Region 2 PLANNING COMMISSION
Serving Hillsdale, Jackson & Lenawee Counties

JACKSON AREA COMPREHENSIVE TRANSPORTATION STUDY (JACTS) TECHNICAL ADVISORY COMMITTEE (TAC) MEETING

Wednesday, June 14, 2023 / 9:30 AM
Jackson City Hall / 10th Floor / 161 W. Michigan Ave., Jackson, MI 49201

AGENDA

1. Call to Order

2. Public Comment

3. Approve Minutes of the Technical Advisory Committee Meeting of May 17, 2023, and Receive the Minutes of the Policy Committee Meeting of May 18, 2023 (see enclosures) – **ACTION**

4. Agency Status Reports – **DISCUSSION**
   - City of Jackson (enclosed)
   - Jackson Area Transportation Authority (enclosed)
   - Jackson County Department of Transportation (enclosed)
   - Michigan Department of Transportation (enclosed)
   - Jackson County Airport-Reynolds Field (not provided)
   - Enterprise Group (http://www.enterprisegroup.org)

5. Approval of Amendments to the JACTS FY 2023–2026 Transportation Improvement Program (TIP) (see enclosure) – **ACTION**

   - Michigan Department of Transportation

6. 2050 Long Range Transportation Plan Update (see enclosure) – **DISCUSSION**

7. Post 2020 United States Adjusted Census Urban Boundary Update (see enclosure) – **DISCUSSION**

8. Other Business

9. Public Comment

10. Adjournment

Region 2 PLANNING COMMISSION
Serving Hillsdale, Jackson & Lenawee Counties

M I N U T E S

JACTS TECHNICAL ADVISORY COMMITTEE
Jackson City Hall
161 W. Michigan Ave. – 10th Floor
Jackson, MI 49201

Wednesday, May 17, 2023

Present: Charlie Briner, JCDOT
Jim Cole, JCDOT
Jon Dowling, City of Jackson
Angie Kline, JCDOT
Mark Kloha, MDOT – Lansing
Alex Masten, The Enterprise Group
Jack Ripstra, Blackman Charter Twp.
Bret Taylor, JCDOT
Kelby Wallace, MDOT – Jackson TSC

Staff Present: Brett Gatz, Region 2 Planning Commission
Jacob Hurt, Region 2 Planning Commission
Jill Liogghio, Region 2 Planning Commission

ITEM 1 **CALL TO ORDER**

Chair Kline called the meeting to order at 9:31 a.m.

ITEM 2 **PUBLIC COMMENT**

No public comments were received.

ITEM 3 **APPROVE MINUTES OF THE TECHNICAL ADVISORY COMMITTEE MEETING OF APRIL 19, 2023 AND RECEIVE THE POLICY COMMITTEE MINUTES OF APRIL 20, 2023**

A motion was made by Mr. Ripstra, supported by Mr. Dowling, to approve the Technical Advisory Committee meeting minutes of April 19, 2023, and receive the Policy Committee meeting minutes of April 20, 2023, as presented. The motion carried unanimously.

ITEM 4 **AGENCY STATUS REPORTS**

Project status updates were presented by the City of Jackson, Jackson County Department of Transportation, and Michigan Department of Transportation.

ITEM 5 **APPROVAL OF AMENDMENTS TO THE JACTS FY 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

The following amendments to the JACTS FY 2023-2026 Transportation Improvement Program (TIP) were submitted by JCDOT:

FY	Job #	Name	Description	Funding	Action
2023	TBD	Countywide Pavement Markings	Pavement Markings	$176,107 RTF **Total $176,107**	Add
2023	TBD	Blackman Road	Force Account PM Overlay	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add
2023	TBD	Dettman Road	Gregory Rd. to Blake Rd.	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add
2023	TBD	Main St. and Coon Hill Rd.	Kennedy Rd. to M-106	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add

The following amendments to the JACTS FY 2023-2026 Transportation Improvement Program (TIP) were submitted by the MDOT:

FY	Job #	Name	Limits	Description	Funding	Funding Source
2025	209481	US-127 S	US-127 from I-94 to M-50	Freeway signing upgrades	$2,242,500 Federal Total: $2,242,500	NHG

A motion was made by Mr. Dowling, supported by Mr. Taylor, to approve the amendments to the JACTS FY 2023-2026 TIP as presented. The motion carried unanimously.

