
2. Trip Generation
Produces trip origin and destination estimates by trip purpose using land-use, household demographics, employment, and other SE-data characteristics
 - *External Station Estimation:*
Trips that originate outside of the model and travel into the model, trips that originate inside the model area and travel outside of the model, or trips that originate and travel through the model area are estimated
3. Trip Distribution
Trip origin and destination locations are matched based on a “gravity” sub-model function
4. Mode Choice
Trips distributed across the model network are broken into modes of travel.
 - *Auto Occupancy:*
Daily “person” trips are converted to vehicular trips
 - *Time-of-Day Factoring:*
Daily vehicle trips are further divided into daily time periods (AM, Mid-day, PM, and Night-time periods)
5. Traffic Assignment
Trips are assigned a route/path, by a particular mode, and by Time-of-Day to the transportation system
6. Model Validation and Calibration
The process by which the model is adjusted (calibrated) to provide simulated results reflective of the current, local observed conditions of the transportation system, within a set of established validation criteria. This occurs throughout each step of the model development process.

7. Model Application / System Analysis

A fully calibrated and validated model is used in the development of the MTP, Air Quality conformity analysis, project identification and prioritization, and / or impact analysis

Model Data Development

There are two main modeling components that are required to be constructed prior to model development:

1. Model Road Network

The model road network, which includes various roadway attributes, mostly consists of the Federal-aid road system. “Local” roads are included in the model network to maintain continuity, for connectivity purposes, or if they are regionally significant. If transit is modeled, which it is not for this model, road links that the transit system uses should also be included.

2. Travel Analysis Zone Development

Travel Analysis Zones (TAZ or “zone”) are geographic divisions of the modeled region. They are developed by grouping areas with similar characteristics, including land-use or human activity. For example, commercial areas are separated to the best extent possible from residential areas. Socio-economic data is aggregated and applied to the various TAZs throughout the model area.

The model road network and the TAZs are mutual. The TAZs are represented on the model road network as a centroid, or a “point” on the model road network. The TAZ centroid, referred to as centroid, is located at the centermost point of activity within the TAZ area. All trips that use the model road network will start or end at a TAZ centroid.

Trips “produced” from or “attracted” to each centroid are connected to the main road system via special model road links called “centroid connectors.” Traffic trips are either loaded to the main road network system from the centroid, or are directed from the main road network system to the centroid, via the centroid connectors. Stated another way, these “hypothetical” connections carry the trips produced from and/or attracted to the respective TAZ, represented as a centroid. Special development criteria are used to ensure centroid connectors meet the main road network system at realistic locations. Some of the criteria for connecting to the main road system include connections at driveway cuts, local intersections, or other logical locations.

Base Year Socio-Economic Data Collection and Organization

Socio-economic data (SE-data) is comprised of demographic and employment information. The SE-data is used to represent activity within the model and is the generator of trips that are modeled across the road network. The SE-datasets were collected and processed for the model base year of 2014, and then forecasted out to the MTP horizon year of 2045. The two datasets that make up the SE-data for this model include the following:

1. Demographic Data:

The 2010 Decennial Census provided the most detailed level of demographic information. The population and housing characteristics, obtained from the 2010 Decennial Census, were available at the Census Block level, which are generally smaller than TAZs. However, in order to reflect demographic conditions for the MTP base year, the 2014 American Community Survey (ACS) 5-year datasets were used. Growth factors between the 2014 ACS and 2010 Decennial Census data were applied to the respective level of equivalent geography available for each demographic characteristic.

2. Employment Data:

As with demographic data, employment for the Jackson MPO was developed to reflect employment as of 2014. The raw form of employment data was derived from a list of businesses residing within the Jackson MPO in 2014. This “master list” of data is purchased by MDOT from two database sources: Claritas (a Nielson Company) and Hoovers (a Dunn-Bradstreet Company). The employment data is geocoded using Geographic Information System (GIS) tools, which can be used in the TDFM. Once geocoded, each business location is combined to the respective TAZ, and divided into various employment sectors.

After the initial collection of SE-data is completed, a thorough review by various stakeholders is conducted. The agencies include the local Economic Development Corporation (EDC), local agencies (Cities, Villages, and Townships), and MPO staff. Once reviewed, changes are incorporated into the employer dataset, and then formally provided to the various MPO committees for additional comments, and then approval. The various Jackson MPO committees approved the use of this data for inclusion into the TDFM in the Fall of 2016.

Socio-Economic Data Collection and Organization for Future Years

After the base year SE-data is formally approved by the MPO committees, the demographic and employment datasets are forecasted in 10 year increments up to the plan horizon year of 2045. Using a series of intricate economic and demographic variables as well as incorporating projected changes in alignment with overall trends, a forecast is developed by the Regional Economic Models, Incorporated (REMI) TranSight Model. The initial REMI results, which are provided at the County level, are provided to the Regional Planning Agencies and MPOs for review and approval. During the model development process, these approved growth factors are further stratified so that more detailed and geographic-specific growth factors can be applied to the model TAZs.

As with the plan base year data, the demographic and employment datasets are provided to all stakeholders, including the local EDC and local agencies (city, villages, and townships), for review and comment. Once the information is returned and the SE-data is updated, the information is provided to the various MPO committees for further review, and subsequent approval. The various Jackson MPO committees approved the use of this forecasted data for inclusion into the TDFM in the late Spring of 2017.

Transportation System Attribution Collection and Organization:

As stated earlier in this chapter, the model road network consists primarily of the Federal-aid road system within the Jackson MPO. The roadway geographic layer used for the model was obtained from Version 15 of the Michigan Geographic Framework (MGF). The MGF contains much of the needed roadway attributes to differentiate between various roadway classes along with attributes needed in identifying paths of trip travel.

In addition to the roadway attributes available in the MGF, R2PC and MDOT staff reviewed the existing conditions via field verifications and aerial imagery. Initial road attribution was provided to JCDOT, City of Jackson Engineering Division, and to staff at MDOT – University Region for review and comment. These three road agencies comprise all of the road maintenance agencies within the Jackson MPO.

The following roadway information was provided to these agencies for review:

Facility Attributes

☐

☐ Federal-Aid status

☐ Facility Type classification

☐ Area Type

Other Attributes

☐

☐ Road Name

☐ Number of Thru-lanes, by road direction

☐ Posted Speed Limit (PSL)

☐ Lane Width: standard or sub-standard

☐ On-street parking availability: none, one side, or both sides

☐ Prohibited turns

☐ Center-Left Turn Lanes (CLTL)

In addition to the aforementioned attributes, modeling staff applied link capacities, Free-Flow Speeds, and validation data (traffic counts), as well as other attribution needed for model operation. Roadway configuration and attribute adjustments are incorporated when operating the model for future year applications.

Travel Analysis Zone Development

Travel Analysis Zones (TAZ or “zone”) are geographic divisions of the model area and provide the structure for housing the SE-data approved by the MPO. As mentioned earlier in this chapter, the TAZ is represented on the model road network as a centroid based on the relative center of activity within each individual TAZ.

A number of guiding principles are used for developing the TAZ structure within the model area. Some of the most critical guidelines for the TAZ structure are as follows:

- TAZ Structure should be compatible with the model road network
- TAZ Structure should be compatible with Census geography (Census Blocks, Tracts, etc.)
- TAZ Structure should be compatible and adhere to political boundaries (city, village, township, county, etc.)
- TAZ Structure should be compatible with the TAZ structure in the Michigan Statewide Passenger Model and the Statewide Freight Model
- TAZ Structure should adhere to natural and man-made boundaries, such as rivers, lakes, parks, railroads, changes in land-use, etc.
- TAZ Structure should accommodate the local transit service routes, to the best extent possible

The 2014 TAZ structure for this model used the TAZ structure from the most recent TDFM, which was used in the 2040 MTP. From there, adjustments to the structure were made based on previous recommendations, changes in socio-economic conditions, and to account for changes in traffic loading to the model road network. There are a total of 581 TAZs, 47 of which are used as External Stations.

These TAZs contain a number of different attributes used to account for differences in land-use, socio-economic, and transportation related variances. Some of the information contained in the TAZs include the following:

- Area Type indicators
 - Developed from land-use and socio-economic density calculations as well as local agency and MPO staff recommendations
- Demographic totals
 - Population, Group Quarters, all housing availability, Occupied Housing Units, school-age population proportions (Kindergarten through 12th Grade / K-12), etc.
- Employment totals
 - Broken out into various employment sectors, such as Retail, Industry, Service, etc.
- Transit Accessibility indicator
 - Relative accessibility to transit services and frequency of service
- Future Year Growth Factors
 - Applied to the various demographic and employment attributes

TAZs are an important component for the initial stages of the TDFM development. Later modeling steps will require the use of the information housed within the TAZs to apply and run the respective step. The TAZs will also hold several output information as produced in later modeling steps.

Trip Generation

Trip Generation is the first step of the four-step TDFM process. In this step, person trip productions and attractions are calculated for each TAZ, for various trip purposes, based on the relative SE-data available for the TAZ. The concept of this stage of model development is to use demographic data to “produce” trips from each TAZ, if applicable, and to use employment data within each TAZ to develop the “attraction” from generated trips. The TDFM uses the concept of productions and attractions to replicate person traveling behavior in the model area.

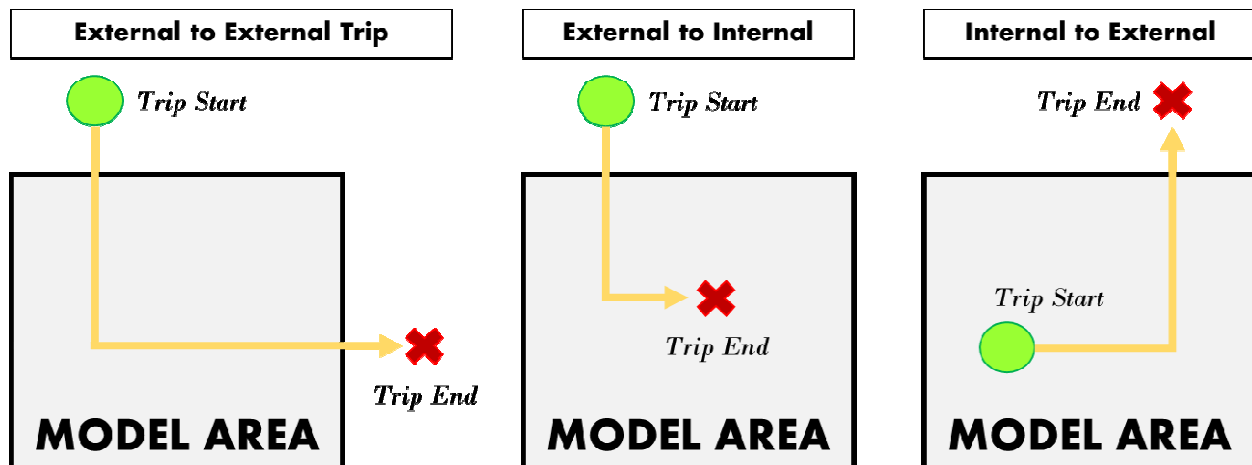
Factors are applied to each TAZ to account for movements where trips are strictly within the area of one TAZ. The factors are often called “intra-zonal” travel factors. Non-Motorized (NM) mode factors are also included in the calculation of trips produced. NM trips were relatively minor for this model area as it related to the total amount of trips being generated in the model area. NM trips were not distributed, nor assigned to the road network, but simply taken out of the total vehicular trips being produced.

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

The methods used above apply to person trips that are generated for TAZs that are within the model area. Trips that originate and/or terminate outside of the model area need to be developed and applied to the model. This is accomplished through the external travel development process, which is sometimes referred to as its own step in the modeling process. There are three external trip types that are accounted for within this model:

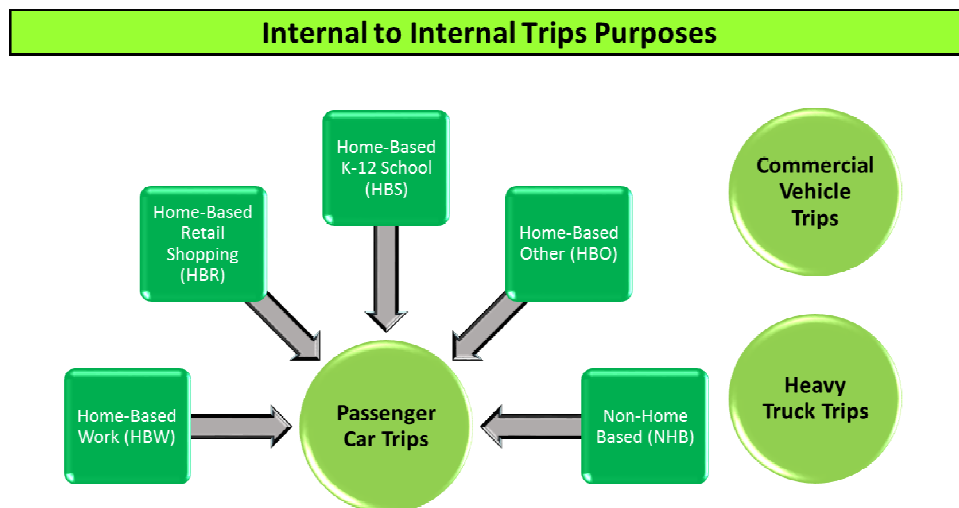
1. External to Internal (EI):
 - Trips that originate outside of the model area and end at a TAZ within the model
2. Internal to External (IE):
 - Trips that originate from a TAZ within the model area and end somewhere outside of the model
3. External to External (EE):
 - Trips that originate from one external station and end at another external station. Represents “thru” trips

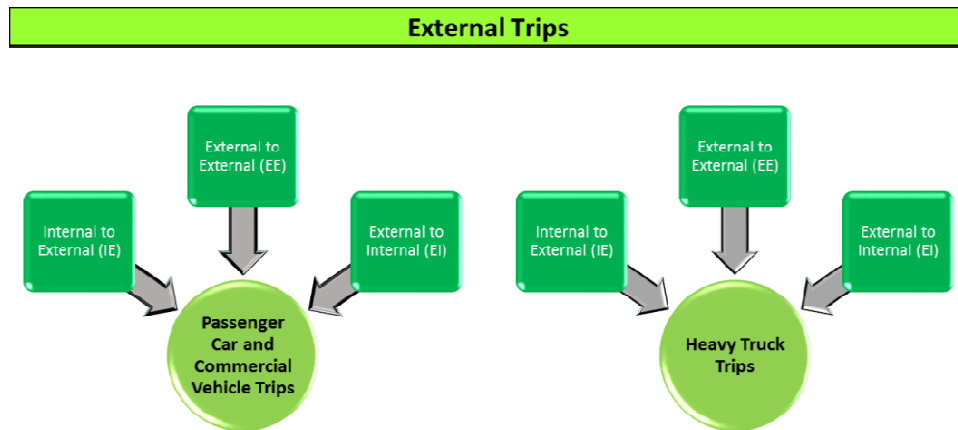
These external trips are also illustrated in the three graphics below:



External travel and the type of external travel is originally provided from a larger model, in this case, the Michigan Statewide model. The information from the statewide model provides the amount of trips in total, and the percentage of those trips that are EE trips. The information is then further processed to develop an estimate of the number of EI and IE trips. The external trip information and calculations are already in vehicular format, and do not need to go through an auto-occupancy assignment routine.

Trip generation and external travel estimation is made up of various trip types, based on the primary purpose of the trip being made. Each trip type has unique production and attraction rates, which are based on SE-data and survey information. Trip purposes for this model, and the vehicle modes they represent, are provided in the following charts:





Trip purposes are classified for internal to internal passenger car trips only, while internal to internal commercial vehicle and heavy truck trips do not have trip purpose categories associated with them. They may be called “mode trips” or “trips by mode” for clarity purposes. For external travel, trip purpose is not assigned based on the trip type, but assigned based on the overall movement of trip (IE, EI, or EE). This is applied to passenger cars and commercial vehicles, as well as heavy truck trip modes.

The trip generation and external travel estimation components, applications, factors, and parameters, were developed based on the most recent survey data available – the *2004-2005 Comprehensive Household Travel Data Collection Program / MI Travel Counts I* program and the *Urban Model Improvement Program (UMIP)*, both were conducted by MDOT.

The outputs of this step are a balanced trip table, which is used as an input into the next step of the traditional four-step TDFM, Trip Distribution.

Trip Distribution

The second step of the four-step TDFM process is called Trip Distribution. In this step, the balanced trip table from the Trip Generation stage (balanced productions and attractions, by trip purpose) along with the model road network, are used to match trip productions and trip attractions from TAZ to TAZ, which in turn, creates “trips” along the model road network. Various methods are used in this step to best replicate the potential travel along the model road network and to show a reasonable interaction between one TAZ to another TAZ.

The following methods used in Trip Distribution for this TDFM are listed in the table below:

Impedance Factors

- Also known as "travel time"
- Establishes an amount of travel time between each TAZ pair by traversing and analyzing all available routes (also known as "paths")
- The outcome of this is to establish a "shortest path" between TAZ pairs

Gravity Model

- Common method for travel modeling applications - "a model within a model"
- Uses "relative attractiveness" and impedance, both of which are conflicting influences, to calculate and estimate the amount trip interaction between any TAZ pairings
 - "Relative attractiveness" may include the geographic proximity of the matched TAZs, the number of employees in the TAZ of attraction, and travel time

Friction Factors

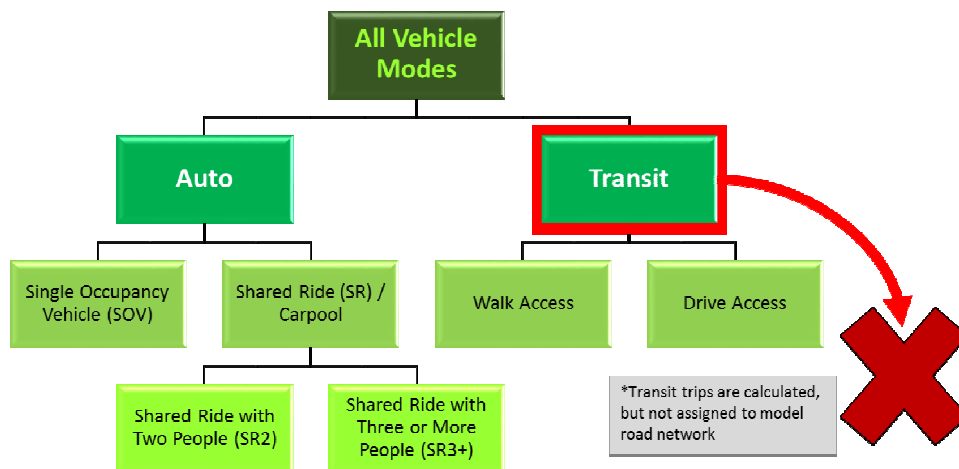
- Represents "perceived" time
- Used to help balance conflicting influences of attractiveness and impedance
- Result is to replicate "observed" travel time distributions

The gravity model is calibrated using successive friction factor adjustments to produce model travel time trip lengths that are consistent with "observed" travel time. Each trip purpose will have a unique travel time trip length and thus, each trip purpose and trip mode must be manually calibrated to ensure consistency with observed travel time data.

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

Mode Choice

Mode Choice is the third step of the four-step TDFM process. At this stage in model development, all trip data, with the exception of external travel data, are in "person-trip" format. The trips must be allocated to distinct vehicular modes, which are auto and transit trips. The chart below provides a brief overview of the types of vehicle modes that are used to allocate the person-trips for this model:



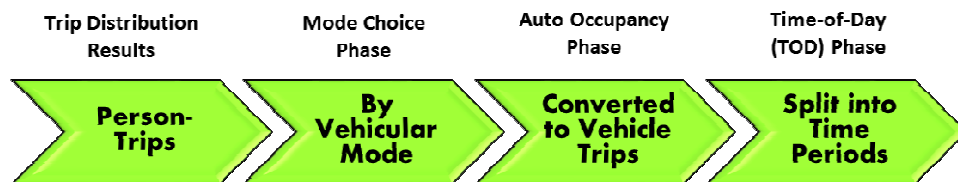
The above chart represents a “Nested Logit Structure,” which is a common method in TDFM applications for combining trip results into various vehicular modes. Selecting the appropriate vehicle mode relies on two key factors:

1. Trip purpose (HBW, HBR, NHB, etc.)
2. Access to transit (via a TAZ-level transit service categorization)

Transit trips, albeit a vehicle mode, are not assigned to the TDFM road network due to the complex nature of the trip interactions and socio-economic conditions related with transit ridership. The TDFM used for MTP purposes is to analyze regional transportation patterns, and not necessarily micro-level or individual trip characteristics.

As such, mode choice for this model used a “simplified” approach where transit trips are initially calculated prior to auto trips, and then subtracted from the total vehicular trips. The resulting trip total is then broken into various auto shares: Single Occupancy Vehicles (SOV), Shared Rides with two people (SR2), and Shared Rides with three or more people (SR3+). Shared Rides may alternatively be referred to as “carpooling” or “High Occupancy Vehicles (HOV).” The final results of the mode choice component is a series of person-trip tables by vehicular mode and trip purpose for each TAZ Origin-Destination pair.

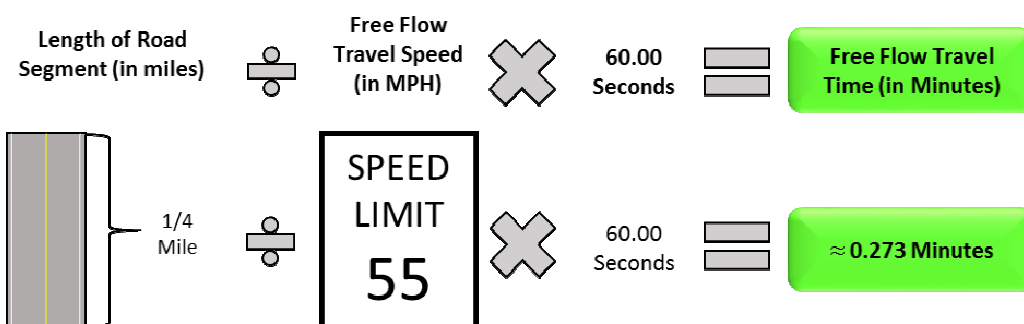
Auto Occupancy and Time-of-Day (TOD), which can be classified as subsets of the Mode Choice step, converts the person trips that are calculated from the mode choice stage into vehicle trips and separates these vehicle mode trips into various TOD periods. The conversion into vehicle trips and TOD are based on auto-occupancy and TOD modeling factors respectively. The finalized product from the Mode Choice step is a number of tables representing vehicle mode trip categories by time periods. The illustration below shows a simplified view of this process:



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

Traffic Assignment

Traffic (or “Trip”) Assignment is the final step in the traditional four-step TDFM process. In this step, trips (i.e. vehicle-based trips, by vehicle mode, and by TOD period) are assigned to a “route” on the model road network between each TAZ origin and TAZ destination. Traffic assignment uses the underlying principle of a TDFM that trip makers will use the “best” route, based on travel time. Travel time is calculated as a function of the link distance and speed, and is one of the determining factors when assigning trips to the model road network. It is developed using the following equation:



The road link volume and capacity of the road link are included during the assignment process. For example: a roadway that is reaching, or has reached its maximum capacity will result in reduced travel time. As such, the assignment routine will include these time reductions when choosing the “best” path. If the delay is significant, an alternative road may be used to accommodate that traffic.

Though traffic assignment, at first glance, may appear as the most straight-forward step of the four steps, it is made up of various procedures that are inherent of a TDFM and requires careful consideration of the methods chosen to assign the trips to the model road network. Different methods and supporting functions will produce very different assignment results.

The traffic assignment method used for this model was the “User Equilibrium (UE)” algorithm, which is commonly used in TDFMs. When selecting the “best” route, UE assumes that trip makers will consider all available travel paths between an origin and destination that have equal travel time. As a result, altering paths will not save travel

time. The algorithm attempts to optimize the travel time between all possible paths, reflecting the effects of system congestion. TDFMs used for MTP purposes do not include human-related factors when assigning trips, such as road geometrics (hills, tight curves, etc.), road condition, and other considerations.


The final product of Traffic Assignment is a series of vehicle-trip (modeled traffic volume or “traffic flow”) tables, by vehicular mode, and separated into TOD, for each model road link within the model road network. The “assigned” link traffic volumes are then compared with “observed” traffic data (i.e. traffic counts) as part of the model calibration, validation, and reasonability review.

Model Base Year Validation and Calibration

To ensure that the TDFM reflects observed base year conditions, a number of quality checks were implemented. The most important, and ultimate goal, for the TDFM is to have base year assigned volumes within a reasonable level of traffic counts used for the model base year. Traffic counts on the federal-aid road system from all respective maintaining road agencies within the MPO is crucial. Without this information, the effectiveness of the model is limited. The local road agencies within the Jackson MPO provided traffic count data to MDOT for use in this TDFM.

Model “calibration” is a term that means various modeling parameters and input or output data are adjusted to replicate observed data as closely as possible, or within pre-defined thresholds. In some cases, such as future year analysis, calibration is used to provide reasonable and realistic results, which is not always straightforward if there are large changes to the road network and/or SE-data throughout the model area. Model “validation” is simply the comparison of the calibrated model to the observed data. Several calibration adjustments may be performed to meet pre-defined validation targets.

If issues are discovered during model application and validation, then it is necessary to return to a previous step in the modeling process to calibrate the input and/or output data. Model calibration and validation are applied for each step of the TDFM development process and for the entire model system, preferably using observed data not used for model estimation. In the chart below, a brief list of common calibration tasks are provided, which are used to meet pre-defined validation targets:

TDFM Step:		Common Calibration Tasks:	Example Validation Tests:
	1	Data Collection, Organization, & Development <ul style="list-style-type: none"> -SE-data is reflective of originating sources, local agency comments, and approved by MPO committees, via manual adjustments to raw data -Aligning road network with TAZ structure -Constructing TAZ layer to best reflect transit "accessibility" -Identifying and building special generators within model area 	<ul style="list-style-type: none"> -Average household size $\pm 5.0\%$ of Census / ACS calculations -Combined TAZ population totals are consistent with parent Census Tract totals -Model-wide employment totals are consistent with BEA and BLS estimates -Average TAZ size (in square miles), population / employment densities, etc. match UMIP targets, or within reasonable ranges, by varying land-use categories
	2	Trip Generation & External Travel <ul style="list-style-type: none"> -Adjusting detailed demographic data to most appropriately reflect overall TAZ characteristics -Non-Motorized factors are appropriately assigned to each trip purpose -Adjusting External to External travel patterns to reflect realistic travel paths 	<ul style="list-style-type: none"> -Trip productions and attractions are balanced for each trip purpose, model-wide -Trip rates meet UMIP, NCHRP, or other reference sources & standards -EE + EI + IE trips at a sampled external station equal total trip movements as provided by statewide model and traffic counts (if available)
	3	Trip Distribution <ul style="list-style-type: none"> -Re-drawing or re-connecting network links to create continuous connectivity -Modification of terminal times -Adjustment of Gravity Model parameters to reflect average observed trip lengths, for each trip purpose, based on MPO size (in square miles and SE-data characteristics) 	<ul style="list-style-type: none"> -Using TransCAD testing applications; verify shortest path between TAZ pairs - random sampling -Average trip lengths, for each trip purpose and mode, are consistent with MTC I survey data -Intra-zonal trips meet UMIP standards for home and non-home based trips
	4	Mode Choice, Auto Occupancy, & TOD <ul style="list-style-type: none"> -Simplified Mode Choice is unique to each individual MPO area and thus, inputs may need to be adjusted to balance meeting realistic targets, stakeholder comments, and survey data (if available) -Most calibration for Mode Choice is done by updating data in earlier steps 	<ul style="list-style-type: none"> -Proportion of Auto modes by trip purposes are similar with surveyed data & UMIP -Total calculated transit trips are consistent with transit survey data and / or National Transit Database ridership information -TOD auto mode trip purpose percentages are consistent with UMIP or surveyed data
		Traffic Assignment <ul style="list-style-type: none"> -Modification of various network-level capacity values to reflect realistic conditions -Free-flow travel speed adjustments by Facility and Area Types, as well as by various Volume Groups -Adjustment of α & β coefficients to reflect observed traffic diversion thresholds -Relocating or removing Centroid Connectors to / from main model network 	<ul style="list-style-type: none"> -Modeled Vehicle Miles Traveled (VMT) is within various, predefined thresholds of observed VMT by Facility Type, Area Type, & Volume Group -Modeled volumes are equivalent to available traffic counts, and are within recommended targets for Facility Type, Area Type, & Volume Group categories -Results are realistic (volumes increase at high-volume intersections, etc.)

Application of the Validated TDFM

Once a model is fully calibrated and validated for the base year, it can be used to forecast traffic patterns for future years. Approved SE-data and road network changes, via the TIP and local support, can be used as substitutions into the various modeling components to produce future year results. The assumption is that model formulas and relations developed for the base year model structure remain constant over time, as to provide an unbiased forecast.

Generally, there are three distinct "testing" scenarios that are developed for the LRTP, and include the following:

Base Year / Horizon Year, No Build

- Referred to as the "validated" model
- Base year uses 2014 ("existing") SE-data to generate traffic volumes on 2014 road network
- Horizon year uses 2045 ("projected") SE-data to generate traffic volumes on 2014 road network
- Used to identify current or anticipated roadway congestion and / or capacity deficiencies
- Both are required first before running the remaining two scenarios

Base Year / Horizon Year, Existing Plus Committed (E+C)

- May also be referred to as "Base Year Plus TIP Network"
- Base Year uses 2014 SE-data to generate traffic volumes on 2014 road network with committed road projects included
- Horizon year uses 2045 SE-data to generate traffic volumes on 2014 road network with committed road projects included
- Used to identify if TIP projects initially alleviate or resolve roadway congestion and / or capacity deficiencies, if any are identified in the No Build scenario
- If determined that additional capacity projects are needed, move to next model scenario

Horizon Year, Improve and Expand (IE) Build Scenarios

- Evaluate horizon year 2045 only
- Projects are tested and selected for alleviating base year 2014, and / or horizon year 2045 congestion and road capacity deficiencies (Improve and Expand projects)
- Horizon year uses 2045 SE-data to generate traffic volumes on 2014 road network with committed road projects, and additional "test" projects not listed in TIP ("2045 Network")
- Successive testing is done until "final" build scenario and projects are selected by MPO
- Can also be used to evaluate traffic responses as a result of roadway capacity reduction projects (e.g. "road diets")

In addition to various road network changes to test, a MPO may elect to use future land-use modeling software tools to include in the TDFM for evaluating the potential traffic impacts as it relates to socio-economic and land-use changes. The Jackson MPO did not pursue this type of testing.

Once the base year and horizon year traffic outlooks have been evaluated, the MPO reviews the traffic impacts of various road projects included in the TIP, for both the base and horizon years. The MPO may then begin testing additional projects that are not yet included in the TIP. If determined that additional projects should be tested, then successive rounds of testing and review are pursued until the results are in line with the goals of the MPO. The Jackson MPO elected to not pursue any further testing beyond the Base Year/Horizon Year E+C scenario as a result of no current or expected roadway capacity deficiencies and limited congested areas, over a 24-hour period. The model results are discussed in more detail in the *Roadway Transportation System Deficiencies and Recommended Projects* chapter of the plan.

The model can be used for additional transportation system analysis outside of the planning process, which include, but not limited, to the following:

- Impact analysis for planned roadway improvements, expansions, or other capacity-altering alternatives
- Individual links can be analyzed to determine which TAZs are contributing to traffic flow on the particular link. Can be shown as a percentage breakdown or by raw volumes
 - Can be referred to as the “service area” of the selected link
- New accessibility, such as a proposed bridge, can be tested to identify traffic flows to and from the new roadway and for adjacent roadway links
 - Limiting factors, such as closure of a bridge, or tolling, can also be tested
- Land-use and economic changes, such as a new retail establishment or expansion of an existing manufacturing plant, can be applied to the model. Base year and horizon year traffic flows can be evaluated as a result of these potential changes
- Road closure, road restriction, and / or detour evaluation studies can be conducted to determine the effects of closing a roadway, and / or restricting capacity, and detouring traffic during construction activities
 - Useful for construction management
 - Also referred to as “Workzone testing”

Chapter 9





Roadway Congestion, Deficiencies, & Recommended Projects

The Travel Demand Forecast Model (TDFM or “model”), as described in chapter 8 was used to identify roadway capacity constraints and deficiencies within the Jackson MPO. The results were provided for three scenarios:

1. Base year 2014 (“current” year)
2. Base year 2014 with committed projects (as listed in 2017 – 2020 TIP)
3. Horizon year 2045 with committed projects (as listed in 2017 – 2020 TIP)
 - Also referred to as a “No Future Build” or “No Build” scenario

Traditionally, there are additional “build option” scenarios to address capacity limitations on the road network. R2PC opted to not use these scenarios for the Jackson 2045 Long-Range Transportation Plan.

The results of the TDFM use a scale based on the current or anticipated volume of the roadway, over a 24-hour period, and the allotted capacity of the roadway. The results provided are called “Volume to Capacity ratios (VOC).” Once calculated, the VOCs are assigned to a “Level of Service (LOS)” categorical system, using a letter grade (A-F). A description and visual representation of the LOS grades used for the Jackson MPO are provided below:

Volume to Capacity Ratio (VOC)	Level of Service (LOS)	Congestion Description	Example
0.00 to 0.60	A and B	Traffic at free & stable flow; high speeds; few interactions	
0.60 - 0.70	C	Moderately high traffic volumes and interactions; stable flow	
0.70 - 0.80	D	High density of traffic & less maneuverability; speed declines; stable flow	
0.80 and above	E and F	Traffic near or at capacity; slowdowns occur; alternate routes used; unstable flow	

Factors that may affect the LOS include the following:

- Free-flow speed
- Freedom to maneuver
- Traffic interruptions (traffic signals, stop signs, merging, etc.)
- Commercial traffic volume
- Safety

The information was developed using a computer travel demand modeling and forecasting software, based on socio-economic data, for each scenario. For the 2045 Long-Range Transportation Plan, the acceptable capacity of each link in the model roadway network is defined as the capacity at LOS D.

In addition to identifying the roadway capacity constraints, the Jackson MPO and members of the public were provided opportunities to review the model results and address the issues through testing, evaluation, and final selection of projects to include in the plan. Other projects that have the potential to modify the existing roadway capacity were solicited for input and testing. This allows the Jackson MPO to identify potential impacts associated with capacity changes on the existing road system. Due to the limited amount of congested corridors over a daily period in the area, no capacity projects were tested or selected outside of those already listed in the most current Transportation Improvement Plan (TIP).

MDOT and R2PC staff provided additional roadways with moderate VOC (0.60 to 0.70) to the various committees and for public comment, since there were limited roadways within the Jackson MPO area that exhibited high capacity restrictions on a daily level. By showing roadways with moderate VOC levels, the public was able to identify potential traffic congestion problem areas that may need attention in future construction programs. The locations may also illustrate operational type issues on a roadway segment, especially during peak travel periods, such as short on/off ramps, intersection queuing, etc.

Base Year 2014 Results

The Base Year 2014 scenario analysis looked at existing conditions of the area-wide transportation system as it was in 2014. The 2014 year was chosen because of the demographic and employment data source availability, along with maintaining consistency with available local agency land use or master plans. Recent roadway projects and socio-economic data changes are not included in this scenario.

Capacity constraints for the plan were analyzed for roadways that exhibited traffic volumes approaching or exceeding the acceptable roadway capacities. The ten highest congested roadways, based on VOC for the Base Year 2014 are listed below:

1. SB M-106 (Cooper St) between W Monroe St & E North St
2. NB M-106 (Cooper St) between E North St & W Monroe St
3. WB I-94 between M-106 (Cooper St) & North Leg US-127 interchanges
4. SB US-127 BR / EB M-50 Off Ramp to E McDevitt Ave / Brooklyn Rd
5. EB & WB E High St between S Elm Ave & Losey Ave
6. EB & WB M-50 (Brooklyn Rd) between Plymouth Rd & M-50 (Brooklyn Rd) – Austin Rd intersection
7. EB I-94 between north & south legs of US-127
8. WB I-94 between South Leg US-127 & M-106 (Cooper St) interchanges
9. EB & WB M-50 (Brooklyn Rd) between M-124 (Wamplers Lake Rd) & M-50 – Brooklyn Rd split
10. NB & SB US-127 BR / EB & WB M-50 (N West Ave) under I-94

A detailed table of the ten highest VOC roadway corridors, along with maps, for the Base Year 2014 results can be found in Figures 2A – 2C later in the chapter.

Base Year 2014 with Committed Projects Results

As with the Base Year 2014 scenario, the Base Year 2014 with Committed Projects results analyzed the traffic volumes in relation to the road capacity on the roadways with completion of the 2017 – 2020 TIP projects. Typically, this scenario will include an analysis of roadways and corridors with Capacity Improvement projects that aim to increase capacity on roadways within the area. In many cases, roadways that are expected to see a reduction in the number of thru-lanes, and thus a lower total roadway capacity, are included in this scenario. The main purpose of this is to ensure that traffic is not negatively affected by the reduction in capacity or that the reduction will create a deficient corridor (VOC > 1.00). Only roadways that are designated as a part of the federal-aid network are eligible for inclusion in the 2045 plan project lists.

The ten highest congested roadways, based on VOC for the Base Year 2045 with Committed Projects scenario are listed below:

1. SB M-106 (Cooper St) between W Monroe Ave & E North St
2. NB US-127 BR / WB M-50 (Louis Glick Hwy) between N Mechanic St & N Blackstone St
3. NB M-106 (Cooper St) between E North St & W Monroe Ave

4. WB Washington Ave (*turn back to city*) between S Mechanic St & S Blackstone St
5. SB US-127 BR / EB M-50 (Louis Glick Hwy) between N Blackstone St & N Mechanic St
6. WB I-94 between M-106 (Cooper St) & North Leg US-127 interchanges
7. SB US-127 / EB M-50 Off Ramp to E McDevitt Ave / Brooklyn Rd
8. EB Washington Ave (*turn back to city*) between S Blackstone St & S Mechanic St
9. E High St between S Elm Ave & Losey Ave
10. EB & WB M-50 (Brooklyn Rd) between Plymouth Rd & M-50 (Brooklyn Rd) – Austin Rd intersection

A detailed table of the ten highest VOC roadway corridors, along with maps, for the Base Year 2014 with Committed Projects results can be found in Figures 3A – 3C later in the chapter.

The capacity projects that were used in the model and were listed in the 2017 – 2020 TIP, along with other large projects from the TIP are included in the table on the next page:

Proposed Capacity Improvement Projects								
Project ID	Fiscal Year	Project Name	Project Limits	Responsible Road Agency	Capacity Change Type	Project Description	Total Cost	Length (Miles)
1	2017	M-60 (Spring Arbor Rd)	Chapel Rd to Emerson Rd	MDOT	Capacity Improvement	Resurface and widen to include Center Left-Turn Lane	\$11,205,000.00	1.60
2	2018	I-94	Over JAIL RR and Grand River	MDOT	Capacity Improvement	Replace and realign bridge structure	\$30,639,000.00	0.40
3	2018	I-94	M-60 to Sargent Rd	MDOT	Capacity Improvement	Complete roadway reconstruction from Lansing Avenue to Elm Road	\$71,868,000.00	8.90
4	2018	I-94	M-106 (Cooper St) over I-94	MDOT	Capacity Improvement	Replace bridge structure and associated road work	\$19,765,000.00	0.20
5	2021	I-94	At Elm Ave	MDOT	Capacity Improvement	Reconstruct interchange	\$20,149,000.00	1.50
TOTAL:							\$153,626,000.00	12.60

Horizon Year 2045 with Committed Projects Results

The Horizon Year 2045 with Committed Projects scenario includes projects listed in the 2017 – 2020 TIP, along with the projected changes in socio-economic data through 2045. Traffic volume results were also compared to the expected capacities for the road system in 2045. The ten highest congested roadways, based on VOC, that are expected in Horizon Year 2045 are listed below:

1. SB M-106 (Cooper St) between W Monroe St & E North St
2. SB M-106 (Cooper Rd) between M-106 (Bunkerhill Rd) – Cooper Rd split & Parnall Rd
3. NB M-106 (Cooper St) between E North St & W Monroe St
4. WB I-94 between south & north legs of US-127
5. SB US-127 BR / EB M-50 (Louis Glick Hwy) between N Blackstone St and N Mechanic St
6. WB M-50 (Brooklyn Rd) between Plymouth Rd & M-50 (Brooklyn Rd) – Austin Rd intersection
7. WB Washington Ave (*turn back to city*) between S Mechanic St & S Blackstone St
8. WB M-50 (Brooklyn Rd) between M-50 – Brooklyn Rd split & M-124 (Wamplers Lake Rd)
9. NB US-127 BR / WB M-50 (Louis Glick Hwy) between N Mechanic St & N Blackstone St
10. EB M-50 (Brooklyn Rd) between M-124 (Wamplers Lake Rd) & M-50 – Brooklyn Rd split

A detailed table of the ten highest VOC roadway corridors, along with maps, for the Horizon Year 2045 with Committed Projects results can be found in Figures 4A – 4C later in the chapter.

Recommended Capacity Improvement Projects

After the completion of the travel demand modeling process and identification of congested or deficient corridors, it is necessary to determine what action should be taken to address the current and anticipated future traffic on the road network. With the knowledge of available federal, state, and local revenues for the 27 year span of the plan, the various JACTS Committees considered local community concerns and issues, which determine the improvements should be programmed in the coming years. The specific projects identified include I-94 trunkline projects on State highways under the jurisdiction of MDOT.

The plan provides a vision of Jackson County's transportation system through the year 2045. The transportation improvements included in the first years (2017-2020) of the plan are considered firm commitments by the implementing jurisdictions. This means that funding has been assigned to the specific improvement which will be completed unless unforeseen circumstances prevent completion. The remaining years of the plan (2021 – 2045) are a vision of how the transportation system may develop based on the existing land use and zoning plans of the City of Jackson, villages, and townships of Jackson County, and the current forecast of available transportation revenues. The transportation improvements in the "out" years (2021-2045) of the Plan represent current priorities for the future. The transportation plan is updated every five years and the priorities listed for the later years may change as conditions warrant.

Recommendations

There are a limited number of congested corridors and no corridors that are currently, or are expected to be, deficient within the Jackson MPO. R2PC's focus is to maintain the current transportation system. This means that although capacity projects are valid and important for the future of the MPO transportation system, they are viewed to be a lower priority than projects aimed at preserving the existing system. Preservation projects generally include reconstruction and resurfacing of the road within the existing right-of-way. In most cases, the lane configuration of the roadway remains the same. These types of projects are not required to be identified within this plan.

Examples of capacity improvement projects may be the addition of traffic lanes, turn lanes, merge-weave lanes, or the construction of a new roadway. Also, only those roadways located on the federal-aid roadway network are eligible for inclusion in the plan's project list. The total estimated investment for the State trunkline Capacity Improvement projects totals \$153.6 million.

I-94 Modernization

Many of the projects currently programmed in the most current TIP consider several transportation issues outside the focus of the TDFM, in particular the modernization of the Interstate 94 corridor.

MDOT completed the Final Environmental Impact Statement and Final Section 4(f) Evaluation for the I-94 Freeway Modernization Study in November 2006. The Record of Decision (ROD) was approved by the Federal Highway Administration in March 2007. The Re-Evaluation was approved by the Federal Highway Administration in September, 2013, and again in December 2017. The project study area is a nine-mile segment of I-94 extending from the M-60 interchange to just east of the Sargent Road interchange. The project area encompassed approximately nine miles of existing highway, eight

interchanges, local frontage roads adjacent to I-94, and 18 distinct bridge structures at 14 locations. The purpose of the project is to (1) improve the deteriorating condition of existing bridges and road segments consistent with an overall corridor improvement plan, (2) improve travel efficiency and roadway capacity in the I-94 corridor by replacing existing road segments, interchanges, and bridges with modern facilities designed to accommodate projected year 2045 traffic volumes, and (3) to improve motorist safety.

The following information was compiled for the 2045 Long Range Transportation Plan. The original priorities were determined at the time of the I-94 Modernization Study (2007) in cooperation with an ad hoc committee consisting of local representatives and MDOT experts evaluating the phasing strategy of the elements based on: 1) Safety; 2) Operations; 3) Condition; 4) Under-clearance; and 5) Funding Availability.

With a projected cost of \$409 million (in 2005-year dollars), sufficient funding is not available for construction of the entire nine-mile corridor. Instead, MDOT will phase project implementation over the next 5 to 40 years based on conditions, traffic volume needs, congestion, funding availability, and safety needs along the corridor. The Preferred Alternative for reconstructing the I-94 corridor has been divided into three separate phases as follows:

Phase 1: Sargent Road interchange reconstruction, including the closure of the I-94 BL interchange, and the replacement of the Hawkins Road and Dettman Road bridge overpasses. The bridge replacements are complete and the Sargent Road interchange was completed in 2013.