ITEM 6 **APPROVAL OF THE URBAN TRANSPORTATION FY 2024 UNIFIED WORK PLAN**

Mr. Hurt reported that the Unified Work Program for FY 2024 has been completed. A motion was made by Mr. Taylor, supported by Mr. Ripstra, to approve the FY 2024 UWP as presented. The motion carried unanimously.

ITEM 7 **OTHER BUSINESS**

There was no other business.

ITEM 8 **PUBLIC COMMENT**

No public comment was received.

ITEM 9 **ADJOURNMENT**

There being no further business, Chair Kline adjourned the meeting at 9:53 a.m.

Staff
Region 2 Planning Commission

Region 2 PLANNING COMMISSION
Serving Hillsdale, Jackson & Lenawee Counties

M I N U T E S

JACTS POLICY COMMITTEE
Jackson County Tower Bldg.
120 W. Michigan Ave. – 5th Floor
Jackson, MI 49201

Thursday, May 18, 2023

Present: **Keith Acker, Sandstone Township**
Tony Bair, Region 2 Planning Commission
Charlie Briner, JCDOT
Jon Dowling, JACTS TAC
John Feldvary, Jackson County Airport
Jeff Franklin, MDOT – Lansing
Jonathan Greene, City of Jackson
Ashanti Harper, MDOT
David Herlein, Spring Arbor Township
Pete Jancek, Blackman Township
Angela Kline, JACTS TAC
Jim Shotwell, Jackson County Board of Commissioners
Andrea Strach, MDOT
Bret Taylor, JCDOT
Mike Trudell, Summit Township
Kelby Wallace, MDOT – Jackson TSC

Public Present: Tina Beagle

Staff Present: Brett Gatz, Region 2 Planning Commission
Jacob Hurt, Region 2 Planning Commission
Jill Liogghio, Region 2 Planning Commission

ITEM 1 **CALL TO ORDER**

Chair Shotwell called the meeting to order at 8:00 a.m.

ITEM 2 **PUBLIC COMMENT**

No public comments were received.

ITEM 3 **APPROVE MINUTES OF THE POLICY COMMITTEE MEETING OF APRIL 20, 2023 AND RECEIVE THE TECHNICAL ADVISORY COMMITTEE MINUTES OF APRIL 19, 2023**

A motion was made by Mr. Jancek, supported by Mr. Trudell, to approve the Policy Committee meeting minutes of April 20, 2023, and receive the Technical Advisory Committee meeting minutes of April 19, 2023, as presented. The motion carried unanimously.

ITEM 4 **AGENCY STATUS REPORTS**

Project status updates were presented by the City of Jackson, Jackson County Department of Transportation, Jackson County Airport, and Michigan Department of Transportation.

ITEM 5 **APPROVAL OF AMENDMENTS TO THE JACTS FY 2023-2026 TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

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2023	TBD	Blackman Road	Force Account PM Overlay	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add
2023	TBD	Dettman Road	Gregory Rd. to Blake Rd.	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add
2023	TBD	Main St. and Coon Hill Rd.	Kennedy Rd. to M-106	$94,000 RTF HIP-CRRSAA **Total $94,000**	Add

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A motion was made by Mr. Trudell, supported by Mr. Jancek, to approve the amendments to the JACTS FY 2023-2026 TIP as presented. The motion carried unanimously.

ITEM 6 **APPROVAL OF THE URBAN TRANSPORTATION FY 2024 UNIFIED WORK PLAN**

Mr. Hurt reported that the Unified Work Program for FY 2024 has been completed. A motion was made by Mr. Jancek, supported by Mr. Bair, to approve the FY 2024 UWP as presented. The motion carried unanimously.

ITEM 7 **OTHER BUSINESS**

There was no other business.

ITEM 8 **PUBLIC COMMENT**

Tina Beagle voiced her concern regarding traffic congestion at Blackman Road and Michigan Avenue. She also stated that the stop sign near Hague and Crouch Road, near Jackson College, needs better reflective markings.

ITEM 9 **ADJOURNMENT**

There being no further business, Chair Shotwell adjourned the meeting at 8:34 a.m.

Staff
Region 2 Planning Commission

JACKSON
Founded 1829

Engineering
161 W. Michigan Ave. • Jackson, MI 49201
Phone: (517) 788-4160 • Fax: (877) 509-5389

TO: JACTS Technical Advisory and Policy Committees

DATE: June 1, 2023

FROM: Jon H. Dowling, P.E.

SUBJECT: TIP Project Status

2022

West Avenue Signals at Franklin, Washington and Morrell with Ganson and Elm Signal - Reconstruct Signals on West Ave at Franklin and Morrell with Signal at Ganson and Elm. Contractor is Wright Electric Co. **Contractor cannot finish until AT&T is done moving their wires.**

Greenwood Ave: Fourth St to Morrell St with Greenwood/Fourth & Fourth/Prospect Signals - Mill and HMA Resurface on Greenwood with signal replacements at the intersections. Contractor is Michigan Paving and Materials Co. **Contractor cannot finish until AT&T is done at Fourth and Greenwood.**

Greenwood at High Signal: Signal replacement with new mast arm signal – HRC is the consultant on the project. J Ranck Electric is the contractor. **Fabrication of the poles is scheduled for Mid-August.**

2023

Brown Street: Morrell to Michigan – Mill and repave, relocate curb and construct non-motorized trail on east side. Spaulding DeDecker is the consultant on this project. **Anlaan is pulling out the first week of June until Consumers Energy has finished their gas main replacement and AT&T has moved their wires and removed their poles.**

Wildwood Avenue: West Ave to Steward – Mill and HMA Resurface. Spaulding DeDecker is the consultant on this project. Bailey Excavating is the low bidder at 9.52% over engineers estimate. **City Council will consider the MDOT Contract after the Assessment Public Hearing on June 13th.**

Wisner Street: Wildwood to Ganson – Mill and HMA Resurface. Spaulding DeDecker is the consultant on this project. Bailey Excavating is the low bidder at 9.52% over engineers estimate. **City Council will consider the MDOT Contract after the Assessment Public Hearing on June 13th.**

Crosswalk Enhancements at 5 Locations (HSIP) – Sidewalk ramps, LED bordered signs, along non-motorized paths. HRC is the consultant on this project. J Ranck Electric is the contractor. **The contract was awarded May 30th. A preconstruction meeting will be scheduled and work will proceed shortly after that.**

North Street: Wisner to West Ave – Pavement Replacement. Spaulding DeDecker is the consultant on the project. **NEPA and SHPO clearance is complete to allow a MDOT July letting.**

JATA
Jackson Area Transportation Authority

2350 East High Street
Jackson, Michigan 49203-3490
517.787.8363

June 2023

Facility Upgrades

a. We hope to award the bid for our Transfer Center parking lot replacement on June 7th.
b. Our RFP - Request for Proposal – to replace all of the bus lifts in our maintenance facility is open and posted on BidNet Direct.

Jackson County
Department of Transportation

Angela N. Kline, PE, CPM
Managing Director / Director of Engineering & Technical Services

Keeping Our Community Safely in Motion…

Memorandum

Date: June 1, 2023

To: Ms. Jill Liogghio
Region 2 Planning Commission

From: Angela N. Kline, PE, CPM
Managing Director/Director of Engineering

RE: June JACTS Update

We would like to provide the following update regarding our projects that are on the Transportation Improvement Program (TIP) for FY 2022, 2023, and 2024.

Fiscal Year 2022

STUL (Urban) Federal Aid Projects

JN 207169 South Street Preventive Maintenance
Project will be constructed during June by Michigan Paving & Materials.

JN 216632 Urban Pavement Markings
Project will be completed by PK Contracting during the summer.