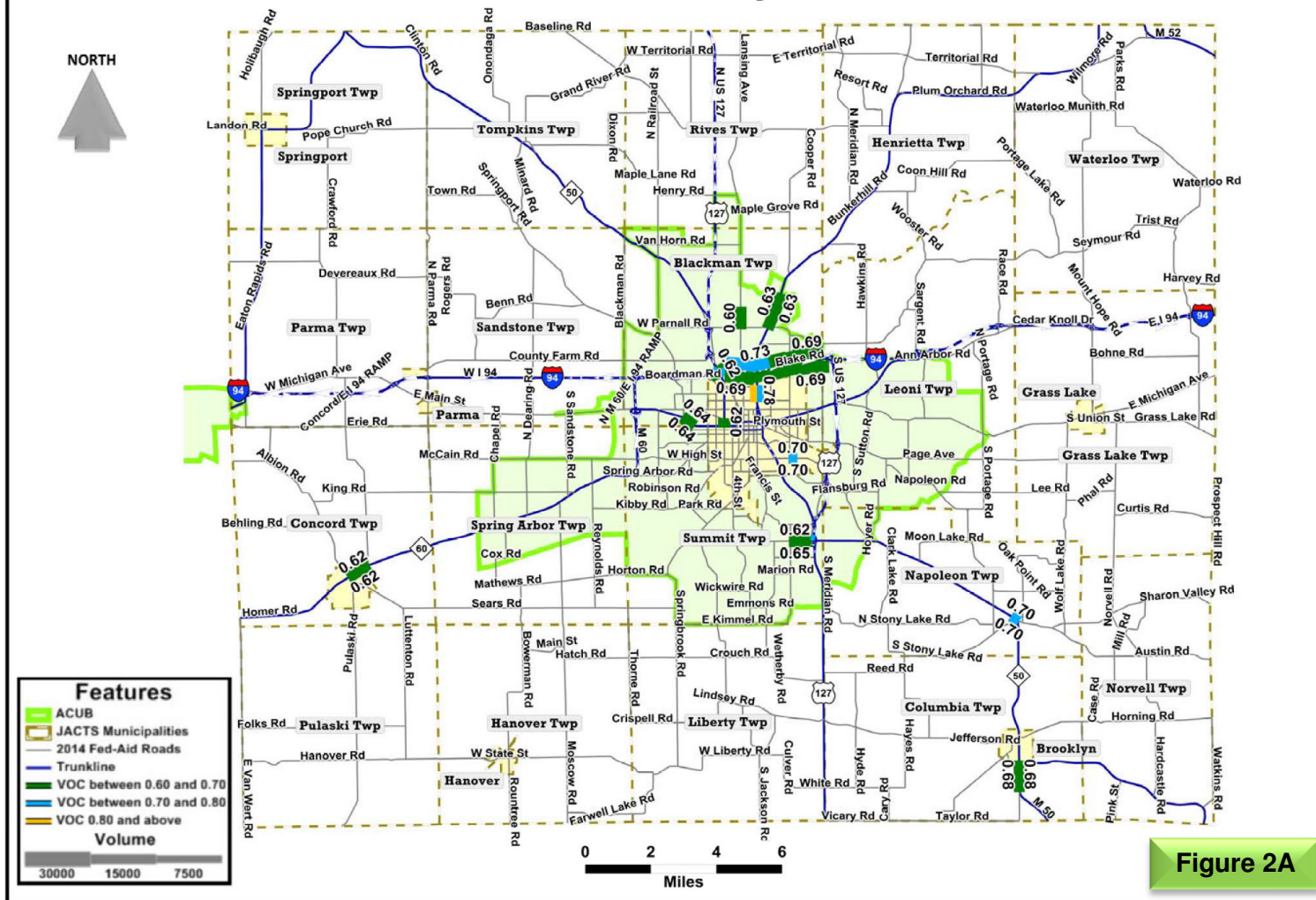
Phase 2: Cooper Street interchange reconstruction and other road improvements as necessary will also be performed. The replacement and widening of the I-94 bridge over the Grand River to accommodate potential future widening of I-94. I-94 will be reconstructed from west of Cooper Street to east of Cooper Street. The remainder of I-94 between M-60 and Sargent road will receive a major rehabilitation. Replacement of the M-60 interchange, Lansing Avenue bridge overpass, and the replacement of the Elm Road interchange are also included in this phase. The estimated time frame for the start and completion of this phase is 0 - 10 years. Funding for this phase has been identified. See Figures 5A – 5D at the end of this chapter.

Phase 3: US-127/M-50-West Avenue interchange reconstruction; reconstruct the northern portion of the Sargent Road interchange; US-127 South interchange reconstruction; Airport Road interchange reconstruction; widen I-94 between the two legs of US-127; widen I-94 from US-127 South to Sargent Road; widen I-94 from US-

127/M-50/West Avenue to M-60. The estimated start and completion time-period for this phase is 25 to 40 years out. No funding for this phase has been identified.

These unfunded improvements are technically not a part of the JACTS 2045 Long Range Transportation Plan, but instead are included to highlight some of the unmet needs that could be addressed with increased revenues. As future funding is identified and becomes available for implementing the findings included in the I-94 Modernization Study, the JACTS committees will continue to assist MDOT in programming the projects to address the capacity and safety improvements outlined in the study.

JACTS Base Year 2014 Capacity Deficiency Analysis Jackson County



JACTS Base Year 2014 Capacity Deficiency Analysis City of Jackson



Jackson Area Comprehensive Transportation Study (JACTS)
Base Year 2014 Scenario Capacity Limitations

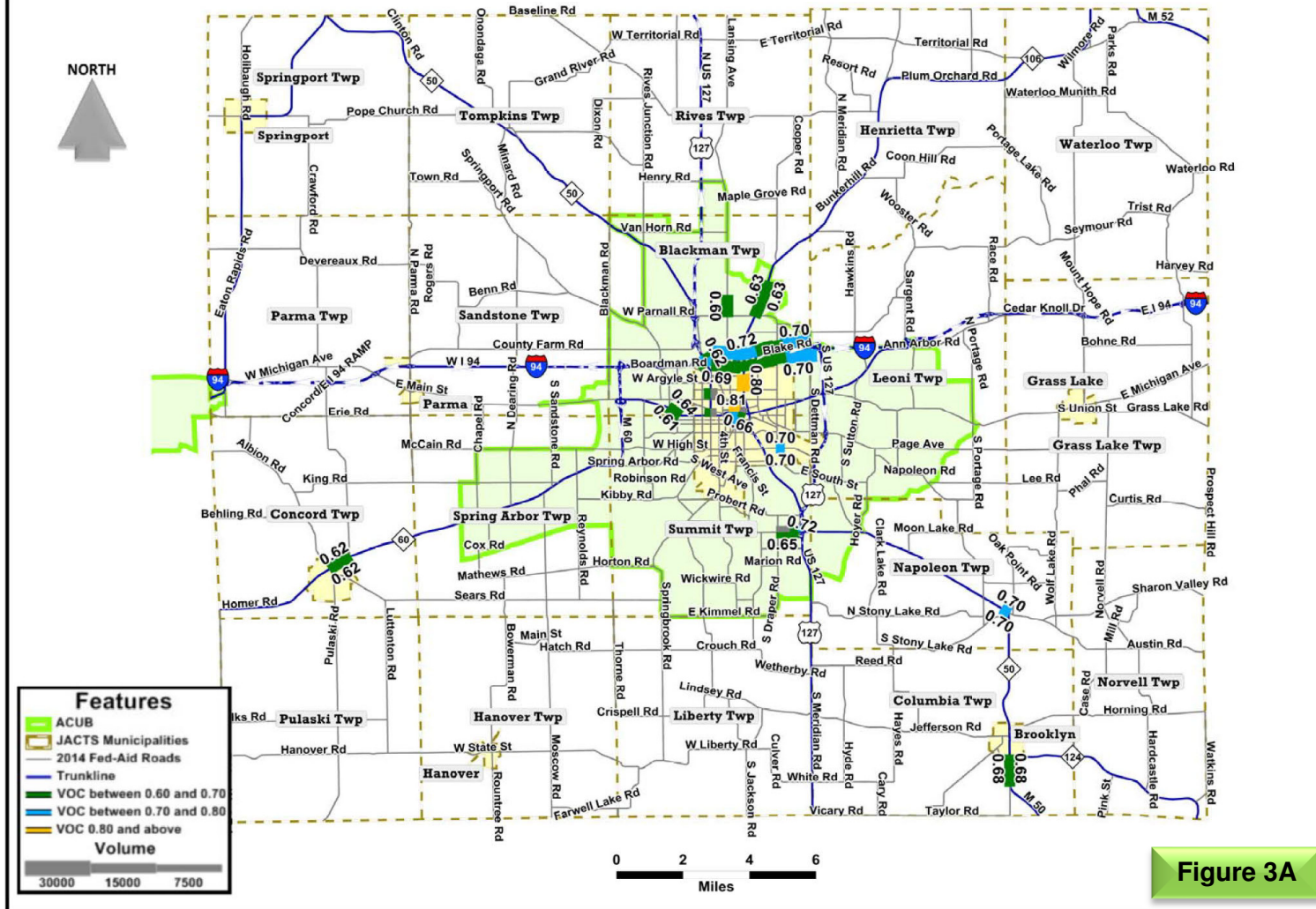
Rank	Road Name	Direction	From	To	Jurisdiction	Maintaining Road Agency	Length (Miles)	Thru Lanes	Total Thru Lanes	Average VOC
1	M-106 (Cooper St)	SB	W Monroe St	E North St	City of Jackson	MDOT	0.43	1	2	0.89
2	M-106 (Cooper St)	NB	E North St	W Monroe St	City of Jackson	MDOT	0.43	1	2	0.78
3	I-94	WB	M-106 (Cooper St) Interchange (Exit #139)	North Leg US-127 Interchange (Exit #138)	Blackman Township	MDOT	1.29	2	4	0.73
4	SB US-127 / EB M-50 Off Ramp	SB / EB	SB US-127 / EB M-50 (Exit #34)	E McDevitt Ave / Brooklyn Rd (Exit #34)	Summit Township	MDOT	0.25	1	1	0.72
5	E High St	E-W	S Elm Ave	Lozey Ave	City of Jackson	Jackson Engineering Division	0.19	N/A	2	0.70
6	M-50 (Brooklyn Rd)	E-W	Plymouth Rd	M-50 (Brooklyn Rd) & Austin Rd Intersection	Napoleon Township	MDOT	0.21	N/A	2	0.70
7	I-94	EB	North Leg US-127 Interchange (Exit #138)	South Leg US-127 Interchange (Exit #142)	Blackman Township	MDOT	3.11	2	4	0.69
8	I-94	WB	South Leg US-127 Interchange (Exit #142)	M-106 (Cooper St) Interchange (Exit #139)	Blackman Township	MDOT	1.62	2	4	0.69
9	M-50 (Brooklyn Rd)	E-W	M-124 (Wamplers Lake Rd)	M-50 - Brooklyn Rd split	Brooklyn Village / Columbia Twp	MDOT	0.88	N/A	2	0.68
10	US-127 BR / M-50 (N West Ave)	N-S / E-W	Under I-94	Under I-94	Blackman Township	MDOT	0.27	N/A	4	0.67

NB: Northbound
SB: Southbound
N-S: NB & SB

EB: Eastbound
WB: Westbound
E-W: EB & WB

Figure 2C

JACTS Base Year 2014 with TIP Projects, Capacity Deficiency Analysis Jackson County



JACTS Base Year 2014 with TIP Projects, Capacity Deficiency Analysis City of Jackson



Jackson Area Comprehensive Transportation Study (JACTS)
Base Year 2014, Existing and Committed Scenario Capacity Limitations

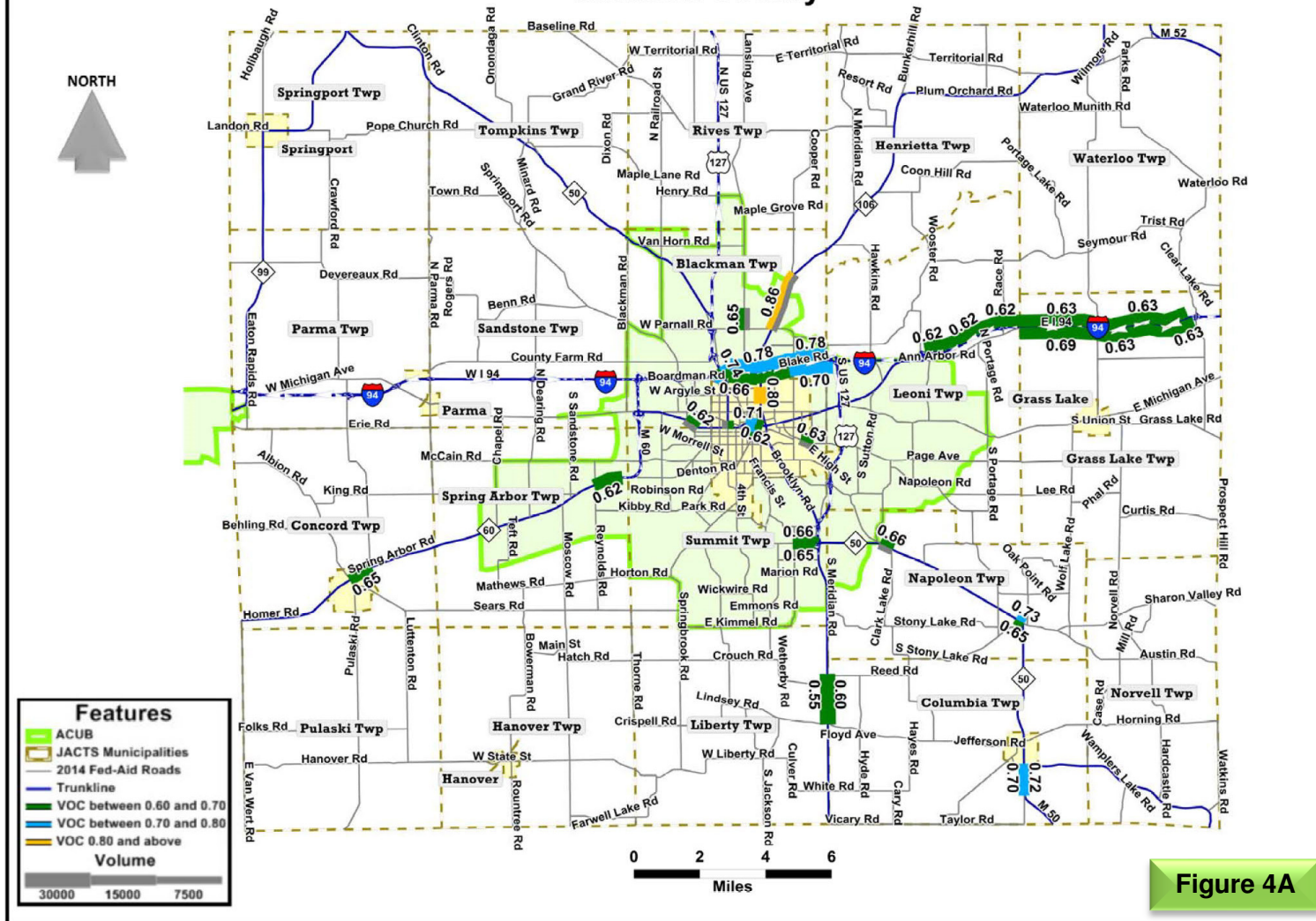
Rank	Road Name	Direction	From	To	Jurisdiction	Maintaining Road Agency	Length (Miles)	Thru Lanes	Total Thru Lanes	Average VOC
1	M-106 (Cooper St)	SB	W Monroe Ave	E North St	City of Jackson	MDOT	0.43	1	2	0.89
2	US-127 BR / M-50 (Louis Glick Hwy)	NB / WB	N Mechanic St	N Blackstone St	City of Jackson	MDOT	0.31	1	2	0.81
3	M-106 (Cooper St)	NB	E North St	W Monroe Ave	City of Jackson	MDOT	0.43	1	2	0.80
4	Washington Ave (turn back to city)	WB	S Mechanic St	S Blackstone St	City of Jackson	Jackson Engineering Division	0.31	1	2	0.74
5	US-127 BR / M-50 (Louis Glick Hwy)	SB / EB	N Blackstone St	N Mechanic St	City of Jackson	MDOT	0.31	1	2	0.73
6	I-94	WB	M-106 (Cooper St) Interchange (Exit #139)	North Leg US-127 Interchange (Exit #138)	Blackman Township	MDOT	1.29	2	4	0.72
7	SB US-127 / EB M-50 Off Ramp	SB / EB	SB US-127 / EB M-50 (Exit #34)	E McDevitt Ave / Brooklyn Rd (Exit #34)	Summit Township	MDOT	0.25	1	1	0.72
8	Washington Ave (turn back to city)	EB	S Blackstone St	S Mechanic St	City of Jackson	Jackson Engineering Division	0.31	1	2	0.70
9	E High St	E-W	S Elm Ave	Lozey Ave	City of Jackson	Jackson Engineering Division	0.19	N/A	2	0.70
10	M-50 (Brooklyn Rd)	E-W	Plymouth Rd	M-50 (Brooklyn Rd) & Austin Rd Intersection	Napoleon Township	MDOT	0.21	N/A	2	0.70

NB: Northbound
 SB: Southbound
 N-S: NB & SB

EB: Eastbound
 WB: Westbound
 E-W: EB & WB

Figure 3C

JACTS Horizon Year 2045 with TIP Projects, Capacity Deficiency Analysis Jackson County



JACTS Horizon Year 2045 with TIP Projects, Capacity Deficiency Analysis City of Jackson



Jackson Area Comprehensive Transportation Study (JACTS)
Horizon Year 2045, Existing and Committed Projects Scenario Capacity Limitations

Rank	Road Name	Direction	From	To	Jurisdiction	Maintaining Road Agency	Length (Miles)	Thru Lanes	Total Thru Lanes	Average VOC
1	M-106 (Cooper St)	SB	W Monroe St	E North St	City of Jackson	MDOT	0.43	1	2	0.94
2	M-106 (Cooper Rd)	SB	M-106 (Bunkerhill Rd) - Cooper Rd split	Parnall Rd	Blackman Township	MDOT	1.77	1	2	0.86
3	M-106 (Cooper St)	NB	E North St	W Monroe St	City of Jackson	MDOT	0.43	1	2	0.80
4	I-94	WB	South Leg US-127 Interchange (Exit #142)	North Leg US-127 Interchange (Exit #138)	Blackman Township	MDOT	2.91	2	4	0.78
5	US-127 BR / M-50 (Louis Glick Hwy)	SB / EB	N Blackstone St	N Mechanic St	City of Jackson	MDOT	0.31	1	2	0.73
6	M-50 (Brooklyn Rd)	WB	Plymouth Rd	M-50 (Brooklyn Rd) & Austin Rd Intersection	Napoleon Township	MDOT	0.21	1	2	0.73
7	Washington Ave (turn back to city)	WB	S Mechanic St	S Blackstone St	City of Jackson	Jackson Engineering Division	0.31	1	2	0.72
8	M-50 (Brooklyn Rd)	WB	M-50 - Brooklyn Rd split	M-124 (Wamplers Lake Rd)	Brooklyn Village / Columbia Twp	MDOT	0.88	1	2	0.72
9	US-127 BR / M-50 (Louis Glick Hwy)	NB / WB	N Mechanic St	N Blackstone St	City of Jackson	MDOT	0.31	1	2	0.71
10	M-50 (Brooklyn Rd)	EB	M-124 (Wamplers Lake Rd)	M-50 - Brooklyn Rd split	Brooklyn Village / Columbia Twp	MDOT	0.88	1	2	0.70

NB: Northbound
SB: Southbound
N-S: NB & SB

EB: Eastbound
WB: Westbound
E-W: EB & WB

Figure 4C

I-94/Cooper Street interchange improvements (in red)

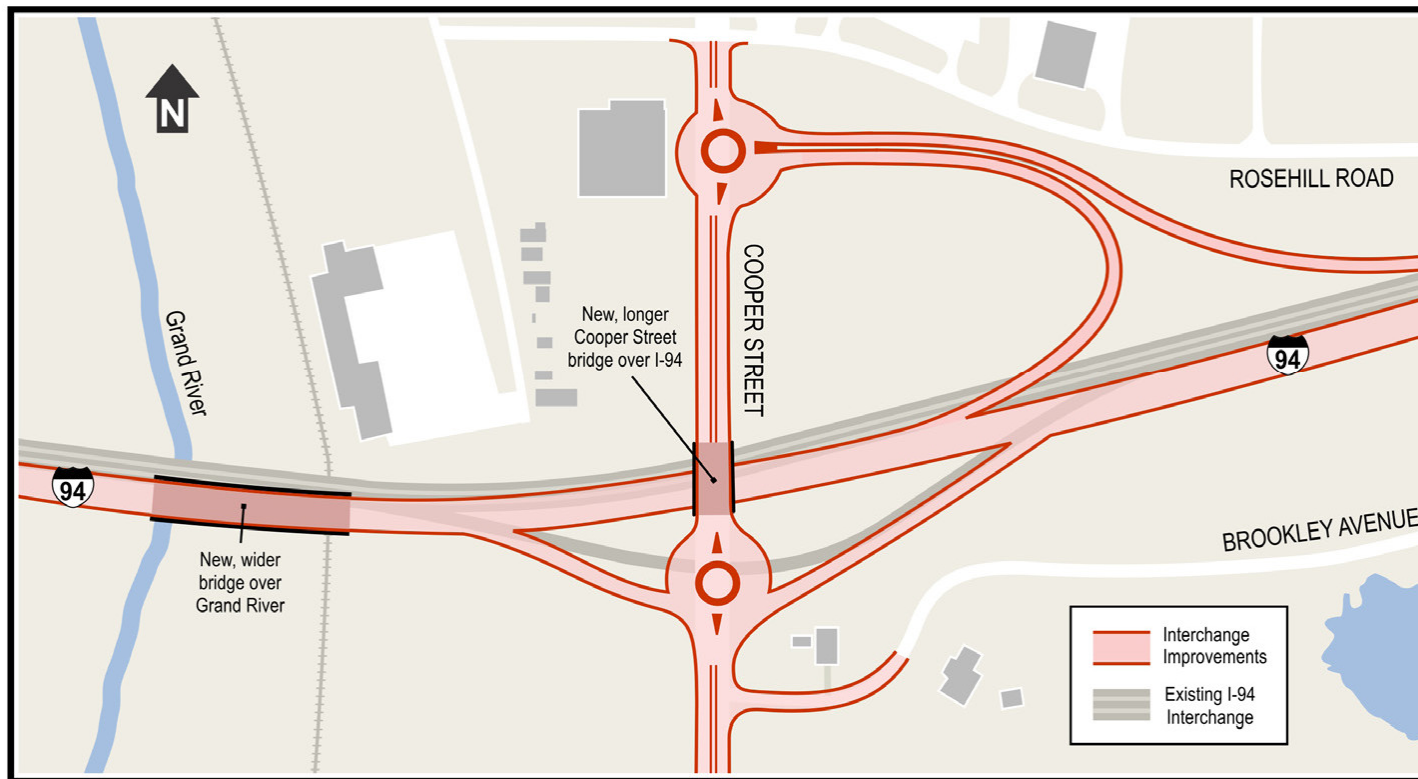


Figure 5A

Reconstruction from Lansing Avenue to Elm Road

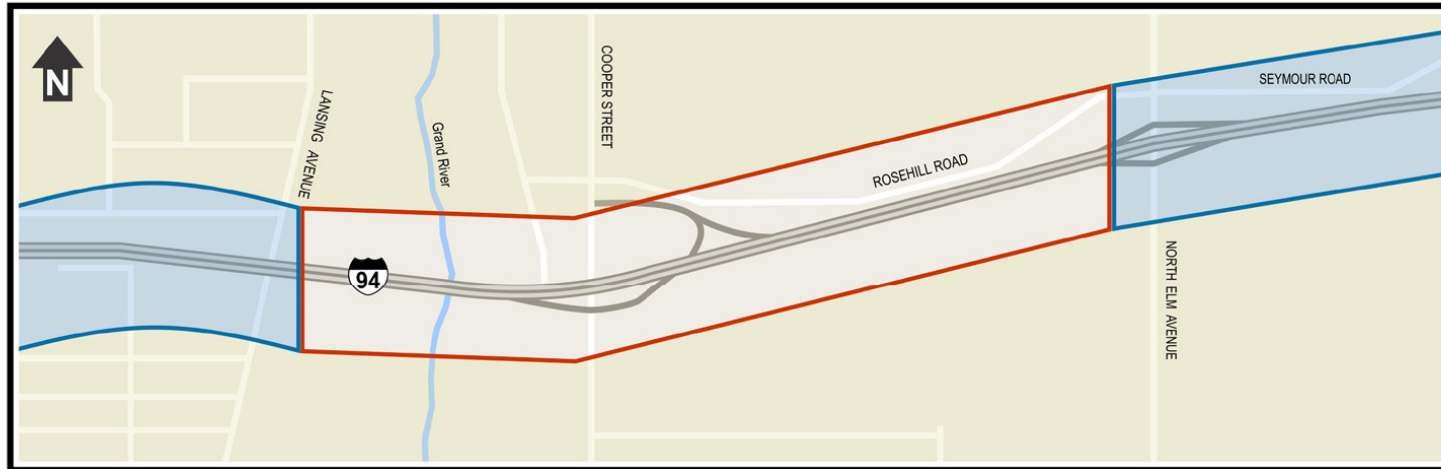


Figure 5B

Resurfacing from M-60 to Lansing Avenue

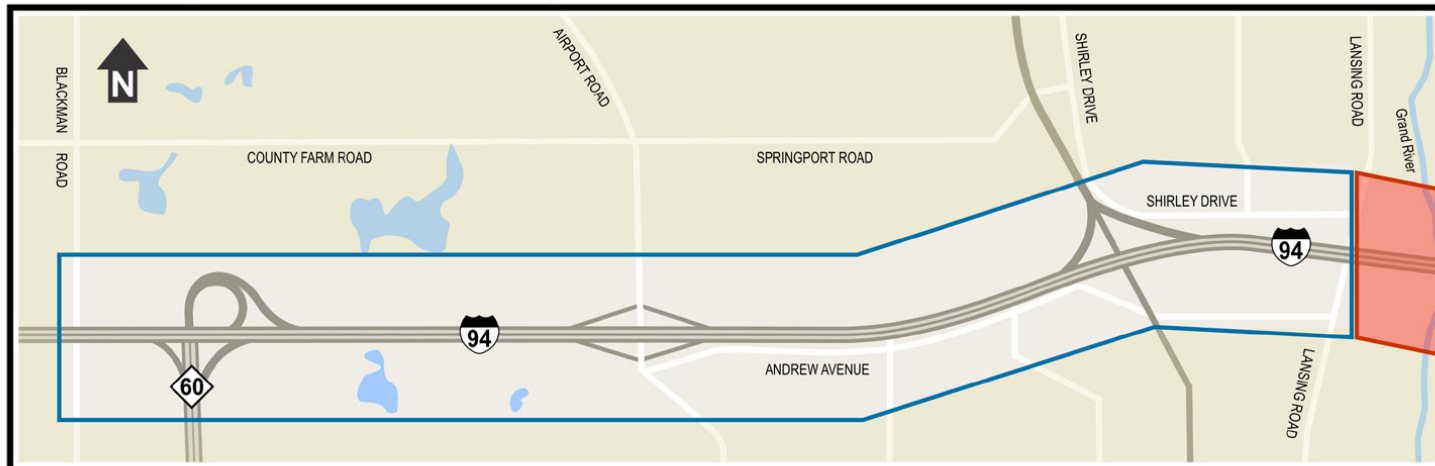


Figure 5C

Resurfacing from Elm Road to Sargent Road

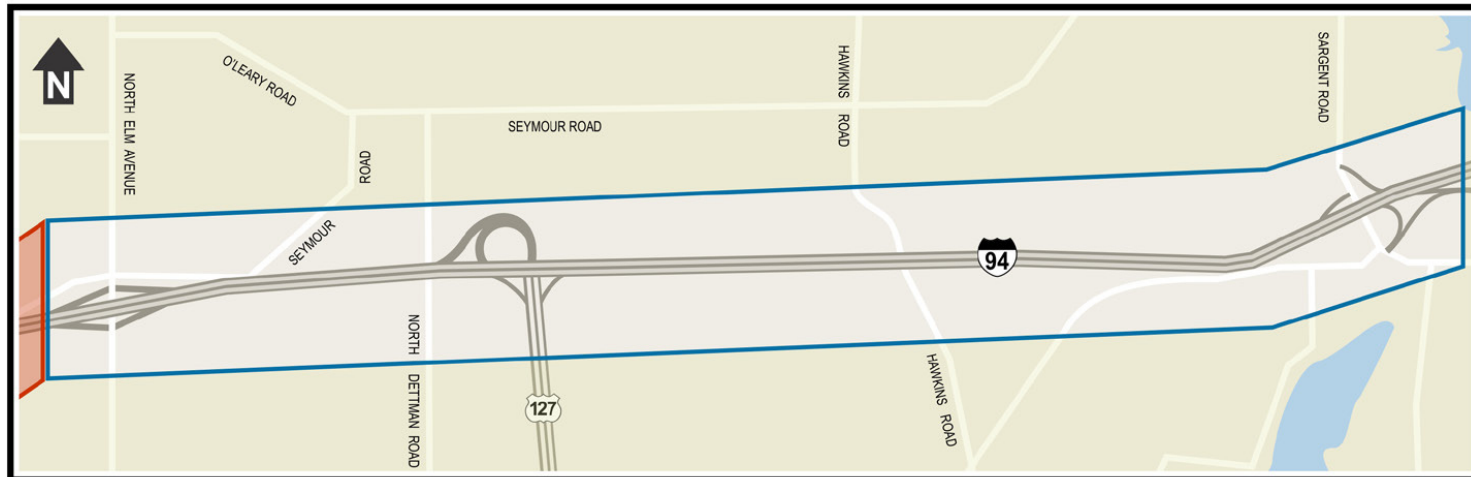


Figure 5D

Chapter 10

Operational and Management Strategies

The FAST Act legislation continues to emphasize the inclusion of operational and management strategies to improve the performance of existing transportation facilities in order to relieve vehicular congestion and to maximize the safety and mobility of people and goods.

The purpose of identifying and utilizing operational and management strategies is to improve the overall performance of the system and to reduce the number of costly widening (capacity) projects and the frequency of total roadway reconstruction projects on the area's roadway network. Jackson participates in and promotes a variety of transportation strategies that support reducing congestion, prolonging the life of the existing facilities, and maximizing the safety and mobility of people and goods. These strategies also support the plan goals of addressing operations, maintenance, preservation, and accessibility.

Programs

Asset Management

Asset management is defined as the process of maintaining, upgrading and operating physical assets cost-effectively, based on a continuous, physical inventory and condition assessment.

The Jackson MPO is actively involved in the asset management process for federal-aid roads in Jackson County and the City of Jackson. One of the goals of the statewide asset management program, overseen by MDOT, is to maximize pavement life by applying the correct “fix” at the right time. Half of all federal-aid eligible roads are inventoried each year by a trained team of field surveyors to determine deterioration levels. The team consists of representatives from MDOT, the Region 2 Planning Commission and either the Jackson County Department of Transportation or the City of Jackson. Each of the local agencies has access to the PASER rating system and the RoadSoft software to use the results of the field data. The City of Jackson and the Jackson County Department of Transportation have chosen to survey all local roads and use this information within their own pavement management and forecasting process. Each road agency is responsible for its own pavement management system. Data for the federal-aid eligible road system has been inventoried annually since 2003.



Weathered asphalt road

Jackson supports this effort with its involvement in training personnel, field surveying, equipment maintenance, assistance to the local agencies, and reporting the data to MDOT.

Capital Preventative Maintenance

This strategy is one of the implementation steps that can result from the asset management activity. Jackson promotes the timely resurfacing, repaving, repainting, redecking, signal upgrading, and other preventative maintenance activities that extend the life of the existing transportation system infrastructure. Many of the projects can be small in scope, while others are not significant enough to be listed within the context of the Long Range Transportation Plan. The local road agencies conduct the activities primarily as maintenance work using state and local funding.



Filling potholes

The Jackson MPO supports these activities through the annual asset management program and the inclusion of MDOT Capital Preventative Maintenance funding in the TIP.

General Maintenance

By maintaining existing facilities in the best possible condition, the transportation system is sustained and functions more safely for users. Activities considered to be general maintenance include minor resurfacing, crack and chip sealing applications, ice and snow removal, traffic signal maintenance, pot hole filling, sign and pavement marking replacement and upkeep, street cleaning and debris removal, and landscaping activities including mowing, tree trimming, and general roadside maintenance.

The Jackson MPO supports these activities through the funding of sign upgrade projects, enhancement projects, and through participation in the asset management program.

Safety Management

Although many of the activities in the CPM and maintenance categories result in improved safety, safety is a secondary benefit. Activities that are directly related to improving the safety and operation of the transportation system include the development of projects to address high crash locations and intersections, adding specific safety features to existing roadways and bridges, improving geometrics or design, and promoting public safety programs.

Jackson County has also developed a Hazard Mitigation Plan in accordance with state and federal government guidelines. The purpose of the plan is to protect the health, safety and economic interests of residents and businesses by reducing the impacts of natural and technological hazards through hazard mitigation planning, awareness, and implementation. Ten jurisdictions and Jackson County have adopted this plan.

The Jackson MPO supports the integration and funding of safety activities through the administration in the Jackson Traffic Safety Program (JTSP), in the selection and funding of projects under the MDOT Federal Local Safety program, and through continued support of the Michigan Office of Highway Safety Planning activities. The Jackson MPO will continue to work with Jackson County and other local jurisdictions to assist in the mitigation of transportation-related safety issues and concerns.



Jackson Traffic Safety Program

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 can include computerized signal controls, automated transit fare collection systems, and transit vehicle locator systems. Future activities that could possibly occur include real-time motorist/trucker information with changeable message signs and a centralized traffic monitoring station. Neither the City nor JCDOT have plans for ITS technology.

The Jackson MPO supports ITS activities through its participation in the Regional ITS Architecture and Deployment Plan by the MDOT Southwest Region Office for Jackson County.

Access Management

Access management involves establishing policies and implementing projects that will reduce or eliminate driveways, roadway access points, median openings, and street connections with the intention of improving safety, reducing congestion, and enhancing traffic mobility by reducing conflict points. Application of the best practices of access management has benefits for motorists, bicyclists, pedestrians, transit, government agencies, and communities by helping to maintain the capacity of the road system.

Success with access management requires that several players be involved in the process including, but not limited to, MDOT, local road agencies, property owners, developers, and local planning commissions. MDOT is involved in access management studies to preserve access along state highway corridors. This process involves bringing together all of the stakeholders to develop an access control plan, along with 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 the development of educational materials for the general public, planning commissions and developers.

The Jackson MPO supports access management procedures through its participation on MDOT steering committees for access management studies within the Jackson area.

Congestion Management

The FAST Act requires that problem areas identified by the congestion management system be considered in developing metropolitan and statewide transportation plans and improvement programs. MDOT's Congestion Management System (CSM) includes the identification of alternative strategies to alleviate congestion while enhancing the mobility of persons and goods. Under the CSM regulations, general purpose road widening can only be considered after careful evaluation of the congestion reduction impacts of low-cost improvements such as traffic signal projects, local traffic engineering projects, and transit/ridesharing improvements.

A congestion management system will require continuous data collection and system monitoring. The extent of the program will be determined by MDOT in consultation with

MPO's, local officials, transit operators, and other transportation officials.

The Jackson MPO will continue to support the development of a congestion management system strategy with uniform performance measures across modes and jurisdictions for the use and analysis of traffic volume and congestion data among local road agencies and MDOT.



I-94 through Jackson

Pedestrian and Non-Motorized Management

Effective accommodation of pedestrians and users of the non-motorized transportation devices available today is important for the safe and efficient operation of the entire transportation system. In the Jackson MPO study area, this includes active involvement in the Walkable Communities Coalition, an advisory committee to the Jackson City Council and the Jackson County Planning Commission.

The local agencies are actively involved in the planning, designing, and implementation of non-motorized projects. MDOT produced a non-motorized map for the University Region's eleven-county planning area that was completed in 2017.

The R2PC will be facilitating a consultant-led joint City of Jackson and Jackson County Non-Motorized Plan. The plan will focus on the establishment of countywide inter-connected, non-motorized network. The Jackson MPO will continue to facilitate this effort in cooperation with the appropriate Act 51 agencies, local area's park and recreation departments, and other stakeholders. The plan will present a list of implementable recommendations, spurring significant investment in the development of non-motorized facilities in the coming years.

The Jackson MPO supports the activities through participation in the Walkable Communities Coalition, and by providing assistance and coordination with area communities in the development of non-motorized and recreational trail plans and projects. The Jackson MPO will also continue to offer assistance to area jurisdictions in funding non-motorized transportation projects.

Public Transit Management

JATA currently uses MDOT's Public Transit Management System to maintain current capital equipment and operational data and to determine future needs. The Jackson MPO will continue to provide assistance to JATA in maintaining and updating its databases as required. The Jackson MPO will continue to advocate and encourage connectivity between transit and other modes of transportation, and continue to promote public transit through its funding of capital equipment including buses, vans, and shelters.



JATA bus maintenance

Chapter 11

Financial Analysis

The federal transportation bill requires that MPO Long Range Plans be financially constrained documents. Prior legislation set the regulation that a planning process be realistic in terms of the financial resources available to carry out the plan. The regulations regarding establishing a financial plan are as follows:

- (i) For purposes of transportation systems operations and maintenance, the financial plan shall contain system-level estimates of costs and revenue sources that are reasonably expected to be available to adequately operate and maintain Federal-aid highways (as defined by 23 U.S.C. 101(a)(5)) and public transportation (as defined by title 49 U.S.C. Chapter 53).
- (ii) For the purpose of developing the metropolitan transportation plan, the MPO, public transportation operator(s), and State shall cooperatively develop estimates of funds that will be available to support metropolitan transportation plan implementation, as required under Sec. 450.314(a). All necessary financial resources from public and private sources that are reasonably expected to be made available to carry out the transportation plan shall be identified.
- (iii) The financial plan shall include recommendations on any additional financing strategies to fund projects and programs included in the metropolitan transportation plan. In the case of new funding sources, strategies for ensuring their availability shall be identified.
- (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.

The development of the financial plan chapter is based on the outlined requirements from the regulations. The revenue and expenditure projections are presented in cost adjusted/inflated dollars, termed “year-of-expenditure” dollars. The 2045 Transportation Plan was also developed using this process. Past practice, historic data, and program funds are the major factors considered in establishing future funding estimates.

Since the majority of 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 these funding sources for the life of the 2045 Plan cannot be predicted with certainty. Future estimates are based on a continuation of the historic experience with these sources.

The FAST Act requires that project selection and investment be influenced by performance-based planning. Guidance from FHWA and MDOT is still in development as to how that should happen, especially at the local level, as of the adoption of this plan. The Jackson MPO's intentions are to adhere to federal and state recommendations, and that the direction of investments will influence project selection over time.

History of Transportation Financing

The development and maintenance of the transportation system has been, and still is, primarily financed by user fees. Local public and private funding 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 \$0.263 per gallon. As vehicles become more fuel efficient, and alternative fuel use increases, the revenue generated from this tax diminishes. Gasoline fuel is taxed at \$0.184 and diesel fuels are taxed \$0.244 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 as "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, and has received funding from the state's general fund in the past.

Most states have vehicle registration fees that are earmarked for transportation improvements as well. In Michigan, the registration fees for automobiles and trucks are also deposited in the MTF. There is no federal passenger vehicle registration fee. County and city 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 and county departments of transportation 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, the FAST Act combines the many programs available to fund transportation improvements into more cohesive pots. The Interstate Maintenance, National Highway System (NHS) and the Highway Bridge program have been combined into the National Highway Performance program. The state uses this funding source for high level facilities like interstate highways. The Surface Transportation Program (STP) still provides funds to the state and to local urban, small city, and rural areas for transportation improvements. The enhancement (which includes beautification, historic preservation, and non-motorized), has been combined with the Recreational Trails and Safe Routes to Schools program under the name “Transportation Alternatives”. Other funding programs include Congestion Mitigation Air Quality (CMAQ) and Rail-Highway Crossings.

The Federal Transit Administration has separate programs to provide capital and operating funding for public transportation as well as other specific programs such as the New Starts/Small Starts programs.

Potential Sources of Revenue for Plan Development

Federal Funding

National Highway Performance
Surface Transportation Program
Transportation Alternatives Program
Highway Safety Improvement Program
Rail-Highway Crossing Program
Federal Transit Administration
New Starts/Small Starts Program
Other Federal

State Funding

Motor Vehicle Tax (Act 51) Distribution
Comprehensive Transportation Fund Distribution
Transportation Economic Development Funds
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
In-Kind Contributions
Foundations
Other Local

Developing Revenue Forecasts

Local revenue projections were made utilizing the experience of the two Act 51 Agencies, City of Jackson and Jackson County Department of Transportation, and the

local road agencies for the period 2015 to 2017 as the base. The Act 51 reports submitted to the state by the agencies provided revenue and expenditures 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. The Jackson MPO deals with funding for projects on the federal-aid eligible system, which is almost completely the same system as the major/primary road system. While the local street/secondary road system revenues and expenditures are reviewed, the figures are not used in addressing either costs or revenues for this financial assessment.

TABLE 11-1

**Average per Year Major Street/Primary Road Revenues
For the Time Period 2015 – 2017**

REVENUES	City of Jackson	Jackson County Department of Transportation	TOTAL
Michigan Transportation Fund	\$ 2,352,989	\$ 24,848,971	\$ 27,201,960
Transportation Economic Development Fund	\$ 0	\$ 668,126	\$ 668,126
Federal Funding	\$ 2,625,831	\$ 4,455,229	\$ 7,081,060
Local Funding	\$ 699,657	\$ 0	\$ 699,657
Metro Act	\$ 122,127	\$ 0	\$ 122,127
Miscellaneous	\$ 979,235	\$ 2,944,601	\$ 3,923,836
TOTAL	\$ 6,779,839	\$ 32,916,927	\$ 39,696,766

TABLE 11-2

**Average per Year Local Street/Secondary Road Revenues
For the Time Period 2015 - 2017**

REVENUES	City of Jackson	Jackson County Department of Transportation	TOTAL
Michigan Transportation Fund	\$ 651,095	\$ 11,755,077	\$ 12,406,172
Transportation Economic Development Fund	\$ 0	\$ 269,471	\$ 269,471
Federal Funding	\$ 0	\$ 0	\$ 0
Local Funding	\$ 579,823	\$ 5,405,225	\$ 5,985,048
Metro Act	\$ 0	\$ 0	\$ 0
Miscellaneous	\$ 663,699	\$ 25,426	\$ 689,125
TOTAL	\$ 1,894,618	\$ 17,455,199	\$ 19,349,817

The estimates of future funding for local transportation needs on the major street/primary road system are based on the presumption that the current funding sources will see annual increases of 3.7% through 2025 and 2.3% thereafter. An increase of 2.0% per year through FY 2025 and 2.4% thereafter is figured as the potential increase in federal funding per MDOT.

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 11-1 & 2):

MI Transportation Fund (MTF) Starting with a combined average of \$27.2 million in 2017 and increasing as stated in the paragraph above, a total of \$1.2 billion will be available for the overall time period of 2017-2045.

State Economic Development Categories Jackson County will expect to receive state TEDF Category D funds as long as the Legislature continues the appropriation. To be fiscally conservative, the annual amount appropriated for Jackson County of \$161,079 will be used from 2017-2045. This amount will yield a total of \$3,965,131.

Local Funding Starting with a combined average of \$669,657 in 2017, carrying forward at the same level for 2017 to 2045 (due to restricted local budgets) this category will provide a total of \$31.2 million. The Jackson County Department of Transportation is unsure how the townships will participate in local funding. They cannot project whether or not they will have an infusion of local dollars to aid their effort.

Miscellaneous Funding Sources This category includes special assessments and other traffic and insurance refunds. Starting with a combined average of \$3.9 million in 2017, carrying forward with a 2% per year increase until 2045, this category will total \$1.7 million over the life of the Plan.

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 plan is shown in Table 11-3.

TABLE 11-3**Cumulative Revenue Estimates for the Period of 2017-2045****STATE & LOCAL Sources used by LOCAL AGENCIES (Source: Act 51)**

YEAR	MTF	TEDF	LOCAL	MISCELLANEOUS
2017	\$27,201,960	\$ 161,079	\$699,657	\$39,238
2018	\$28,208,433	\$ 135,859	\$699,657	\$40,690
2019	\$29,252,145	\$ 135,859	\$699,657	\$42,196
2020	\$30,334,474	\$ 135,859	\$699,657	\$43,757
2021	\$31,456,849	\$ 135,859	\$699,657	\$45,376
2022	\$32,620,753	\$ 135,859	\$699,657	\$47,055
2023	\$33,827,721	\$ 135,859	\$699,657	\$48,796
2024	\$35,079,346	\$ 135,859	\$699,657	\$50,601
2025	\$36,377,282	\$ 135,859	\$699,657	\$52,474
2026	\$37,213,960	\$ 135,859	\$699,657	\$53,680
2027	\$38,069,881	\$ 135,859	\$699,657	\$54,915
2028	\$38,945,488	\$ 135,859	\$699,657	\$56,178
2029	\$39,841,234	\$ 135,859	\$699,657	\$57,470
2030	\$40,757,583	\$ 135,859	\$699,657	\$58,792
2031	\$41,695,007	\$ 135,859	\$699,657	\$60,144
2032	\$42,653,992	\$ 135,859	\$699,657	\$61,528
2033	\$43,635,034	\$ 135,859	\$699,657	\$62,943
2034	\$44,638,640	\$ 135,859	\$699,657	\$64,390
2035	\$45,665,328	\$ 135,859	\$699,657	\$65,871
2036	\$46,715,631	\$ 135,859	\$699,657	\$67,386
2037	\$47,790,091	\$ 135,859	\$699,657	\$68,936
2038	\$48,889,263	\$ 135,859	\$699,657	\$70,522
2039	\$50,013,716	\$ 135,859	\$699,657	\$72,144
2040	\$51,164,031	\$ 135,859	\$699,657	\$73,803
2041	\$52,340,804	\$ 135,859	\$699,657	\$75,501
2042	\$53,544,642	\$ 135,859	\$699,657	\$77,237
2043	\$54,776,169	\$ 135,859	\$699,657	\$79,014
2044	\$56,036,021	\$ 135,859	\$699,657	\$80,831
2045	\$57,324,849	\$ 135,859	\$699,657	\$82,690
TOTAL	\$1,216,070,326	\$ 3,965,131	\$ 20,290,053	\$1,754,161
GRAND TOTAL				\$1,238,114,539

Federal Revenues for the Local System (not including transit)

In addition to the categories reflected on the Act 51 report, the Jackson MPO oversees the expenditure of federal funds 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) The STP Urban funding took a drastic decline with the passage of MAP-21. Based on the FY 2016 amount of \$1.2 million, federal funding is projected to increase by 3.7% through FY 2025, and then decrease to 2.3% to FY 2044. This will provide **\$59.5 million** in STP Urban funds over the life of the plan.

Surface Transportation Program (STP) Rural The Jackson Metropolitan Area Boundary expands out to the county limits, so the rural funding is also taken into account when determining financial constraint. Based on the FY 2016 amount of \$646,546, and increasing by the same percentages as the STP Urban, approximately **\$30.6 million** will be available in STP Rural funds over the life of the plan.

Surface Transportation Program (STP) Flex The Jackson Metropolitan Area Boundary also receives a flexible amount that is also taken into account when determining financial constraint. Based on the FY 2016 amount of \$235,326, and increasing by the same percentages as the STP Urban, approximately **\$11.1 million** will be available in STP Rural funds over the life of the plan.

Other Federal - Revenue estimates for several smaller federal funding categories are being estimated together for the purposes of the 2045 plan. The 2016 general program account figures for local rail crossing, local bridge, local safety, and local transportation alternatives have been used to calculate this total, based on the same percentages as the STP Urban and Rural programs, per year over the life of the plan, for a total of **\$524.3 million**.

The calculation of these categories of funds over the life of the 2045 Long Range Transportation Plan is shown in Table 11-4 on the following page.

TABLE 11-4 Cumulative Revenue Estimates for the Period of 2016-2045
FEDERAL REVENUE Sources used by LOCAL AGENCIES (\$000's)

YEAR	STP URBAN	STP RURAL	STP FLEX	OTHER FEDERAL
2016	\$1,256	\$ 646,546	\$235,326	\$12,514
2017	\$1,303	\$ 670,468	\$244,033	\$12,764
2018	\$1,351	\$ 695,276	\$253,062	\$13,019
2019	\$1,401	\$ 721,001	\$262,426	\$13,279
2020	\$1,453	\$ 747,678	\$272,135	\$13,545
2021	\$1,507	\$ 775,342	\$282,204	\$13,816
2022	\$1,563	\$ 804,029	\$292,646	\$14,092
2023	\$1,620	\$ 833,779	\$303,474	\$14,374
2024	\$1,680	\$ 864,628	\$314,702	\$14,662
2025	\$1,743	\$ 896,620	\$326,346	\$14,955
2026	\$1,783	\$ 917,242	\$333,852	\$15,314
2027	\$1,824	\$ 938,338	\$341,531	\$15,681
2028	\$1,866	\$ 959,920	\$349,386	\$16,058
2029	\$1,909	\$ 981,998	\$357,422	\$16,443
2030	\$1,953	\$ 1,004	\$365,643	\$16,838
2031	\$1,997	\$ 1,027	\$374,052	\$17,242
2032	\$2,043	\$ 1,051	\$382,656	\$17,656
2033	\$2,090	\$ 1,075	\$391,457	\$18,079
2034	\$2,139	\$ 1,100	\$400,460	\$18,513
2035	\$2,188	\$ 1,125	\$409,671	\$18,958
2036	\$2,238	\$ 1,151	\$419,093	\$19,413
2037	\$2,290	\$ 1,177	\$428,732	\$19,879
2038	\$2,342	\$ 1,205	\$438,593	\$20,356
2039	\$2,396	\$ 1,232	\$448,681	\$20,844
2040	\$2,451	\$ 1,261	\$459,001	\$21,345
2041	\$2,508	\$ 1,290	\$469,558	\$21,857
2042	\$2,565	\$ 1,319	\$480,357	\$22,381
2023	\$2,624	\$ 1,350	\$491,406	\$22,919
2044	\$2,685	\$ 1,381	\$502,708	\$23,469
2045	\$2,746	\$ 1,412	\$514,270	\$24,032
TOTAL	\$59,529	\$30,619	\$11,144,884	\$524,309
GRAND TOTAL				\$625,603

Federal and State Revenues (for state system)

MDOT has provided revenue estimates for its program for the time frame of the 2045 Plan. The estimates are divided by the major programming categories used by MDOT: preserve vs. increase capacity/new roads. A breakdown by multi-year groupings has been provided by MDOT for the entire Plan period.

Revenues that go toward operations and maintenance are not included in the figures in Table 11-5. The costs for this type of work by 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 MAP-21 regulations.

TABLE 11-5
Revenues Available for State Facilities
(\$ in 000's)

MDOT	Preserve	Capacity Improve/New Roads
2016-2020	\$ 88,825	\$ 120,638
2021-2025	\$ 114,937	\$ 75,399
2026-2030	\$ 131,957	\$ 0
2031-2035	\$ 147,208	\$ 0
2036-2040	\$ 181,522	\$ 0
2041-2045	\$ 216,312	\$ 0
TOTAL	\$ 880,762	\$ 196,037

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. The local government (the City of Jackson) provides dollars from its general fund to support some of the operating costs of the transit. Revenues are garnered from fares paid by users of the transit service and a modest amount of revenue is derived from sources like advertising.

Table 11-6 lists the estimated revenues for transit over the life of the 2045 Transportation Plan. The federal and state revenues have been provided by MDOT, which provided revenue figures by multi-year groupings, the same as for the road categories. Transit funding from federal and state allocated sources is estimated to be approximately \$167,567 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 11-6
Revenues Available for Transit Services, Vehicles and Facilities
(\$ in 000's)

Year	Federal & State	Local, Farebox, & Other
2014-2018	\$ 15,344	\$ 8,865
2019-2023	\$ 15,433	\$ 9,738
2024-2028	\$ 15,399	\$ 10,749
2029-2033	\$ 15,401	\$ 11,870
2034-2038	\$ 15,439	\$ 13,107
2039-2045	\$ 21,749	\$ 14,473
TOTAL	\$ 98,765	\$ 68,802
GRAND TOTAL	\$	167,567

OPERATIONS & MAINTENANCE

The continued effective operation and maintenance of the existing transportation system is a priority and goal of the Jackson MPO. Therefore, estimated costs for these aspects of the transportation system over the life of the 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 expenditures from 2015-2017 for the two 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 Jackson area was approximately **\$8.3 million** per year.

For the life of the Plan, this figure has been expanded by 1.03% in 2017, 1.01% for FY 2018 through 2020, and 1.02% through FY 2045 per year as provided by MDOT based on historic percentages and future projections.

Based on these percentage increases, the total cost for operations and maintenance of the major street/primary road system in the Jackson area by the local agencies over the 2015 to 2045 time period is expected to be approximately **\$303 million**.

MDOT has provided figures regarding its anticipated costs for operations and maintenance (O+M) of the state system within the Jackson 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).

Based on an average cost per year of 8.5 million in 2016, a total cost over the life of the 2045 plan for state operations and maintenance is estimated at **\$344 million**. As with the local estimate, this category was expanded by the same percentages.

SUMMARY

Summaries of estimated available revenues and estimated expenditures over the life of the 2045 Plan are shown in the following Tables 11-7 and 11-8:

Table 11-7
Summary of Available Revenues for the
JACTS 2045 Long Range Transportation Plan

Projected Capital Revenues	Total \$
Federal Transportation Funds for Construction of Local Roads	\$ 625,603,000
Federal and State Funding for State Controlled Roadways	\$ 1,421,601,000
Federal/State/Local Transit Funding (Operations and Capital)	\$ 167,567,000
State and Local Funding for Construction and O/M of Local Roads	\$ 1,238,114,539
TOTAL	\$ 3,452,885,539

Table 11-8
Summary of 2045 Long Range Transportation Plan
Operations/Maintenance & Capital Expenditures 2015-2045

Operations/Maintenance (O/M) Expenditures for Local & State Roads	Total \$'s
Estimated Expenditures for O/M on Local Roads	\$ 303,312,995
Estimated Expenditures for O/M on State Roads	\$ 344,802,000
PLANNED CAPITAL EXPENDITURES	\$ 648,114,995
Local Road Projects	
• Capacity Improvement Projects (0)	\$ 0
• Preservation	\$ 16,685,566
• Safety	\$ 0
• Non-Motorized	\$ 442,023
Total	\$ 18,028,467
Transit Projects	
• Operating Expenses	\$ 285,002,840
• Vehicle Replacement (83 Vehicles)	\$ 15,589,603
• Vehicle Addition	\$ 5,624,000
• Other Capital	\$ 1,062,100
• Security Improvements	\$ 703,862
Total	\$ 307,982,405
State Projects	
• Capacity Improvement (5 Projects)	\$ 196,037,000
• Preservation	\$ 880,762,884
Total	\$ 1,076,799,884
GRAND TOTAL EXPENDITURES	\$ 2,050,925,751

DEMONSTRATION OF FINANCIAL CONSTRAINT

The total expenditures identified in the JACTS 2045 Long Range Transportation Plan are within the total federal, state, and local revenues estimated for the Plan. As shown in Table 11-9 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 JACTS 2045 Long Range Transportation Plan is financially constrained.

Table 11-9
Demonstration of Financial Constraint for the
2045 Long Range Transportation Plan of the Jackson Area
Comprehensive 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 Jackson MPO.	\$ 3,452,885,539
Expenditures for Operations/Maintenance of Local & State Roads	\$ 648,114,995
Expenditures for Local Road Improvement Projects	\$ 18,028,467
Expenditures for Transit Improvement Projects	\$ 307,982,405
Expenditures for State Improvement Projects	\$ 1,076,799,884
REMAINING BALANCE	\$ 1,401,959,788

Chapter 12

Environmental Justice

The roadway and transit projects identified and programmed in the Jackson MPO 2045 Long Range Transportation Plan must address the principles of Executive Order 12898 relating to Environmental Justice (EJ). The plan must identify and address disproportionately adverse human health or environmental effects on the transportation system programs and policies on minority and low-income populations. The basic principles addressed by the Environmental Justice analysis include:

- To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process, and
- To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Methodology

The Environmental Justice Analysis is typically performed on improve and expand projects. To ensure the principles are being met, the methodology entails mapping the EJ zones where the low-income (poverty) and minority population concentrations exceed the population averages of these groups for the Jackson MPO, overlaying the improve and expand projects or Jackson Area Transportation Authority (JATA) bus routes, and visually analyzing the potential impacts.

The following methodology was followed to ensure a fair process:

1. Acquire the most current population data from the United States Census Bureau and adopt the United States Department of Human Services Poverty Standards as publicized by the department.
2. Compute the county average and establish a county baseline threshold for minority and impoverished populations.
3. Synthesize the Census data with the Location Quotient statistical method to calculate and compare the shared contribution of an area's local economy to another referenced economy; in this case, Census Block Group data to county-level data.
4. Develop sets of thematic maps showing the spatial location of minority and low-income populations at the MPO level.
5. Overlay maps of the improve and expand projects over the minority and low-income population maps and analyze for intersections on the basis that a project is included or is partially tangential to an EJ zone.
6. Overlay maps of the JATA bus routes and ADA corridor over the minority and low-income population maps and analyze for intersections on the basis that the transit

income population maps and analyze for intersections on the basis that the transit route is included or is partially tangential to an EJ zone.

Location Quotient Statistical Method

Location quotient (LQ) is a sophisticated statistical technique used in calculating and comparing the shared distribution of a local economy, such as an individual county or region, relative to a referenced base economy such as the state. The LQ statistical method strives to show if a local economy has a greater share than expected of a given base economy; the extra contribution marks the additional contribution that such local economy is contributing.

The statistical notation for LQ is:

$$LQ_i = \frac{\frac{x_i}{n_i}}{\frac{x}{n}} \text{ or } \frac{x_i}{x} \times \frac{n}{n_i}$$

Where,

LQ_i = Location Quotient for a local economy

x_i = Total number of EJ identified population groups for a local economy

n_i = Total population for a local economy

x = Total number of EJ identified population groups for a reference economy

n = Total population for a reference economy

The LQ method is used to determine whether or not a particular Block Group in Jackson County has a greater share of its racial and low-income groupings than expected. A Block Group having a LQ value greater than one ($LQ > 1$) will be recognized as an EJ zone within the county. Block Groups with $LQ > 1$ provide evidence that such a racial and low-income group(s) has a population greater than their expected EJ populations. The Block Groups would represent the selection set identified as EJ zones.

Environmental Justice Populations Definitions

Definition of “Minority” for the Purposes of Environmental Justice

According to the U.S. DOT Order 5610.2, the following groups are to be considered when conducting an Environmental Justice Analysis and are defined as follows:

- *Black or African American.* A person having origins in any of the black racial groups of Africa.
- *Hispanic or Latino/a.* A person of Mexican, Puerto Rican, Cuban, Central American, South American, or other Spanish culture or origin, regardless of race.
- *Asian & Pacific Islander.* A person having origins in any of the original people of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- *American Indian & Alaskan Native.* A person having origins in any of the original people of North America and who maintain cultural identification through tribal affiliation or community recognition.

According to the 2016 American Community Survey Data, the countywide averages for the minority populations are as follows: African American 8.56%, Hispanic 3.33%, Asian and Pacific Islander 0.78%, and American Indian and Alaskan Natives 0.46%.

Americans with Disabilities Act (ADA) Corridor

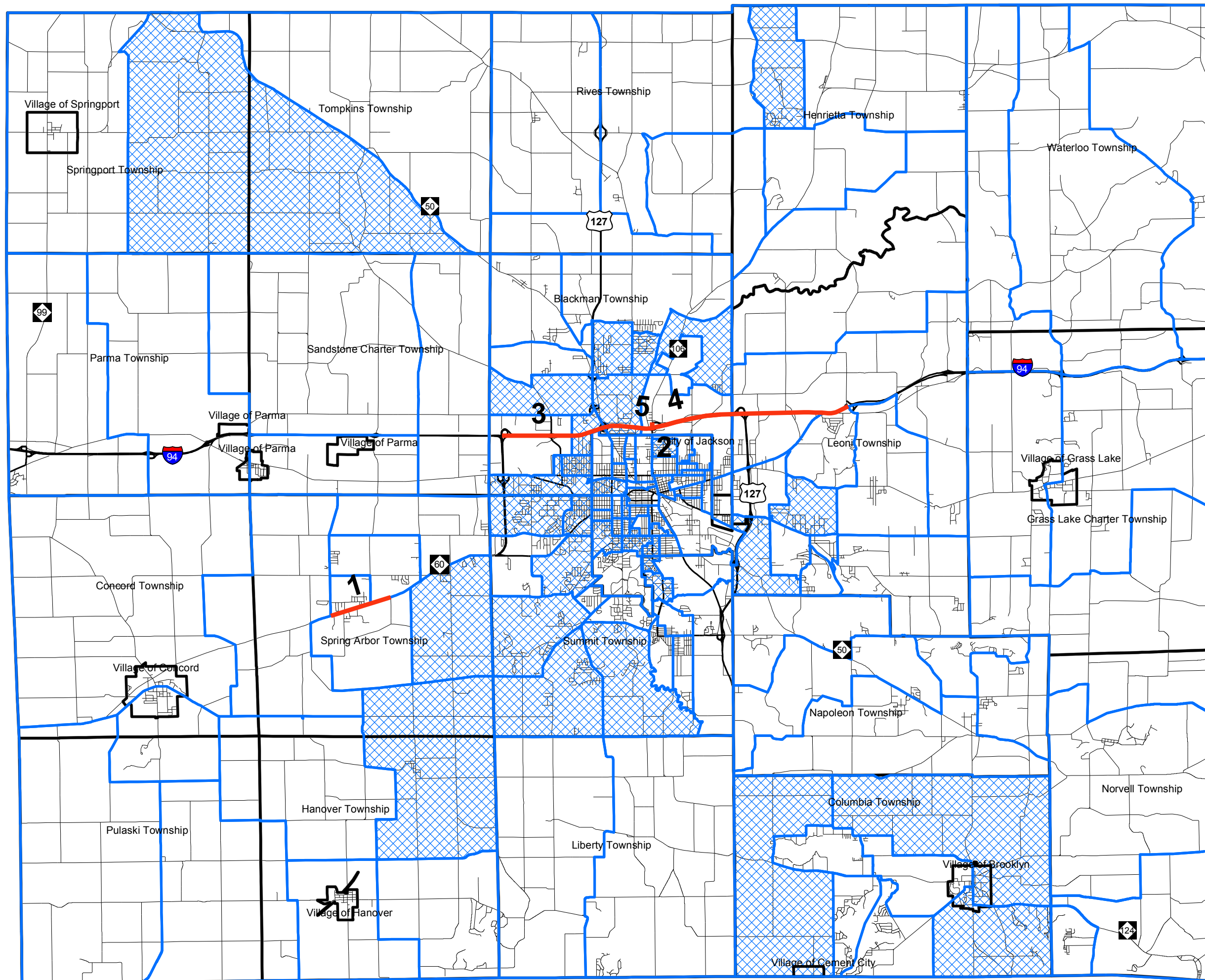
ADA requires public transit agencies that provide fixed-route service to provide paratransit service to people with disabilities who cannot use the fixed-route bus or rail service because of a disability. ADA paratransit service must be provided within 3/4 of a mile of a bus route or rail station, at the same hours and days, for no more than twice the regular fixed route fare.

Definition of “Low Income” or “Individuals Living Below Poverty Level” for Purposes of Environmental Justice

The Office of Management & Budget defines low income as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines. The guidelines are used as eligibility criteria for the Community Services Block Grant Program as well as a number of other federal assistance programs. According to the 2016 American Community Survey data, 15.7% of Jackson County’s population falls below the national poverty threshold (Figure 15-1i, 15-1j).

Maps on the next several pages show where these populations are located within the Jackson MPO overlapped with the five capacity improvement projects mentioned in Chapter 9.

Asian & Pacific Islanders Populations



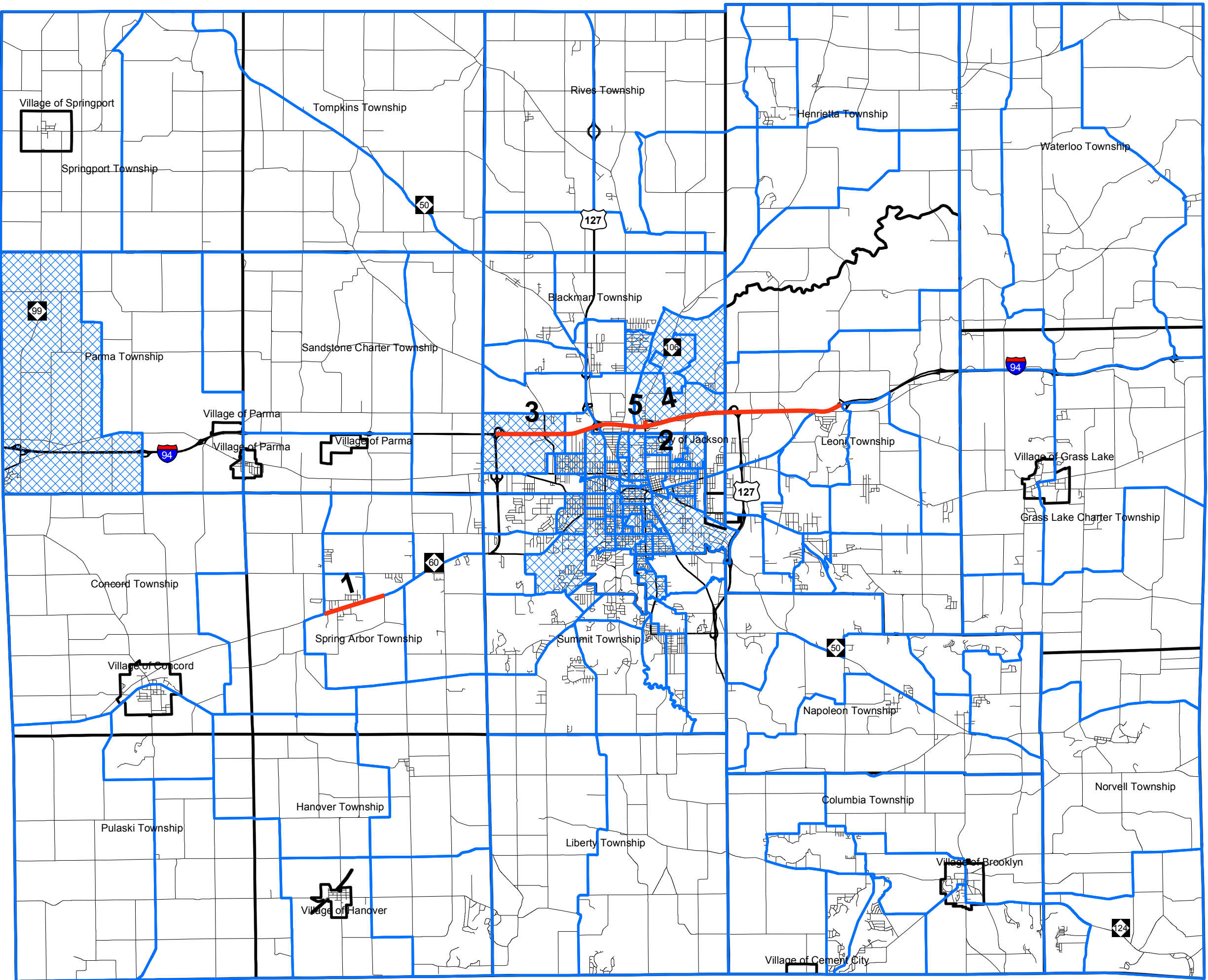
- Improve and Expand Projects
- Minority Pop. > County Avg.
- Census Block Group
- Municipal Boundary

0 2 4 Miles



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Jackson Area Comprehensive Transportation Study



Blacks & African Americans

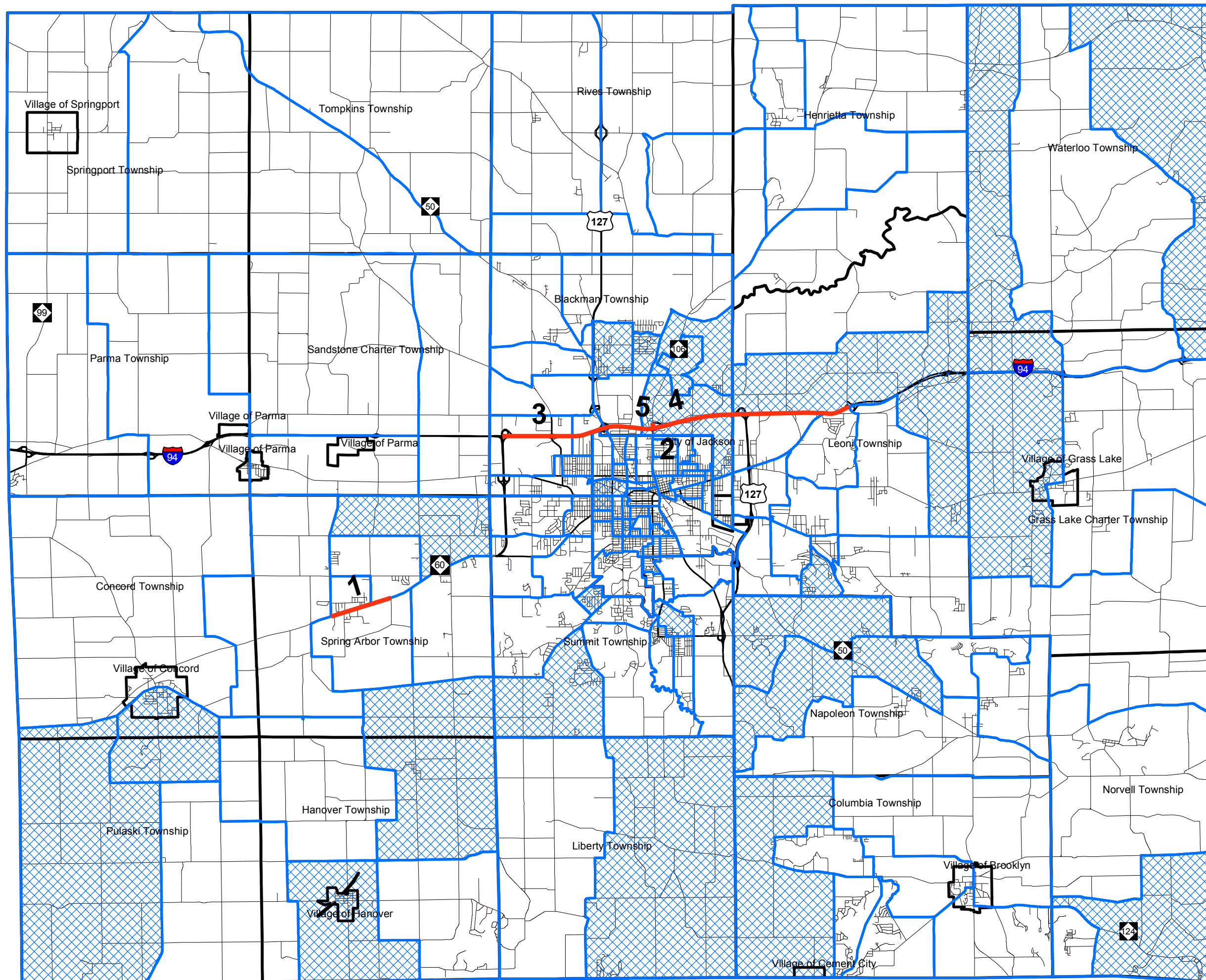
- Improve and Expand Projects
 - Minority Pop. > County Avg.
 - Census Block Group
 - Municipal Boundary
- 0 2 4 Miles
- N



American Indian or Alaskan Native

- Improve and Expand Projects
- Minority Pop. > County Avg.
- Census Block Group
- Municipal Boundary

0 2 4 Miles

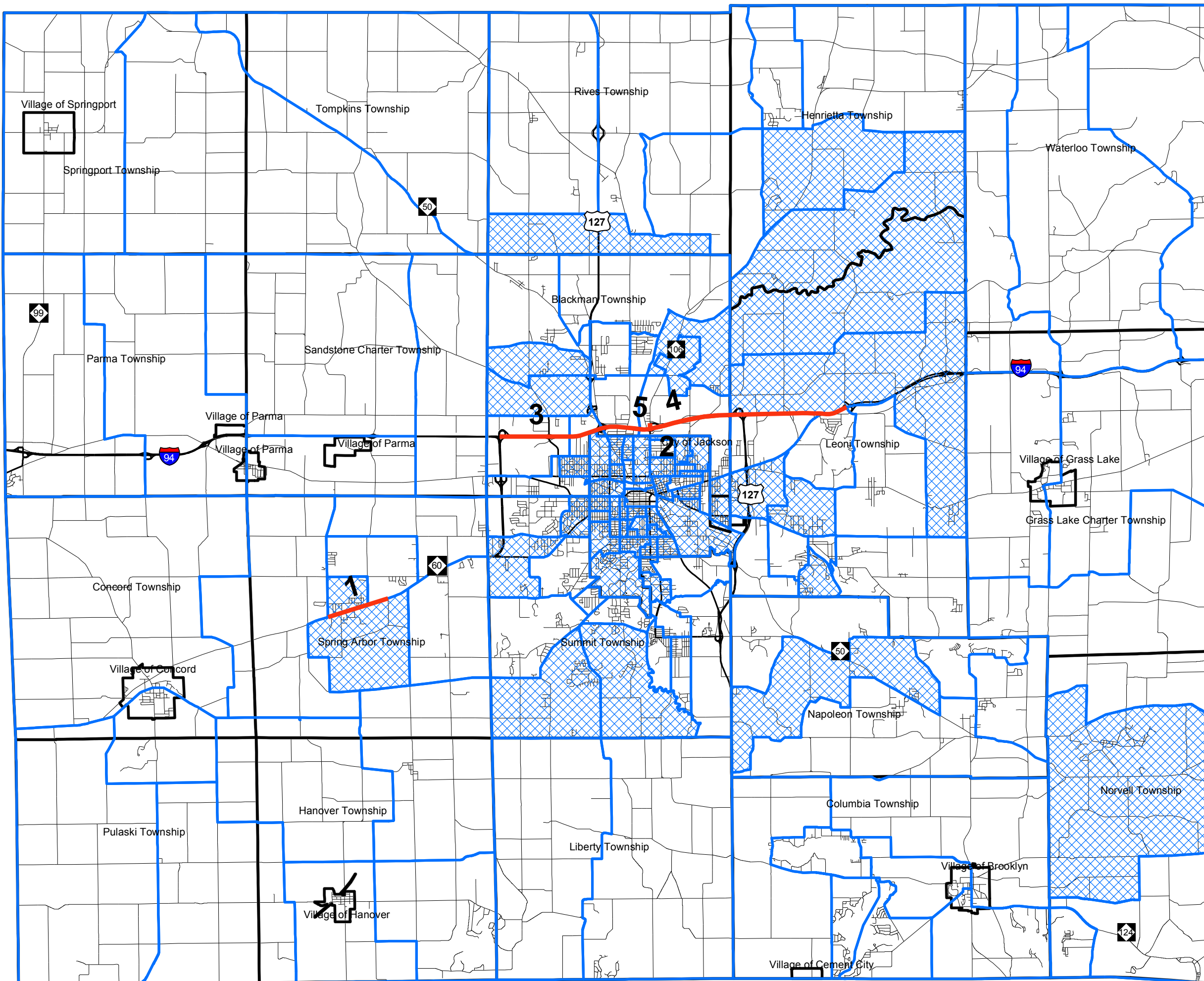


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Hispanic or Latino/a

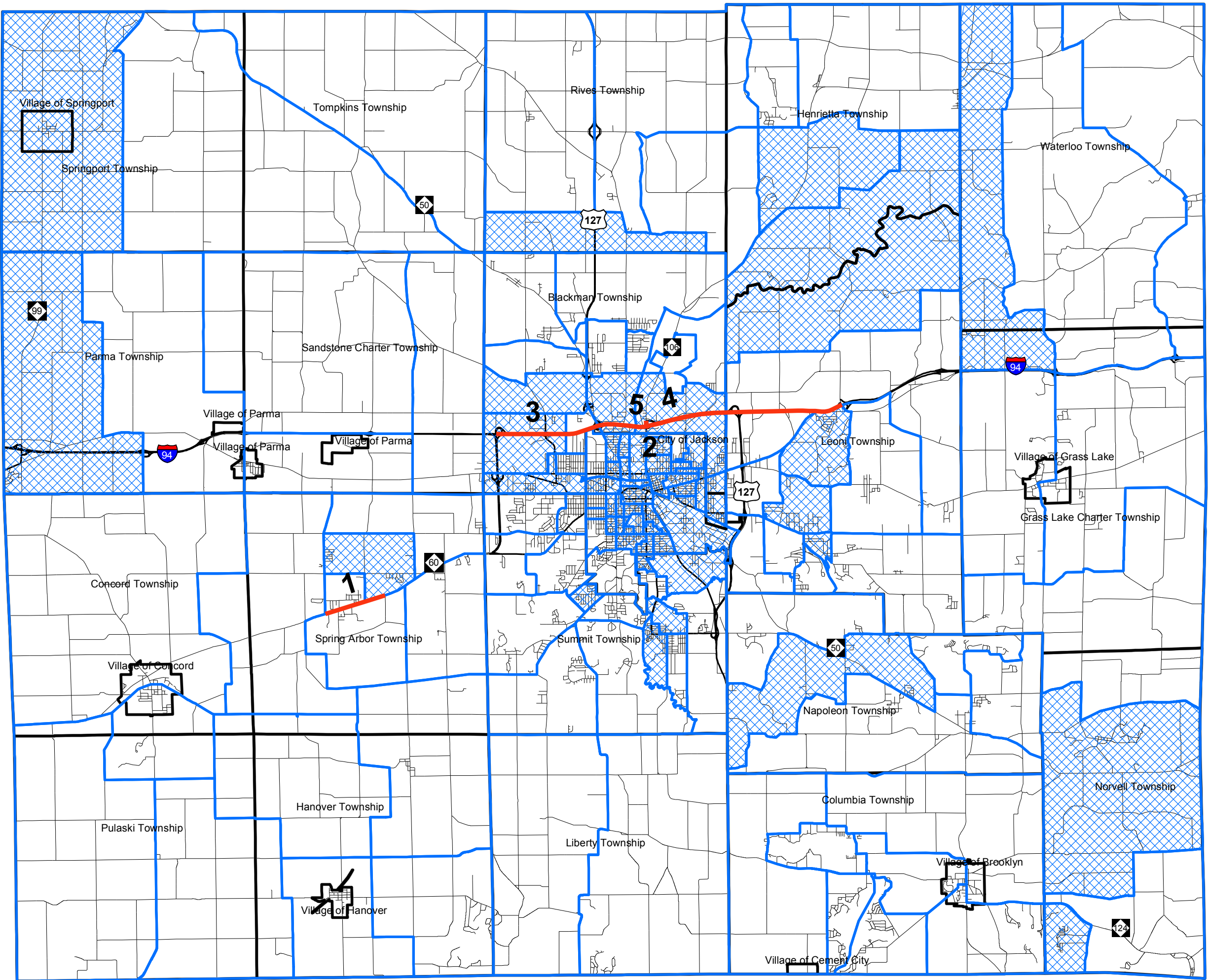
- Improve and Expand Projects
- Minority Pop. > County Avg.
- Census Block Group
- Municipal Boundary

0 2 4 Miles



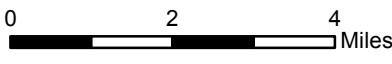
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Impoverished Individuals

- Improve and Expand Projects
- Minority Pop. > County Avg.
- Census Block Group
- Municipal Boundary



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Analyzing Potential Impact Centers

The environmental justice analysis requires analyzing the potential impacts on three major areas of concern. These areas are explored below.

1) Disproportionately high adverse impact to low-income/minority areas

Of the five state roadway capacity improvement projects highlighted in Chapter 9 in the plan, 100% of all five projects are located within or adjacent to areas “equal to or exceeding” the county’s overall poverty levels. Total funding invested in these projects is estimated at approximately \$120,638,000. The projects include:

- 1) Resurface and widening of M-60 from Chapel Road to Emerson Road
- 2) Reconstruction and realignment of the Cooper Street interchange at I-94
- 3) Reconstruction of I-94 from M-60 to Sargent Road
- 4) Reconstruction of I-94 interchange at Elm Avenue
- 5) Realignment and bridge structure replacement over JAIL Railroad and the Grand River to accommodate the future proposed widening of I-94 as recommended in the I-94 Freeway Modernization Study.

The environmental reevaluation process for the I-94 bridge over the JAIL Railroad and the Grand River, the I-94 at Cooper Street interchange and the reconstruction/realignment project began in 2012. The final design of the Cooper Street Interchange affects several homes and businesses, and as of May 2013, the property owners have been contacted. A public meeting was held at the Blackman Township Hall on April 18, 2013. Any environmental impacts resulting from these projects will be mitigated according to federal and state laws. During project implementation, appropriate detour routes will be maintained to minimize delay and disruption.

For each of the identified minority populations, five state roadway capacity improvement projects, four, or 80% are located in, or adjacent to, African American minority areas; two or 40% projects are in Hispanic minority areas; two or 40% of projects are located within or adjacent to Asian minority areas; and four or 80% of the total projects are located within or adjacent to Native American minority areas. Five projects, or 100% of the projects, are located within or adjacent to areas “equal to or exceeding” the county’s overall poverty levels.

The I-94 projects have been identified and documented in the environmental reevaluation process noted in the above paragraph. Any environmental impacts will be mitigated according to state and federal laws.

2) Minimizing/blocking access of low income/minority areas to transportation

Minimizing access can be characterized as the permanent closing of streets or interchanges in order to accomplish the proposed capacity projects contained in the plan. The capacity improvement projects will not involve any permanent street or interchange closures. The proposed construction will improve the flow of traffic through the areas. Therefore, it is assumed that there will be limited or no blockage of access to

the transportation system or loss of mobility as a result of implementing proposed projects.

3) Neglect of the transportation system in low income/minority areas

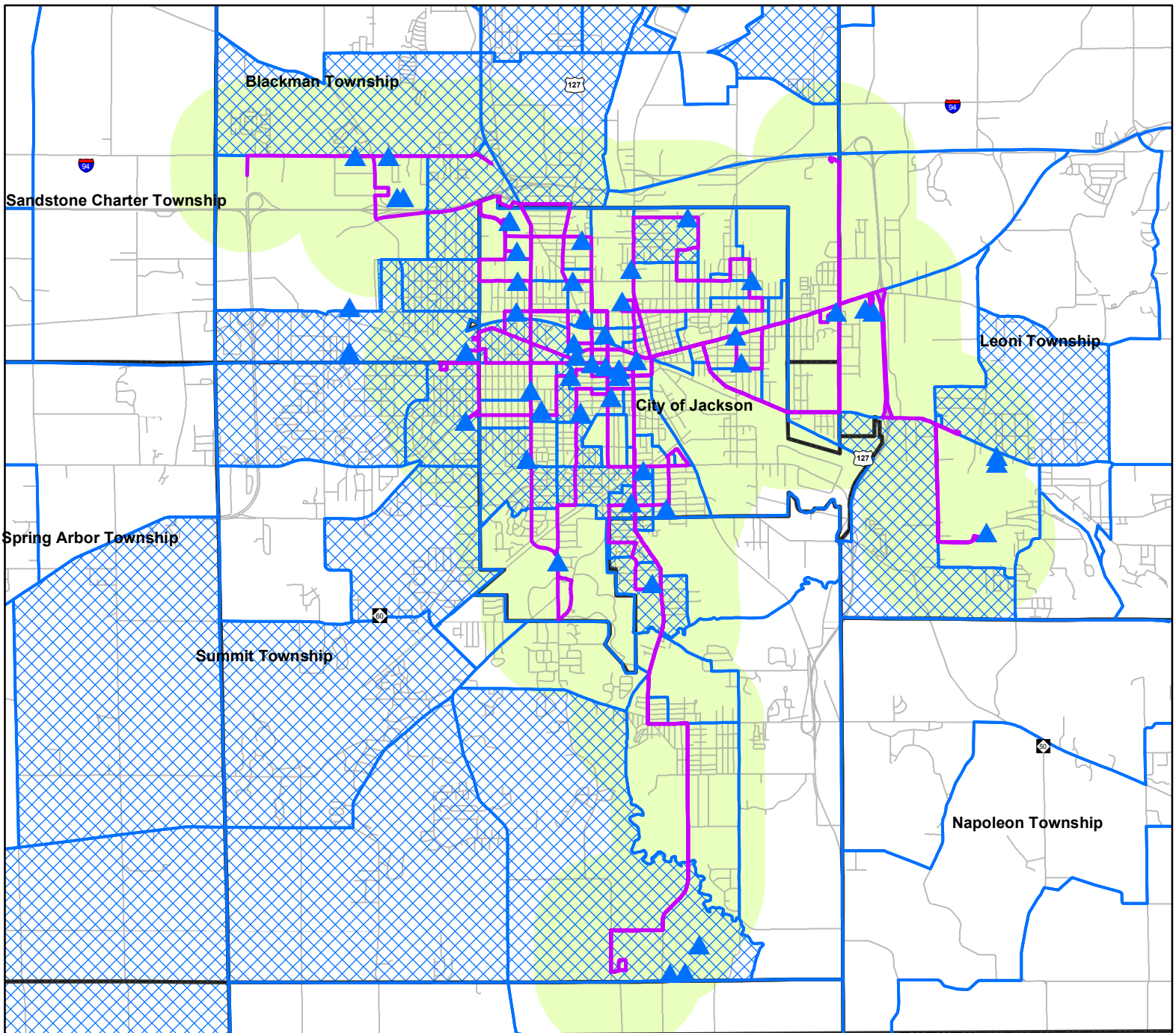
The Jackson MPO is approximately 720 square miles and includes 19 townships and the city of Jackson. The targeted low income (% below the national poverty level) areas mapped cover approximately 20% of the county and the composite minority areas mapped cover almost 60% of the county. As noted earlier, of the five state roadway improve and expand projects, all five projects are located within or adjacent to the low-income areas. In the identified minority areas, all five projects included in the plan are located within or adjacent to neighborhoods with a minority group exceeding the countywide averages. Therefore, it has been determined that there is no neglect of investment in the transportation system in the low-income and minority areas.

Public Transit Investment

Public transit in Jackson County is provided by JATA. The agency's fixed-route service area includes the city of Jackson and portions of the urbanized area and the Reserve-A-Ride program provides demand response service to all residents of the city and county. Reduced fares are available for the elderly, disabled and student populations. None of the proposed projects included in the plan restrict the access of residents to the public transit system services. Therefore, it has been determined that there is no neglect, reduction or delay in the receipt of transportation benefits by those residing in low income or minority areas. Maps illustrating how JATA routes serve minority and low-income populations in the Jackson Urbanized Area are also provided for review on the next several pages.

Conclusion

Following adopted environmental justice procedures, this analysis finds that the proposed projects do not result in violations of Executive Order 12898. The Jackson MPO will continue to update and maintain the public participation mailing list, and continue to improve communication, coordination, education, and involvement activities in order to reach the traditionally disadvantaged populations (including minority and low income) to ascertain and evaluate potential effects or impacts resulting from proposed projects.