STP Local (Rural) Federal Aid Projects

JN 215587 – Holibaugh Road
Lakeland Asphalt Construction has an August start date for construction.

U.S. Economic Development Administration (EDA) Grant Project

County Farm/Springport Corridor Improvements and Jackson Technology Park North Construction

- Work to widen County Farm Road continues at the intersection of Ayrshire.
- All utility work is completed.
- Consumers has installed power for the flashing signal.

Weekly progress meetings are scheduled for every Monday at noon during the project.

HRRR & HSIP Funding – MDOT Safety Grant Projects

JN 210343 Compact Roundabout at South Dearing Road and McCain Road

JN 211855 Compact Roundabout at Springport Road and Rives Junction Road

All aggregate base, curb and gutter, and drainage work is complete at the Springport Road and Rives Junction Road roundabout. Completion anticipated in mid-June.

South Dearing Road and McCain Road start date is set for June 12th, with a tentative completion date of mid-August.

JN 211779 Countywide Horizontal Curve Signing (West and Northeast) – CONSTRUCTION
JN 211851 Countywide LED Stop Signs

Work to begin after July 4th.

JN 211823 N. Concord Road Tree Removal
JN 211852 Moscow Road Tree Removal
JN 211853 Rives Junction Road Tree Removal

Sign replacement, guardrail upgrades, and pavement markings will be placed later this summer.

JN 213736 Edgeline Pavement Markings

Construction will take place in summer 2023.

JN 213875 N. Stony Lake Road, Seymour Road, and Race Road Tree Removal

Sign replacement, guardrail upgrades, and pavement markings will be placed later this summer.

JN 214462 Countywide Horizontal Curve Signing (Southeast)
JN 214463 Countywide LED Stop Signs
JN 214464 Countywide High Friction Surface Treatment and LED Stop Signs

Work to begin after July 4th.

Fiscal Year 2023

HRRR & HSIP Funding – MDOT Safety Grant Projects

JN 213879 Dearing Road and Jefferson Tree Removal

Final documents have been submitted. Project will be let during the summer.

JN 213984 Springport Road and Minard Road Compact Roundabout

JCDOT is completing design for summer 2024 construction.

JN 214664 Airport Road at Wayland Drive/Meijer Drive Signal Modernization

Final documents being prepared for submission.

JN 214064 Horton Road (Ferguson Road to Weatherwax Drive) Road Safety Audit
JN 214065 Moscow Road Intersections Road Safety Audit
These RSAs will be completed during the fall when school is back in session.

MDOT Local Bridge Program

JN 209883 S. Jackson Bridge Replacement
Project was in an April bid letting. Low bid was $2,000,360.64, which was 34.37% over Engineer's estimate of $1,488,704.75. Project to be in August bid letting, with completion in November 2024.

STUL (Urban) Federal Aid Projects

JN 207167 Badgley Road
June bid letting with November 15th completion date.

JN 216635 Signal Modernization Project at Multiple Intersections
Intersections Include:
Lansing Avenue and Parnall Road
Badgley Road and Horton Road
McCain Road and Robinson Road
Final documents being prepared for submission.

STL (Rural) Federal Aid Project

2023 PM Project – Sharon Valley Road from Austin Road to Washtenaw County Line
June bid letting with November 15th completion date.

Fiscal Year 2024

HRRR & HSIP Funding – MDOT Safety Grant Projects

JN 211703 Compact Roundabout at Horton Road and Springbrook Road
The Michigan State Historic Office found that the project would have an adverse effect on the archeological sites that were found. JCDOT is currently working with the Michigan SHPO and MDOT to mitigate the adverse effects of the site so that the project can be constructed.

Transportation Alternatives Program (TAP) Grant – Shared-use Pathway Project

JN 210635 Mike Levine Lakelands Trail Extension
Alternate trail routes are currently being reevaluated to avoid property acquisition from private property owners.