- Census Block Group
- Minority Pop. > County Avg.
- Bus Shelter
- Bus Route
- ADA Corridor

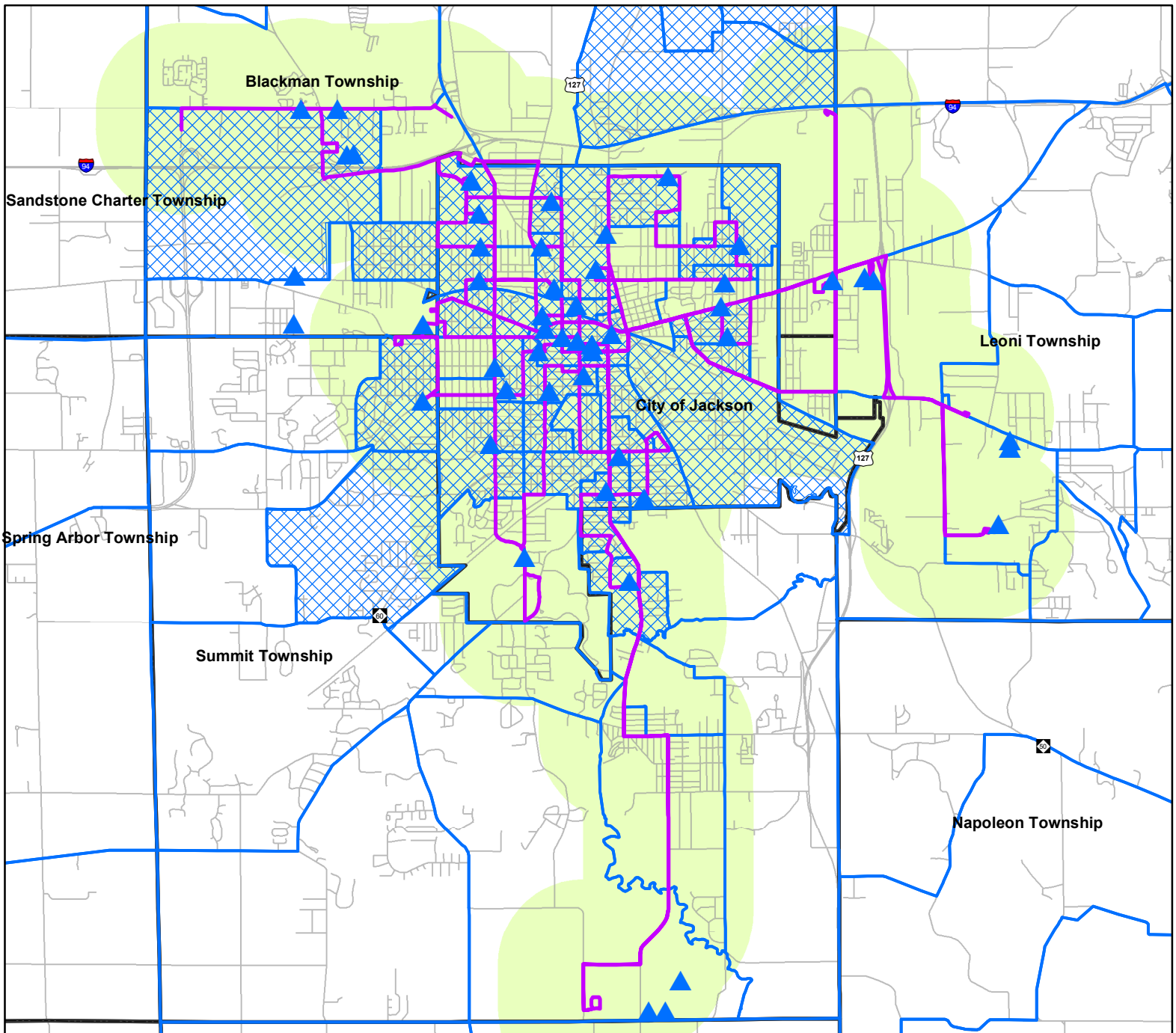
0 1 2 Miles



Asian & Pacific Islanders

Jackson Area Transportation Authority (JATA) Routes

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- Census Block Group
- ▲ Bus Shelter
- Minority Pop. > County Avg.
- Bus Route
- ADA Corridor

0 1 2 Miles

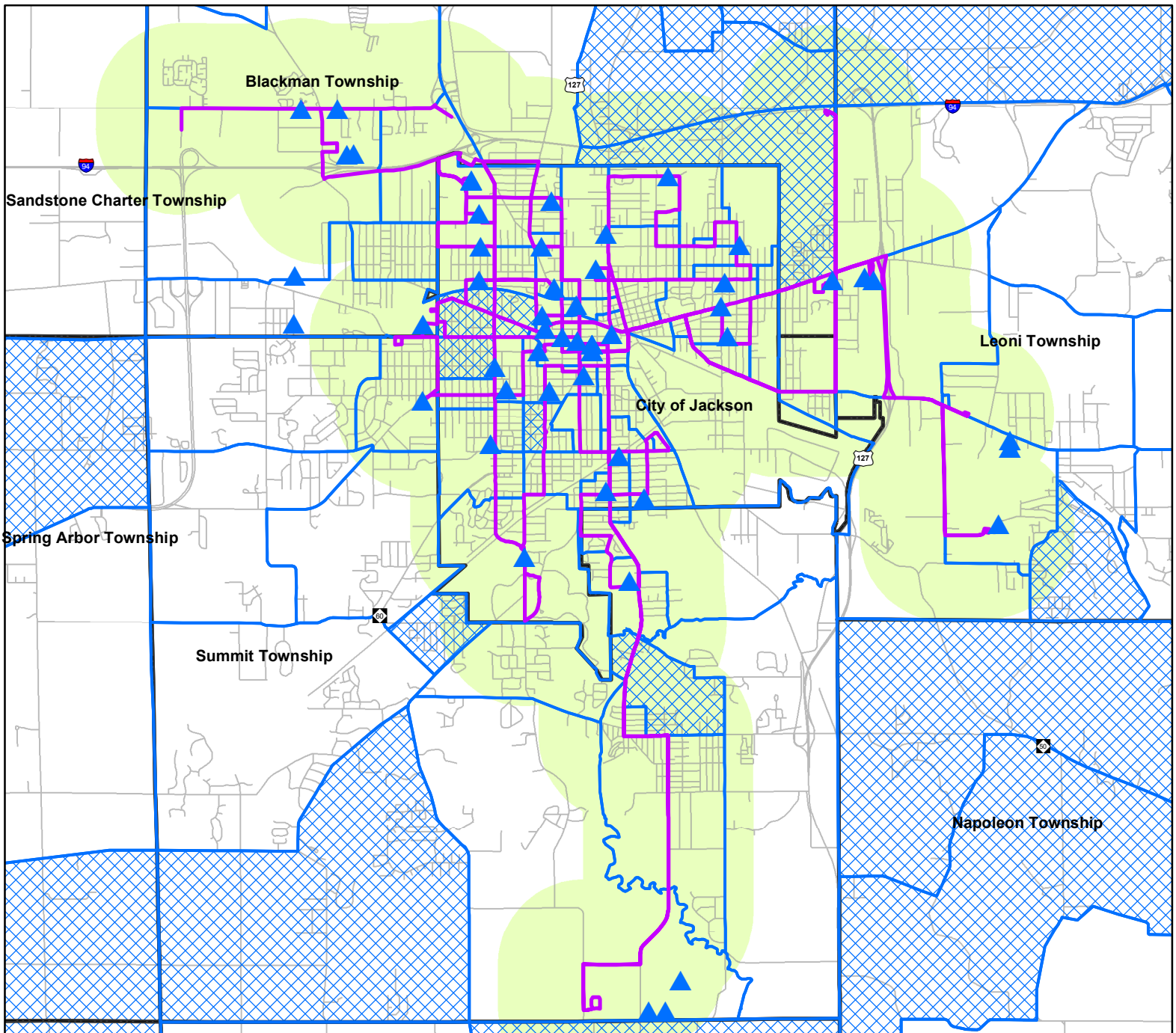


Blacks & African Americans

Jackson Area Transportation Authority (JATA) Routes

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- Census Block Group
- Minority Pop. > County Avg.
- Bus Shelter
- Bus Route
- ADA Corridor

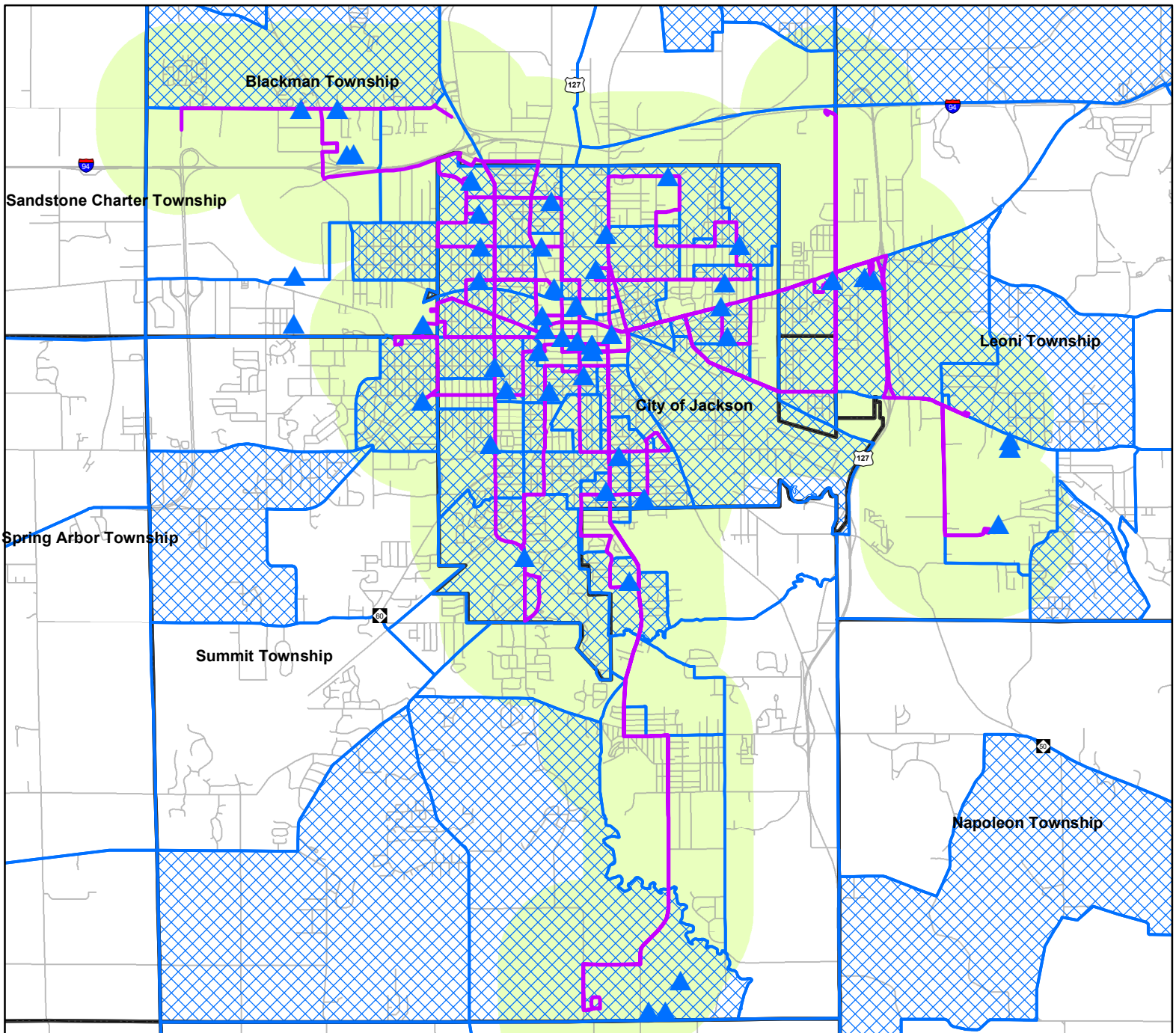
0 1 2 Miles



American Indian & Alaskan Native

Jackson Area Transportation Authority (JATA) Routes

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- Census Block Group
- ADA Corridor
- Bus Shelter
- Bus Route
- Minority Pop. > County Avg.

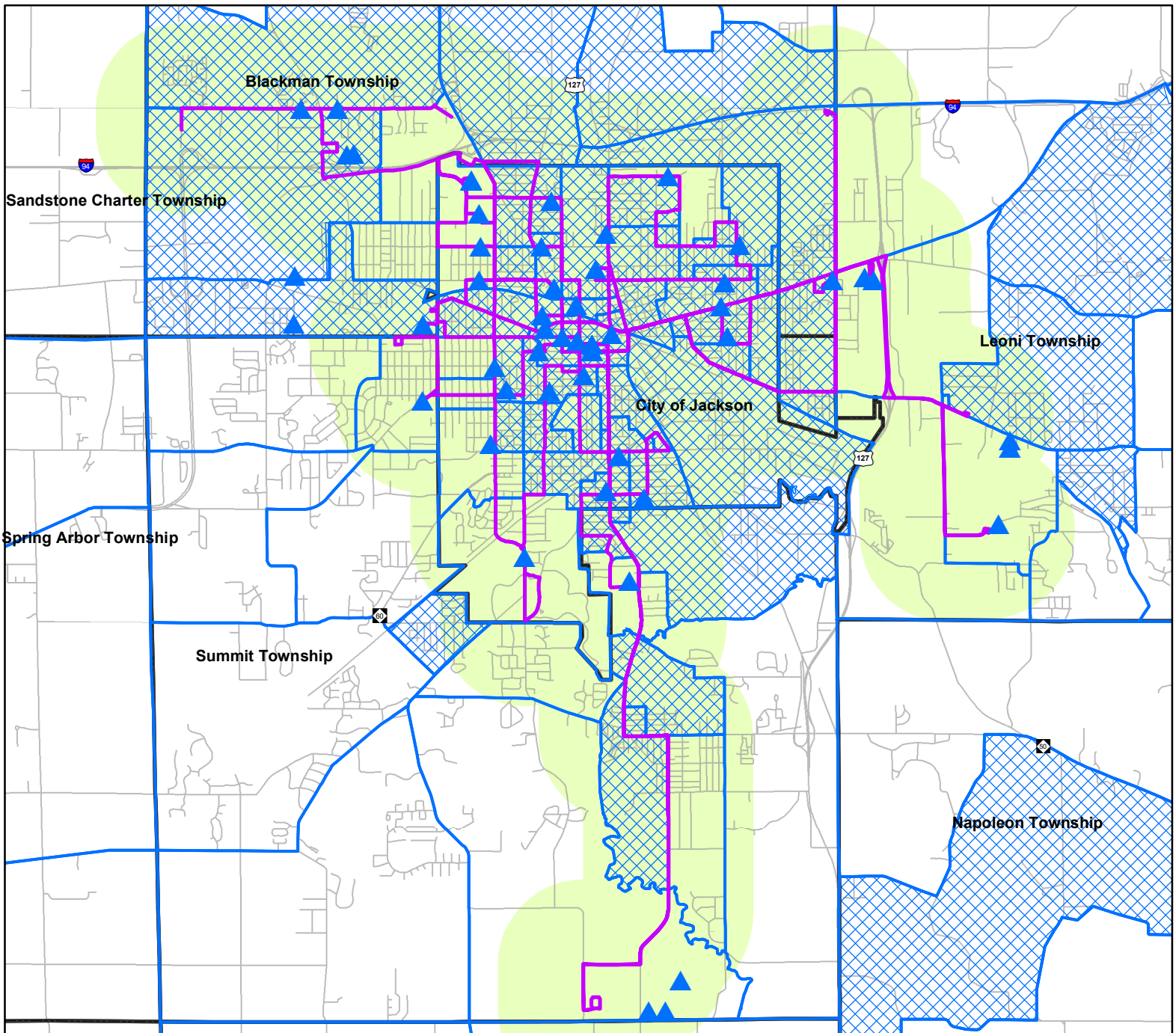
0 1 2 Miles



Hispanic or Latino/a

Jackson Area Transportation Authority (JATA) Routes

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- Census Block Group
- Minority Pop. > County Avg.
- Bus Shelter
- Bus Route
- ADA Corridor

0 1 2 Miles



Impoverished Individuals

Jackson Area Transportation Authority (JATA) Routes

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Chapter 13

Environmental Mitigation

The transportation system affects and is affected by the natural environment. Beginning with SAFETEA-LU and continuing with the FAST Act, long range transportation plans need to discuss “potential mitigation activities and potential areas to carry out these activities, including activities that may have the greatest potential to restore and maintain environmental functions affected by the Plan,” in consultation with pertinent wildlife, land management, and regulatory agencies. The purpose of the process is to identify possible impacts of proposed “improve and expand projects” on environmentally sensitive resources, list useful guidelines for mitigating these impacts, and share information with implementing agencies.

The FAST Act requires that the plan also addresses how storm water mitigation is addressed within the transportation system. MDOT, Jackson County, the City of Jackson and Jackson County Airport provided relevant manuals and plans. They are further reviewed in this section.

Natural, Agricultural, Aquatic, & Cultural Resource Analysis

The purpose of the analysis is to identify the projects that may have the potential to impact an environmentally sensitive area. Once a potential impact has been identified, general guidelines can be introduced for agency consideration during all phases of project planning, design, construction, and maintenance. Natural and Agricultural, Aquatic, and Cultural resource maps are shown on the next three pages. Buffers of a quarter of a mile were established around each proposed capacity improvement project. The proposed projects and their buffers were then overlaid on a series of maps identifying the locations of the following natural and cultural resources. The maps are on the next three pages.

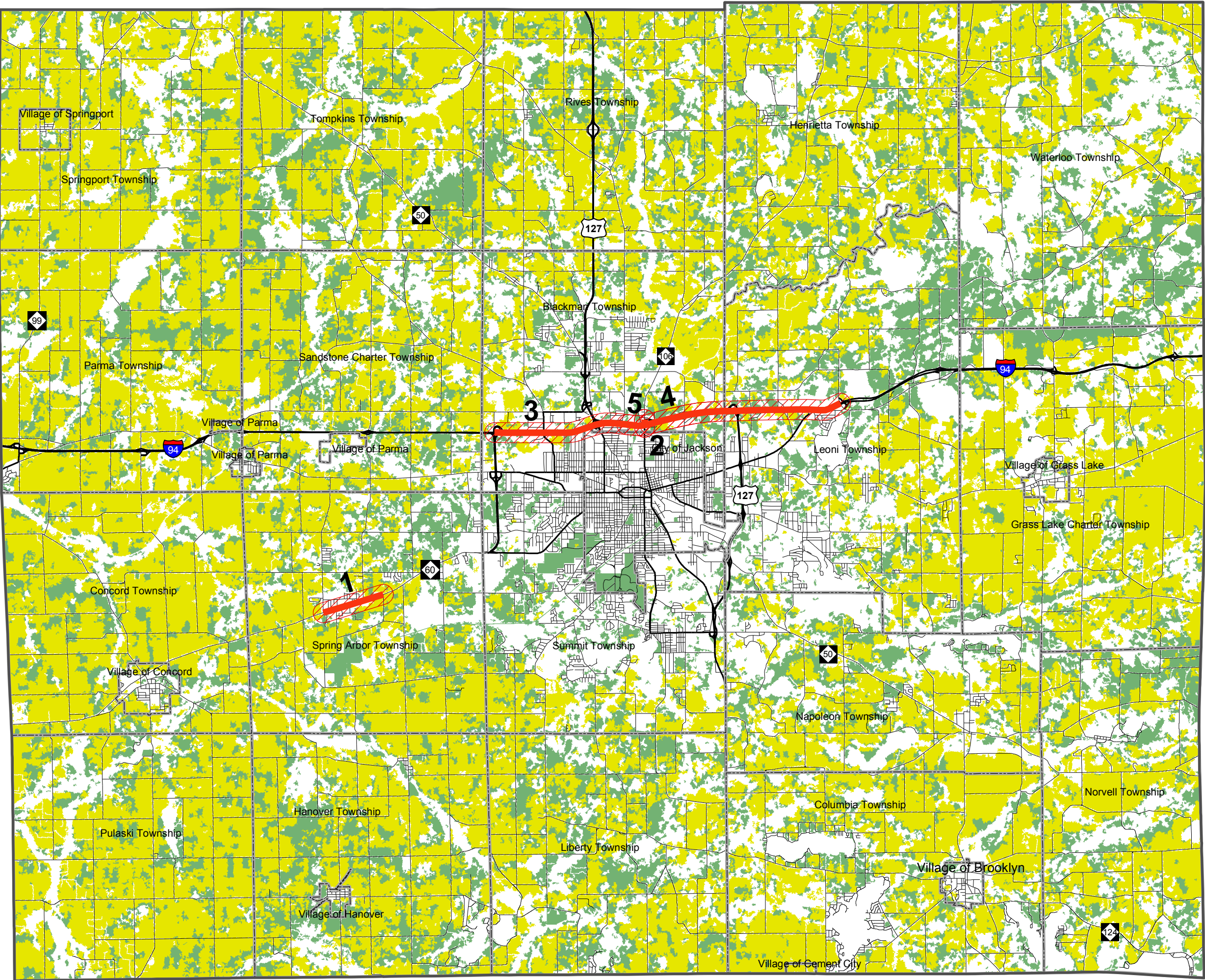


Watkins State Park

Natural Resources Map

- Capacity Improvement Projects
- Quarter Mile Buffer
- Forests & Fields
- Agriculture

0 2 4 Miles



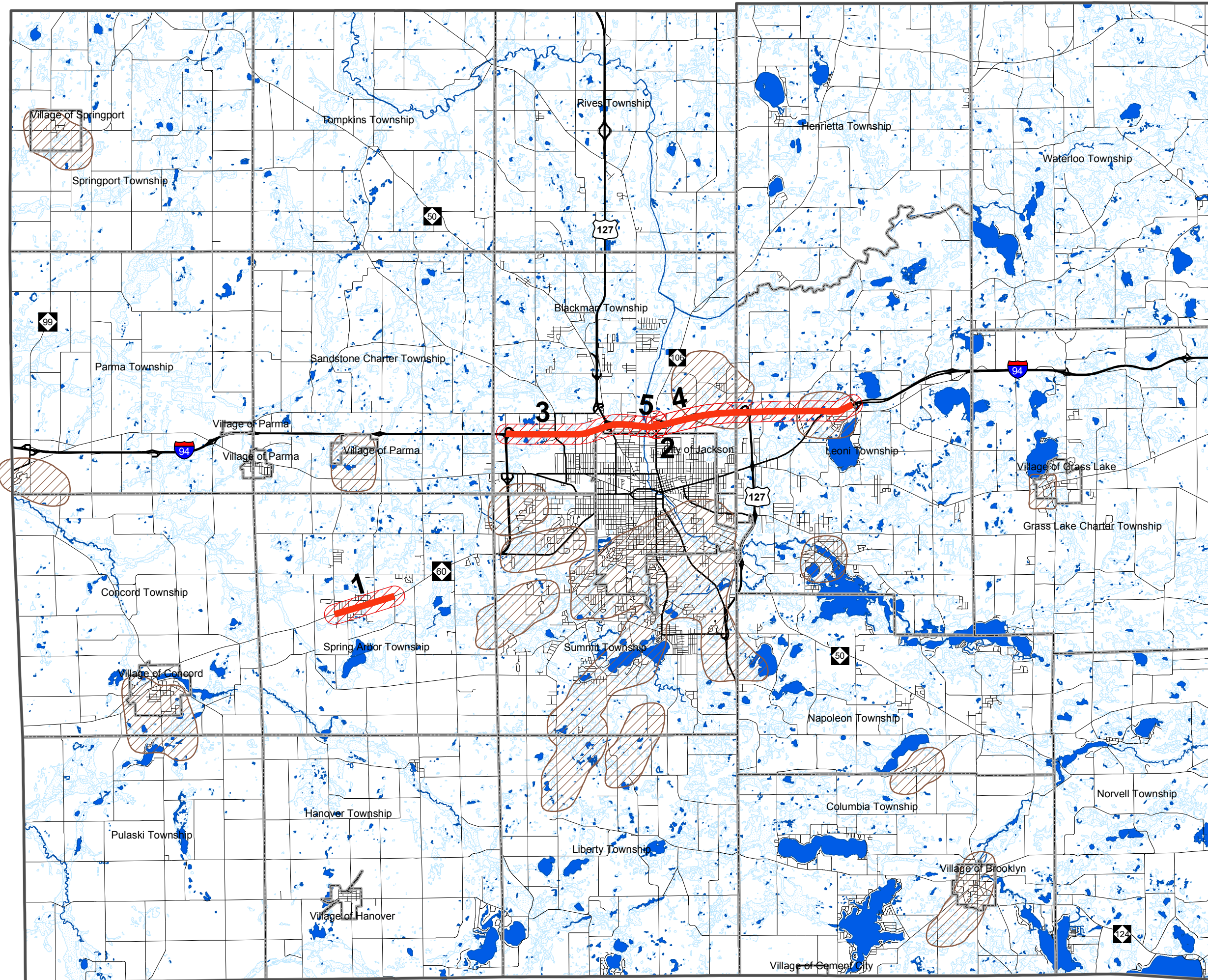
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Jackson Area Comprehensive Transportation Study

Aquatic Resources Map



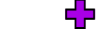






- Capacity Improvement Projects
- Quarter Mile Buffer
- Waterbodies
- Wetlands
- Wellhead Protection Areas

0 2 4 Miles

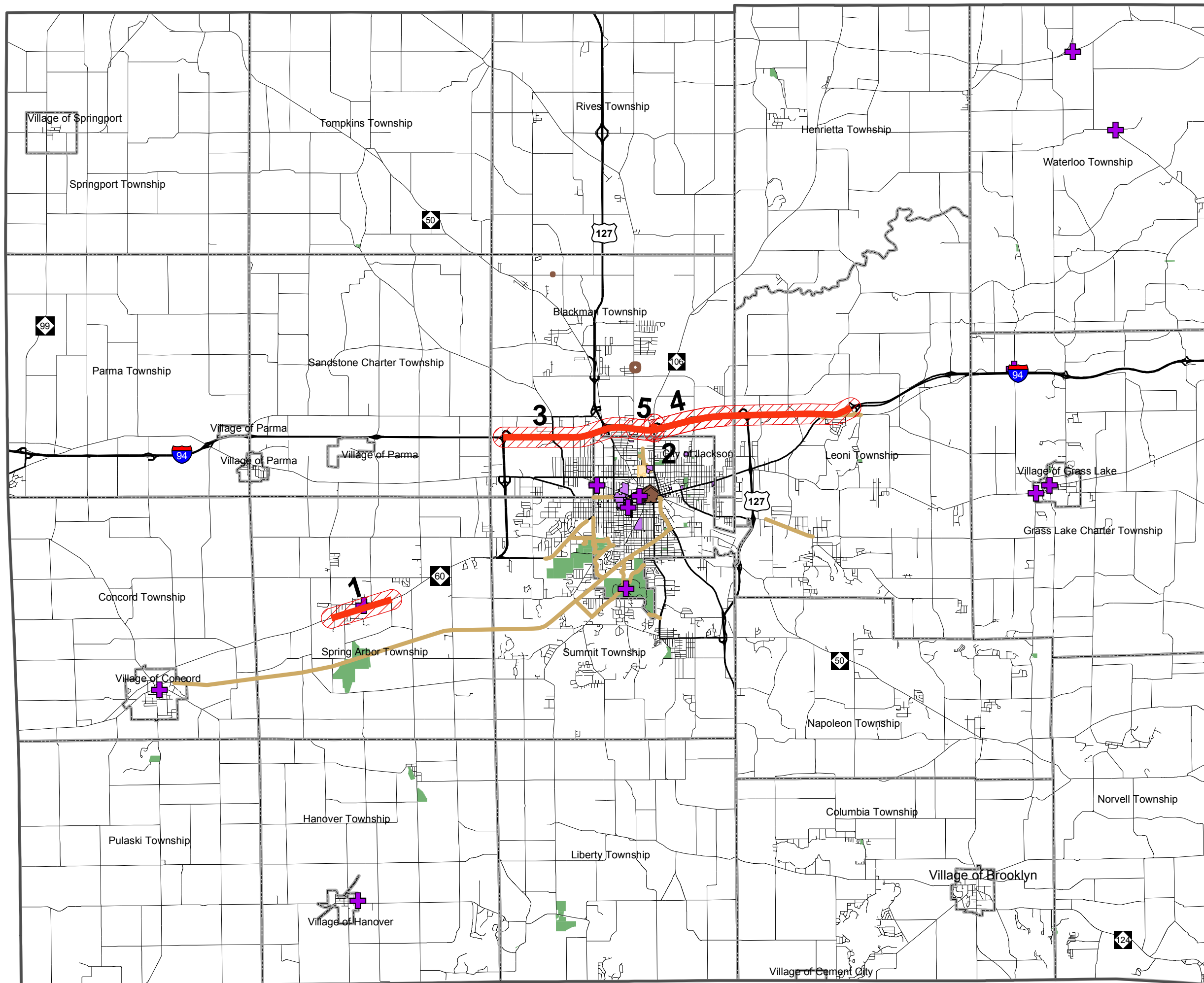


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Cultural & Historic Resources Map

-  Capacity Improvement Projects
-  Quarter Mile Buffer
-  Historical Sites
-  Historic Districts
-  Cemetery
-  Cemetery
-  Trail
-  Parks
-  County Fairgrounds

0 2 4 Miles



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The table below identifies the data sets that were used to create each map.

Table 13-1

Natural, Agricultural, Aquatic & Cultural Resource Map Data

Map	Resources	Data Source
Natural & Agricultural Resources	forest, open space, agricultural areas	US Geological Survey National Land Cover Database
	endangered species	US Fish & Wildlife Service
Aquatic Resources	rivers, drains, lakes, ponds, wetlands	Jackson County GIS Hydrology layer
	wellhead protection areas	Wellhead Protection Area Delineation report
Cultural Resources	parkland, trails	Joint City of Jackson/Jackson County Recreation Plan
	historic districts & properties	City of Jackson and Jackson County Historic Districts & Properties GIS layers
	cemeteries	City of Jackson and Jackson County Land Use GIS layer

Results

A potential impact was recorded on the Natural & Cultural Resources Matrix whenever a mapped resource intersected with a proposed project within the quarter-mile buffer. That table is on the next page.

The purpose of this analysis is to identify the projects that may have the potential to impact an environmentally sensitive area. However, it does not mean that the project cannot be implemented. Once a potential impact has been identified, general guidelines can be introduced for agency consideration during all phases of project planning, design, construction, and maintenance.

Table 13-2**Capacity Improvement Projects Resource Matrix**

	Project	Limits	Rivers & drains	Lakes & ponds	Wetlands	Wellhead protection areas	Forests	Areas of farmland preservation	Endangered species	Parkland & trails	Historic districts & properties	Cemeteries
1.	Resurface & widening of M-60	Chapel Road to Emerson Road			x							
2.	Reconstruction & realignment of the Cooper Street interchange				x		x					
3.	Reconstruction of I-94	M-60 to Sargent Road			x		x					
4.	Reconstruction of I-94 interchange at Elm Avenue				x	x	X					
5.	Realignment & bridge structure replacement over JAIL Railroad & the Grand River		x		x		x		x			

Storm water

Long range transportation plans need to address how communities reduce or mitigate storm water impacts to transportation. MDOT, Jackson County, the City of Jackson and the Jackson County Airport have guidelines for this issue.

Michigan Department of Transportation Drainage Manual 2006

The MDOT 2006 Drainage Manual provides guidance to administrative, engineering, and technical staff and consultants for the design of MDOT drainage facilities. Developed under the guidance of the TEA-21 federal transportation bill and AASHTO's

Model Drainage Manual, Metric Version, 1999, the MDOT manual was developed to give a design engineer a working knowledge of hydrology, hydraulics, and storm water management. The manual provides general operational guidelines with the flexibility to adapt recommendations to individual project needs.

The manual addresses MDOT's policy, design criteria, design guidance, procedure, and maintenance of the following topics:

- Hydrology
- Natural Channels and Roadside Ditches
- Culverts
- Bridges
- Road Storm Drainage Systems
- Storm water Storage Facilities
- Pump Stations
- Storm Water Best Management Practices

The intent is to give specific guidance that is applicable to most projects, and enable MDOT to practice good storm water management. MDOT University Region engineers use the manual as a starting point to ensure good engineering storm water management practice is used for state projects.

Jackson County

The Jackson County Department of Transportation uses the Jackson County Drain Commissioner's Storm Water Management Policy for site development. The policy is as follows:



Flooded Grand River in downtown Jackson

Retention (adequate outlet not available)

- 100 year frequency storm
- 3 hour duration
- 1.5"/hour rainfall intensity*

Detention (outlet available, but with limited capacity)

- 50 year frequency storm
- 1 hour duration
- 2.5"/hour rainfall intensity

*based upon Grand River Basin intensity-duration frequency curves

Jackson County is part of the Upper Grand River Watershed Alliance, which is a coalition of municipalities, agencies, businesses and individuals dedicated to improving water quality in the headwater region of the Grand River. The group developed the 2003 Upper Grand River Watershed Management plan, which provided recommendations on how agencies could continue to support the health of the upper Grand River watershed. The 2006 update to the plan is an addendum to fulfill the EPA's 319 Nine Minimum Elements of Water Shed Planning and the National Pollutant Discharge Elimination System (NPDES) Phase II requirements. The plan doesn't explicitly address how storm water is affected by and affects the transportation system, however, the following goal and objectives relate to the mitigation of storm water impacts of surface transportation:

Goal: All new development projects to be water quality friendly.

Objective: Increase regional planning efforts and implementation among local units of government.

Objective: Develop a standards manual which outlines economically viable water quality friendly development practices and requirements.

Objective: Incorporate water quality friendly practices into community development master plans.

These are important measures that the Jackson County Department of Transportation uses to help guide the development of projects, under guidance of the Drain Commissioner.

Jackson County Department of Transportation also uses the MDOT 2006 Drainage Manual.

City of Jackson

The 2012 City of Jackson Storm Water Management Manual provides specific information to the City of Jackson for design standards to address storm water quantity and quality and flood control. The City of Jackson adopted the *Low Impact Development (LID) Manual for Michigan* to guide the design of proposed best management practices. The Department of Public Works reviews all storm water related projects. The technical guide is used by City of Jackson Engineering in dealing



Storm water management in the City of Jackson

with storm water for all transportation related projects that meet the minimum requirements.

The previously mentioned 2016 City of Jackson Community Master Plan sites the need to address storm water runoff, especially in the downtown and urban core of the community, which includes maintaining an open and working transportation system.

The City of Jackson is also part of the Upper Grand River Watershed Alliance.

Jackson County Airport-Reynolds Field

The Jackson County Airport has a Storm Water Pollution Prevention Plan that was developed in 2006 as a requirement under Part I.B of Michigan's National Pollutant Discharge Elimination System (NPDES) general permit for storm water discharges from industrial activities and in accordance with good engineering practices. The plan describes the facility and its operations, identifies potential sources of storm water pollution associated with industrial activities at the facility, and recommends appropriate best management practices or pollution control measures to reduce the discharge of pollutants in storm water runoff. Additionally, the plan covers all the industrial activities conducted by commercial businesses at the airport including vehicle maintenance, fueling, cleaning, and deicing. Many private hangars exist at the airport owned by private individuals or corporations that are not considered commercial businesses nor industrial related activities, and therefore, are not included in the plan.

The goal of the storm water permit program is to improve the quality of surface waters by reducing the amount of pollutants potentially contained in the storm water runoff being discharged from industrial activities. The objectives of the plan are as follows:

1. To identify potential sources of pollution at JXN [Airport].
2. To describe best management practices which are to be used at JXN [Airport].
3. To provide other elements such as, a facility inspection program and record keeping and reporting program that will help JXN comply with the terms and conditions of their storm water discharge permit

All future airport facility improvements will be designed and constructed with best management practices that further improve the quality of surface waters around the airport.

Intergovernmental Cooperation

MDOT, County, and City staff typically works together as needed to resolve storm water issues at the site level on a project basis. With Jackson's unique soils and drainage issues, local leaders and staff collaborate to develop cost-effective, environmental-sound solutions using storm water best management practices. There has been talk between the City of Jackson and Jackson County to develop a set of guidelines that are complimentary and/or similar to help with the successful adherence to storm water management policies, standards and guidelines for engineers and developers across jurisdictional boundaries.

with storm water for all transportation related projects that meet the minimum requirements.

The previously mentioned 2016 City of Jackson Community Master Plan sites the need to address storm water runoff, especially in the downtown and urban core of the community, which includes maintaining an open and working transportation system.

The City of Jackson is also part of the Upper Grand River Watershed Alliance.

Jackson County Airport-Reynolds Field

The Jackson County Airport has a Storm Water Pollution Prevention Plan that was developed in 2006 as a requirement under Part I.B of Michigan's National Pollutant Discharge Elimination System (NPDES) general permit for storm water discharges from industrial activities and in accordance with good engineering practices. The plan describes the facility and its operations, identifies potential sources of storm water pollution associated with industrial activities at the facility, and recommends appropriate best management practices or pollution control measures to reduce the discharge of pollutants in storm water runoff. Additionally, the plan covers all the industrial activities conducted by commercial businesses at the airport including vehicle maintenance, fueling, cleaning, and deicing. Many private hangars exist at the airport owned by private individuals or corporations that are not considered commercial businesses nor industrial related activities, and therefore, are not included in the plan.

The goal of the storm water permit program is to improve the quality of surface waters by reducing the amount of pollutants potentially contained in the storm water runoff being discharged from industrial activities. The objectives of the plan are as follows:

1. To identify potential sources of pollution at JXN [Airport].
2. To describe best management practices which are to be used at JXN [Airport].
3. To provide other elements such as a facility inspection program and record keeping and reporting program that will help JXN comply with the terms and conditions of their storm water discharge permit

All future airport facility improvements will be designed and constructed with best management practices that further improve the quality of surface waters around the airport.

Intergovernmental Cooperation

MDOT, County, and City staff typically work together as needed to resolve storm water issues at the site level on a project basis. With Jackson's unique soils and drainage issues, local leaders and staff collaborate to develop cost-effective, environmental-sound solutions using storm water best management practices. There has been talk between the City of Jackson and Jackson County to develop a set of guidelines that are complimentary and/or similar to help with the successful adherence to storm water management policies, standards and guidelines for engineers and developers across jurisdictional boundaries.

- If it all possible, avoid impacts to environmental resources through project design and/or through the implementation of all possible mitigation measures.
- Incorporate storm water and erosion control management into the project design.
- Reduce the size and need for culverts when and where possible.

Construction and Maintenance Guidelines

- Include all special requirements that address environmentally sensitive resources into plans and estimates used by contractors and subcontractors. Bring to attention the types of activities that are not appropriate in environmentally sensitive areas.
- Minimize the size of the construction and staging area with clearly marked boundaries using fencing or flagging around sensitive areas as necessary to prevent intrusions.
- Utilize the least intrusive construction materials and techniques.
- Avoid disturbing the construction site as much as possible by:
 - Protecting established vegetation and natural habitat. If disruption is unavoidable, replace with native species as soon as possible.
 - Implementing sediment and soil erosion control measures as required.
 - Not stockpiling materials in sensitive areas.
 - Protecting water quality by controlling direct runoff, sweeping streets to reduce sediment, implement salt management techniques, and control storm water drains from construction debris.
 - Protecting cultural and historic resources.
 - Minimizing noise and vibration.
 - Providing for solid waste disposal.
 - Conducting on-site monitoring during and after construction to ensure protection of environmental resources as planned.
 - Maintaining equipment in good working condition and avoid fueling or maintenance near environmentally sensitive areas.
 - Reducing land disturbances through the efficient organization of construction activities.

Conclusion

The purpose of this process is to identify potential impacts the proposed capacity expansion projects may have on the area's environmentally sensitive resources and to provide useful guidelines for mitigating the impacts to the implementation agencies. The projects included in the plan should be analyzed closely as they move further into the stages of development to determine whether negative environmental impacts will affect the surrounding area.

Chapter 14

Emergency Management and Natural Disasters

The FAST Act requires that the plan must address how agencies are reducing the vulnerability of the transportation infrastructure to natural disasters. Federal, state, and local agencies have been collaborating for years to ensure that impacts to the road network, transit services, railroads, air travel, and non-motorized facilities are reduced when faced with a major event. This chapter addresses how agencies in Jackson have prepared to meet this need.

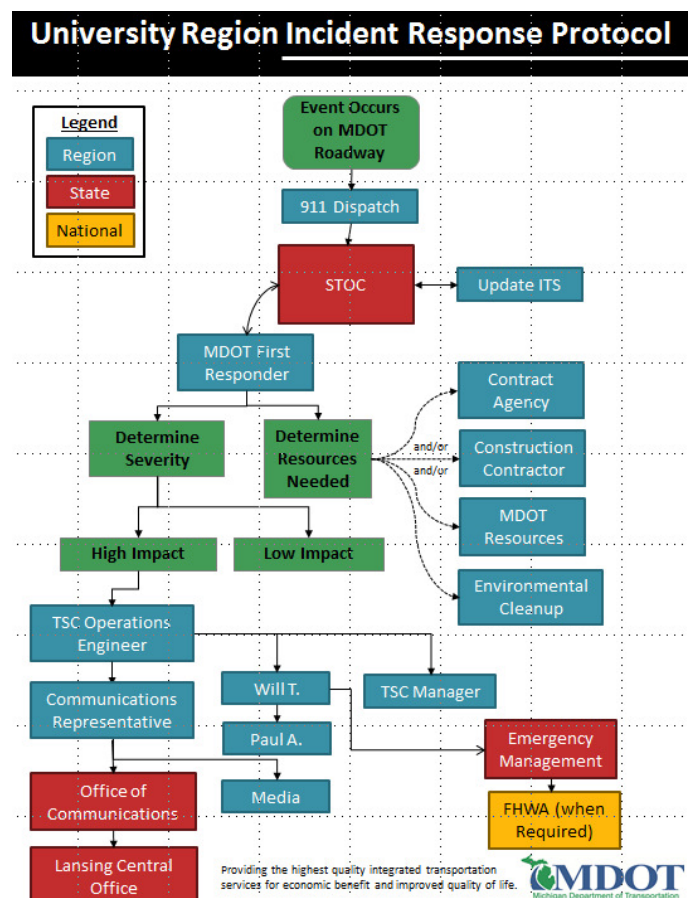
Existing Services

Michigan Department of Transportation

MDOT has protocols to address incidents that affect the state transportation system, which include events that would occur as a result of a natural disaster. The MDOT University Region Incident Response protocol outlines the specific response for an event that occurs within the University Region. The process, as outlined by MDOT, includes communication with 911 Dispatch through FHWA, if necessary. MDOT staff is primarily responsible for the steps outlined, however, local and federal level agencies are included on an as needed basis. A variety of MDOT staff at the local Transportation Service Center (TSC) Office and at the Lansing Central Office are also involved. Having the process outlined clearly is helpful if a time of need arises.

MDOT also works with the Michigan State Police (MSP) in coordinating road closures by following the Official Order Number 17, Subject: Traffic Enforcement and Local Ordinances document. Having the two agencies work together closely in a time of need can address public safety and reduce stress on the transportation system for state and local governments as well as the public. The relevant departmental policies and responsibilities found in the document are:

- Procedures for Closures of State Highways
- Traffic Law Enforcement Policy and Procedure
- Speed Limit Enforcement and Policy



- Guidance for Loss of Power to Traffic Signals
- Snowmobiles and Off-Road Recreation Vehicles
- Enforcement Policy for Railroad Law
- Railroad Operating in Michigan and Emergency Contacts
- Enforcement of Local Ordinances

Jackson County Sheriff

The Jackson County Sheriff is charged with the formal administration of Emergency Management Division for Jackson County. Emergency Management Division coordinates emergency response agencies who work together to protect the lives and property of the citizens of Jackson County. They administer alerts related to severe weather and administer the county hazard mitigation plan.

Jackson County Department of Transportation

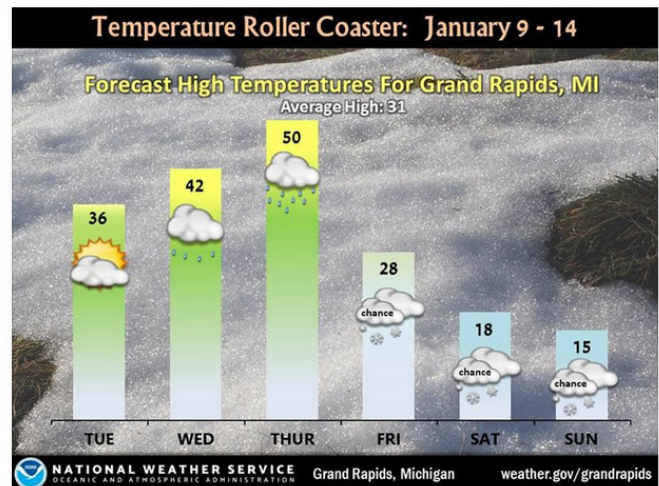
JCDOT is well connected and resourced to communicate with the public and its partnering agencies to address issues related to natural disasters. Using social media, the department pushes information about construction sites, hazardous weather alerts, and weather-related traffic events, detours, delays, and crashes. For example, when snow plows are deployed, the information is posted on the JCDOT Facebook page.

JCDOT has informal and formal agreements with external agencies to provide mutual aid in times of need. There are written, formal agreements with Calhoun County Road Department that specifically address that the road agencies, with the permission of departmental directors, provide help as needed. Informal agreements exist with other nearby counties, and shared resources are also available through the department's participation with the County Road Association of Michigan (CRA). CRA is a member-driving organization that works with the 83 road agencies within the state on matters of common interest. A list of available shared resources at each road commission is available through CRA. JCDOT and MDOT also have a formal contract agreement to help each other out in addressing matters of emergency management and natural disasters, as it relates to the transportation system. For example, MDOT may ask JCDOT to respond to a state matter because they are closer and can provide a more timely response.



Good morning Jackson County,

It looks like things will be warming up a little over the next couple of days, but that also means more moisture in the air. Our road crews have been out since 3:30 this morning salting as needed due to frost on the roads and freezing rain. Please continue to be cautious during your daily commute and travel safely.



Jackson Area Transportation Authority

JATA can also be affected by weather events. The local transit system has emergency snow routes. The snow routes allow riders to catch the bus in an area where riders can board and exit safely during or after a snow storm. The routes take effect when JATA determines that the road conditions are unsafe. JATA has an email emergency notification system that will notify its recipients of any route alterations or delays, including those related to natural disasters like weather events, flooding, the deployment of snow routes, etc. The service is an important way JATA users can stay informed about the transit system in Jackson.



Existing Plans

Jackson County Hazard Mitigation Plan 2011

The 2011 Jackson County Hazard Mitigation Plan (JCHMP) is a community plan that identifies various potential disasters and actions and activities to implement before a disaster happens for all communities in Jackson County. The JCHMP includes developed strategies and actions to implement prior to the occurrence of a disaster to attempt to minimize the negative impacts associated with each disaster. The plan is administered through the Jackson County Sheriff Emergency Management Division.

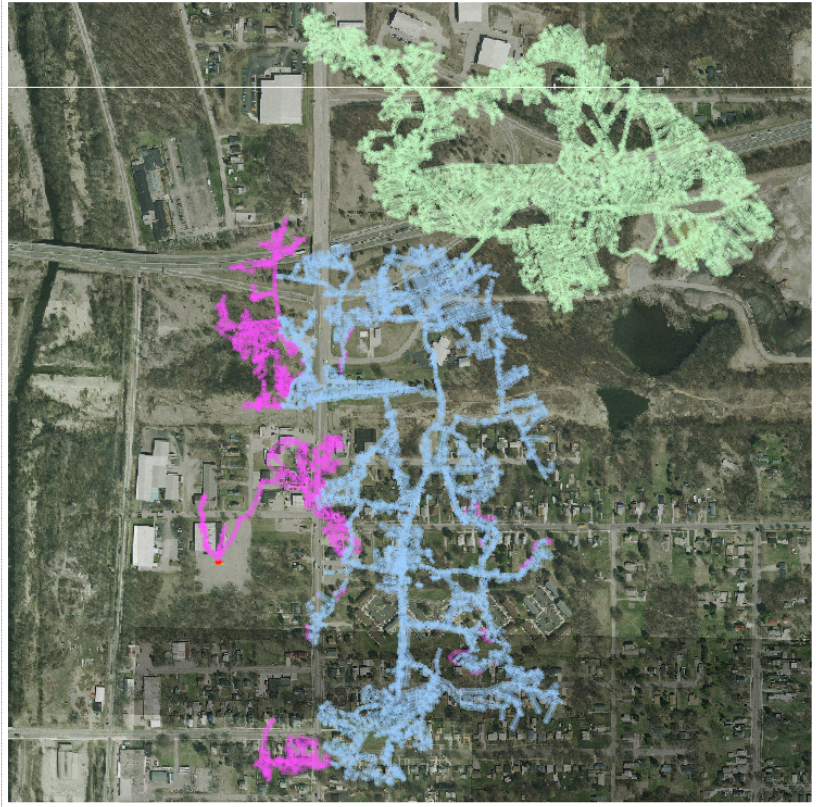
The JCHMP includes a list of natural disasters that are known or have the potential to occur within the Jackson area. They include:

- Earthquakes
- Subsidence
- Wildfires
- Riverine Flooding
- Drought
- Extreme Temperatures
- Hail
- Lightning
- Severe Wind Events/Tornadoes
- Snowstorms
- Ice/Sleet Storms

Each of the natural disasters listed could affect the transportation system, however, the impact or likelihood of each of the events is different. The impact to the transportation system would depend on the size, location, and duration of each event. The natural disasters most likely to affect the transportation system are explored below:

Earthquakes: There have been no significant events in Jackson County, however there is a small potential that minor ground disturbances could occur. **Impacts to the transportation system could include** energy disruptions or fuel price increases, an increase in traffic to accommodate refugees due to an occurrence of a regional event, temporary street, non-motorized facilities, and/or rail line closures to clean up debris displaced by the event. Air travel at the airport may also be temporarily disrupted.

Subsidence: Natural subsidence occurs when the ground collapses into underground cavities produced by the dissolution of limestone or other soluble materials by groundwater. Historical coal mining in the area has left some subsidence vulnerability along parts of I-94 corridor and the local road network. During MDOT pre-construction efforts for the I-94 Modernization Project, professionals found some highway footings were in old coal mining shafts. Since this discovery, MDOT has put significant resources toward addressing the issue. **Impacts to the transportation system could include** future subsidence events in areas near abandoned coal mines, like along I-94. MDOT has been addressing this issue during the I-94 Modernization Project by procuring special studies, resources, and experts to address the concern for future events.



Known coal mining shafts overlaid on I-94 at the Cooper St exit

Wildfires: The combination of Jackson County's forest cover and an increase in exurban development has raised the likelihood for potential loss of life and property, especially in the Irish Hills area in Columbia and Norvell townships. **Impacts to the transportation system could include** disruption like traffic congestion in the event evacuations take place or road, non-motorized facilities, rail line and airport closures due to the wildfire location and smoke drifts.

Riverine Flooding: With Jackson being the headwater to three major rivers and full of wetlands areas, there is great potential for flooding. A 2009 Flood Insurance Study for Jackson County found that major flooding events have been documented in the area since 1904. Flooding is most likely to occur within the City of Jackson, however, flooding may also occur in areas in Summit Township, Village of Brooklyn and areas within the Kalamazoo River Watershed. **Impacts to the transportation system could include** long and short term road, non-motorized facilities, and rail line closures due to a flooding event and cleanup or traffic and transit disruptions as vehicles are routed around flooded areas. Each community that has a Flood Insurance Rate Map intends to adopt and enforce the National Flood Insurance Program flood management requirements. Communities where no flooding hazard areas have been identified will monitor conditions and request further analysis as needed.

Severe Wind/Tornadoes: Jackson has a history of having tornadoes and severe wind impact the area. The County expects several severe thunderstorms that are characterized by strong winds to occur annually. **Impacts to the transportation system could include** short term road, non-motorized facilities, airport and rail line closures due to a tornado and cleanup or traffic or transit disruption as vehicles are routed around affected areas.



Damage after a tornado in Jackson County

Snowstorms: Jackson County averages more than three snow storms a year. The effects of large snow storms are usually widespread and countywide. **Impacts to the transportation system could include** short term closure of roads and the airport during the storm event and while facilities are cleared, an increase in risk in driving on snow-covered roads, biking, and walking on non-motorized facilities. At the airport, impacts could include delays due to the deicing of planes and risks associated with flying in snow storms.

Ice Storms: In recent history, Jackson County has experienced an ice storm almost every year. **Impacts to the transportation system could include** short term closure of roads and the airport during the storm event and while facilities are cleared, an increased risk in driving on ice-covered roads, biking and walking on non-motorized facilities, and flying in ice storms.

The following JCHMP goals and objectives address or relate to hazard mitigation planning for the transportation system:

- Goal 1. Guide future growth and development to assure a high quality, safe environment.
 - Objective. Development should occur in a manner consistent with existing local community master plans. The plans must be reviewed when land use decisions and governmental expenditures are considered, and such decisions and expenditures should be consistent with the plans at the time of their implementation.
 - Objective. Local units of government should promote high-density compact development which offers an ease in service delivery and the provision of infrastructure and avoids an over-consumption of land.
 - Objective. As components of the natural system, wetlands, rivers and floodplains, and wooded areas should be used to define development and channel growth into appropriate areas, and maintain natural systems for flood prevention.

- Goal 2. Improve the transportation system to promote safety and efficiency.
 - Objective. Transportation improvements should promote safety and ease of movement of people and freight.
- Goal 3. Protect Jackson County's natural environment
 - Objective. Development should be strongly discouraged in floodplains.
 - Objective. Jackson communities should preserve their wetlands.
 - Objective. Best management practices should be applied for storm water management throughout the County.
- Goal 4. Strengthen and diversify Jackson's economy safely and efficiently.
 - Objective. New industrial parks should be located in areas which are accessible to I-94 and major state arterial routes to promote Jackson's economic growth, and promote safety in the production and movement of goods.
- Goal 5. Maintain a safe community and protect property.
 - Objective. Hazard mitigation planning should be incorporated as a fundamental element in local planning processes.

To address the natural hazards identified and the outlined goals, a set of mitigation strategies were developed. Those relevant to the transportation system are as follows:

1. Implement an enhanced public information and education program, aimed at Jackson County citizens, regarding potential emergencies and how to prepare and respond. As result of the preparation of this plan, and the comprehensive view of hazards facing the community, it was determined that there is a need to develop an enhanced public information and education program to inform citizens about the potential hazards facing the Jackson community. A knowledgeable citizen base can do much to minimize the potential for damage and threat to human life.

2. Incorporate hazard mitigation planning in community master planning. As a means of mitigating the hazards facing Jackson communities, there is a need to incorporate hazard mitigation planning into the community master planning process. The protection of the public health, safety, and welfare is central to governmental planning. The incorporation of hazard mitigation planning as an elemental part of the community planning process will assure a review of the hazard mitigation plan at least once every five years when the Community Master Plan is reviewed and updated.

3. Update the hazard mitigation plan every five years, or as deemed necessary. An update of the hazard mitigation plan every five years will offer an opportunity to reassess the hazards facing the community and adjust mitigation strategies as necessary. This review and adjustment will result in a maximization of the use of limited resources and a reduction of the impacts of the hazards.

The JCHMP identified that Jackson County is particularly vulnerable to ice storms, snow storms, and tornadoes. Communities will likely focus on these issues, but should also

proceed on disaster preparedness for all natural disasters. The communities within Jackson County should collaborate to ensure that the public, as well as the transportation system, is prepared to respond in the event of a natural disaster. By highlighting the goals, objectives, and strategies in the JCHMP, the long range transportation plan demonstrates a reduction of vulnerability of the transportation system to natural disasters.

APPENDIX

Public Participation Documentation

Region 2 Planning Commission



Jackson Area Comprehensive Transportation Study

To: Member of the 2045 Long Range Transportation Plan Steering Committee

Carl Rice, Jr., Region 2 Planning Commission, Chair
(Alt. John Polaczyk, Region 2 Planning Commission)
Steve Shotwell, JACTS Policy Committee, Chair
(Alt. Pete Jancek, JACTS Policy Committee, Vice Chair)
Angela Kline, Jackson County Department of Transportation, Director of Engineering
Jon Dowling, City of Jackson, City Engineer
Mike Brown, Jackson Area Transportation Authority, Executive Director
(Alt. Lane Masoud, Jackson Area Transportation Authority)
Marce Wandell, Jackson County Department on Aging, Director
Parrish Stahl, Disability Connections, Community Outreach & ADA Specialist
Joe Evans, Traffic Safety Committee, Chair
Laurel Mauldin, Walkable Communities Coalition, Chair
Rick Fowler, MDOT, Program Manager
Tyler Kent, MDOT

Other Interested Jurisdictions

From: Tanya DeOliveira, Principal Transportation Planner
Date: Wednesday, July 12, 2017
Subject: 2045 Long Range Transportation Plan – Steering Committee Kickoff Meeting

Staff is starting on the development of the 2045 Long Range Transportation Plan. This is the official transportation plan for the Jackson Metropolitan Planning Organization (MPO), and forms the basis for future transportation funding decisions. The plan identifies transportation-related projects and policies, and is for all transportation modes and facilities – transit, rail, pedestrians, bicycles, freight, roads and vehicles, etc. The last plan was completed 5 years ago, and federal law requires an updated plan every 5 years.

A Steering Committee has been identified to provide input into the plan and help guide the effort. **The 2045 Long Range Transportation Plan Steering Committee Kickoff Meeting** will take place on **Thursday, July 20, 2017 at 1:30 p.m.** at the **Jackson County Tower Building**, 120 West Michigan Avenue, Jackson, Michigan 49201 on the **17th floor**. Please see the meeting agenda for more information.

The Steering Committee meeting is open to the public. JACTS and R2PC committees are invited to participate in this process, and will ultimately approve and adopt the final 2045 Long Range Transportation Plan. JACTS and R2PC committees will have dedicated opportunities to review plan documents, receive project updates, and provide input to the process during regularly scheduled monthly meetings. **Please contact Tanya DeOliveira with questions or for more information at tdeoliveira@co.jackson.mi.us or 517.745.9041.**

Region 2 Planning Commission



Jackson Area Comprehensive Transportation Study

To: Interested Agencies, Parties, & Stakeholders of the 2045 Long Range Transportation Plan

From: Tanya DeOliveira, Principal Transportation Planner

Date: Wednesday, August 16, 2017

Subject: 2045 Long Range Transportation Plan – Public Kickoff Meeting - August 29, 2017

The Region 2 Planning Commission staff has begun the development of the 2045 Long Range Transportation Plan. This is the official transportation plan for the Jackson Metropolitan Planning Organization (MPO), and forms the basis for future transportation funding decisions. The plan identifies transportation-related projects and policies, and is for all transportation modes and facilities – transit/bus system, the railroads, pedestrians, bicycles, freight, roads and vehicles, etc. The last plan was completed 5 years ago, and federal law requires an updated plan every 5 years.

A Public Kickoff Meeting will be held to provide an overview of the project and an opportunity to gather input that will shape the priorities of the plan. **The 2045 Long Range Transportation Plan Public Kickoff Meeting** will take place on **Tuesday, August 29, 2017** from **6:00 – 7:00 p.m.** at the **Jackson County Tower Building**, 120 West Michigan Avenue, Jackson, Michigan 49201 on the **17th floor**.

Since the Jackson MPO's geographical boundaries align with Jackson County's boundaries, the project will be focusing on the transportation system within Jackson County. The mandate for the plan comes from the federal transportation bill Fixing America's Surface Transportation Act, also called the FAST Act. The plan will ensure that the Jackson MPO is eligible for future federal funding. The final plan will be approved and adopted by the Region 2 Planning Commission in late spring of 2018.

Please contact Tanya DeOliveira, Principal Transportation Planner, with questions or for more information at tdeoliveira@co.jackson.mi.us or 517.745.9041 or see the project website: <http://www.region2planning.com/long-range-transportation-plan/>. If your contact information need updating and/or you prefer to receive future notices by email instead of by mail, please contact Ms. DeOliveira.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical, JACTS Policy & Region 2 Planning Commission Committees Members

From: Tanya DeOliveira

Date: September 1, 2017

Subject: **2045 Long Range Transportation Plan update – Transportation Participation Plan Draft – Available for Review**

Staff from the Region 2 Planning Commission has completed the Transportation Participation Plan draft for the 2045 Long Range Transportation Plan. The draft plan outlines how the public can expect participation to unfold for the 2045 Long Range Transportation project.

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines.

Please take an opportunity to review the plan, and contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041. A copy of the plan is enclosed in the packet and is also available on the project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>. Printed copies can also be made available upon request.

Region 2

Planning Commission

JACTS MEMORANDUM



To: Kari Martin, MDOT- University Region
Jon Dowling, City of Jackson Engineering
Angela Kline, Jackson Department of Transportation

From: Tanya DeOliveira, AICP, Principal Transportation Planner

Date: October 25, 2017

Subject: Reviewing 2040 Project List for 2045 Long Range Transportation Plan

MDOT has recently released the initial results of the Travel Demand Model. These results were reviewed at the October JACTS Technical, JACTS Policy, Region 2 Planning Commission, and 2045 Long Range Transportation Plan Steering Committee meetings. The Region 2 Planning Commission staff is asking that your agency consider any projects that it would like tested in this model for the purposes of the 2045 Long Range Transportation Plan. At the writing of this memo, there are no projects that we are considering beyond the 2017 – 2020 Transportation Improvement Program (TIP).

Furthermore, please review the list of projects for the 2040 Plan and also included in this memo. Please let Region 2 Planning Commission staff know if you would like to consider these projects to be run through the Travel Demand Model for inclusion in the 2045 plan.

Chapter 12**Roadway Transportation Deficiencies
and Recommended Projects****JACTS****Table 12-4
Proposed Improve & Expand Projects**

KEY	PROJECT	LIMITS	LENGTH (Miles)	DESCRIPTION	TOTAL COST	RESPONSIBLE AGENCY	YEAR
1	West Avenue	Bloomfield Street to High Street	0.27	Add SB Right Turn Lane at Kibby Road	\$630,400	City of Jackson	2015
2	Interstate 94 (I-94)	Cooper Street Interchange	0.16	Bridge Replacement & Associated Road Work	\$14,077,201	MDOT	2016
3	Interstate 94 (I-94)	Over ConRail and Grand River	0.40	Realign and Replace Structure	\$20,177,000	MDOT	2016
4	Interstate 94 (I-94)	Lansing Road to Elm Road	1.52	Reconstruction and Realignment	\$20,000,000	MDOT	2016
5	County Farm Road	Airport Road to Blackman Road	1.50	Widen to 3 Lanes	\$1,518,000	JCDOT	2020
6	Lansing Avenue	Ganson Street to Steward Avenue	0.30	Widen to 3 Lanes for 2-Way Conversion	\$817,000	City of Jackson	2020
7	Blackstone Street	Louis Glick High- way to Trail Street	0.21	Widen to 3 Lanes for 2-Way Conversion	\$1,275,000	City of Jackson	2020
8	West Avenue	Glenwood Street to Franklin Street	0.45	Widen to 3 Lanes	\$1,287,000	City of Jackson	2020
9	Airport Road	Wayland Drive to Springport Road	0.40	Add 5 th Lane	\$500,000	JCDOT	2024
10	Fourth Street	Horton Road to West Avenue	0.36	Widen to 3 Lanes with Roundabout at Hickory Street	\$1,623,000	City of Jackson	2025
11	Springport Road	County Farm Road to Rives Junction Road	0.90	Widen to 3 Lanes	\$1,481,000	JCDOT	2026
	GRAND TOTAL				\$63,385,601		

MDOT – Michigan Department of Transportation
JCDOT – Jackson County Department of Transportation

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: November 16, 2017

Subject: **2045 Long Range Transportation Plan update – Existing Conditions Chapter Draft – Available for Review**

Staff from the Region 2 Planning Commission has completed the Existing Conditions Chapter draft for the 2045 Long Range Transportation Plan. The draft chapter is an overview of the transportation system, and an important part of the plan.

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines. The public comment period will close on Friday, December 15, 2017.

Please take an opportunity to review the plan and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapter is available on the project website:
<http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>. Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: December 14, 2017

Subject: **2045 Long Range Transportation Plan update – Socio Economic Conditions Chapter Draft – Available for Review**

Staff from the Region 2 Planning Commission has completed the Socio Economic Conditions Chapter draft for the 2045 Long Range Transportation Plan. The draft chapter is a narrative on the local demographics and employment data used in the development of the Travel Demand Model.

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines. The public comment period will close on Tuesday, January 20, 2017.

Please take an opportunity to review the draft chapter and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapter is available on the project website:

<http://www.region2planning.com/long-range-transportation-plan/>. Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: December 27, 2017

Subject: **2045 Long Range Transportation Plan update – Coordination with the State Local Transportation Plans Chapter Draft – Available for Review**

Staff from the Region 2 Planning Commission has completed the Coordination with the State and Local Transportation Plans Chapter draft for the 2045 Long Range Transportation Plan. The draft chapter is an overview of how local transportation plans align with state plans, meeting federal requirements.

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines. The public comment period will close on Friday, January 26, 2017.

Please take an opportunity to review the draft chapter and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapter is available on the project website:
<http://www.region2planning.com/long-range-transportation-plan/>. Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: January 10, 2018

Subject: **2045 Long Range Transportation Plan update – Environmental Mitigation draft chapter and Travel Demand Modeling and Forecasting draft chapter – Available for Review**

Two separate draft chapters are available for public comment. Staff from the Region 2 Planning Commission has completed the Environmental Mitigation Chapter draft. The chapter addresses the ways that the transportation planning processes addresses and acknowledges the natural environment, storm water mitigation, air quality and other related topics. Staff from the Michigan Department of Transportation (MDOT) has completed the Travel Demand Modeling and Forecasting draft chapter, addressing the raw data, public engagement process, and background information that went into the development of the travel demand model for Jackson. (The Travel Demand Model results will be discussed in another chapter that has yet to be completed and open to public comment.)

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines. The public comment period for both draft chapters will close on Monday, February 12, 2018.

Please take an opportunity to review the draft chapters and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapter is available on the project website:

<http://www.region2planning.com/long-range-transportation-plan/>. Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: January 23, 2018

Subject: **2045 Long Range Transportation Plan update –Emergency Management, Natural Disasters, and the Transportation System draft chapter and Operational and Management Strategies draft chapter – Available for Review**

Two separate draft chapters are available for public comment. Staff from the Region 2 Planning Commission has completed two more draft chapters of the 2045 Long Range Transportation Plan. The Emergency Management, Natural Disasters and the Transportation System draft chapter addresses how state, regional and local agencies are reducing the vulnerability of the transportation infrastructure to natural disasters. The Operational and Management Strategies draft chapter identifies the operational and management strategies used to improve the performance of the transportation system.

The Region 2 Planning Commission must provide the public with a reasonable opportunity to comment on the 2045 Long Range Transportation Plan, according to federal guidelines. The public comment period for both draft chapters will close on Friday, February 23, 2018.

Please take an opportunity to review the draft chapters and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapter is available on the project website:
<http://www.region2planning.com/long-range-transportation-plan/>. Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical & JACTS Policy Committee members

From: Tanya DeOliveira

Date: February 2, 2018

Subject: **2045 Long Range Transportation Plan**

An exercise to discuss the 2045 Long Range Transportation Plan's vision, goals, and objectives will take place during the February JACTS meetings. The vision, goals, and objectives are used to guide the metropolitan transportation planning process over the life of the plan, and can be used to determine the success of plan implementation. The vision, goals, and objectives also reflect the values and principles of the community, measuring the expectations for the quality of life, and can help determine if future projects align with the long-term vision for Jackson.

The discussion will start with an exercise asking participants to envision what the ideal transportation system within the Jackson MPO looks like. Following that, participants will be asked to complete a short exercise reviewing the attached goals and objectives that are based on the 2040/previous Long Range Transportation Plan.

Please come to the meeting ready to share your ideas.

Project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>

The following goals and objectives will be reviewed during the February JACTS meetings.

GOAL 1. Increase the safety and security of the transportation system for motorized and non-motorized users.

Objectives

- 1.1 Reduce vehicular crashes and eliminate hazardous locations.
- 1.2 Utilize standard traffic control devices to increase efficiency and safety.
- 1.3 Minimize rail/auto/transit conflicts and commercial/non-commercial vehicle conflicts.
- 1.4 Minimize motorized/non-motorized conflicts.
- 1.5 Maximize the safety and security of its patrons.
- 1.6 Increase access to crash incidences and/or disabled vehicles.
- 1.7 Utilize state-of-the-art measures to increase pedestrian safety.
- 1.8 Contribute to the reduction of traffic volumes.
- 1.9 Improve the handling of hazardous materials movement.
- 1.10 Continue to administer funding through the Jackson Traffic Safety Program to improve all aspects of safety on the transportation system in Jackson County.

GOAL 2. Increase the accessibility and mobility options available to both people and freight.

Objectives

- 2.1 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.
- 2.2 Provide appropriate access, via motorized or non-motorized transportation, to and from major land uses and activity centers within Jackson County.
- 2.3 Provide all travelers in the community with reasonable access to important destinations, such as residences, employment, recreation, community facilities, and commercial centers.
- 2.4 Provide enhanced, new capacity, or new accessibility to the transportation system to move freight and enhance the range of freight service options available.

- 2.5 Enhance or increase bike lanes and sidewalks.
- 2.6 Design the transportation system to operate at the highest level-of-service which can be reasonably provided.

GOAL 3. Emphasize the preservation of the existing transportation system.

Objectives

- 3.1 Preserve and maintain the existing transportation infrastructure at the highest possible level – based on the policies and goals of all implementing jurisdictions.
- 3.2 Implement management systems which foster preservation and coordinate at all levels within Jackson County. Use the outputs in the needs identification component of the planning process.
- 3.3 Contribute to better system maintenance.
- 3.4 Emphasize system rehabilitation rather than expansion, except for the provisions of the I-94 Modernization Study.
- 3.5 Incorporate new technologies.

GOAL 4. 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.

Objectives

- 4.1 Minimize interference of the transportation system with existing households and disruption of neighborhoods to ensure transportation projects do not disproportionately affect low-income and minority populations.
- 4.2 Minimize negative effects on commercial and industrial facilities as well as recreational, cultural, religious, and educational activities as transportation improvements are made.
- 4.3 Preserve historic sites and districts and ensure minimal impact if necessary.
- 4.4 Conserve prime agricultural resources and open spaces.

- 4.5 Reduce vehicle emissions and noise, including greenhouse gases and air pollutant concentrations.
- 4.6 Minimize energy resources consumed for transportation.
- 4.7 Add to the convenience and/or efficiency of the system.
- 4.8 Minimize disruption to wetlands and/or other natural habitats.
- 4.9 Enhance the development of brownfields.
- 4.10 Encourage the use of alternative fuels.
- 4.11 Maximize quality and minimize quantity of storm water run-off.
- 4.12 Actively pursue techniques aimed at multiple-occupant vehicle use and spreading travel demand to non-critical times of the day.

GOAL 5. Enhance the integration and connectivity of the transportation system across and between modes for people and freight.

Objectives

- 5.1 Develop transportation services consistent with area land use, housing, water quality management, recreation/open space, and other relevant plans, as well as economic development initiatives.
- 5.2 Ensure the transportation system is multi-modal and intermodal in character and provides a smooth interface among different modes.
- 5.3 Encourage local land use policies and practices and appropriate access management and right-of-way preservation to meet the future needs of the transportation system.
- 5.4 Improve intermodal connectivity for all people.
- 5.5 Improve intermodal connectivity for freight.
- 5.6 Enhance the information/telecommunication networks that integrate freight and people.

GOAL 6. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.

Objectives

- 6.1 Encourage job employment retention, attraction, and expansion in Jackson County by providing the most efficient transportation system possible.
- 6.2 Ensure transportation improvements are cost-effective and maximize the long term benefits by considering the overall life cycle costs.
- 6.3 Minimize capital and operating costs for all modes.
- 6.4 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.
- 6.5 Encourage transportation system investments from the private sector.
- 6.6 Promote general economic development.
- 6.7 Improve and/or enhance the movement of freight and services.
- 6.8 Improve and/or enhance the movement of workers.
- 6.9 Improve economic productivity and competitiveness throughout the system.

GOAL 7. Promote efficient system management and operation.

Objectives

- 7.1 Promote transportation projects which reduce distance and time spent traveling.
- 7.2 Improve on-road operating efficiency through the use of transportation management techniques where possible, including Intelligent Transportation Systems (ITS).
- 7.3 Encourage increased vehicle occupancy for all motorized modes.
- 7.4 Coordinate the movement of goods and persons for maximum efficiency.
- 7.5 Encourage the multiple use of transportation rights-of-way by different modes, including pedestrian and non-motorized.
- 7.6 Reduce transportation system costs.

- 7.7 Contribute to more accurate vehicle and commercial traffic counts.
- 7.8 Enhance administrative productivity/efficiency.
- 7.9 Minimize capital and operating costs for all modes.
- 7.10 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.

GOAL 8. Encourage the public to become involved in the planning and development of transportation facilities and services.

Objectives

- 8.1 Provide opportunities for the involvement of all segments of the community in the development of JACTS plans and programs through multiple outlets.
- 8.2 Allow for timely public review and comment at key decision points in the planning and project development process.
- 8.3 Look for ways to include traditionally under-represented communities, especially minority and low-income populations.
- 8.4 Promote a balanced transportation system through directed investment in improvements across modes.
- 8.5 Enhance intergovernmental coordination and cooperation for improving multimodal transportation planning.

GOAL 9. Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.

Objective

- 9.1 Maximize quality and minimize quantity of storm water run-off.
- 9.2 Support the development, integration, and use of local, regional, and state storm water mitigation plans and policies.
- 9.3 Consider the impact to the Upper Grand River watershed for any transportation project.
- 9.4 Consider the impact to local floodplains and wetlands for any transportation project.

- 9.5 Consider the impacts extreme weather events to storm water mitigation on the transportation system.
- 9.6 Encourage projects and programs that use low-polluting fuels and technologies in vehicles.
- 9.7 Develop the transportation system to minimize the disruption of existing neighborhoods, households, prime farmlands, natural habitats and open spaces.

GOAL 10. Enhance travel and tourism.

Objectives

- 10.1 Support cultural travel, tourism and our regional transportation history.
- 10.2 Minimize negative effects of improvements to the transportation system on historic sites and recreational, cultural, religious and educational activities.
- 10.3 Emphasize context-sensitive designs that preserve historic character.
- 10.4 Provide and maintain economical non-motorized facilities in rural, suburban and urban areas that may transform the region into a non-motorized travel destination.
- 10.5 Integrate water trails into the transportation framework as a means for promoting travel and tourism in the region

Region 2 Planning Commission



MEMORANDUM

To: Region 2 Planning Commission members

From: Tanya DeOliveira

Date: March 1, 2018

Subject: **2045 Long Range Transportation Plan**

During the month of February, staff facilitated a workshop for the 2045 Long Range Transportation Plan vision, goals and objectives at three different public meetings: the Project Steering Committee meeting, the JACTS Technical Committee Meeting, and the JACTS Policy Committee meeting. The vision, goals, and objectives are used to guide the metropolitan transportation planning process over the life of the plan, and can be used to determine the success of plan implementation. The vision, goals, and objectives also reflect the values and principles of the community, measure the expectations for the quality of life, and can help to determine if future projects align with the long-term vision for Jackson.

A high-level summary of the data collected at the meetings has been collected and summarized in the attached sheets. The **JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet** is a summary of the statements participants shared when they were asked to reflect on the following statement: "What does the ideal transportation system look like to you? Consider the needs, issues, concerns, challenges and opportunities for the Jackson MPO, including the City of Jackson, Jackson County and the local townships." The **JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet** are the results of participants reflecting on what objectives from the 2040 plan are still relevant (or not) for the 2045 plan.

These results will be used to develop the vision, goals and objectives for the 2045 Long Range Transportation Plan. The opportunity to review and provide edits on these items will be during the 30 day public comment period which will follow soon.

Comments on the attached results will be welcomed during the March Region 2 Planning Commission meeting.

Project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>

JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

1 means that the group mentioned this topic.

Modal Transportation Topic (General Support for...)	Steering Committee		JACTS Technical		JACTS Policy		Total	Priority^	Imporant^^
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2			
Roads	1	1	1	1	1	1	6		All groups mentioned road system.
Lane serapation on highway	1						1		
Better exit/entrance ramps	1	1					2		
Safe for all modes	1	1				1	3		*
Eliminate all one-way roads			1			1	2		
Safer Roads	1	1				1	3		*
Good level of service		1					1		
Modernize roadway network, intersections, etc.			1	1	1	1	4	*	
Still a need for a southern connector??					1		1		
Maitenance mode only for pavement	1	1	1	1	1		5	*	
Bike/ped	1	1	1	1	1		5		Most groups mentioned non-motorized system.
Safety	1		1				2		
Recreation & transportation	1						1		
Something like KalHaven Trail	1						1		
Better design between I94 & 127		1					1		
Bike share		1					1		
Better connectivity		1					1		
Sidewalks everywhere in City			1	1	1		3		*
Better education for all users			1				1		
Improved lighting			1				1		
Give pedestrians legal ROW							0		
No regional boundaries							0		
Transit	1	1	1		1		4		Most groups mentioned transit system
Explore funding opportunities for transt	1						1		
Important for aging population	1	1					2		
Well used but not well funded	1						1		
Younger population looking for options	1						1		
Greyhound runs out of JATA, but has decreased	1						1		
Improved regional transit	1		1				2		
Bus shelters		1					1		
Efficient service		1					1		
Dial a ride service 7 days a week			1		1		2		
Fixed route service in urban townships			1				1		
Rail	1		1	1		1	4		Most groups mentioned rail system.

JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

1 means that the group mentioned this topic.

Modal Transportation Topic (General Support for...)	Steering Committee		JACTS Technical		JACTS Policy		Total	Priority^	Imporant^^
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2			
Econmic and safe for freight and passengers	1		1			1	3		*
High speed rail				1			1		
Have rail/car grade separation						1	1		
Freight						1	1		One group mentioned needs for freight.
Restricted hours for freight						1	1		
Separate roadways for freight trucks						1	1		
							0		
Complete Streets		1	1	1	1	1	5		Most groups supported some aspect of completed streets.
Making sure there's enough funding		1					1		
Better connections between communities for all modes	1	1	1	1	1		5	*	
Road Diet				1			1		
Balace between traffic flow and accessibility				1			1		
Connected and Automated Vehicles		1				1	2		Two groups mentioned CAVs.
							0		
Ride Share		1			1		2		Two groups mentioned ride share as an option for Jackson.
Non-Modal Transportation Topics									
Funding	1			1	1	1	4		Most groups mentioned better funding mechancisms.
Equal distribution and determination of funding				1			1		
Freedom to move money for local needs					1		1		
Sustainable funding sources						1	1		
Funding to support local roads	1						1		
							0		
Signage	1						1		One group mentioned signs.
Easier to read	1						1		
Easier to see at night	1						1		
							0		
Keeping commutes who drive through Jackson in mind	1						1		
Solar panel roadway						1	1		

^ Statements where more than half of the groups mentioned the topic

^^Statements where half of the groups mentioned the topic

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

Green are the number of dots in support of the objective.

Red are the number of dots that don't support the objective.

Green are the number of dots in support of the objective. Red are the number of dots that don't support the objective.	JACTS Policy		JACTS Technical		Steering Committee			
	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Total Green (Support)	Total Red (Oppose)
GOAL 1. Increase the safety and security of the transportation system for motorized and non-motorized users.								
1.1 Reduce vehicular crashes and eliminate hazardous locations.	11		8		9		28	0
1.2 Utilize standard traffic control devices to increase efficiency and safety.	2		4		5		11	0
1.3 Minimize rail/auto/transit conflicts and commercial/non-commercial vehicle conflicts.	3			1			3	1
1.4 Minimize motorized/non-motorized conflicts.	10		6		4		20	0
1.5 Maximize the safety and security of its patrons.	4		2		2		8	0
1.6 Increase access to crash incidences and/or disabled vehicles.		3		1			0	4
1.7 Utilize state-of-the-art measures to increase pedestrian safety.		2	4				4	2
1.8 Contribute to the reduction of traffic volumes.			1	3	2	2	3	5
1.9 Improve the handling of hazardous materials movement.							0	0
1.10 Continue to administer funding through the Jackson Traffic Safety Program to improve all aspects of safety on the transportation system in Jackson County.				2	4		4	2
Goal 2 Increase the accessibility and mobility options available to both people and freight.								
2.1 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.	11		7		9		27	0
2.2 Provide appropriate access, via motorized or non-motorized transportation, to and from major land uses and activity centers within Jackson County.	11		4		5		20	0
2.3 Provide all travelers in the community with reasonable access to important destinations, such as residences, employment, recreation, community facilities, and commercial centers.	1		2	1	2		5	1
2.4 Provide enhanced, new capacity, or new accessibility to the transportation system to move freight and enhance the range of freight service options available.	1	3	6			1	7	4
2.5 Enhance or increase bike lanes and sidewalks.	6	3	9		8		23	3
2.6 Design the transportation system to operate at the highest level-of-service which can be reasonably provided.	8			1	4	1	12	2
Goal 3 Emphasize the preservation of the existing transportation system.								
3.1 Preserve and maintain the existing transportation infrastructure at the highest possible level – based on the policies and goals of all implementing jurisdictions.	2	2	8		10		20	2
3.2 Implement management systems which foster preservation and coordinate at all levels within Jackson County. Use the outputs in the needs identification component of the planning process.	1	5	1	3			2	8
3.3 Contribute to better system maintenance.	10		8		4		22	0
3.4 Emphasize system rehabilitation rather than expansion, except for the provisions of the I-94 Modernization Study.	12		8		4		24	0
3.5 Incorporate new technologies.	13		1		7		21	0
Goal 4 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.								

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

Green are the number of dots in support of the objective.

Red are the number of dots that don't support the objective.

	JACTS Policy		JACTS Technical		Steering Committee		Total Green (Support)	Total Red (Oppose)
	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
development patterns.								
4.1 Minimize interference of the transportation system with existing households and disruption of neighborhoods to ensure transportation projects do not disproportionately affect low-income and minority populations.	6	1	6		1		13	1
4.2 Minimize negative effects on commercial and industrial facilities as well as recreational, cultural, religious, and educational activities as transportation improvements are made.	1				3		4	0
4.3 Preserve historic sites and districts and ensure minimal impact if necessary.	7		2		4		13	0
4.4 Conserve prime agricultural resources and open spaces.	3	1	4				7	1
4.5 Reduce vehicle emissions and noise, including greenhouse gases and air pollutant concentrations.	4			1	4		8	1
4.6 Minimize energy resources consumed for transportation.	4				4		8	0
4.7 Add to the convenience and/or efficiency of the system.	2	2	4		3		9	2
4.8 Minimize disruption to wetlands and/or other natural habitats.	11		3		1		15	0
4.9 Enhance the development of brownfields.	4		2		3		9	0
4.10 Encourage the use of alternative fuels.		1		6	1		1	7
4.11 Maximize quality and minimize quantity of storm water run-off.	1	1	2		3		6	1
4.12 Actively pursue techniques aimed at multiple-occupant vehicle use and spreading travel demand to non-critical times of the day.		1	1				1	1
Goal 5 Enhance the integration and connectivity of the transportation system across and between modes for people and freight.								
5.1 Develop transportation services consistent with area land use, housing, water quality management, recreation/open space, and other relevant plans, as well as economic development initiatives.	6		10		7		23	0
5.2 Ensure the transportation system is multi-modal and intermodal in character and provides a smooth interface among different modes.	13		4		6		23	0
5.3 Encourage local land use policies and practices and appropriate access management and right-of-way preservation to meet the future needs of the transportation system.	10		7		2		19	0
5.4 Improve intermodal connectivity for all people.	6			1	8		14	1
5.5 Improve intermodal connectivity for freight.	2		1	2	1		4	2
5.6 Enhance the information/telecommunication networks that integrate freight and people.		9	4		1		5	9

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

Feb-18

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	JACTS Policy		JACTS Technical		Steering Committee		Total Green (Support)	Total Red (Oppose)
	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
Goal 6 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.								
6.1 Encourage job employment retention, attraction, and expansion in Jackson County by providing the most efficient transportation system possible.	13		7		9		29	0
6.2 Ensure transportation improvements are cost-effective and maximize the long term benefits by considering the overall life cycle costs.	4		5		7		16	0
6.3 Minimize capital and operating costs for all modes.				2	2		2	2
6.4 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.	3				1		4	0
6.5 Encourage transportation system investments from the private sector.	1	7	5		1		7	7
6.6 Promote general economic development.	6		1	3			7	3
6.7 Improve and/or enhance the movement of freight and services.	1	2			2		3	2
6.8 Improve and/or enhance the movement of workers.	8		3				11	0
6.9 Improve economic productivity and competitiveness throughout the system.	3	1	3		2		8	1
Goal 7 Promote efficient system management and operation.								
7.1 Promote transportation projects which reduce distance and time spent traveling.	6		6		3		15	0
7.2 Improve on-road operating efficiency through the use of transportation management techniques where possible, including Intelligent Transportation Systems (ITS).	12		3		4		19	0
7.3 Encourage increased vehicle occupancy for all motorized modes.	2		1		2		5	0
7.4 Coordinate the movement of goods and persons for maximum efficiency.	3		4				7	0
7.5 Encourage the multiple use of transportation rights-of-way by different modes, including pedestrian and non-r	1		3		7		11	0
7.6 Reduce transportation system costs.	9			1			9	1
7.7 Contribute to more accurate vehicle and commercial traffic counts.		4					0	4
7.8 Enhance administrative productivity/efficiency.		3	4				4	3
7.9 Minimize capital and operating costs for all modes.	2			2	5		7	2
7.10 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.	2		1		6		9	0

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

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Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

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	JACTS Policy		JACTS Technical		Steering Committee		Total Green (Support)	Total Red (Oppose)
	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
Goal 8 Encourage the public to become involved in the planning and development of transportation facilities and services.								
8.1 Provide opportunities for the involvement of all segments of the community in the development of JACTS plans and programs through multiple outlets.	12		5		3		20	0
8.2 8.2 Allow for timely public review and comment at key decision points in the planning and project development process.	10		2		6		18	0
8.3 Look for ways to include traditionally under-represented communities, especially minority and low-income populations.	7	2	2		8		17	2
8.4 8.4 Promote a balanced transportation system through directed investment in improvements across modes.		8	5	1		1	5	10
8.5 8.5 Enhance intergovernmental coordination and cooperation for improving multimodal transportation planning.	11		5		8		24	0
Goal 9 Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.								
9.1 Maximize quality and minimize quantity of storm water run-off.	10		6		2		18	0
9.2 Support the development, integration, and use of local, regional, and state storm water mitigation plans and policies.	8		4		7		19	0
9.3 Consider the impact to the Upper Grand River watershed for any transportation project.	1	1	1	1	1		3	2
9.4 Consider the impact to local floodplains and wetlands for any transportation project.	5		3		2		10	0
9.5 Consider the impacts extreme weather events to storm water mitigation on the transportation system.	1	1	2	1	4		7	2
9.6 Encourage projects and programs that use low-polluting fuels and technologies in vehicles.	4	4			3		7	4
9.7 Develop the transportation system to minimize the disruption of existing neighborhoods, households, prime farmlands, natural habitats and open spaces.	12	1	9		5		26	1
Goal 10 Enhance travel and tourism.								
10.1 Support cultural travel, tourism and our regional transportation history.	2	6		2	3		5	8
10.2 Minimize negative effects of improvements to the transportation system on historic sites and recreational, cultural, religious and educational activities.	10		5		6		21	0
10.3 Emphasize context-sensitive designs that preserve historic character.	12		6		9		27	0
10.4 Provide and maintain economical non-motorized facilities in rural, suburban and urban areas that may transform the region into a non-motorized travel destination.	4		9		5		18	0
10.5 Integrate water trails into the transportation framework as a means for promoting travel & tourism in the region.	11	1	5		7		23	1

Region 2 Planning Commission



MEMORANDUM

To: JACTS Policy committee members

From: Tanya DeOliveira

Date: March 8, 2018

Subject: **2045 Long Range Transportation Plan**

During the month of February, staff facilitated a workshop for the 2045 Long Range Transportation Plan vision, goals and objectives at three different public meetings: the Project Steering Committee meeting, the JACTS Technical Committee Meeting, and the JACTS Policy Committee meeting. The vision, goals, and objectives are used to guide the metropolitan transportation planning process over the life of the plan, and can be used to determine the success of plan implementation. The vision, goals, and objectives also reflect the values and principles of the community, measure the expectations for the quality of life, and can help to determine if future projects align with the long-term vision for Jackson.

A high-level summary of the data collected at the meetings has been collected and summarized in the attached sheets. The **JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet** is a summary of the statements participants shared when they were asked to reflect on the following statement: "What does the ideal transportation system look like to you? Consider the needs, issues, concerns, challenges and opportunities for the Jackson MPO, including the City of Jackson, Jackson County and the local townships." The **JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet** are the results of participants reflecting on what objectives from the 2040 plan are still relevant (or not) for the 2045 plan.

These results are being used develop the vision, goals and objectives for the 2045 Long Range Transportation Plan. The opportunity to review and provide edits on these items will be during the 30 day public comment period which will follow soon.

Project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>

JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

1 means that the group mentioned this topic.

Modal Transportation Topic (General Support for...)	Steering Committee		JACTS Technical		JACTS Policy		Total	Priority^	Imporant^^
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2			
Roads	1	1	1	1	1	1	6		All groups mentioned road system.
Lane serapation on highway	1						1		
Better exit/entrance ramps	1	1					2		
Safe for all modes	1	1				1	3		*
Eliminate all one-way roads			1			1	2		
Safer Roads	1	1				1	3		*
Good level of service		1					1		
Modernize roadway network, intersections, etc.			1	1	1	1	4	*	
Still a need for a southern connector??					1		1		
Maitenance mode only for pavement	1	1	1	1	1		5	*	
Bike/ped	1	1	1	1	1		5		Most groups mentioned non-motorized system.
Safety	1		1				2		
Recreation & transportation	1						1		
Something like KalHaven Trail	1						1		
Better design between I94 & 127		1					1		
Bike share		1					1		
Better connectivity		1					1		
Sidewalks everywhere in City			1	1	1		3		*
Better education for all users			1				1		
Improved lighting			1				1		
Give pedestrians legal ROW							0		
No regional boundaries							0		
Transit	1	1	1		1		4		Most groups mentioned transit system
Explore funding opportunities for transt	1						1		
Important for aging population	1	1					2		
Well used but not well funded	1						1		
Younger population looking for options	1						1		
Greyhound runs out of JATA, but has decreased	1						1		
Improved regional transit	1		1				2		
Bus shelters		1					1		
Efficient service		1					1		
Dial a ride service 7 days a week			1		1		2		
Fixed route service in urban townships			1				1		
Rail	1		1	1		1	4		Most groups mentioned rail system.

JACTS 2045 Long Range Transportation Plan Visioning Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

1 means that the group mentioned this topic.

Modal Transportation Topic (General Support for...)	Steering Committee		JACTS Technical		JACTS Policy		Total	Priority^	Imporant^^
	Group 1	Group 2	Group 1	Group 2	Group 1	Group 2			
Econmic and safe for freight and passengers	1		1			1	3		*
High speed rail				1			1		
Have rail/car grade separation						1	1		
Freight						1	1		One group mentioned needs for freight.
Restricted hours for freight						1	1		
Separate roadways for freight trucks						1	1		
							0		
Complete Streets		1	1	1	1	1	5		Most groups supported some aspect of completed streets.
Making sure there's enough funding		1					1		
Better connections between communities for all modes	1	1	1	1	1		5		*
Road Diet				1			1		
Balace between traffic flow and accessibility				1			1		
Connected and Automated Vehicles		1				1	2		Two groups mentioned CAVs.
							0		
Ride Share		1			1		2		Two groups mentioned ride share as an option for Jackson.
Non-Modal Transportation Topics									
Funding	1			1	1	1	4		Most groups mentioned better funding mechancisms.
Equal distribution and determination of funding				1			1		
Freedom to move money for local needs					1		1		
Sustainable funding sources						1	1		
Funding to support local roads	1						1		
							0		
Signage	1						1		One group mentioned signs.
Easier to read	1						1		
Easier to see at night	1						1		
							0		
Keeping commutes who drive through Jackson in mind	1						1		
Solar panel roadway						1	1		

^ Statements where more than half of the groups mentioned the topic

^^Statements where half of the groups mentioned the topic

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

Feb-18

Summary from the the JACTS Technical, JACTS Policy and Project Steering Committee meetings.

Green are the number of dots in support of the objective.

Red are the number of dots that don't support the objective.

Green are the number of dots in support of the objective. Red are the number of dots that don't support the objective.	JACTS Policy		JACTS Technical		Steering Committee			
	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Total Green (Support)	Total Red (Oppose)
GOAL 1. Increase the safety and security of the transportation system for motorized and non-motorized users.								
1.1 Reduce vehicular crashes and eliminate hazardous locations.	11		8		9		28	0
1.2 Utilize standard traffic control devices to increase efficiency and safety.	2		4		5		11	0
1.3 Minimize rail/auto/transit conflicts and commercial/non-commercial vehicle conflicts.	3			1			3	1
1.4 Minimize motorized/non-motorized conflicts.	10		6		4		20	0
1.5 Maximize the safety and security of its patrons.	4		2		2		8	0
1.6 Increase access to crash incidences and/or disabled vehicles.		3		1			0	4
1.7 Utilize state-of-the-art measures to increase pedestrian safety.		2	4				4	2
1.8 Contribute to the reduction of traffic volumes.			1	3	2	2	3	5
1.9 Improve the handling of hazardous materials movement.							0	0
1.10 Continue to administer funding through the Jackson Traffic Safety Program to improve all aspects of safety on the transportation system in Jackson County.				2	4		4	2
Goal 2 Increase the accessibility and mobility options available to both people and freight.								
2.1 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.	11		7		9		27	0
2.2 Provide appropriate access, via motorized or non-motorized transportation, to and from major land uses and activity centers within Jackson County.	11		4		5		20	0
2.3 Provide all travelers in the community with reasonable access to important destinations, such as residences, employment, recreation, community facilities, and commercial centers.	1		2	1	2		5	1
2.4 Provide enhanced, new capacity, or new accessibility to the transportation system to move freight and enhance the range of freight service options available.	1	3	6			1	7	4
2.5 Enhance or increase bike lanes and sidewalks.	6	3	9		8		23	3
2.6 Design the transportation system to operate at the highest level-of-service which can be reasonably provided.	8			1	4	1	12	2
Goal 3 Emphasize the preservation of the existing transportation system.								
3.1 Preserve and maintain the existing transportation infrastructure at the highest possible level – based on the policies and goals of all implementing jurisdictions.	2	2	8		10		20	2
3.2 Implement management systems which foster preservation and coordinate at all levels within Jackson County. Use the outputs in the needs identification component of the planning process.	1	5	1	3			2	8
3.3 Contribute to better system maintenance.	10		8		4		22	0
3.4 Emphasize system rehabilitation rather than expansion, except for the provisions of the I-94 Modernization Study.	12		8		4		24	0
3.5 Incorporate new technologies.	13		1		7		21	0
Goal 4 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								

JACTS 2045 Long Range Transportation Plan Objectives Exercise Summary Sheet

Feb-18

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	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
development patterns.								
4.1 Minimize interference of the transportation system with existing households and disruption of neighborhoods to ensure transportation projects do not disproportionately affect low-income and minority populations.	6	1	6		1		13	1
4.2 Minimize negative effects on commercial and industrial facilities as well as recreational, cultural, religious, and educational activities as transportation improvements are made.	1				3		4	0
4.3 Preserve historic sites and districts and ensure minimal impact if necessary.	7		2		4		13	0
4.4 Conserve prime agricultural resources and open spaces.	3	1	4				7	1
4.5 Reduce vehicle emissions and noise, including greenhouse gases and air pollutant concentrations.	4			1	4		8	1
4.6 Minimize energy resources consumed for transportation.	4				4		8	0
4.7 Add to the convenience and/or efficiency of the system.	2	2	4		3		9	2
4.8 Minimize disruption to wetlands and/or other natural habitats.	11		3		1		15	0
4.9 Enhance the development of brownfields.	4		2		3		9	0
4.10 Encourage the use of alternative fuels.		1		6	1		1	7
4.11 Maximize quality and minimize quantity of storm water run-off.	1	1	2		3		6	1
4.12 Actively pursue techniques aimed at multiple-occupant vehicle use and spreading travel demand to non-critical times of the day.		1	1				1	1
Goal 5 Enhance the integration and connectivity of the transportation system across and between modes for people and freight.								
5.1 Develop transportation services consistent with area land use, housing, water quality management, recreation/open space, and other relevant plans, as well as economic development initiatives.	6		10		7		23	0
5.2 Ensure the transportation system is multi-modal and intermodal in character and provides a smooth interface among different modes.	13		4		6		23	0
5.3 Encourage local land use policies and practices and appropriate access management and right-of-way preservation to meet the future needs of the transportation system.	10		7		2		19	0
5.4 Improve intermodal connectivity for all people.	6			1	8		14	1
5.5 Improve intermodal connectivity for freight.	2		1	2	1		4	2
5.6 Enhance the information/telecommunication networks that integrate freight and people.		9	4		1		5	9

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	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
Goal 6 Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.								
6.1 Encourage job employment retention, attraction, and expansion in Jackson County by providing the most efficient transportation system possible.	13		7		9		29	0
6.2 Ensure transportation improvements are cost-effective and maximize the long term benefits by considering the overall life cycle costs.	4		5		7		16	0
6.3 Minimize capital and operating costs for all modes.				2	2		2	2
6.4 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.	3				1		4	0
6.5 Encourage transportation system investments from the private sector.	1	7	5		1		7	7
6.6 Promote general economic development.	6		1	3			7	3
6.7 Improve and/or enhance the movement of freight and services.	1	2			2		3	2
6.8 Improve and/or enhance the movement of workers.	8		3				11	0
6.9 Improve economic productivity and competitiveness throughout the system.	3	1	3		2		8	1
Goal 7 Promote efficient system management and operation.								
7.1 Promote transportation projects which reduce distance and time spent traveling.	6		6		3		15	0
7.2 Improve on-road operating efficiency through the use of transportation management techniques where possible, including Intelligent Transportation Systems (ITS).	12		3		4		19	0
7.3 Encourage increased vehicle occupancy for all motorized modes.	2		1		2		5	0
7.4 Coordinate the movement of goods and persons for maximum efficiency.	3		4				7	0
7.5 Encourage the multiple use of transportation rights-of-way by different modes, including pedestrian and non-r	1		3		7		11	0
7.6 Reduce transportation system costs.	9			1			9	1
7.7 Contribute to more accurate vehicle and commercial traffic counts.		4					0	4
7.8 Enhance administrative productivity/efficiency.		3	4				4	3
7.9 Minimize capital and operating costs for all modes.	2			2	5		7	2
7.10 Ensure the scale and character of transportation improvements is consistent with the ability to finance such improvements.	2		1		6		9	0

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Feb-18

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	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)	Green (Support)	Red (Oppose)		
Goal 8 Encourage the public to become involved in the planning and development of transportation facilities and services.								
8.1 Provide opportunities for the involvement of all segments of the community in the development of JACTS plans and programs through multiple outlets.	12		5		3		20	0
8.2 8.2 Allow for timely public review and comment at key decision points in the planning and project development process.	10		2		6		18	0
8.3 Look for ways to include traditionally under-represented communities, especially minority and low-income populations.	7	2	2		8		17	2
8.4 8.4 Promote a balanced transportation system through directed investment in improvements across modes.		8	5	1		1	5	10
8.5 8.5 Enhance intergovernmental coordination and cooperation for improving multimodal transportation planning.	11		5		8		24	0
Goal 9 Improve the resiliency and reliability of the transportation system and reduce or mitigate storm water impacts of surface transportation.								
9.1 Maximize quality and minimize quantity of storm water run-off.	10		6		2		18	0
9.2 Support the development, integration, and use of local, regional, and state storm water mitigation plans and policies.	8		4		7		19	0
9.3 Consider the impact to the Upper Grand River watershed for any transportation project.	1	1	1	1	1		3	2
9.4 Consider the impact to local floodplains and wetlands for any transportation project.	5		3		2		10	0
9.5 Consider the impacts extreme weather events to storm water mitigation on the transportation system.	1	1	2	1	4		7	2
9.6 Encourage projects and programs that use low-polluting fuels and technologies in vehicles.	4	4			3		7	4
9.7 Develop the transportation system to minimize the disruption of existing neighborhoods, households, prime farmlands, natural habitats and open spaces.	12	1	9		5		26	1
Goal 10 Enhance travel and tourism.								
10.1 Support cultural travel, tourism and our regional transportation history.	2	6		2	3		5	8
10.2 Minimize negative effects of improvements to the transportation system on historic sites and recreational, cultural, religious and educational activities.	10		5		6		21	0
10.3 Emphasize context-sensitive designs that preserve historic character.	12		6		9		27	0
10.4 Provide and maintain economical non-motorized facilities in rural, suburban and urban areas that may transform the region into a non-motorized travel destination.	4		9		5		18	0
10.5 Integrate water trails into the transportation framework as a means for promoting travel & tourism in the region.	11	1	5		7		23	1

Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: March 12, 2018

Subject: **2045 Long Range Transportation Plan update – Vision, Goals, & Objectives; Environmental Justice; and Roadway Congestion, Deficiencies, & Recommended Projects draft chapters- Available for Review**

Staff from the Region 2 Planning Commission has completed three more draft chapters of the 2045 Long Range Transportation Plan, and are available for public comment. The three draft chapters are listed below:

1. The Vision, Goals, and Objectives draft chapter is meant to guide the long range transportation planning process over the life of the plan, and can be used as a benchmark to determine if future projects align the vision for Jackson.
2. The Environmental Justice draft chapter identifies and addresses any of the disproportionately high and adverse human health or environmental effects of the transportation program and policies on minority and low-income populations.
3. The Roadway Congestion, Deficiencies, and Recommended Projects draft chapter is the results of the travel demand modeling and forecasting process that was developed through public input in the fall of 2017.

The public comment period for the draft chapters will close on **April 10, 2018**.

Please take an opportunity to review the draft chapters and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapters are available on the project website:

<http://www.region2planning.com/long-range-transportation-plan/>.

Printed copies are also available upon request.

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Region 2 Planning Commission



MEMORANDUM

To: Project Steering Committee & Other Interested Parties

From: Tanya DeOliveira

Date: March 22, 2018

Subject: **2045 Long Range Transportation Plan update – Performance Measures & Systems Performance Report and the Consultation draft chapters - Available for Review**

Staff from the Region 2 Planning Commission has completed two more draft chapters of the 2045 Long Range Transportation Plan that are available for public comment. The two draft chapters are listed below:

1. The Performance Measures & Systems Performance Report draft chapter has been completed as a part of the requirement of moving transportation planning at the federal, state, MPO and local level toward performance based planning. The chapter is meant to given an overview of what kinds of road and transit performance areas that MPO's will need to address within their work program. The need for the chapter comes from a new federal requirement based on guidance from the Federal Highway Administration (FHWA).
2. The Consultation draft chapter describes how the Region 2 Planning Commission has interacted with the public during the planning process and its consultation agencies. This draft chapter is complete, pending any updates that it might receive until the plan is complete.

The public comment period for the draft chapters will close on **April 20, 2018**.

Please take an opportunity to review the draft chapters and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapters are available on the project website:

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Region 2 Planning Commission



MEMORANDUM

To: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: March 22, 2018

Subject: **2045 Long Range Transportation Plan update – Performance Measures & Systems Performance Report and the Consultation draft chapters - Available for Review**

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1. The Performance Measures & Systems Performance Report draft chapter has been completed as a part of the requirement of moving transportation planning at the federal, state, MPO and local level toward performance based planning. The chapter is meant to give an overview of what kinds of road and transit performance areas that MPO's will need to address within their work program. The need for the chapter comes from a new federal requirement based on guidance from the Federal Highway Administration (FHWA).
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The public comment period for the draft chapters will close on **April 20, 2018**.

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Region 2 Planning Commission



MEMORANDUM

To: Project Steering Committee, JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: March 27, 2018

Subject: **2045 Long Range Transportation Plan update – Financial Analysis draft chapter available for review**

Staff from the Region 2 Planning Commission has completed the Financial Analysis draft chapter of the 2045 Long Range Transportation Plan, and is available for public comment. The Financial Analysis draft chapter shows how the plan is fiscally constrained by information provided by the local Act 51 Agencies (the City of Jackson and Jackson County) and MDOT, a requirement by the Federal Highways Administration. The public comment period for the draft chapter will close on **April 26, 2018**.

The next and final opportunity for public input into the project will be to review the complete 2045 Long Range Transportation Planning in final draft form, and will start in early May. This will be the final opportunity for public comment before the plan is approved and adopted by the Region 2 Planning Commission in mid-June. Another public notice will follow notifying you that the final public comment period has begun, when it will end, and other relevant information.

Please take an opportunity to review the draft chapter and let your constituents know that the public comment period is open. Contact Tanya DeOliveira with comments, edits and/or questions at tdeoliveira@co.jackson.mi.us or at 517.745.9041.

A copy of the draft chapters are available on the project website:
<http://www.region2planning.com/long-range-transportation-plan/>.
Printed copies are also available upon request.

Region 2 Planning Commission



MEMORANDUM

To: Region 2 Planning Commission members

From: Tanya DeOliveira

Date: April 3, 2018

Subject: **2045 Long Range Transportation Plan update**

Staff is finalizing work on the JACTS 2045 Long Range Transportation Plan. Work began on the project in the summer of 2017, and the project is expected to be complete later this spring. To ensure that the Jackson MPO remains eligible for federal aid funding, staff is expecting that the plan will be recommended for approval and adoption by the JACTS Technical and Policy committees during their May 2018 meetings. **Staff would then be looking for the plan's formal approval and adoption by the Region 2 Planning Commission at the June 14, 2018 meeting.**

The final opportunity for public comment on the plan will start in late April and run through early June. A round of public meetings will kickoff the final 30 public comment period on the complete final draft of the plan document. The public meetings will be on:

Monday, April 30

2:00p – 3:00p

Grass Lake Township Hall
373 Lakeside Dr
Grass Lake, MI 49240

Tuesday, May 1

1:30p – 2:30p

Spring Arbor Township Hall
107 Teft Road
Spring Arbor, MI 49283

Thursday, May 3

5:30p – 6:30p

Jackson County Tower Building
120 West Michigan Avenue,
17th Floor
Jackson, MI 49201

Friday, May 4 will open the final 30 day public comment period on the entire final draft planning document. The public comment period will close on Monday, June 4. The plan will be available on the project website. (Printed copies are available upon request.) Please consider notifying your constituents of the final opportunities for public comment. Please feel free to contact me with any questions or comments at tdeoliveira@co.jackson.mi.us or 517.768.6703/517.745.9041.

Project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>

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Region 2 Planning Commission



MEMORANDUM

To: Project Steering Committee, JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning Commission Committees members & Other Interested Parties

From: Tanya DeOliveira

Date: April 3, 2018

Subject: **2045 Long Range Transportation Plan update**

The JACTS 2045 Long Range Transportation Plan project is nearing completion. The project began in the summer of 2017, and is expected to wrap up in mid June with the plan's approval and adoption by the Region 2 Planning Commission.

The final opportunity for public comment on the plan will start in late April and run through early June. A round of public meetings will kickoff the final 30 day public comment period on the complete final draft of the plan document. The public meetings will be on:

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Please consider notifying your constituents of the final opportunities for public comment. Please feel free to contact me with any questions or comments at tdeoliveira@co.jackson.mi.us or 517.768.6703/517.745.9041.

Project website: <http://www.region2planning.com/wp-content/uploads/2017/08/Transportation-Participation-Plan.pdf>

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Public Comments

Tanya DeOliveira

From: Marce Wandell
Sent: Thursday, July 20, 2017 4:28 PM
To: Tanya DeOliveira; Steven Duke
Subject: Long Range Transportation Plan

Tanya and Steve,

You did a nice job at today's Steering Committee meeting explaining to us non-transportation people the scope of the long range transportation plan. I agree with what Parrish Stahl from DisAbility Connections said, but I realize the focus of this group is not all-encompassing with regard to transportation issues. Today's explanation helps me better understand expectations for committee members.

I'll see you at the next meeting.

Marce

Marce Wandell, Director
Jackson County Department on Aging
517 768-8651

Dec. 3, 2017

From: James M. Franzen

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To: Tanya DeOliveira,

Region II Panning Commission

Re: 2045 Draft

Comments on 2045 Long Range Plan.

Jackson Transit Trivia:

» From the beginning federal and state operating funds have come to the Urbanized Area. If it wasn't for the Urbanized Area Jackson would not have been eligible for direct funding which gives greater control over that funding source. [Ref. FTA C900.1E & NTDB JATA Profile].

New tactic. Instead of going to the townships begging for money have them sign a wavier and recognize what has been done for years they give up their right on how the finds are used and leave it to JATA.

» What is now Reserve-a-Ride [RaR] was started so we would not have to put lifts / ramps on the fixed-route buses. Because it was considered an alternative to those that could not use the buses the requirements of use were liberal and low fare. As I recall in Battle Creek to use their service you almost had to have a note from a doctor. It has become a taxi service.

I was at the meetings with the owners of Checker and Trolz cab companies and they had no objection as long as there was a 24 hr advance reservation.

» Source of funding = " Internal Asset Redistribution ". Long ago RaR should have been changed. See below.

Taxicab Service

Taxi service in Jackson needs to be studied. Except when a ramp is needed RaR takes business from the taxis and at a higher cost to society, 2016 NTDB JATA Profile, Demand Response = \$45.70 per trip. User side taxi subsidies have been mixed. Elkhart, IN has had one for many years but Kokomo, IN ended theirs, I think over reimbursement to the taxi company.

In 1958 when Jackson City Lines ended bus service to Michigan Center the cab companies did want to take runs out there. One of the companies did try a shared ride program that only a few months. That was replaced by a shuttle using a station wagon that didn't last long either.

Page 2

Dec. 3, 2017

From: Franzen

To: DeOliveira

Inter-modal Ground Transportation

If Region II Planning does not have an understanding of the ground transportation options in Jackson in 2017 that is a big problem.

» "Getting Around the Western U.P." is something that is simple to produce. Avoid slick brochures that you print thousands for a reasonable unit cost but in months can be obsolete and you just have re-cycle material.

» Greyhound stopped issuing printed schedules years ago and Amtrak recently national and just have regional. I kept at and found a Greyhound printed schedule on line.

» Just looking at the schedules you would think the only way to get from Jackson to Grand Rapids is by Greyhound. You can take Amtrak at 8:00 a.m. and 7:55 p.m. to Kalamazoo and the Thruway bus to GR, cost more and longer, but increases your travel options.

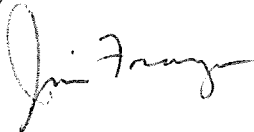
Veterans Transportation

I have personal experience with this. The Soper Line is useless. Note the Get Around ... brochure includes veterans transportation. We also have DAV and VTS to the Ann Arbor VA. I not sure what is worse dealing with the VA or any transportation provider. The DAV van will pick up at the transfer center by request at about 7:30 a.m. and the VTS has a trip from the East Meijer about 7:05 a.m. One time I was on one van and both arrived at Ann Arbor VA at the same time. For the DAV if I have too I take the bus the transfer center, but Meijer is find someone to drive me or cab. I took a cab last Spring and that is an experience I don't want to do again.

One last thing. Can the " Connecting Jackson County Study 2017 " be downloaded? I have the 2015 Study and have been trying reconcile data with the "1975-80 TDP ", " ATE Jackson, Mich. Marketing Study - 1977 " and American Fact Finder Table B08101.

Also enclosed is a short history of public transit in Jackson.

I hope you find this information helpful.



2 Choices Offered in Bus Crisis

MAY 10 1956

DEC 12 1957

What to do about Jackson's bus crisis has simmered down to this choice: Ownership and operation of a bus system by the city government or private enterprise.

The public transportation study committee gave the bus situation a thorough going over at a dinner meeting at the Country club Wednesday night, working toward a decision. The committee agreed that bus service is essential to the growth and prosperity of the Jackson metropolitan area.

Ralph E. James of Chicago, executive vice president of the National City Lines, parent company of the Jackson City Lines, sent to the committee Wednesday, details on how the Jackson bus system would be offered for sale and how it could be taken over.

CITY OWNERSHIP.

The proposal basically recommends city ownership. The city would issue revenue bonds, to be purchased by the National City Lines and retired from bus system income. The system would be operated by a non-political transit authority and managed by the present bus company, or another transit firm, on a percentage basis.

Intent of the proposal is to eliminate the payment of local, state and federal taxes, which amount to between \$25,000 and \$30,000 a year, through municipal ownership.

Attorney J. Adrian Rosenburg told the committee Wednesday that he is "frankly dubious" whether taxes would be eliminated through operation of the lines by a transit authority. He called the method a "tax gimmick," adding that elimination of taxes would be more certain if the city purchased and operated the system outright.

Some committee members, however, oppose city ownership and believe the bus service here could be operated profitably by private enterprise. They say that city ownership would lead to subsidization with city tax funds.

2 Choices Offered In City Bus Crisis

MAY 10 1956

(Continued from Page 1.)

ever, oppose city ownership and believe the bus service here could be operated profitably by private enterprise. They say that city ownership would lead to subsidization with city tax funds.

SIX POINTS STRESSED.

The purpose of public transportation is to provide quick, efficient service to the masses, not for the relatively few persons who do not have automobiles, according to a report by a subcommittee headed by Wayne Dressel. His group made the following observations:

1. Present routes now are too complicated and do not provide good service. "There are too many loops in the routes — riders have

to travel 44 blocks to go 10 blocks to their destination."

2. Buses should run every 15 minutes during peak hours and every 20 minutes between 9 a. m. and 3 p. m., with one hour service to Michigan Center and half hour service to Vandercook Lake. "Evening, Sunday and holiday service is not essential to adequate mass transportation."

3. The present 15-cent fare should be retained temporarily, but it should be reduced as soon as possible to encourage more patronage.

4. A committee of business men, industrialists and city officials would study means of relieving traffic congestion in the downtown area to allow buses to make their rounds faster. Serious consideration should be given to such measures as prohibiting curb parking on certain downtown streets during peak bus hours.

5. Smaller and faster buses should replace the present 37-passenger coaches.

6. Education of the public is needed to increase the use of mass transit and the system should be promoted. "We feel that this is one of the areas where the Jackson City Lines has fallen down."

Mr. Dressel's group said it feels the service now provided by the Jackson City Lines is inadequate for the Jackson metropolitan area.

Clifford R. Miller, chairman of the public transportation study committee, called another session for 7 p. m. May 28 in the city commission chamber.

Bribe Case and Scene Anted

former Pinkertons, being ribbed state feared he in extor-

tie di- te of tant of ve

12-3-2017

Not much has changed in 60 yrs - except the * target riders. Jmt

But Legal Victory May Be Too Late

4-2-1959 p.1

Jackson Wins Long Struggle Over Bus Line Lease Plan

Jackson has won its 15-month battle with the state over the "Jackson lease plan" of bus line operation.

An opinion by Ingham Circuit Judge Sam Street Hughes, delivered Thursday, upholds city lease of the National City Lines facilities as valid, thereby saving Jackson more than \$10,000 in fuel and weight taxes.

However, the legal victory may be too late to save private-enterprise operation of the buses. Last fall Jackson citizens in an advisory vote authorized the city council to prepare a public-ownership plan.

This will be submitted to voters

in September, Mayor Harold D. Miller commented, and it bears a \$250,000 price tag for purchase of the Jackson bus facilities.

Despite the court ruling to allow state gasoline and weight tax exemptions, the city lease with the Jackson City Lines in effect since December, 1957, is not working out according to anticipation, according to Jackson officials.

\$22,491 DEFICIT.

The bus firm receives 5 per cent of revenues for operating the system and under the agreement was to have been paid 10 per cent of the gross take as payment for use of its equipment.

However, the 10 per cent payments have fallen far short of what the bus firm says it has coming. The lease obligation deficit so far is \$22,491.

The bus company thus far has realized a net profit of \$41,597 under the lease agreement. Money left over after lease obligations and taxes were paid was to have gone into a joint city-bus firm transit account for expansion of service. But this has not worked out under the lease.

LACKS PRECEDENT.

The city of Kalamazoo has a similar lease system to avoid payment of fuel and weight taxes to bolster a shaky bus line financial position. Like Jackson, Kalamazoo deposited money in escrow to get 50-cent license plates in 1958 and 1959. Kalamazoo was an intervenor in the case settled by Judge Hughes' opinion.

Judge Hughes commented there is little precedent for the case in any court in the nation.

The state attorney general contended that the Jackson lease plan was a "legal subterfuge" to escape taxes, but in reality control of the bus operation rested with National City Lines. However, the city handles cash receipts and purchases supplies, including fuel, for the buses.

Judge Hughes' four-page opinion noted that "the transit corporation carries on business in almost exactly the same manner it did as under a permit from the city for several years prior to the agreement in question."

'VIEW SOUND.'

But he cited the argument of Jackson City Attorney Guy Christian: "A city cannot operate anything except through the people it engages to do so. Whether it

engages a person or a company or corporation would seem to make little difference."

Judge Hughes said, "This view seems sound to this court."

The judge's opinion comes at a year of effort to help ailing city bus lines. In the winter of 1957 the secretary of state attempted to collect diesel fuel taxes from

Jackson, and this led to a conference of mayors with Gov. G. Mennen Williams.

The governor and the attorney general outlined what kind of a lease plan they would accept, it was written into bill form for legislative approval, and the bill passed the house then died in conference committee on the last day of the regular 1958 legislative session.

(Continued on Page 2, Column 1.)

Jackson Wins Bus Lease Fight

(Continued from Page 1.)

Other cities were interested in the "Jackson plan" to save tax costs on bus lines. But since last spring the Bay City bus line went out of business and the Lansing bus line announced it will do so this May.

The bill to give state sanction to the bus lease plan was introduced by Rep. Wilfred G. Bassett (R., Jackson) and was considered a way to prevent the state from forcing collection of fuel and weight taxes. Assistant Attorney General Russell A. Searl had predicted the state would win the case in Judge Hughes' court.

Mayor Miller of Jackson said the judge's decision "is great news," but added the future of the Jackson bus line is now up to the people, and he did not think the court decision would make any basic change in the situation.

Bus revenues in Jackson, Lansing and other cities have declined over the past several years. Legislators who opposed the Jackson lease bill predicted municipal ownership will be the outcome, anyway.



Note city seal under bus number 2942. This was a GMC diesel built in 1949 and transferred from Saginaw City lines in 1962 when National City Lines closed down that property. [Bill Evans Photo, Mar. 15, 1962]

WOLVERINE SERVICE, BLUE WATER and PERE MARQUETTE

Wolverine Service	Wolverine Service	Blue Water	Wolverine Service	Pere Marquette	Thruway	Train Name	Pere Marquette	Wolverine Service	Blue Water	Wolverine Service	Wolverine Service	Thruway
350	352	364	354	370	8356	Train Number	371	351	365	353	355	8651
Daily	Daily	Daily	Daily	Daily	Daily	Normal Days of Operation	Daily	Daily	Daily	Daily	Daily	Daily
						On Board Service						
8364/8150			8354			Connecting Thruway Number		8465		8353	8555	
Read Down						Mile	Read Up					
7 20A	12 50P	4 00P	6 00P	6 30P	10 35P	0	CHICAGO, IL					
							Union Station					
7 46A	1 16P					16	Hammond-Whiting, IN					
	1 58P		7 01P			52	Michigan City, IN					
				9 15P		89	St. Joseph-Benton Harbor, MI					
				9 51P		116	Bangor, MI					
				10 34P		151	Holland, MI					
9 37A	3 09P	6 10P	8 12P			62	New Buffalo, MI					
10 07A	3 33P	6 33P	8 35P			89	Niles, MI					
10 17A		6 43P				102	Dowagiac, MI					
10 52A	4 08P	7 12P	9 10P			138	Kalamazoo, MI					
						176	Traverse City, St. Ignace—see back					
						160	GRAND RAPIDS, MI					
						208	Battle Creek, MI					
						249	East Lansing, MI					
						238	Owosso, MI					
						256	Durand, MI					
						274	Flint, MI					
						319	Lapeer, MI					
						184	PORT HURON, MI					
						208	Albion, MI					
						243	Jackson, MI					
						271	Ann Arbor, MI					
						281	Dearborn, MI					
						292	DETROIT, MI					
						296	Amtrak Station					
						304	Royal Oak, MI					
							Troy, MI					
							PONTIAC, MI					
							Windsor, ON—Greyhound Station					
							London, ON					
							TORONTO, ON					
							—Greyhound Station					

SCHEDULES EFFECTIVE 6/26/17

Service on Wolverine®, Blue Water™ and Pere Marquette®

- Coaches:** Reservations required.
- Business class:** Ticket price includes non-alcoholic beverage and newspaper, and access to the Amtrak Metropolitan Lounge in Chicago.
- Cafe:** Sandwiches, snacks and beverages.
- Wi-Fi available.
- Amtrak Quiet Car (Monday-Friday only).
- Bicycles:** A limited number of spaces are available to transport standard bicycles to/from most Blue Water and Pere Marquette stations. Reservations are required; nominal charges apply; passenger assists with loading and unloading as carry-on baggage on the Blue Water and checked trainside on the Pere Marquette. Visit Amtrak.com/bikes for more information.
- Greyhound Lines Thruway connection at Chicago Union Station. Amtrak tickets are sold only when purchasing a connecting or return Amtrak train ticket. Otherwise, buy ticket directly from Greyhound.
- Greyhound Lines Thruway connection at Dearborn.
- Indian Trails Thruway connection at Battle Creek.
- Indian Trails Thruway connection at Kalamazoo. For Thruway connection from Grand Rapids to Trains 350 and 354, and from Train 351 to Grand Rapids, see back.

Golf Bags: A limited number of spaces are available to transport golf bags to/from all stations. Reservations are required; nominal charges apply; passenger assists with loading, stowing and unloading.

All Amtrak services and stations are non-smoking.

Trails and Rails Program: In cooperation with the National Park Service, volunteer rangers provide on board narratives between May and October on selected days on parts of these routes. Visit nps.gov/trailsandrails and amtrakparks.com.

The Wolverine Service, Blue Water and Pere Marquette are financed primarily through funds made available by the Michigan State Department of Transportation.

Possible Michigan Service Delays

Wolverine and Blue Water schedules may be affected by major ongoing track work being performed between Kalamazoo and Dearborn. Visit Amtrak.com or call 1-800-USA-RAIL to confirm schedules for your anticipated travel period.



WOLVERINE SERVICE, BLUE WATER and PERE MARQUETTE ROUTE MAP and SYMBOLS



SYMBOLS KEY

- Stops to receive and discharge passengers; train may leave before time shown.
- Stops only to receive passengers.
- Thruway Bus stop
- Ferry connection
- Quik-Trak self-serve ticketing kiosk
- Unstaffed station
- Staffed Station with ticket office; may or may not be open for all train departures.
- Station wheelchair accessible; no barriers between station and train.
- Station wheelchair accessible; not all station facilities accessible.

SHADING KEY

Daytime train Thruway and connecting services

Thruway Connections

Toledo • Detroit • East Lansing (Trinity Transportation)

29/49	Connecting Train Number					30/48
6049	Mile		Thruway Number	Symbol	6048	
6 30A	0	Dp	Toledo, OH—Amtrak Station (ET)	● & Ar	10 35P	
7 35A	61	Ar	Detroit, MI—Amtrak Station	● & Qr	9 30P	
7 50A	70		Dearborn, MI—Amtrak Station	● & Qr	9 10P	
8 40A	106		Ann Arbor, MI—Amtrak Station	● & Qr	8 25P	
9 25A	143		Jackson, MI—Amtrak Station	● & Qr	7 40P	
10 05A	182	Ar	East Lansing, MI—Amtrak Sta. (ET)	● & Qr Dp	7 00P	

Battle Creek/Kalamazoo • Flint • Saginaw • Bay City • Cheboygan • St. Ignace (Indian Trails)

8150	8354	Thruway Number				8353	8555	
Daily	Daily	Mile	▼	Days of Operation	Symbol	▲	Daily	Daily
	10 00P	0	Dp	Kalamazoo, MI —Amtrak Station	● & Qr	Ar		8 40P
	11 00P	29	▲	Grand Rapids, MI	○ & Qr	▲		7 30P
11 50A		51		Battle Creek, MI	● & Qr		9 40A	
1 25P	12 25A	79		East Lansing, MI	● & Qr		8 25A	6 00P
2 10P		111		Owosso, MI	○ & Qr			
3 45P	1 25A	132		Flint, MI	● & Qr		7 20A	3 50P
4 40P		163		Saginaw, MI	○ & Qr			2 20P
5 05P		176		Bay City, MI	○ & Qr			1 45P
6 35P		218		Tawas City, MI	○ & Qr			12 10P
8 38P		268		Alpena, MI	○ & Qr			10 20A
10 14P		345		Cheboygan, MI	○ & Qr			8 40A
10 35P		350	Mackinaw City, MI	○ & Qr		8 10A		
10 50P		357	Ar	St. Ignace, MI (ET)	○ & Qr	Dp		7 55A

NOTE—Through passengers change buses at Flint, MI on buses 8150 and 8555.

Kalamazoo • Grand Rapids (Indian Trails)

8351	8364	Thruway Number				8465	8365	8555	
Daily	Daily	Mile	👉	Days of Operation	Symbol	👈	Daily	Daily	Daily
8 35A	2 15P	0	Dp	Kalamazoo, MI (ET) —Amtrak Station	● & Qr	Ar	9 00A	5 35P	8 40P
9 40A	3 10P	50	Ar	Grand Rapids, MI (ET) —Amtrak Station	○ & Qr	Dp	7 23A	4 33P	7 30P

Kalamazoo • Traverse City • Sault Ste. Marie (Indian Trails)

8364	Thruway Number					8365
Daily	Mile		Days of Operation	Symbol		Daily
2 15P	0	Dp	Kalamazoo, MI—Amtrak Sta. (ET)	● & Qr	Ar	5 35P
3 10P	29		Grand Rapids, MI	○ & Qr		4 30P
4 50P	64		Rockford, MI	○ & Qr		3 40P
5 18P	85		Howard City, MI	○ & Qr		3 05P
5 40P	106		Big Rapids, MI	○ & Qr		2 40P
6 25P	130		Reed City, MI	○ & Qr		2 10P
7 01P	147		Cadillac, MI	○ & Qr		1 08P
7 15P	176		Manton, MI	○ & Qr		12 46P
7 40P	168		Kingsley, MI	○ & Qr		12 23P
8 15P	192		Traverse City, MI	○ & Qr		11 53A
9 22P	253		Charlevoix, MI	○ & Qr		10 38A
9 50P	270		Petoskey, MI	○ & Qr		10 00A
10 10P	279		Alanson, MI	○ & Qr		9 33A
10 18P	288		Pellston, MI	○ & Qr		9 25A
10 51P	305		Mackinaw City, MI	○ & Qr		9 00A
11 15P	312		St. Ignace, MI	○ & Qr		8 45A
12 15A	363	Ar	Sault Ste. Marie, MI (ET)	○ & Qr	Dp	6 45A

NOTE—Through passengers change buses at the Grand Rapids Bus Station on buses 8364 and 8365.

Michigan Straits Route (Indian Trails)

350	Connecting Train Number					355
8650	Thruway Number					8855
Daily	Mile	▼	Days of Operation	Symbol	▲	Daily
	0		Kalamazoo, MI—Amtrak Sta. (ET)	● & Qr	Ar	8 40P
11 50A	27	Dp	Battle Creek, MI	○ & Qr		
3 50P	127	Ar	Alma, MI (DART terminal)	○ & Qr	Dp	5 00P
4 26P	146		Mt Pleasant, MI	○ & Qr		4 30P
5 15P	165		Clare, MI	○ & Qr		3 45P
5 50P	201		Houghton Lake, MI	○ & Qr		2 30P
6 25P	226		Grayling, MI	○ & Qr		2 00P
6 55P	254	Ar	Gaylord, MI (ET)	○ & Qr	Dp	1 20P

NOTE—change of buses required en route at Lansing














See other side for Route Map, Services, Symbols and Shading Key.

Thruway Connections

Hancock • L'Anse • Marquette • Milwaukee • Chicago (Indian Trails)

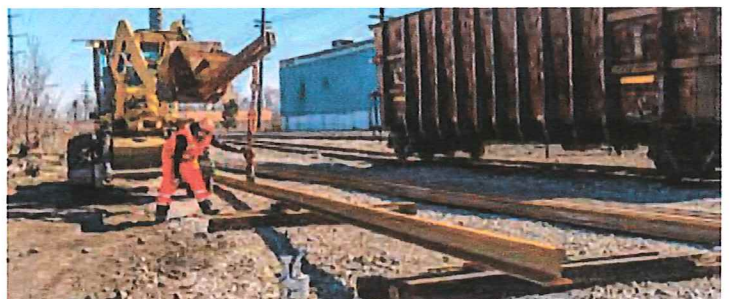
8532	Thruway Number						8539
Daily	Mile		Days of Operation		Symbol		Daily
10 55P	0	Dp	Hancock, MI	(CT)	○	Ar	7 54A
11 02P	1		Houghton, MI		○		7 47A
12 01A	34		L'Anse, MI		○		6 52A
1 35A	102		Marquette, MI		○		5 20A
4 10A	160		Escanaba, MI		○		3 50A
4 50A	182		Marinette, MI		○	Ar	12 54A
5 24A	195		Oconto, MI		○		11 55P
6 15A	212		Green Bay, WI		○		11 15P
6 55A	253		Manitowoc, WI		○		10 35P
7 30A	276		Sheboygan, WI		○		10 00P
8 45A	328	Ar	Milwaukee, WI—Amtrak Sta.	(CT)	● & Q	Dp	9 00P
334	Connecting Train at Milwaukee						339
11 00A	0	Dp	Milwaukee, WI—Amtrak Sta.	(CT)	● & Q	Ar	6 45P
11 10A	8		Milwaukee Airport Rail Sta., WI	✈	○ & Q		6 28P
11 23A	23		Sturtevant, WI		○ & Q		6 14P
12 01P	68		Glenview, IL		● & Q		5 32P
12 29P	86	Ar	Chicago, IL—Union Station	(CT)	● & Q	Dp	5 08P

Port Huron • Detroit (Hoosier Ride)

350	Connecting Train Number							355
8170	8168	Thruway Number					8471	8469
Daily	Daily	Mile		Days of Operation	Symbol		Daily	Daily
3 10P	8 10A	0	Dp	Detroit, MI (CT) —Amtrak Station	 	Ar	6 55P	12 55P
3 40P	8 40A	18	Ar	Roseville, MI			6 45P	12 45P
3 55P	8 55A	26		Mt. Clemens, MI			6 30P	12 30P
4 15P	9 15A	40		New Baltimore, MI			6 10P	12 10P
4 45P	9 45A	63		Marysville, MI		Ar	5 40P	11 40A
5 00P	10 00A	69	Ar	Port Huron, MI (CT) —Amtrak Station		Dp	5 25P	11 25A



Amtrak and the Michigan Department of Transportation have modified *Wolverine Service* schedules to accommodate track and signal work to result in improved reliability, a smoother ride and an expansion of the Midwest's first 110 mph Amtrak service. Photos courtesy of MDOT.



Indian Trails
Amtrak numbers

8555 8365 8461 8465? GRAND RAPIDS-KALAMAZOO 8351 8352 8364 8354

READ DOWN				SCHEDULE NUMBER				READ UP			
33	83	79	87	1487				88	86	78	82
Flint Chicago (1482)				10-20-17							Chicago Flint (1482)
⚠	⚠	⚠	⚠	FREQUENCY				⚠	⚠	⚠	⚠
.....	3 10	.....	.....	Lv Muskegon, MI	(242) GL	Ar	.....	12 40	.....	5 45	.....
.....	4 00	.....	.....	Ar Grand Rapids, MI		Lv	.....	11 55	.....	4 55	.....
.....	8 45	.....	.....	Lv St. Ignace, MI	(1484) IT (EST)	Ar	.....	.....	.....	11 05	.....
.....	9 33	.....	.....	Lv Alanson, MI		Lv	.....	.....	.....	10 10	.....
.....	10 00	.....	.....	Lv Petoskey, MI		Lv	.....	.....	.....	9 50	.....
.....	11 53	.....	.....	Lv Traverse City, MI		Lv	.....	.....	.....	8 15	.....
.....	1 08	.....	.....	Lv Cadillac, MI		Lv	.....	.....	.....	7 01	.....
.....	4 25	.....	.....	Ar Grand Rapids, MI		Lv	.....	.....	.....	4 30	.....
7 40	4 30	12 40	7 20	Lv ▲ GRAND RAPIDS, MI (Grey. Term.)		Ar	7 05	9 40	12 30	3 15	11 00
7 30 *	4 33	12 43	7 23	Ar Grand Rapids, MI (Amtrak)		Lv	↑	D 9 35	D 12 27	D 3 10	10 55
8 40	5 35	1 45	8 25	Ar ▲ KALAMAZOO, MI (Bus/Amtrak)		Lv	6 05	8 35	11 25	2 15	10 00
8 45	.....	.....	.....	Lv Kalamazoo, MI	(1482) IT (EST)	Ar	.....	.....	10 05	.....	9 35
9 45	.....	.....	.....	Ar Benton Harbor, MI	(EST)	Lv	.....	.....	9 05	.....	8 10
D 11 10	.....	.....	.....	Ar Chicago, IL	(CT)	Lv	.....	.....	6 05	.....	4 25
10 00	.....	.....	10 20	Lv Kalamazoo, MI	(1482) IT	Ar	.....	.....	10 55	.....	.....
12 10	.....	.....	12 55	Ar Lansing, MI		Lv	.....	.....	8 45	.....	.....
D 1 25	.....	.....	2 55	Ar Flint, MI		Lv	.....	.....	7 20	.....	.....
9 45	.....	2 40	10 35	Lv Kalamazoo, MI	(290) GLI	Ar	.....	.....	10 50	.....	9 25
11 20	.....	4 15	12 40	Ar Ann Arbor, MI		Lv	.....	.....	8 55	.....	7 50
12 30	.....	5 20	1 30	Ar Detroit, MI		Lv	.....	.....	7 50	.....	6 45

* Stops at Amtrak before bus terminal

AM - Light Print
PM - Bold Print
GL - Greyhound Lines
OC - On Call, passengers must call 24 hours in advance of pick up to (800) 292-3831
D - Discharge Only
▲ - Full Service Station
X - Meal Stop
⚠ - Rest Stop
⚠ - Wheelchair Accessible

* Amtrak has AR 900am

DETROIT - MUSKEGON

Table
242
Westbound
as of 06/21/17

Frequency

Schedules

	4588 GLI DETROIT MUSKEGON eff. 01/21/17	4590 GLI DETROIT MUSKEGON eff. 05/22/13	4592 GLI DETROIT GRAND RAPIDS eff. 05/19/15
DETROIT, MI (EST)	8:00 Lv	12:10 Lv	8:15 Lv
SOUTHFIELD, MI	8:25	12:40	8:45
ANN ARBOR, MI		1:20	
JACKSON, MI		2:10	
EAST LANSING, MI	9:55	2:55	10:10
LANSING, MI	10:15 Ar 10:25 Lv	3:05 Ar 3:25 Lv	10:20 Ar 10:30 Lv
GRAND RAPIDS, MI	11:35 Ar 11:55 Lv	4:35 Ar 4:55 Lv	11:40
MUSKEGON, MI	12:40	5:45	

1 - MONDAY 2 - TUESDAY 3 - WEDNESDAY 4 - THURSDAY 5 - FRIDAY 6 - SATURDAY 7 - SUNDAY X - EXCEPT H - HOLIDAY
All schedules operate daily unless otherwise noted.

AM - Light Face Figures. PM - Bold Face Figures.

- Rest Stop - Meal or Lunch Stop - Package Express Pickup + Delivery
cs - Change Buses b - Discharge Only F - Flag Stop HS - Highway Stop LB - Lock Box X - By Connection

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DETROIT - MUSKEGON		Schedules		
Table 242 Eastbound as of 06/21/17		4595 GLI MUSKEGON DETROIT eff. 06/20/12	4591 GLI GRAND RAPIDS DETROIT eff. 06/27/16	4593 GLI MUSKEGON DETROIT eff. 05/22/13
Frequency				
MUSKEGON, MI (EST)		6:05 LV	.....	3:10 LV
GRAND RAPIDS, MI		6:55 Ar 7:15 LV	1:30 LV	4:00 Ar 4:20 LV
LANSING, MI		8:30 Ar 8:40 LV	2:45 Ar 3:00 LV	5:35 Ar 5:45 LV
EAST LANSING, MI		8:50	3:10	5:55
JACKSON, MI		9:35		
ANN ARBOR, MI		10:20		
SOUTHFIELD, MI		11:00	4:35	7:20
DETROIT, MI		11:25	5:00	7:40
1 - MONDAY 2 - TUESDAY 3 - WEDNESDAY 4 - THURSDAY 5 - FRIDAY 6 - SATURDAY 7 - SUNDAY X - EXCEPT H - HOLIDAY All schedules operate daily unless otherwise noted.				
AM - Light Face Figures. PM - Bold Face Figures.				
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City	Arrive	Depart	Schedule	Carrier
DETROIT, MI		01:45pm	0355	MRT
YPSILANTI (E), MI	02:20pm	02:20pm	0355	MRT
ANN ARBOR, MI	02:45pm	02:45pm	0355	MRT
JACKSON, MI	03:35pm	03:40pm	0355	MRT
ALBION, MI	04:05pm	04:05pm	0355	MRT
BATTLE CREEK, MI	04:50pm	04:50pm	0355	MRT
KALAMAZOO, MI	05:25pm	06:00pm	0355	MRT
ELKHART (E), IN	07:25pm	07:25pm	0355	MRT
SOUTH BEND, IN	07:55pm	08:10pm	0355	MRT
PLYMOUTH (E), IN	08:45pm	08:45pm	0355	MRT
ROCHESTER (E), IN	09:10pm	09:10pm	0355	MRT
PERU (E), IN	09:35pm	09:35pm	0355	MRT
KOKOMO, IN	10:00pm	10:10pm	0355	MRT
INDIANAPOLIS, IN	11:40pm		0355	MRT

Carrier Legend

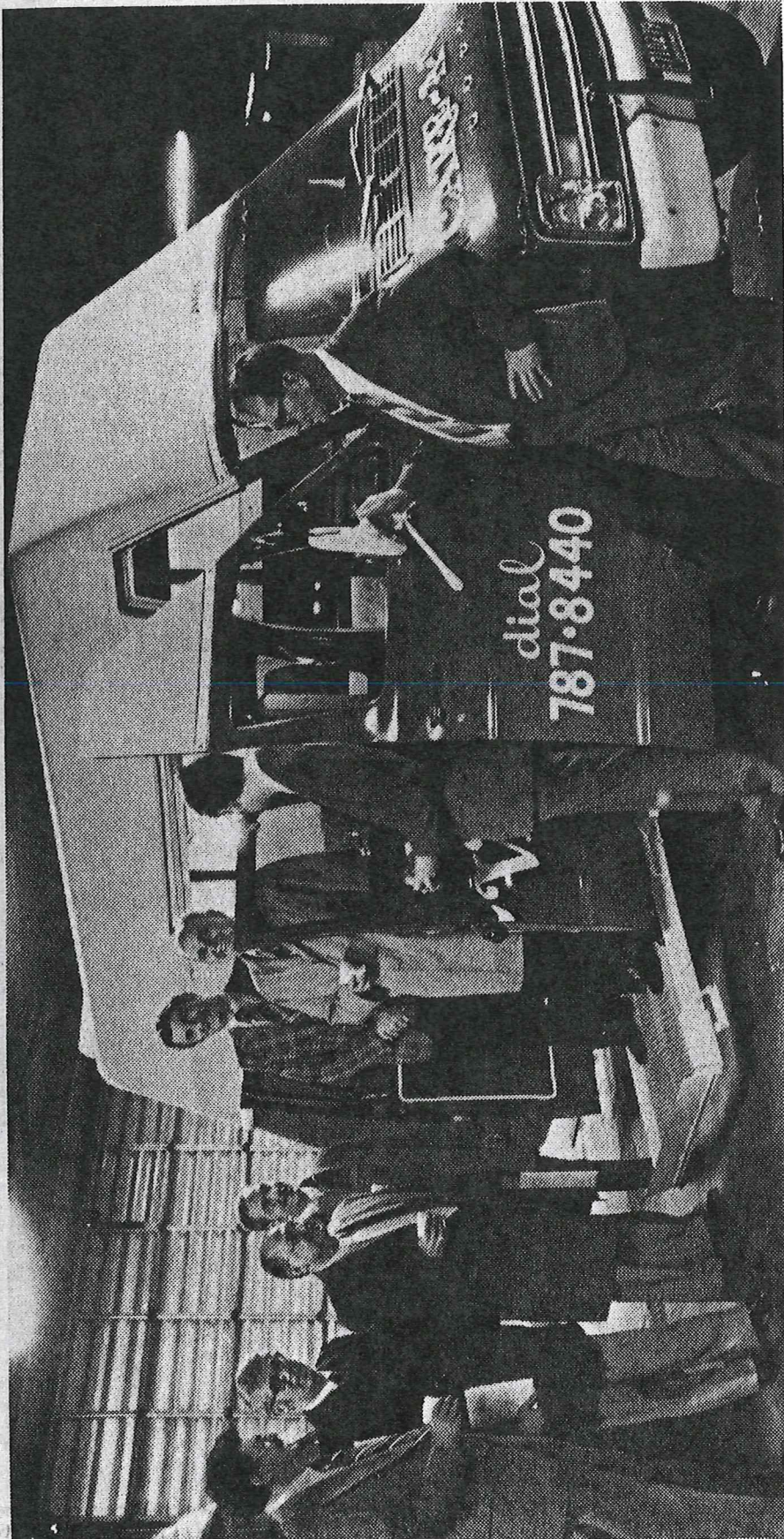
MRT - MILLER TRANSPORTATION/HOOSIER RIDE



City	Arrive	Depart	Schedule	Carrier
INDIANAPOLIS, IN		04:00pm	0354	MRT
KOKOMO, IN	05:30pm	05:40pm	0354	MRT
PERU (E), IN	06:00pm	06:00pm	0354	MRT
ROCHESTER (E), IN	06:30pm	06:30pm	0354	MRT
PLYMOUTH (E), IN	07:00pm	07:00pm	0354	MRT
SOUTH BEND, IN	07:40pm	07:55pm	0354	MRT
ELKHART (E), IN	08:25pm	08:25pm	0354	MRT
KALAMAZOO, MI	09:40pm	10:00pm	0354	MRT
BATTLE CREEK, MI	10:45pm	10:45pm	0354	MRT
ALBION, MI	11:10pm	11:10pm	0354	MRT
JACKSON, MI	11:30pm	11:30pm	0354	MRT
ANN ARBOR, MI	12:15am	12:15am	0354	MRT
DETROIT, MI	01:15am		0354	MRT

Carrier Legend

MRT - MILLER TRANSPORTATION/HOOSIER RIDE



BUS COMPANY GETS LIFT — City commissioners and others looked at the new Care-A-Vans Tuesday in the bus garage. On the left are Donald Falk, president of the L. H. Field

Co., left, and City Com. Philip O'Connell, right. Operating the lift is James Franzen, project manager. (Citizen Patriot photo by Garrett Cope)

Vans geared to handicapped

The Jackson Public Transit Co. today put into service two new vans equipped with a power lift for passengers using wheelchairs and walkers.

Another of the \$12,095 vehicles, called Care-A-Vans, will serve as backup.

Riders are asked to request the service 24 hours in advance by

calling 787-8440.

Service is available to areas in the city limits and some outlying areas like Robinson Road residential developments and the Consumers Power Co. Parnall Road office.

Seats are available for those accompanying the handicapped. Drivers will be able to help riders

get into and out of the van. They cannot go into buildings or leave the van unattended.

To obtain Care-A-Van service call from 8 a.m. to 5 p.m. Monday through Friday with the following information:

—Your name, and telephone number.

—The type of handicap appliance you have, such as a whe-

elchair or walker.

—The day, time and location of pickup.

—Where you want to go, the time you have to be there and time of return.

Charge for the handicapped, senior citizens and those accompanying them is 50 cents each way. Others will pay \$1.

A SHORT HISTORY OF PUBLIC TRANSPORTATION IN JACKSON, MICHIGAN

By James M. Franzen

May 27, 1872. "Greenwood Avenue" omnibus line. From the Fort Wayne Railroad depot at Fourth Street to the prison, changed in November 1872 to go out East Main Street [Michigan Ave.] to the Deyo Farm. Stables on Fourth Street at the railroad tracks. Fare, five cents, 25 tickets/\$1. Went out of business around 1876.

November 5, 1873. "Main Street and Air Line Junction Omnibus Line" began operation. From West Avenue and Main Street to the Junction [Elm & Page Aves.?]. May have been out of business by the end of December.

Late 1881. Herdic Coaches [Named for their inventor, Peter Herdic] Operated eight and ten passenger coaches and some fitted with runners for winter use. Out of business late 1882? Some of the routes:

West Main to Air Line Junction
Wildwood & Main out East Main
Summitville to the prison
Mechanic, Franklin, Morrell to Mt. Evergreen Cemetery

May 20, 1882. The "Jackson City Railway Co." began operations with horsecars. Fare five cents. The first line was from Morrell Street up First Street to Main Street to Forbes Street. A line up Mechanic Street to the prison over to Cooper, ending at North Street. This was to have been extended to the coal mines around Porter Street, but I have nothing indicating it was. The car line was built by Hiram Smith and sons, Henry and Dwight.

October 12, 1889. The "Purifier Line" opened [West Ganson Street, transfer and destination sign name in later years, "Jackson Street"]. Called Purifier line because its construction was prompted by the building of the George T. Smith Middling Purifier Co. plant at Ganson and Wisner Streets. This line was also called the "Moody Hill Line". The East Main line was extended to Horton Street at this time.

The first horsecar barn was on the south side of East Main at the head of Edgewood Street. This building burned down in 1884 and new barns were built on the south side of East Main at Dwight Street [The barns were built over South Dwight Street]. These barns continued in use through the electric cars until the new car barn was built on East Wesley Street in 1911. In 1919 the city of Jackson took title of the property to extend South Dwight Street through to East Main.

September 20, 1891. The electric cars began operation by the "Jackson Street Railway Co." [Still owned by the Smith family]. The line had been completely rebuilt. The First Street line was extended to Greenwood Avenue. In 1892 it was extended to Griswold Street. The Mechanic Street line track was taken up.

March 8, 1894. Cars began operating on the Francis Street line from Main to High Street. Plans were begun to extend the line to Vandercook Lake.

June 26, 1897. The Jackson Street Railway Co. goes into receivership. W.A. Foote is appointed receiver. Who under takes a complete rebuilding of the line, including rebuilding the cars with enclosed platforms. Two open car bodies are purchased in 1898. In 1897 metal tokens are used for the first time, six for twenty-five cents. Before this a book of 125 tickets for five dollars was sold.

September 1900. The Jackson Street Railway is sold to a new company "Jackson and Suburban Traction Co.", formed by W.A. Boland.

February 11, 1901. A new line out Page Avenue to the Junction was opened.

May 4, 1901. Page Avenue extended to Michigan Center and on June 29, 1901 to Grass Lake.

April 1902. Conductors and motormen organized as part of the Amalgamated Association of Street Car Conductors and Motormen, Division 245 [Now Amalgamated Transit Union].

1903. Local service on West Main Street to the city limits became available when the Jackson and Battle Creek Traction Co. began operations.

April 1904. Jackson and Suburban Traction Co. became part of the "Jackson Consolidated Traction Co.".

Summer 1905. Service began to Vandercook Lake. At first passengers had to take a Francis Street car to High Street and get off and walk across the Michigan Central tracks to the Vandercook Lake car. The Vandercook car was kept on the other side of the tracks and was only brought across for repairs. This continued until an agreement was reached for the streetcars to cross the railroad tracks. About this time service began on the Cooper Street line.

May 1907. The Jackson Consolidated Traction Co. was sold to the Michigan United Railways.

1908. The Lansing Avenue line was opened.

January 1911. New car barn opened on East Wesley Street. A new interurban station opened at the corner of Francis and Washington.

April 1912. M.U.R. leased to the Michigan Railway Co., operating under the name, "Michigan United Traction Co."

August 15, 1913. The Leroy Street line is opened. The last major car line built in Jackson

March 1915. Jitneys first appear on Jackson streets.

October 1915. The First Street line extended to Prospect and Fourth to serve the new Essex Heights sub-division

April 24, 1918. The streetcar fare had been five cents cash since 1882, it went to six cents cash, five tickets for twenty-seven cents. Starting March 10, 1919 students 5-14 years old could buy ten tickets for thirty cents at the company or interurban offices. [The company office was on South Mechanic Street in the old gas company office building, now Alan's Printing].

June 1920. Fares went to ten cents cash, four tickets for thirty cents, children 5-12 years, five cents.

September 5, 1921. After a short trial of reduced fares, passengers up, total revenue down; fares were set at ten cents cash, four rides for 25¢, children 5-12 years, five cents.

March 31, 1922. The first bus began operating in Jackson. Michigan Railway bus operated from The Otsego Hotel to the Reynolds Spring Co. plant on Water Street. In July the bus was used for runs from downtown to Ella Sharp Park.

December 1922. M.U.R. in receivership. Effective January 1, 1916 the leased streetcar companies were assigned to Michigan Railway Co. and the local operation was referred to as both the M.U.R. and Michigan Railway.

June 1923. The M.U.R. [which also included local cars in Battle Creek, Kalamazoo, Lansing and the interurban lines] were reorganized as the "Michigan Electric Railway Co.". April 25, 1924, papers filed in Lansing to dissolve the M.U.R.

April 22, 1927. Tokens went to three for 25¢.

June 1928. M.E.R. in the hands of a receiver.

March 1929. The local car lines of the M.E.R. reorganized. The lines in Jackson called the "Jackson Transportation Co."

March 1932. A proposal was placed before city council to replace the streetcars with buses. Because the city would have accepted bids from anyone wanting to operate buses in Jackson the proposal was dropped.

October 1932. Operators went on strike. Streetcar operator wages had gone from 51¢ an hour, after two years, in June 1930 to 31¢ an hour on October 1, 1932. The distinction between under and over two years was dropped because of the high unemployment during the Depression, there were no employees with less than two years seniority.

January 1933. The Southern Michigan Transportation Co. was in the hands of a receiver. S.M.T.C. had been formed in 1925 to operate buses and trucks to supplement the interurban lines. With the decline of a transportation system that had covered all of southern Michigan, in a number of moves on paper, J.T.C. became legally part of S.M.T.C., but still operated under the name Jackson Transportation Co. As a legal entity J.T.C. was dissolved in February 1934.

March 5, 1935. The operating assets of J.T.C. were sold at auction to the employees for \$5,001. The company was now called "Jackson Rapid Transportation Co.", the cars continued to carry the monogram of J.T.C.

November 28, 1935. A Yellow Coach model 715 bus replaced the car on the Michigan Center line.

May 19, 1936. J.R.T.C. was in the hands of a receiver. In the final accounting the principal of the 1904 mortgage of \$790,000 and accrued interest from November 1, 1924 of \$494,009.73 were owed; the only property available were the car barn and some real estate, which sold for about \$30,000.

June 27, 1936. Streetcar service ends in Jackson. The next day twenty buses with Ford chassis and model 35x Fitzjohn bodies take over. The city fare was five cents, with convenience tokens available. The fare to Michigan Center and Vandercook Lake was ten cents or five cents and a 2½¢ token. The 2½¢ tokens were sold on the buses at four for ten cents. The new company, "Jackson City Lines, Inc.", was a wholly owned subsidiary of National City Lines, Inc.

September 1, 1936. The first new bus route, "Merriman Street" begins operation.

December 13, 1939. A trial route, "Franklin and 21st", was operated to the 21st and Morrell area. The half hour morning and afternoon service ended March 9, 1940.

January 1941. Jackson City Lines moves into a new garage at 119 Clinton Street [Now Glick Highway].

October 1, 1948. Fares went to ten cents cash, two tokens for 15¢, students and children, five cents.

April 4, 1949. Service to the Foote Grove Manor area was tried again. The five trips a day ended May 6th.

November 1, 1950. Trial route to Losey and South Street area. Three morning and three afternoon trips discontinued December 29, 1950.

November 1951. National City Lines offers to sell Jackson City Lines to the city.

July 3, 1955. Route changes included the ending of the Merriman and South Jackson Street routes.

December 1, 1956. The city enters a lease agreement with National City Lines. The company would receive 10% of gross revenues for the use of its equipment and 5% for operating the system.

December 14, 1957. Service on Sundays, holidays and evenings, except Monday nights, ends.

August 9, 1958. Service to Michigan Center ends.

September 9, 1963. The five J.C.L. routes were combined into three. Service to Vandercook Lake ended.

October 21, 1963. Mrs. Charles Lobdell begins jitney service to Vandercook, ends April 15, 1966.

September 1, 1964. The "Jackson Public Transportation Co., Inc." begins operation. City Lines had given the city notice in February it was terminating the agreement. JPTC sponsored by the Greater Jackson Chamber of Commerce, working capital provided by a stock subscription of local businesses, buses leased from Art Moehn Chevrolet and garage leased from City Lines.

June 1972. Eight General Motors TDH 3302A's in service, federal, state and local funds were used. Called "Easy Riders" and the name "Jackson Transit System" used [Name not legally changed].

January 6, 1975. Monday and Friday night trips for downtown store workers end.

February 23, 1976. Service to Vandercook Lake and Michigan Center restored. With the opening of the Jackson Community College campus in Summit Township JPTC had operated service for JCC students. This service was discontinued after the end of the spring semester in 1969, due to low ridership. The service was started again September 5, 1972 and in 1973 the general public along the route could use the service. The new route started at Paka Plaza, but soon cut back to starting from the downtown transfer point. The Michigan Center route was expanded to serve the Gilletts Lake area on December 17, 1979, and discontinued July 1, 1981.

March 27, 1978. "Springport Road Shuttle" started, half hour service between the Airport Road Meijers and Paka Plaza. Changed June 26, 1978 to an hourly service serving Parnell Road/Lansing Avenue area, renamed "Northwest Loop". First bus route not to originate downtown. Cut back to original route and combined with West Ganson 1981.

April 1, 1980. Route started to Spring Arbor/Robinson Roads area. Service ended Jan. 3, 1983.

December 15, 1980. Jackson Area Transportation Council formed to operate county wide transportation system. State demonstration grant with goal of combining all transit services, including schools, into one agency. Failed to pass countywide millage.

June 1981. Operations moved to a new garage at 2350 E. High Street.
Summer 1986. City of Jackson Transportation Authority formed.

REFERENCES

Primary source microfilm of Jackson daily newspapers since 1873.

Moody's Investors Manuals, Various years.

Bankruptcies. Early bankruptcy cases were handled in Jackson county courts and those records are at the Jackson County clerk's office. Later cases held in federal courts and those records are at the National Archives Branch in Chicago.

Revised Oct. 1, 2014

Veterans Transportation

Medical transportation to the Iron Mtn. V.A. Medical Center

- Disabled American Veterans and Veterans Transportation Service

Serve entire region; Call 774-3300

- Houghton County, Call 482-0102

- Gogebic County, Call 667-1110

- Ontonagon County, Call 884-4320



Long-Distance Medical Transportation

Non-emergency transportation to distant medical facilities

- Baragoland Senior Citizens

Serves Baraga County; Call 524-6922

- Gogebic-Ontonagon Community Action Agency

Serves Gogebic County; strictly limited funds for

seniors 60+ to destinations outside Gogebic County;

Call 667-0283

- Little Brothers—Friends of the Elderly

Serves seniors 60+ in Houghton &

Keweenaw Counties; local and long-

distance (*Marquette only*) available; Call 482-6944

- Northwoods Airline

Serves entire region; provides *urgent transportation* to

those with *high level of need* for transplants, chronic

care, etc. in the Upper Midwest; Call 800-311-1760

- Ontonagon County Commission on Aging

Serves Ontonagon County; strictly limited funding for

seniors 60+; local and long-distance available;

Call 575-3461

Intercity Bus Service—Indian Trails

- U.S. 41 Route: Hancock, Houghton, Baraga, L'Anse

- U.S. 2 Route: Ironwood, Wakefield, Watersmeet, Iron

- River, Crystal Falls

- Fares vary widely; discounts for seniors 62+, college

- students, advance purchase

- Call 800-292-3831

Indian Trails

What's on the Web?

Transit—

Fares, hours, routes, service areas, contact information, and more for...

- Public transit agencies
- Other public agencies
- Nonprofit organizations
- Taxis and other private companies



"How to ride" tips, history, & sustainability

Carpooling—

- Regional rideshare matching tool
- Map of park-and-ride lots
- Making connections with transit



Non-Motorized Transportation—

- Countywide trail descriptions and maps
- Multi-modal trail connections
- Trail events and organizations



If you would like to see other content
give us your input!

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Transit Provider Information

for Baraga, Gogebic,
Houghton, Iron,
Keweenaw, and
Ontonagon Counties



Get educated!

Get active!



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Major Transit Providers

All phone numbers in 906 area code unless otherwise noted

Baraga-Houghton-Keweenaw Community Action Agency

Primarily serves seniors & persons with disabilities

- **Door-to-Door, Northern Houghton County**
9 am-4 pm Tues. & Thurs., \$4-6 round trip
- **Door-to-Door, Central Houghton County**
9 am-4 pm Mon. & Thurs., \$4-8 round trip
- **Mohawk-Houghton**, One round trip 10 am-3 pm Wed., \$6-8
- Call 482-5528; all services are weather-permitting

Barageland Senior Citizens

Serves Baraga County seniors & persons with disabilities

- **Door-to-Door** in Baraga, L'Anse, & surrounding communities
8-10 times/month; \$2 L'Anse, \$3 Baraga, \$3-4 others
- **Distant Routes** to Houghton, Iron Min., Marquette, & Watersmeet 1-2 times/month; \$8 round trip
- 8 am-4 pm Tuesday-Friday; Call 524-6922

Dickinson-Iron Community Services Agency

Primarily serves Iron County seniors & persons with disabilities

- **Door-to-Door**, Crystal Falls Thur. 8-9 am; \$2 seniors 60+ only; Call 875-6709
- **Door-to-Door**, Iron River (five-mile radius from city)
8 am-3:30 pm Mon.-Thurs.; \$2 seniors 60+/persons with disabilities, \$3 wheelchair, \$2.50 others; Call 265-6134
- **Iron River-Iron Mountain 3rd Wednesday** of Month starting 1 pm, \$10 round trip; Call 265-6134



Ontonagon County Transit (On-Transit)

- **Door-to-Door** throughout county, \$1.50-3.50 general public; half price for seniors 62+, disabled, & students under 13; 6 am-6 pm Mon.-Fri.
- **Ontonagon-Houghton**, one round trip, 9 am-3 pm 2nd Wednesday of Month, \$7; Call (for all services) 884-2006

Gogebic County Transit Authority

- **Door-to-Door** in Ironwood, Bessemer, & Wakefield, 6 am-6 pm Mon.-Fri.; in Watersmeet, 10:45 am-2:15 pm Fri.
- **Ironwood-Wakefield Route** 6 am-6 pm Mon.-Fri.
- **Ironwood-Watersmeet Route** 2 round trips on Thurs., 8-15 am-3:30 pm; 1 round trip on Fri., 9:30 am-3:30 pm
- **Routes** \$2-3, Door-to-Door \$2.50
- **Half off fares** for seniors 62+, persons w/disabilities, all students, children under 12
- Call 932-2523

Hancock Public Transit



- **Door-to-Door**, 7 am-5 pm Mon.-Fri. in Hancock & Houghton, \$5 general public; \$3 students
- **Half off regular fare** for seniors 55+, persons with disabilities, children under 12
- **Student Pass** \$30 for 10 rides plus 2 free
- **Senior/Disability Pass** \$40 for 16 rides plus 2 free
- Call 482-3450; after hours: 369-3450

Houghton Public Transit

- **Door-to-Door** 7 am-5 pm (Houghton) / 4 pm (Hancock) Mon.-Fri.; Houghton \$5, Hancock \$6; \$3-4 students
- **Michigan Tech Routes** 7 am-1 pm (within Tech) & 1:15-7:15 pm (within Tech and around Houghton), both Mon.-Fri., free for students, staff, and faculty; otherwise \$2
- **Downtown Route** in Houghton 10 am-2 pm Mon.-Fri., \$2



- **Half off regular fares** for seniors 55+, persons w/disabilities, children under 12, students on Downtown
- **Pass** \$20 for that value of fares plus 2 free rides
- Call 482-6092

Taxi/Private Providers

B&B Wheelchair Transportation, Hancock



- **Hours**: 24 hours a day, 365 days a year
- **Fares**: \$30 2-way in Houghton/Hancock area, \$50 2-way Houghton/Hancock to Calumet/Laurel; others \$1.50/mi
- Call 482-6147 or 281-7202; e-mail dobruho@yahoo.com

Copper Country Limo & Taxi, Hancock

- **Hours**: 5:30 am-5:30 pm daily; service to airport outside usual hours with one day's notice
- **Fares** variable; \$15-20 Hancock/Houghton to Airport
- **Flexible Discount** available for students
- Call 370-4761

Neil's Taxi, Stands in Hancock & Laurium

- **Hours**, Hancock: 4:30 am-2:30 am Mon.-Sat.; until 12 am Sun. night; daily except Christmas
- **Hours**, Laurium: 7 am-2:30 am Mon.-Sat.; until 12 am Sun. night; any time of day w/ advance notice; daily exc. Christmas
- **Fares**, Hancock: \$2.50 within Hancock, \$3-5 within Houghton & between Hancock & Houghton; call for others
- **Fares**, Hancock: \$3 within Calumet & Laurium, higher in outlying areas, \$7 Calumet/Laurium to Kearsarge; call for others
- Call 482-5515 for Hancock, 337-1800 for Laurium

Paula's Taxi, Baraga

- **Hours**: 24 hours a day, 365 days a year
- **Fares**: \$5-12 most Baraga County communities; \$1/mile distant
- Call 337-1800

Twin City Cab, Ironwood

- **Hours**: 24 hours a day, 365 days a year (weather-permitting)
- **Fares**: \$1.50/mile long-distance, \$1.75/mile airport; call for others; delivery is available for regular fare + \$4 fee
- **Discounts**: \$1 off for seniors 55+, persons with disabilities, students; call about special fares for housing complex residents
- Call 932-0711

Tanya DeOliveira

From: John A Tuttle <tompkinsupervisor@gmail.com>
Sent: Wednesday, January 24, 2018 9:31 AM
To: Tanya DeOliveira
Subject: Re: Long Range Transportation Plan

OK, got it now, I did not upgrade the link from what was in the original letter! Thanks, John

John A Tuttle Sr
Tompkins Township Supervisor
Office/Home (517) 569-3263
Mobile (517) 206-5540
9555 Minard Rd
Parma Mi 49269

On Wed, Jan 24, 2018 at 9:08 AM, Tanya DeOliveira <TDeOliveira@co.jackson.mi.us> wrote:

John,

If you would just like a copy of the draft Environmental Mitigation chapter, please find it attached. It is also can be found on the project website under the "Environmental Mitigation Chapter Available for Public Comment" section. The draft can be downloaded by clicking on the large green button that reads "Draft Environmental Mitigation."

Please let me know if you have further questions.

Tanya DeOliveira, AICP

Principal Transportation Planner

Region 2 Planning Commission
120 W. Michigan Avenue - 9th Floor

Jackson, MI 49201

[517.768.6703](tel:517.768.6703)

[517.745.9041](tel:517.745.9041)

From: John A Tuttle [mailto:tompkinsupervisor@gmail.com]

Sent: Wednesday, January 24, 2018 8:56 AM

To: Tanya DeOliveira

Subject: Long Range Transportation Plan

Good Morning Tanya

I wanted to review the plan chapters that have been completed this morning and cannot find how to access the chapter 2, Environmental Mitigation Chapter draft. Can you give me an assist?

I want to send this out by email to our township residents but want to make sure that it works before doing so.

Thanks,John

John A Tuttle Sr

Tompkins Township Supervisor

Office/Home [\(517\) 569-3263](tel:(517)569-3263)

Mobile [\(517\) 206-5540](tel:(517)206-5540)

9555 Minard Rd

Parma Mi 49269

Tanya DeOliveira

From: Martha York <Martha.York@r2aaa.net>
Sent: Wednesday, January 24, 2018 12:09 PM
To: Tanya DeOliveira
Subject: Re: Region 2 Planning Commission 2045 plan feedback and comment

Awesome- thank you, Tanya!

Sent from my iPhone

On Jan 24, 2018, at 12:07 PM, Tanya DeOliveira <TDeOliveira@co.jackson.mi.us> wrote:

Martha,

I appreciate your feedback on this topic. This is a great comment, and this will be addressed in the plan. The nature of your comment aligns with the reasoning as to why we need to improve the various parts of our transportation system, which is something that is covered in the plan. The issues you raise are timely, and it's great that you are drawing attention to them. Thanks for taking the time to comment.

Also, to let you know, a consultant that has been working with JATA is working on a study called "Connecting Jackson County" that will be up on the Region 2 Planning Commission website later this year that also addresses these issues. Stay tune to the website in the coming months, and you'll be able to read the study when it's complete.

Tanya DeOliveira, AICP
Principal Transportation Planner
Region 2 Planning Commission
120 W. Michigan Avenue - 9th Floor
Jackson, MI 49201
517.768.6703
517.745.9041

From: Martha York [<mailto:Martha.York@r2aaa.net>]
Sent: Wednesday, January 24, 2018 10:51 AM
To: Tanya DeOliveira
Cc: Margaret Omalley; Kara Lorenz; Julie Wetherby
Subject: Region 2 Planning Commission 2045 plan feedback and comment

Hi, Tanya

It's very exciting to see the plan taking shape, and especially seeing the Trail extension in its projected state of completion! I appreciate and value your input into the Walkable Communities Coalition. You have been a great addition!

For the seniors and persons with disabilities that we serve through Region 2 Area Agency on Aging, the biggest hurdle we have is lack of public transportation outside of Jackson City limits. We serve people in all of the outlying villages and cities that very much need access to transportation for medical care, shopping, and socialization. There are issues including increased hospital emergency room visits because people are not able to receive easier access to routine medical care. Being socially isolated and

dependent on others for transportation leads to feelings of hopelessness and increase in depression, and there is an increase in the rate of substance use, opioid use, and suicide in older adults. I'm not sure if this fits, but I thought this needs to be added to the Jackson Area Plan under the following:

Emergency Management, Natural Disasters and the Transportation System Chapter

The Region 2 Planning Commission is looking for comments, edits and/or questions on the draft of The Emergency Management, Natural Disasters and the Transportation System chapter of the 2045 Long Range Transportation Plan. The chapter addresses how state, regional and local agencies are reducing the vulnerability of the transportation infrastructure to natural disasters.

Martha York, LBSW

Community Education Coordinator

Quality Coordinator, DSMT/ MNT

Master Trainer: Chronic Disease Self-Management Programs, Matter of Balance

Trainer: Creating Confident Caregivers

Advanced Care Planning Facilitator

Cell: 517-395-7891

Fax: 517-592-1975

www.martha.york@r2aaa.net

<image001.jpg>

Region 2 Area Agency on Aging

102 N Main St - PO Box 189

Brooklyn, MI 49230

517-592-1974 ext. 1931

"Region 2 Area Agency on Aging now has open enrollment for the Medicaid Waiver and Care Management Programs. Please contact us at 1-800-335-7881 and ask for Intake and Referral Specialists."

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Tanya DeOliveira

From: Tanya DeOliveira
Sent: Friday, January 26, 2018 9:12 AM
To: 'rayandjanbradley@frontier.com'
Subject: RE: Blackman Road

Mr. Bradley,

Thank you for your comment on the 2045 Long Range Transportation Plan. Public comment has supported the continued need for maintenance and preservation of the existing system as opposed to building new roads or expanding them and putting more stress, just like you are stating. We take a look at the road network across Jackson County and City of Jackson to see if we need to build new roads, and the data and public comment has come back to say the focus needs to be on improving what we have. This means that the City of Jackson, Jackson County, and MDOT are committed to putting their resources to improving the transportation system, including roads.

Your comment will be shared with the Jackson County Department of Transportation, as they are the agency responsible for the care and maintenance of the roads in Blackman Township.

Thank you,

Tanya DeOliveira, AICP
Principal Transportation Planner
Region 2 Planning Commission
120 W. Michigan Avenue - 9th Floor
Jackson, MI 49201
517.768.6703
517.745.9041

From: rayandjanbradley@frontier.com [<mailto:rayandjanbradley@frontier.com>]
Sent: Wednesday, January 24, 2018 2:31 PM
To: Tanya DeOliveira
Subject: Blackman Road

Does your plan include improving Blackman Road by actually paving it rather than just plugging holes? It is a main road going north out of Jackson, and to my knowledge it has not been improved beyond plugging holes and pouring gravel on hot tar since it was laid as a gravel on tar project many years ago. It needs ASPHALT PAVEMENT not just more tar and gravel.

Ray Bradley
Rives Junction

[Sent from Yahoo7 Mail on Android](#)

Tanya DeOliveira

From: Marce Wandell
Sent: Tuesday, March 13, 2018 9:05 AM
To: Tanya DeOliveira
Subject: RE: 2045 Long Range Transportation Plan - Three New Draft Chapters Available to Review

Hi Tanya,
Minor edit for Chapter 2, Vision, Goals, & Objectives, Goal 8. Public Involvement (page 5): 8.2 and 8.3 are the same. It's an important objective, so maybe that's why it's listed twice :^)

Have a good week, and don't put your car snow scraper away yet.
Marce

Marce Wandell, Director
Jackson County Department on Aging
517 768-8651

From: Tanya DeOliveira
Sent: Monday, March 12, 2018 3:23 PM
To: Jim Shotwell; Pete Jancek; Angela Kline; Jon Dowling; Michael Brown; Marce Wandell; Parrish Stahl; Laurel and Clyde Mauldin; Fowler, Richard (MDOT); Kent, Tyler (MDOT); Evans624@comcast.net; Jeffrey Wickman
Cc: Steven Duke; Wallace, Kelby (MDOT); Mike Overton; jmorris@cityofjackson.org; andy.pickard@dot.gov; Lanum, John (MDOT); FranklinJ1@michigan.gov; Corey Clevenger; Bret Taylor; ssykes@cityofjackson.org; Mike Davis; Krishina Welch; Habba, Maria (MDOT)
Subject: 2045 Long Range Transportation Plan - Three New Draft Chapters Available to Review

To: Members of the 2045 Long Range Transportation Plan Steering Committee & Other Interested Parties
From: Tanya DeOliveira
Re: **2045 Long Range Transportation Plan update – Three New Draft Chapters Available for Public Comment**

Attached is a memo regarding the opportunity for public review, comment, edits, and questions on three draft chapters of the 2045 Long Range Transportation Plan. They are:

- Vision, Goals and Objectives draft chapter
- Environmental Justice draft chapter
- Roadway Congestion, Deficiencies, and Recommended Projects draft chapter

The public comment period will end April 10, 2018. The draft chapters are available to download on the project website: <http://www.region2planning.com/long-range-transportation-plan/>.

Please contact me with any questions, comments or edits.
Thank you,

Tanya DeOliveira, AICP
Principal Transportation Planner
Region 2 Planning Commission
120 W. Michigan Avenue - 9th Floor
Jackson, MI 49201
517.768.6703

Tanya DeOliveira

From: Tanya DeOliveira
Sent: Monday, April 09, 2018 4:12 PM
To: 'Theo Hilleary'
Subject: RE: 2045 Long Range Transportation Plan Update

That would be question for the Jackson County Department of Transportation, as they oversee the funding and maintenance of county roads. The plan is just meant to report on what Act 51 Agencies (Jackson County being one of the Act 51 Agencies for the Jackson MPO) are expecting to spend/expense over the plan's horizon. Any rationale behind the numbers would be best addressed by the given agency.

Tanya DeOliveira, AICP
Principal Transportation Planner
Region 2 Planning Commission
120 W. Michigan Avenue - 9th Floor
Jackson, MI 49201
517.768.6703
517.745.9041

From: Theo Hilleary [<mailto:theohilleary9@hotmail.com>]
Sent: Monday, April 09, 2018 4:00 PM
To: Tanya DeOliveira
Subject: Re: 2045 Long Range Transportation Plan Update

Reviewing the revenue in the plan I wonder at the sufficiency to recover from the extensive road damage in the county. Continued patching or some modified resurfacing to smooth out our ride?

On Mar 12, 2018, at 2:00 PM, Jill Liogghio <jliogghi@co.jackson.mi.us> wrote:

TO: JACTS Technical Committee, JACTS Policy Committee, Region 2 Planning
Commission Committees, Other
Interested Parties

FROM: Tanya DeOliveira

DATE: March 12, 2018

SUBJECT: 2045 Long Range Transportation Plan Update – Vision, Goals, & Objectives;
Environmental Justice; and Roadway
Congestion, Deficiencies, & Recommended Projects draft chapters – Available
For Review

Staff from the Region 2 Planning Commission has completed three more draft chapters of the 2045 Long Range Transportation Plan, and are available for public comment. The three draft chapters are listed below:

1. The Vision, Goals, and Objectives draft chapter is meant to guide the long range transportation planning process over the life of the plan, and can be used a benchmark to determine if future projects align the vision for Jackson.

Jackson County future coming into focus

By Brad Flory

What sounds like the far-off future is already coming into focus in planning a transportation network for the next generation of Jackson County residents.

Work began in August to gather public input for the 2045

Long-Range Transportation Plan, which will shape federal funding decisions for Jackson County roads and other modes of transportation for 28 years.

Anticipating needs for the year 2045 is not easy, and the task requires some educated

guesswork.

"We have a better understanding of five or 10 years into the future," said Tanya DeOliveira, principal planner for the Region 2 Planning Commission, which is overseeing development of the plan. "Any

longer than that is more difficult."

Federal law requires an update of the Long-Range Transportation Plan every five years. The county's last plan, stretching to 2040, was completed five years ago. A new plan is scheduled to be approved

by June.

After considerable number-crunching to forecast travel demands, the plan will recommend projects for major roads eligible for federal funding.

Goals include: increased safety, security, accessibility, and mobility; support for economic vitality and efficiency; better integration of an overall transportation system; and "positive impacts" for the local community and environment.

Region 2 is working to encourage participation from local civic leaders and anyone else with opinions on Jackson County transportation needs. A public "kick-off meeting" was Aug. 29.

Much of the long-range planning work will be done at the state level by experts who use statistical modeling of population and economic trends to predict which roads will be busiest in coming decades. However, guidance from local voices is a federal requirement.

"There is more nuance to the process than just numbers," DeOliveira said.

One key decision is whether the county's network of major roads is sufficient, thus mostly requiring maintenance of existing routes, or if it needs to be expanded.

"In the past, this community has tended to focus on maintaining existing roads," DeOliveira said.

The plan will also address future needs for bus service, railroads, air transportation, walking and biking trails, and freight centers.

Some of the difficulty of planning for 2045 was pointed out by Jackson County Administrator Michael Overton, who urged Region 2 to consider how the emergence of driverless vehicles will affect transportation.

"Driverless vehicles are coming, and personally I predict a huge paradigm shift in how we drive and how we go from point A to point B," Overton told DeOliveira at a county meeting.

DeOliveira said the impact of automated and connected vehicles – and drones, too – is still largely unknown but some attempt will be made to address those trends in the Long-Range Transportation Plan. As answers become clearer in the future, the plan can be updated, she said.

She urged anyone interested in the plan to follow its development online at <http://www.region2planning.com/long-range-transportation-plan/>.

Members of the public can also be put on an email list to be notified of future meetings and other significant steps, she said.

Fall Open House

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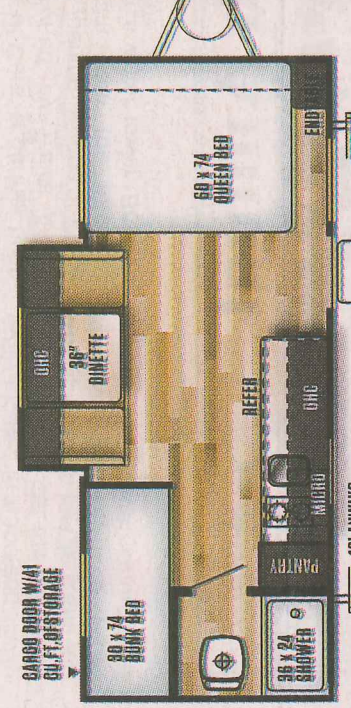
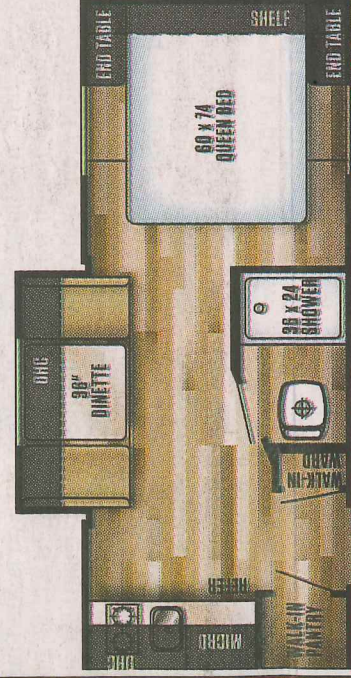
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Free breakfast, bus tour to Great Lakes National Cemetery

Borek Jennings Funeral Homes is again hosting a free breakfast and bus tour for all U.S. veterans, their spouses and family members to the Great Lakes National Cemetery on Wednesday, Sept. 20 at 8:30 a.m. Breakfast and coffee will be served from 8:30 to 9:30 a.m.; buses will depart at 9:30 a.m. from Borek Jennings Funeral Home located at 137 S. Main St. in Brooklyn. To make a reservation, call 517-295-0705 as seating is limited.

APPENDIX

Performance Measures

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) Project List

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
1	I-94 BL	2017	City of Jackson	Louis Glick & Washington	Reconstruct	Work associated with the two-way conversion for Louis Glick and Washington in the city of Jackson. This job number will cover all work outside the limits of JN 113565.		\$ 13,074,059	x			x			x
2	Kibby Rd	2017	City of Jackson	Cascade Court to West Avenue	Reconstruct	Reconstruct pavement on south side of boulevard and remove north side, roundabout at Kibby and Denton for 740' west of Kibby and install non-motorized path from County path at City limits to County path at Denton.	\$ 929,000	\$ 1,161,000	x			x			
3	Facility Upgrades	2017	JATA	Area-wide	Transit facility	Replace HVAC in non-admin areas of main base	\$ 93,398	\$ 116,748						x	
4	Transit Capital	2017	JATA	Area-wide	Transit Capital	Purchase snow tires	\$ 5,204	\$ 7,188					x	x	
5	Transit Capital	2017	JATA	Countywide	Transit communication equipment	Replace radio system	\$ 12,450	\$ 15,562					x	x	
6	Transit Capital	2017	JATA	Countywide	Transit communication equipment	Replace radio system	\$ 20,000	\$ 25,000					x	x	
7	Transit Capital	2017	JATA	Countywide	Transit Capital	Replace 2 small buses/vans	\$ 97,600	\$ 122,000					x	x	
8	Transit Operating	2017	JATA	County-wide	Transit operations	Transit operating funds	\$ 99,000	\$ 696,000							
9	Transit Operating funds	2017	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,232,507	\$ 3,465,082							
10	Berry Rd and Rives Eaton Rd	2017	JCDOT	Rives Eaton to Lansing and Perine to Berry	Restore & rehabilitate	Preventative Maintenance	\$ 292,400	\$ 365,500							
11	Coats Rd	2017	JCDOT	Moscow Rd to 1000' east of Moscow Rd	Reconstruct	Widen and reconstruct		\$ 359,294	x			x			
12	Robinson Rd	2017	JCDOT	Spring Arbor to Kibby	Resurface	Cold mill, paving fabric, resurface	\$ 374,708	\$ 469,000	x						
13	Springport Rd	2017	JCDOT	Airport Road at Springport Road	Traffic ops/safety	Install countdown pedestrian signals and ADA ramps	\$ 80,960	\$ 101,200		x					x
14	W Michigan Ave	2017	JCDOT	W Parma Village Limit to Glasgow Rd	Restore & rehabilitate	Preventative Maintenance	\$ 280,000	\$ 350,000	x						
15	W. Michigan Avenue	2017	JCDOT	M-99 to N. Concord Road	Restore & rehabilitate	HMA Overlay	\$ 323,712	\$ 404,640	x						
16	I-94	2017	MDOT	Over Conrail and the Grand River	Miscellaneous	Construction oversight by railroad of work on it's property		\$ 25							x
17	I-94	2017	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 452,487	\$ 20,149,000	x			x			x

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
18	I-94	2017	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 1,325,147	\$ 20,149,000	x			x			x
19	I-94 BL	2017	MDOT	Brown to Louis Glick	Reconstruct	Reconstruct	\$ 6,985,163	\$ 10,434,059	x						x
20	I-94BL	2017	MDOT	Cooper St to Dwight St	Resurface	HMA Cold Milling and Single Course Overlay	\$ 989,841	\$ 1,299,336	x						x
21	M-106	2017	MDOT	Bunkerhill Rd to 1300 ft west of Sayers Rd	Resurface	Single Course Mill and Resurface	\$ 435,993	\$ 547,892	x						
22	M-106	2017	MDOT	M-52 in Stockbridge southwest to the Portage River Bridge just west of Hawkins Road	Roadside facility	Non-motorized trail improvement with bridge replacements	\$ 509,840	\$ 6,324,000			x				
23	M-124	2017	MDOT	US-12 to M-50	Restore & rehabilitate	HMA cold milling with single course HMA overlay and detail 7 joint repairs	\$ 16,015	\$ 2,133,000	x						
24	M-50	2017	MDOT	Pope Church Rd to Ingham CL / Jackson CL	Resurface	Micro-Surface, Warranty	\$ 670,743	\$ 834,478	x						
25	M-50	2017	MDOT	Rives Junction to Pope Church Rd	Resurface	Micro-Surface, Warranty	\$ 611,148	\$ 760,890	x						
26	M-50/US-127BR	2017	MDOT	North St to Boardman Rd	Restore & rehabilitate	Longitudinal Joint Repair	\$ 282,000	\$ 370,000	x						x
27	M-50/US-127BR	2017	MDOT	Washington Ave to South St	Restore & rehabilitate	Concrete pavement repair	\$ 18,130	\$ 979,000	x						x
28	M-60	2017	MDOT	Emerson Road to Renfrew Road	Resurface	HMA cold milling and 2 course overlay HMA resurfacing with minor drainage improvements, guardrail upgrade, intersection improvements, and signal modernization		\$ 4,505,666	x			x			
29	M-60	2017	MDOT	Chapel Road to Emerson Road	Restore & rehabilitate	Rehabilitation and intermittent reconstruction including widening for center left-turn lane between Chapel Road and Dearing Road; drainage improvements, sidewalk upgrades and possible non-motorized work	\$ 368,325	\$ 10,231,078	x			x			
30	M-60	2017	MDOT	Spring Arbor Rd to I-94	Resurface	HMA cold milling with single course HMA overlay and detail 7 joint repairs. Plus ramp resurfacing at Michigan Ave.	\$ 18,979	\$ 1,693,000	x						x
31	M-60	2017	MDOT	Chapel Road to Emerson Road	Resurface	Resurface/widening with CLTL	\$ 49,110	\$ 10,481,078	x			x			x

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
32	M-99	2017	MDOT	Railroad St. to Jackson county line	Resurface	Single Course Micro Surface	\$ 737,883	\$ 919,000	x						x
33	M-99	2017	MDOT	I-94 to Willow St.	Restore & rehabilitate	Single chip seal with fog seal	\$ 13,642	\$ 917,000	x						x
34	US-127	2017	MDOT	US-127 from north of Henry Road to the JCL	Studies	Consultant road scoping; starting with obligation in FY 2017 and ending September 30, 2018		\$ 548,000							x
35	Fourth St	2018	City of Jackson	Audubon to Horton	Traffic ops/safety	Single course mill and resurface, construct roundabout at Hickory, with intersection realignment at Fourth & Horton, and connect PAKA Trail to Ella Sharp Museum	\$ 782,000	\$ 977,000		x		x			
36	Fourth Street	2018	City of Jackson	Horton Road	Traffic ops/safety	Replace signal with mast arms	\$ 85,000	\$ 106,000		x					
37	Facility Upgrades	2018	JATA	Area-wide	Transit facility	Administrative office rehabilitation and upgrade	\$ 113,000	\$ 141,000						x	
38	Transit	2018	JATA	Countywide, Jackson Area Transit Authority	Transit vehicle additions/replacements	2 Small Buses	\$ 100,000	\$ 125,000					x	x	
39	Transit Operating	2018	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,249,000	\$ 4,743,000							
40	Transit Operating	2018	JATA	County-wide	Transit operations	Transit operating funds	\$ 102,000	\$ 716,000							
41	Ann Arbor Rd Non-Motorized	2018	JCDOT	Hackett St to Ponderosa Dr	Roadside facility	Construction of a non-motorized path	\$ 501,345	\$ 802,690							
42	Norvell Rd (Ph. 1)	2018	JCDOT	E Michigan Ave to Phal Rd	Resurface	Cold Mill and Resurface	\$ 501,723	\$ 627,153	x						
43	Rives Junction Rd	2018	JCDOT	Rives Junction Road from M-50 northerly	Roadside facility	Construction of a non-motorized path	\$ 222,224	\$ 277,780							
44	W. Michigan Ave.	2018	JCDOT	M-60 to Glasgow	Resurface	Cold mill and resurface	\$ 320,000	\$ 400,000	x						
45	I-94	2018	MDOT	I-94 over Conrail and the Grand River	Bridge replacement	Realign and Replace Structure	\$ 24,476,715	\$ 27,196,350		x	x	x			x
46	I-94	2018	MDOT	M-106 NB and SB (Cooper St) over I-94	Bridge replacement	Bridge Replacement and Associated Road Work	\$ 12,669,481	\$ 17,765,416		x	x	x			x
47	I-94	2018	MDOT	M-60 to Sargent Rd	Reconstruct	Reconstruct/Rehab	\$ 46,569,320	\$ 61,968,689	x	x		x			x
48	I-94 BL	2018	MDOT	Areawide	Studies	Pavement marking retroreflectivity readings and condition assessment	\$ 15,300	\$ 17,000							x
49	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Longitudinal pavement marking application	\$ 2,250	\$ 2,638,000		x					x

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
50	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Longitudinal pavement marking application	\$ 2,371,500	\$ 2,638,000		x					x
51	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Special pavement marking application	\$ 2,250	\$ 563,000		x					x
52	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Special pavement marking application	\$ 504,000	\$ 563,000		x					x
53	I-94 E	2018	MDOT	I-94 Lansing Road to Elm Road	Miscellaneous	Clearing/tree removal and fencing in advance of mainline reconstruction	\$ 693,000	\$ 770,000							x
54	M-106	2018	MDOT	Ganson to Porter St.	Resurface	Single Course Mill and Resurface	\$ 547,557	\$ 749,501	x						x
55	M-106	2018	MDOT	M-52 in Stockbridge southwest to the Portage River Bridge just west of Hawkins Road	Roadside facility	Non-motorized trail improvement with bridge replacements	\$ 3,918,136	\$ 6,234,000			x				x
56	M-124	2018	MDOT	US-12 to M-50	Restore & rehabilitate	HMA cold milling with single course HMA overlay and detail 7 joint repairs	\$ 1,729,613	\$ 2,113,000	x						x
57	M-50/US-127BR	2018	MDOT	Washington Ave to South St	Reconstruct	Concrete pavement repair	\$ 783,214	\$ 979,000	x						x
58	M-52	2018	MDOT	Washtenaw Co line to M-106	Resurface	Single course mill & resurface		\$ 957,000	x						x
59	M-52	2018	MDOT	Jackson/Washtenaw County Line to M-106	Resurface	HMA cold milling and single course HMA overlay with shoulder gravel		\$ 957,000	x						x
60	M-60	2018	MDOT	Chapel Rd to Emerson Rd	Resurface	Resurface/Widening with CLTL	\$ 7,585,332	\$ 10,481,078	x			x			x
61	M-60	2018	MDOT	EB and WB over I-94	Bridge replacement	Bridge replacement of SO2-3 and SO2-4 of 38061 with interchange	\$ 3,402	\$ 15,812,000			x				x
62	M-60	2018	MDOT	Spring Arbor Rd to I-94	Resurface	HMA cold milling with single course HMA overlay and detail 7 joint repairs. Plus ramp resurfacing at Michigan Ave.	\$ 1,366,531	\$ 1,693,000	x						x
63	M-99	2018	MDOT	I-94 to Willow St.	Restore & rehabilitate	Single chip seal with fog seal	\$ 736,656	\$ 917,000	x						
64	US-127	2018	MDOT	At Floyd Ave	Traffic ops/safety	Add traffic signal	\$ 31,381	\$ 31,381		x					x
65	Marshall St	2018	Village of Brooklyn	Village Limits to Brooklyn Rd	Resurface	Resurface	\$ 116,000	\$ 270,000	x						
66	Francis St	2019	City of Jackson	Morrell to Mason	Reconstruct	Reconstruct	\$ 587,000	\$ 733,750	x			x			
67	Bus Replacement	2019	JATA	Urbanized Area	Transit vehicle additions/replacements	Replace 2 full-size buses	\$ 608,000	\$ 760,000					x	x	
68	Transit Operating	2019	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,286,000	\$ 4,885,000							

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
69	Transit Operating	2019	JATA	County-wide	Transit operations	Transit operating funds	\$ 105,000	\$ 738,000							
70	Laurence Ave	2019	JCDOT	RR to Wildwood	Resurface	Cold mill and resurface	\$ 200,000	\$ 250,000	x						
71	Laurence Ave	2019	JCDOT	Wildwood to Argyle	Resurface	Cold mill and resurface	\$ 400,000	\$ 500,000	x						
72	W Michigan Ave	2019	JCDOT	West Parma VL to M-99	Restore & rehabilitate	Preventative Maintenance	\$ 501,753	\$ 710,446	x						
73	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
74	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
75	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
76	M-50	2019	MDOT	M-124 to Riverside Dr	Restore & rehabilitate	HMA cold milling and single course HMA overlay		\$ 754,000	x						n
77	M-60 W	2019	MDOT	Areawide	Restore & rehabilitate	HMA crack treatment and overband crack fill		\$ 400,000	x						x
78	M-60 W	2019	MDOT	Areawide	Restore & rehabilitate	HMA crack treatment and overband crack fill	\$ 315,122	\$ 400,000	x						x
79	US-127	2019	MDOT	Ayers Rd to Floyd Rd	Restore & rehabilitate	Multiple course micro-surfacing		\$ 810,000	x						x
80	US-127	2019	MDOT	Ayres Rd to Floyd Rd	Restore & rehabilitate	Multiple course micro-surfacing	\$ 648,098	\$ 810,000	x						x
81	US-127	2019	MDOT	Floyd Rd to I-94 including the ramps at M-50, South St, Page Ave, and Michigan Ave	Restore & rehabilitate	Concrete pavement repair and joint sealing		\$ 1,947,000	x						x
82	US-127	2019	MDOT	Floyd Rd to I-94 including the ramps at M-50, South St, Page Ave, and Michigan Ave	Restore & rehabilitate	Concrete pavement repair and joint sealing	\$ 1,567,726	\$ 1,947,000	x						x
83	W Main St	2019	Village of Springport	M-99/Mechanic St to Village Limits	Resurface	Resurface	\$ 216,000	\$ 270,000	x						
84	Greenwood/ Wilkins	2020	City of Jackson	Morrell to Jackson	Reconstruct	Reconstruct	\$ 587,000	\$ 733,000	x			x			

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
85	Facility Upgrades	2020	JATA	Area-wide	Transit facility	Replace paint booth in shop	\$ 113,000	\$ 141,000						x	
86	Transit	2020	JATA	Countywide, Jackson Area Transit Authority	Transit vehicle additions/replacements	2 Small Buses	\$ 100,000	\$ 125,000					x	x	
87	Transit Operating	2020	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,325,000	\$ 5,032,000							
88	Transit Operating	2020	JATA	County-wide	Transit operations	Transit operating funds	\$ 108,000	\$ 760,000							
89	Norvell Rd (Ph. 2)	2020	JCDOT	Phal Rd to Raby Rd	Resurface	Mill and Resurface	\$ 589,150	\$ 736,437	x						
90	O'Neill Dr	2020	JCDOT	Airport to Dead end	Resurface	Cold mill and resurface	\$ 280,000	\$ 350,000	x						
91	Springport Rd	2020	JCDOT	County Farm to Rives Junction	Resurface	Cold mill and resurface	\$ 320,000	\$ 400,000	x						
92	I-94	2020	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 360,000	\$ 20,149,000	x	x		x		x	
93	I-94 E	2020	MDOT	Michigan Avenue in Parma to M-60	Reconstruct	Pavement reconstruction with ramp extensions and drainage improvements		\$ 81,234,000	x	x		x		x	
94	M-50	2020	MDOT	M-124 to Riverside Dr	Restore & rehabilitate	HMA cold milling and single course HMA overlay	\$ 552,964	\$ 754,000	x						
95	M-60	2020	MDOT	EB and WB over I-94	Bridge replacement	Replacement	\$ 12,858,366	\$ 15,811,892			x	x		x	
96	S King/Tiffany/Cement City	2020	Village of Brooklyn	Chicago St to Village Limit	Reconstruct	Reconstruction	\$ 28,603	\$ 220,000	x			x			

APPENDIX

Systems Performance Report

System Performance Report & Requirements

According to the FAST Act, a long range transportation plan needs to include a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets. The information should include progress achieved by the MPO in meeting the performance targets in comparison with system performance recorded in previous reports, including baseline data. The long range transportation plan will provide information on the current and proposed target information adopted by MDOT for roads, highways, and transit. Updates to target data will be on the Region 2 Planning Commission website.

Roads and Highways Reporting Requirements

MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1 of each even numbered year). One exception to the biennial reporting requirements is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

MPOs are not required to provide annual reports other than MPO decisions on targets. MPOs are required to report MPO performance targets to MDOT in accordance with the documented procedures. This will result in MPOs reporting MPO safety targets annually to MDOT, and other performance targets as they are established (every two or four years).

2018 Safety Targets - Roads and Highways

Federal regulations require the use of five year rolling averages for each of the performance measures, which include: Fatalities, Fatality Rate per 100 million VMT, Serious Injuries, Serious Injury rate per 100 million VMT, Non-motorized fatalities and serious injuries. The values used in creating the following charts for 2017 and 2018 are estimates provided by MDOT.

Total Fatalities & Fatalities Rate

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

To determine the forecasted five year rolling average for Fatalities, Fatality rate per 100 million VMT, Serious Injuries, and Serious Injury Rate per 100 million VMT, the forecast was obtained from the models for 2017 and 2018. The final forecasted value for fatalities is the average of MDOT and UMTRI forecasted values which predicts **1,058 in 2017 and 1,030 in 2018**. The target for calendar year 2018 is **1,003** for fatalities and **1.02** for fatality rate, which is shown on the following table.

Michigan Total Fatalities and Fatality Rate

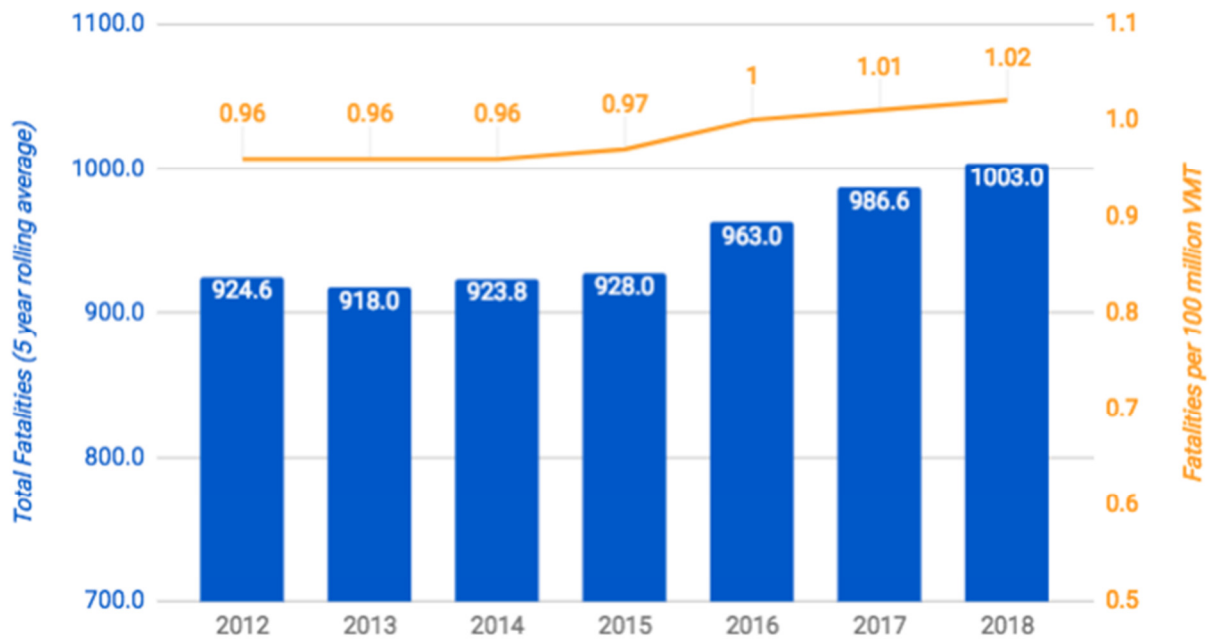


Chart Interpretation: The statewide number of fatalities rose significantly in 2016 and 2017. While part of the rise reflects an increase in the overall amount of travel in the state, the fatality rate shows elevated risk for every mile traveled in 2016 and 2017.

Reporting Requirements: MDOT is required to report to FHWA on the establishment of state performance targets and the progress made in attaining the state targets on a biennial basis (October 1 of each even numbered year). One exception to the biennial reporting requirement is for the safety performance measures, which are required to be reported by MDOT to FHWA through the Highway Safety Improvement Program Annual Report by August 31 of each year.

State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state Trunkline system the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's Strategic Highway Safety Plan (SHSP), to address Trunkline locations with correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the area. Priority is given to those projects with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural

roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

MPO Actions

- As shown in the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2018. This established targets for five performance measures based on five year rolling averages, including:
 - Number of Fatalities,
 - Rate of Fatalities per 100 million Vehicle Miles Traveled (VMT),

Michigan State Safety Targets for Calendar Year 2018

Safety Performance Measure	Baseline Through Calendar Year 2016	Calendar Year 2018 State Safety Target
Fatalities	963.0	1,003.2
Fatality Rate	1.00	1.02

- Implement the recommended strategies based on the defined emphasis areas for Jackson County in the Region 2 Regional Transportation Safety Plan
 - There should be a particular focus on locations outlined in Appendix B – Top Local Road Locations by Emphasis Area
- Give priority in the TIP to projects that address safety
- Encourage Act 51 Agencies to implement systemic treatments, such as cable stay barriers and center rumble strips to reduce lane departure crashes
- Use data to develop projects that address safety hazards in particular locations
- Promote safe travel habits for drivers, cyclists, and pedestrians through education and enforcement initiatives and programs

Total Serious Injuries & Serious Injuries Rate

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

State Total Serious Injuries and Serious Injury Rate

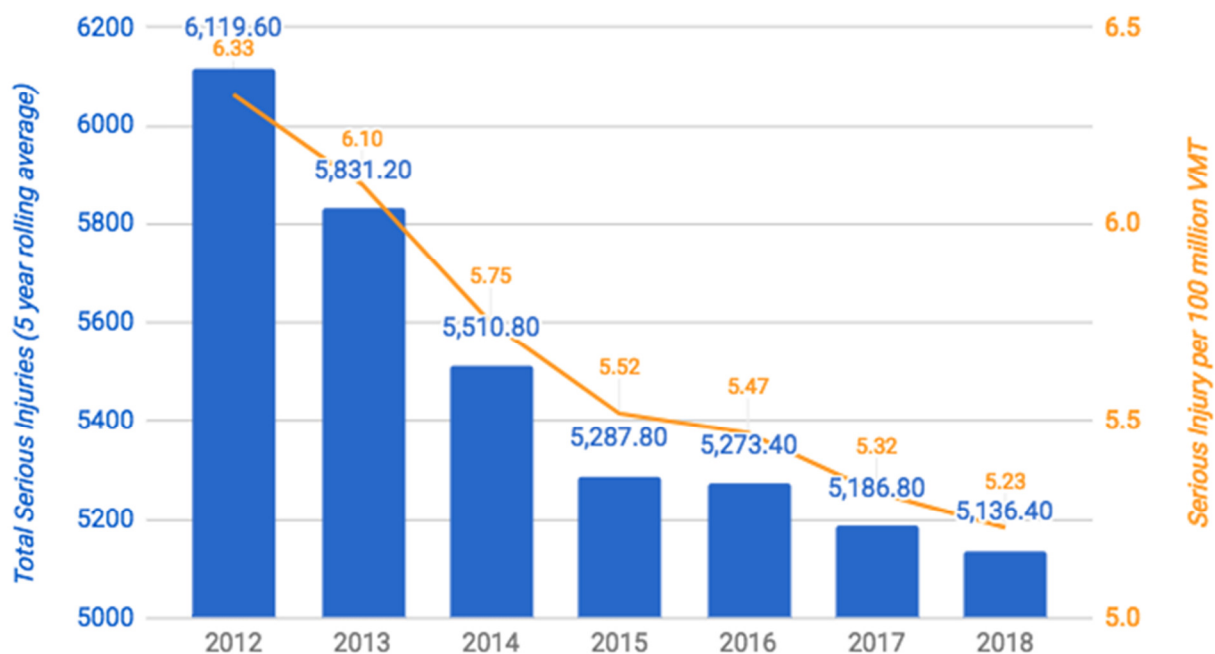


Chart Interpretation: The statewide number of serious injuries has seen a decrease since 2012. While there has been an increase in the overall amount of travel in the state, the serious injury rate is trending down for risk for 2017 (5.32) and 2018 (5.23).

State Actions

- To meet the safety goal of reducing fatalities and serious injuries on the state Trunkline system, the strategy of the Safety Program is to select cost-effective safety improvements, as identified in Michigan's SHSP, to address Trunkline locations with correctable fatality and serious injury crashes.
- All proposed safety funded improvements must be supported by the MDOT Region's Toward Zero Deaths Implementation Plan to mitigate crashes within the region. Priority is given to those projects, within each Region, with SHSP focus area improvements that have the lowest cost/benefit analysis or are a proven low-cost safety improvement to address the correctable crash pattern.
- On the local road system, MDOT administers federal safety funds for safety improvements supported by a Local Road Safety Plan or addressed by means of a low-cost safety project. High Risk Rural Road is one program used to address rural roadways where fatalities and serious injuries exceed the statewide average for that class of roadway.

MPO Actions

- As shown in the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2018. This established targets for five performance measures based on five year rolling averages, including:
 - Number of Serious Injuries,
 - Rate of Serious Injuries per 100 million VMT

Michigan State Safety Targets for Calendar Year 2018

Safety Performance Measure	Baseline Through Calendar Year 2016	Calendar Year 2018 State Safety Target
Serious Injuries	5,273.4	5,136.4
Serious Injury Rate	5.47	5.23

- Implement the recommended strategies based on the defined emphasis areas for Jackson County in the Region 2 Regional Transportation Safety Plan
 - There should be a particular focus on locations outlined in Appendix B – Top Local Road Locations by Emphasis Area
- Give priority in the TIP to projects that address safety
- Encourage Act 51 Agencies to implement systemic treatments, such as cable stay barriers and center rumble strips to reduce lane departure crashes
- Use data to develop projects that address safety hazards in particular locations
- Promote safe travel habits for drivers, cyclists, and pedestrians through education and enforcement initiatives and programs

Total Bicycle & Pedestrian Fatality & Serious Injuries

How Targets Were Set: Results from the UMTRI model (the A/K relationship) were also used to generate forecasted 5 year moving average values for bicycle and pedestrian fatalities and serious injuries for 2017 and 2018. The forecasting total for fatalities and serious injuries is **782 in 2017 and 752 in 2018**. The target for calendar year 2018 is **743.6** for fatalities and serious injuries.

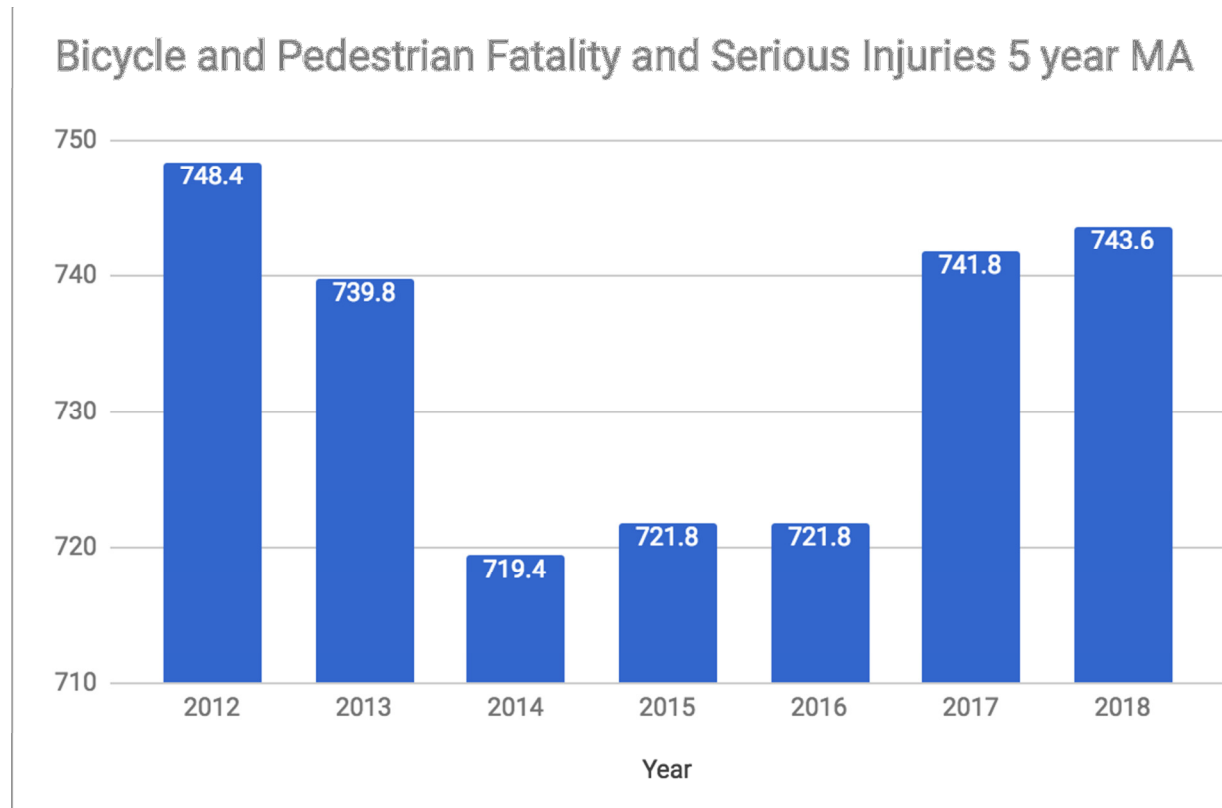


Chart Interpretation: Fatalities and Serious Injuries have seen a general downward trend since 2012 and saw lower numbers from 2014-2016. The increase in fatality and serious injury rate may be due to an overall increase in vehicular traffic (due to a good economy and inexpensive gas prices) as well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

State Actions

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

MPO Actions

- As shown in the table below, the Jackson MPO supported the adoption of MDOT's State Targets for Safety Performance Measures for Calendar Year 2018. This established targets for five performance measures based on five year rolling averages, including:
 - Number of Non-Motorized Fatalities and Non-Motorized Serious Injuries

Michigan State Safety Targets for Calendar Year 2018

Safety Performance Measure	Baseline Through Calendar Year 2016	Calendar Year 2018 State Safety Target
Non-motorized Fatalities & Serious Injuries	721.8	743.6

- Direct the consultants working on the combined City of Jackson and Jackson County Non-Motorized Plan to address safety issues, concerns and needs for drivers, bicyclists, and pedestrians.
- Implement the recommendations in the Non-Motorized Plan upon the plan's completion.
- Focus safety funding on high priority road segments, intersections, and initiatives as identified in the Region 2 Regional Transportation Safety Plan.
- Work with the Walkable Communities Coalition to advocate for the issues and needs of non-motorized users.
- Utilization of MDOT road safety audits and engineering countermeasures, and other initiatives, programs or designs that are promoted as part of the Toward Zero Deaths National Strategy.

Transit Reporting Requirements

The Federal Transit Administration Transit Asset Management Rule requires a group Transit Asset Management (TAM) plan to set one or more performance targets for each applicable performance measure. The goal is to establish a strategic and systematic process of operation, maintaining, and improving public capital assets effectively through their entire life cycle. The targets should be based on realistic expectations, and the recent data available and the financial resources from all sources that are reasonably expected funding the TAM plan horizon period. The three asset classes to be in the Transit Asset Management plan are: Revenue Vehicles, Service Vehicles, and Facilities.

The targets for 2017 are based on the following assumptions:

- Section 5339: \$1.75M allocated to MDOT
- Section 5310: 55% of rural and small urban 5310 funds allocated to MDOT \$2M
- State match to the above
- Total \$4,687,500 available to meet the targets
- All available funds will be focused on revenue vehicle replacement

Coordination Efforts: MDOT discussed the federal requirements. Once MDOT drafted the targets, they were shared with all transit agencies for comments.

2017 State of Michigan State of Good Repair		
Measure	Current Condition	2017 Target
Rolling Stock		Not more than 10% will meet or exceed the FTA useful life benchmark (ULB)
Small Bus and Van 5311	11%	
Small Bus and Van 5310	0%	
Large Bus Class 5311	62%	
Large Bus Class 5310	0%	
Service Vehicles	58%	100% may not meet or exceed the FTA ULB
Facilities - All classes	unknown	100% may be below a 3.0 rating on the FTA Transit Economic Requirements Model (TERM)

How Targets Are Set: MDOT ran reports from Public Transportation Management System (PTMS), the reporting system for public transit agencies who receive federal funding. Targets were set based upon funds available to MDOT and the current conditions of revenue vehicles, service vehicles and facilities. Targets are set for the rural area by MDOT on an annual basis each year in January and reported in the National Transit Database (NTD).

Actions

The state of Michigan will:

- Use 5339 funds in the amount of \$1.75M allocated to MDOT plus the state match of \$437,500 for a total of \$2.18M just revenue vehicles

Urban Transit Targets

Transit agencies in an urban area are required to develop targets for State of Good Repair. The purpose of the State of Good Repair is to establish a strategic and systematic process of operation, maintaining, and improving public capital assets effectively through their entire life cycle. The Jackson Area Transportation Authority provided information in the table on the next page to address the targets.

2018 Jackson Area Transportation Authority (JATA) State of Good Repair

Asset Category	Asset Class	Sub-Asset	Useful Life	Performance Measure	2018 Targets	Current
Rolling Stock	Buses	25 ft+	12 yrs	% of fleet exceeds default useful life benchmark	90%	100%
	Vans	Med-Duty	7 yrs		50%	33%
		Light Duty	4 yrs		50%	45%
Equipment	Maintenance / Utility	N/A	Varies		50%	0%
	Non-Revenue Vehicles	Vans	4 yrs		25%	0%
Facilities	Support Facilities	Admin. & Mainten. Facilities	N/A	% of facilities rated under 3.0 on TERM scale	50%	Unknown
	Passenger Facilities	Downtown Transfer Center	N/A		100%	Unknown
Infrastructure	N/A	N/A				

*Applicable to capital assets that JATA owns, except equipment with an acquisition value under \$50,000 that is not a service vehicle.

APPENDIX

Glossary

Glossary of Transportation Planning Terms

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 per year). Requires permanent traffic recorder to measure annual total.

ARTERIAL: Class of street serving major movements of traffic not served by freeways.

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.

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

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

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 2-lane or 3-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, stating the prevailing roadway and traffic condition under which the capacity is applicable is essential.

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.

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.

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

DESTINATION: The TAZ in which a trip terminates.

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 the Jackson MPO, the time period beginning October 1 and ending September 30 of the subsequent calendar year.

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.

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.

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

JACTS: Jackson Area Comprehensive Transportation Study.

JCDOT: Jackson County Department of Transportation.

LEVEL OF SERVICE (LOS): The term used to indicate the quality of service provided by a facility under a given set of operating conditions.

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 or more years.

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: 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.

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

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

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 vehicle driver, vehicle passenger, transit passenger, or non-motorized (i.e., bicycling, 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.

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

PEAK HOUR: The 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.

R2PC: Region 2 Planning Commission. A regional planning organization that is responsible for transportation planning in the rural areas of Jackson, Lenawee, and Hillsdale Counties as well as the small urban areas (less than 50,000 population) of Hillsdale and Adrian/Tecumseh/Clinton.

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.

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. The entire county comprises the Jackson MPO.

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.

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

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.

URBANIZED 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.

VOLUME: The number of vehicles using a facility.

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

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.

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
1	I-94 BL	2017	City of Jackson	Louis Glick & Washington	Reconstruct	Work associated with the two-way conversion for Louis Glick and Washington in the city of Jackson. This job number will cover all work outside the limits of JN 113565.		\$ 13,074,059	x			x			x
2	Kibby Rd	2017	City of Jackson	Cascade Court to West Avenue	Reconstruct	Reconstruct pavement on south side of boulevard and remove north side, roundabout at Kibby and Denton for 740' west of Kibby and install non-motorized path from County path at City limits to County path at Denton.	\$ 929,000	\$ 1,161,000	x			x			
3	Facility Upgrades	2017	JATA	Area-wide	Transit facility	Replace HVAC in non-admin areas of main base	\$ 93,398	\$ 116,748						x	
4	Transit Capital	2017	JATA	Area-wide	Transit Capital	Purchase snow tires	\$ 5,204	\$ 7,188					x	x	
5	Transit Capital	2017	JATA	Countywide	Transit communication equipment	Replace radio system	\$ 12,450	\$ 15,562					x	x	
6	Transit Capital	2017	JATA	Countywide	Transit communication equipment	Replace radio system	\$ 20,000	\$ 25,000					x	x	
7	Transit Capital	2017	JATA	Countywide	Transit Capital	Replace 2 small buses/vans	\$ 97,600	\$ 122,000					x	x	
8	Transit Operating	2017	JATA	County-wide	Transit operations	Transit operating funds	\$ 99,000	\$ 696,000							
9	Transit Operating funds	2017	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,232,507	\$ 3,465,082							
10	Berry Rd and Rives Eaton Rd	2017	JCDOT	Rives Eaton to Lansing and Perine to Berry	Restore & rehabilitate	Preventative Maintenance	\$ 292,400	\$ 365,500							
11	Coats Rd	2017	JCDOT	Moscow Rd to 1000' east of Moscow Rd	Reconstruct	Widen and reconstruct		\$ 359,294	x			x			
12	Robinson Rd	2017	JCDOT	Spring Arbor to Kibby	Resurface	Cold mill, paving fabric, resurface	\$ 374,708	\$ 469,000	x						
13	Springport Rd	2017	JCDOT	Airport Road at Springport Road	Traffic ops/safety	Install countdown pedestrian signals and ADA ramps	\$ 80,960	\$ 101,200		x					x
14	W Michigan Ave	2017	JCDOT	W Parma Village Limit to Glasgow Rd	Restore & rehabilitate	Preventative Maintenance	\$ 280,000	\$ 350,000	x						
15	W. Michigan Avenue	2017	JCDOT	M-99 to N. Concord Road	Restore & rehabilitate	HMA Overlay	\$ 323,712	\$ 404,640	x						
16	I-94	2017	MDOT	Over Conrail and the Grand River	Miscellaneous	Construction oversight by railroad of work on it's property		\$ 25							x
17	I-94	2017	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 452,487	\$ 20,149,000	x			x			x

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
18	I-94	2017	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 1,325,147	\$ 20,149,000	x			x			x
19	I-94 BL	2017	MDOT	Brown to Louis Glick	Reconstruct	Reconstruct	\$ 6,985,163	\$ 10,434,059	x						x
20	I-94BL	2017	MDOT	Cooper St to Dwight St	Resurface	HMA Cold Milling and Single Course Overlay	\$ 989,841	\$ 1,299,336	x						x
21	M-106	2017	MDOT	Bunkerhill Rd to 1300 ft west of Sayers Rd	Resurface	Single Course Mill and Resurface	\$ 435,993	\$ 547,892	x						
22	M-106	2017	MDOT	M-52 in Stockbridge southwest to the Portage River Bridge just west of Hawkins Road	Roadside facility	Non-motorized trail improvement with bridge replacements	\$ 509,840	\$ 6,324,000			x				
23	M-124	2017	MDOT	US-12 to M-50	Restore & rehabilitate	HMA cold milling with single course HMA overlay and detail 7 joint repairs	\$ 16,015	\$ 2,133,000	x						
24	M-50	2017	MDOT	Pope Church Rd to Ingham CL / Jackson CL	Resurface	Micro-Surface, Warranty	\$ 670,743	\$ 834,478	x						
25	M-50	2017	MDOT	Rives Junction to Pope Church Rd	Resurface	Micro-Surface, Warranty	\$ 611,148	\$ 760,890	x						
26	M-50/US-127BR	2017	MDOT	North St to Boardman Rd	Restore & rehabilitate	Longitudinal Joint Repair	\$ 282,000	\$ 370,000	x						x
27	M-50/US-127BR	2017	MDOT	Washington Ave to South St	Restore & rehabilitate	Concrete pavement repair	\$ 18,130	\$ 979,000	x						x
28	M-60	2017	MDOT	Emerson Road to Renfrew Road	Resurface	HMA cold milling and 2 course overlay HMA resurfacing with minor drainage improvements, guardrail upgrade, intersection improvements, and signal modernization		\$ 4,505,666	x			x			
29	M-60	2017	MDOT	Chapel Road to Emerson Road	Restore & rehabilitate	Rehabilitation and intermittent reconstruction including widening for center left-turn lane between Chapel Road and Dearing Road; drainage improvements, sidewalk upgrades and possible non-motorized work	\$ 368,325	\$ 10,231,078	x			x			
30	M-60	2017	MDOT	Spring Arbor Rd to I-94	Resurface	HMA cold milling with single course HMA overlay and detail 7 joint repairs. Plus ramp resurfacing at Michigan Ave.	\$ 18,979	\$ 1,693,000	x						x
31	M-60	2017	MDOT	Chapel Road to Emerson Road	Resurface	Resurface/widening with CLTL	\$ 49,110	\$ 10,481,078	x			x			x

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
32	M-99	2017	MDOT	Railroad St. to Jackson county line	Resurface	Single Course Micro Surface	\$ 737,883	\$ 919,000	x						x
33	M-99	2017	MDOT	I-94 to Willow St.	Restore & rehabilitate	Single chip seal with fog seal	\$ 13,642	\$ 917,000	x						x
34	US-127	2017	MDOT	US-127 from north of Henry Road to the JCL	Studies	Consultant road scoping; starting with obligation in FY 2017 and ending September 30, 2018		\$ 548,000							x
35	Fourth St	2018	City of Jackson	Audubon to Horton	Traffic ops/safety	Single course mill and resurface, construct roundabout at Hickory, with intersection realignment at Fourth & Horton, and connect PAKA Trail to Ella Sharp Museum	\$ 782,000	\$ 977,000		x		x			
36	Fourth Street	2018	City of Jackson	Horton Road	Traffic ops/safety	Replace signal with mast arms	\$ 85,000	\$ 106,000		x					
37	Facility Upgrades	2018	JATA	Area-wide	Transit facility	Administrative office rehabilitation and upgrade	\$ 113,000	\$ 141,000						x	
38	Transit	2018	JATA	Countywide, Jackson Area Transit Authority	Transit vehicle additions/replacements	2 Small Buses	\$ 100,000	\$ 125,000					x	x	
39	Transit Operating	2018	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,249,000	\$ 4,743,000							
40	Transit Operating	2018	JATA	County-wide	Transit operations	Transit operating funds	\$ 102,000	\$ 716,000							
41	Ann Arbor Rd Non-Motorized	2018	JCDOT	Hackett St to Ponderosa Dr	Roadside facility	Construction of a non-motorized path	\$ 501,345	\$ 802,690							
42	Norvell Rd (Ph. 1)	2018	JCDOT	E Michigan Ave to Phal Rd	Resurface	Cold Mill and Resurface	\$ 501,723	\$ 627,153	x						
43	Rives Junction Rd	2018	JCDOT	Rives Junction Road from M-50 northerly	Roadside facility	Construction of a non-motorized path	\$ 222,224	\$ 277,780							
44	W. Michigan Ave.	2018	JCDOT	M-60 to Glasgow	Resurface	Cold mill and resurface	\$ 320,000	\$ 400,000	x						
45	I-94	2018	MDOT	I-94 over Conrail and the Grand River	Bridge replacement	Realign and Replace Structure	\$ 24,476,715	\$ 27,196,350		x	x	x			x
46	I-94	2018	MDOT	M-106 NB and SB (Cooper St) over I-94	Bridge replacement	Bridge Replacement and Associated Road Work	\$ 12,669,481	\$ 17,765,416		x	x	x			x
47	I-94	2018	MDOT	M-60 to Sargent Rd	Reconstruct	Reconstruct/Rehab	\$ 46,569,320	\$ 61,968,689	x	x		x			x
48	I-94 BL	2018	MDOT	Areawide	Studies	Pavement marking retroreflectivity readings and condition assessment	\$ 15,300	\$ 17,000							x
49	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Longitudinal pavement marking application	\$ 2,250	\$ 2,638,000		x					x

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									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
50	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Longitudinal pavement marking application	\$ 2,371,500	\$ 2,638,000		x					x
51	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Special pavement marking application	\$ 2,250	\$ 563,000		x					x
52	I-94 BL	2018	MDOT	Areawide	Traffic ops/safety	Special pavement marking application	\$ 504,000	\$ 563,000		x					x
53	I-94 E	2018	MDOT	I-94 Lansing Road to Elm Road	Miscellaneous	Clearing/tree removal and fencing in advance of mainline reconstruction	\$ 693,000	\$ 770,000							x
54	M-106	2018	MDOT	Ganson to Porter St.	Resurface	Single Course Mill and Resurface	\$ 547,557	\$ 749,501	x						x
55	M-106	2018	MDOT	M-52 in Stockbridge southwest to the Portage River Bridge just west of Hawkins Road	Roadside facility	Non-motorized trail improvement with bridge replacements	\$ 3,918,136	\$ 6,234,000			x				x
56	M-124	2018	MDOT	US-12 to M-50	Restore & rehabilitate	HMA cold milling with single course HMA overlay and detail 7 joint repairs	\$ 1,729,613	\$ 2,113,000	x						x
57	M-50/US-127BR	2018	MDOT	Washington Ave to South St	Reconstruct	Concrete pavement repair	\$ 783,214	\$ 979,000	x						x
58	M-52	2018	MDOT	Washtenaw Co line to M-106	Resurface	Single course mill & resurface		\$ 957,000	x						x
59	M-52	2018	MDOT	Jackson/Washtenaw County Line to M-106	Resurface	HMA cold milling and single course HMA overlay with shoulder gravel		\$ 957,000	x						x
60	M-60	2018	MDOT	Chapel Rd to Emerson Rd	Resurface	Resurface/Widening with CLTL	\$ 7,585,332	\$ 10,481,078	x			x			x
61	M-60	2018	MDOT	EB and WB over I-94	Bridge replacement	Bridge replacement of SO2-3 and SO2-4 of 38061 with interchange	\$ 3,402	\$ 15,812,000			x				x
62	M-60	2018	MDOT	Spring Arbor Rd to I-94	Resurface	HMA cold milling with single course HMA overlay and detail 7 joint repairs. Plus ramp resurfacing at Michigan Ave.	\$ 1,366,531	\$ 1,693,000	x						x
63	M-99	2018	MDOT	I-94 to Willow St.	Restore & rehabilitate	Single chip seal with fog seal	\$ 736,656	\$ 917,000	x						
64	US-127	2018	MDOT	At Floyd Ave	Traffic ops/safety	Add traffic signal	\$ 31,381	\$ 31,381		x					x
65	Marshall St	2018	Village of Brooklyn	Village Limits to Brooklyn Rd	Resurface	Resurface	\$ 116,000	\$ 270,000	x						
66	Francis St	2019	City of Jackson	Morrell to Mason	Reconstruct	Reconstruct	\$ 587,000	\$ 733,750	x			x			
67	Bus Replacement	2019	JATA	Urbanized Area	Transit vehicle additions/replacements	Replace 2 full-size buses	\$ 608,000	\$ 760,000					x	x	
68	Transit Operating	2019	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,286,000	\$ 4,885,000							

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									Roadways				Transit		
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69	Transit Operating	2019	JATA	County-wide	Transit operations	Transit operating funds	\$ 105,000	\$ 738,000							
70	Laurence Ave	2019	JCDOT	RR to Wildwood	Resurface	Cold mill and resurface	\$ 200,000	\$ 250,000	x						
71	Laurence Ave	2019	JCDOT	Wildwood to Argyle	Resurface	Cold mill and resurface	\$ 400,000	\$ 500,000	x						
72	W Michigan Ave	2019	JCDOT	West Parma VL to M-99	Restore & rehabilitate	Preventative Maintenance	\$ 501,753	\$ 710,446	x						
73	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
74	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
75	I-94 E	2019	MDOT	I-94 under Lansing Avenue	Bridge replacement	Replace Lansing Avenue bridge OV I-94, approaches, reconstruct I-94 under Lansing Avenue to accommodate weave lanes		\$ 17,360,000		x	x	x			x
76	M-50	2019	MDOT	M-124 to Riverside Dr	Restore & rehabilitate	HMA cold milling and single course HMA overlay		\$ 754,000	x						n
77	M-60 W	2019	MDOT	Areawide	Restore & rehabilitate	HMA crack treatment and overband crack fill		\$ 400,000	x						x
78	M-60 W	2019	MDOT	Areawide	Restore & rehabilitate	HMA crack treatment and overband crack fill	\$ 315,122	\$ 400,000	x						x
79	US-127	2019	MDOT	Ayers Rd to Floyd Rd	Restore & rehabilitate	Multiple course micro-surfacing		\$ 810,000	x						x
80	US-127	2019	MDOT	Ayres Rd to Floyd Rd	Restore & rehabilitate	Multiple course micro-surfacing	\$ 648,098	\$ 810,000	x						x
81	US-127	2019	MDOT	Floyd Rd to I-94 including the ramps at M-50, South St, Page Ave, and Michigan Ave	Restore & rehabilitate	Concrete pavement repair and joint sealing		\$ 1,947,000	x						x
82	US-127	2019	MDOT	Floyd Rd to I-94 including the ramps at M-50, South St, Page Ave, and Michigan Ave	Restore & rehabilitate	Concrete pavement repair and joint sealing	\$ 1,567,726	\$ 1,947,000	x						x
83	W Main St	2019	Village of Springport	M-99/Mechanic St to Village Limits	Resurface	Resurface	\$ 216,000	\$ 270,000	x						
84	Greenwood/ Wilkins	2020	City of Jackson	Morrell to Jackson	Reconstruct	Reconstruct	\$ 587,000	\$ 733,000	x			x			

FY 2017 - 2020 Jackson MPO Transportation Improvement Program (TIP) as of January 2018									Performance Areas						Projects on the National Highway System (NHS)
									Roadways				Transit		
2045 LRTP Number	Project Name	Fiscal Year	Agency	Limits	Primary Work Type	Project Description	Federal Cost	Total Project Cost	Pavement	Safety	Bridges	System Reliability	Transit Safety	Transit Asset Management	
85	Facility Upgrades	2020	JATA	Area-wide	Transit facility	Replace paint booth in shop	\$ 113,000	\$ 141,000						x	
86	Transit	2020	JATA	Countywide, Jackson Area Transit Authority	Transit vehicle additions/replacements	2 Small Buses	\$ 100,000	\$ 125,000					x	x	
87	Transit Operating	2020	JATA	County-wide	Transit operations	Transit operating funds	\$ 1,325,000	\$ 5,032,000							
88	Transit Operating	2020	JATA	County-wide	Transit operations	Transit operating funds	\$ 108,000	\$ 760,000							
89	Norvell Rd (Ph. 2)	2020	JCDOT	Phal Rd to Raby Rd	Resurface	Mill and Resurface	\$ 589,150	\$ 736,437	x						
90	O'Neill Dr	2020	JCDOT	Airport to Dead end	Resurface	Cold mill and resurface	\$ 280,000	\$ 350,000	x						
91	Springport Rd	2020	JCDOT	County Farm to Rives Junction	Resurface	Cold mill and resurface	\$ 320,000	\$ 400,000	x						
92	I-94	2020	MDOT	I-94 at Elm Rd	Reconstruct	Reconstruct Interchange	\$ 360,000	\$ 20,149,000	x	x		x		x	
93	I-94 E	2020	MDOT	Michigan Avenue in Parma to M-60	Reconstruct	Pavement reconstruction with ramp extensions and drainage improvements		\$ 81,234,000	x	x		x		x	
94	M-50	2020	MDOT	M-124 to Riverside Dr	Restore & rehabilitate	HMA cold milling and single course HMA overlay	\$ 552,964	\$ 754,000	x						
95	M-60	2020	MDOT	EB and WB over I-94	Bridge replacement	Replacement	\$ 12,858,366	\$ 15,811,892			x	x		x	
96	S King/Tiffany/Cement City	2020	Village of Brooklyn	Chicago St to Village Limit	Reconstruct	Reconstruction	\$ 28,603	\$ 220,000	x			x			