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
JACKSON TRANSPORTATION SERVICE CENTER

BRADLEY C. WIEFERICH,P.E
ACTING DIRECTOR

June 2, 2023

Construction:

I-94 at Elm Road, Lansing Ave. and West Ave (US-127) also includes resurfacing on US-127 (I-94 to Parnall) – Nearly all the concrete paving on WB I-94 is completed near Elm Road and traffic is expected to be shifted back to the westbound roadway near June 13th. Shoulder widening and resurfacing is occurring on US-127 from Springport to Parnall. Work on the sidewalk along the west side of West Ave is progressing. Seymour Road is detoured until near June 14th.

I-94 from M-60 to Calhoun County line – Reconstruction from M-60 to Michigan Ave, major rehabilitation from Michigan Ave to Calhoun County line – (2022-2025 construction). Traffic is shifted into a split merge configuration to rebuild westbound I-94 from M-60 to Michigan Ave. The westbound ramps at Parma Road are closed Monday through Friday morning until the end June. The westbound exit ramp to Michigan Ave will close from June 5th until the end of June. The westbound ramps to Dearing Road will close at the end of June or early July for 30 days. Resurfacing work will continue from Michigan Ave to the Calhoun County line.

US-127 bridges over M-50/Railroad (just north of McDevitt) – Deck replacement and superstructure repairs. US-127 is down to one lane in each direction. The bridge deck was poured in May and traffic is scheduled to be shifted back to the southbound roadway near July 15th.

Railroad bridges over Jackson Street and Mechanic Street in downtown Jackson – Bridge replacements. Work started near March 1st and Mechanic Street will be closed until the fall. The track shutdown and bridge deck installation is scheduled for mid-August on both bridges. Jackson Street will remain open with intermittent closures until the track shutdown. Blackstone Road is closed at the railroad crossing for rebuilding.

Signing upgrade on M-106 (Cooper St) M-50, I-94 BL (E. Michigan Ave), M-124 – Work is underway and will continue through 2023.

I-94 Westbound from Mt. Hope Road to Washtenaw County line – Capital preventative maintenance resurfacing. Work is underway and being done at night.

M-50 from Valley Farm Road to Lincoln Road – Shoulder paving. Work should begin near June 12th.

Traffic signal modernization on Cooper Street and MLK (Washington, Glick, Ganson, Leroy, Parnall, South, Morrell, & High. MLK at Ganson.) – (Late 2023 construction).

Cooper (M-50/US-127BR) over abandoned RR, north of High and south of Morrell – Preventative maintenance bridge repairs. 2024 construction.

Design:

Cooper Street (M-106) bridge replacement in downtown Jackson south of train station and Louis Glick (I-94BL) deck replacement near Mechanic Street – (2024/2025 Construction).

US-127 Freeway Signing Upgrade (I-94 to Ingham County Line and M-50 to I-94) – (2024 Construction).

I-94 BL/E. Michigan Ave (Dwight to US-127) – Reconstruction (future construction).

US-127 (Henry to near Ingham Co Line) – Maintenance resurfacing (future construction).

I-94 at Airport Road interchange – Operational study to review alternatives (future construction).

GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

BRAD WEIFERICH
ACTING DIRECTOR

June 2, 2023

Jacob Hurt
Executive Director
Region 2 Planning Commission
120 W. Michigan Avenue, 9th Floor
Jackson, Michigan 49201

Dear Director Hurt:

This letter is sent by the Michigan Department of Transportation (MDOT) to inform the Jackson Area Comprehensive Transportation Study committee of a Transportation Improvement Plan (TIP) amendment to the FY 2023-2026 TIP.

Proposed TIP Amendment:

1) The project budget has increased for the engineering and construction phases of the traffic safety project on M-50 at Clark Road (JN 209391).
2) A right of way phase for I-94 business loop, east bound, (JN 211675) has been added to the TIP program.

Please see the next page for details.

Thank you for your attention to this request. If you have any questions or need additional information, please contact me at (947) 233-8562.

Sincerely,
Andrea Strach, Transportation Planner

MICHIGAN DEPARTMENT OF TRANSPORATION PROPOSED TRANSPORTATION IMPROVEMENT AMENDMENT (JUNE 2023)

	Fiscal Year	Job no.	Phase	County	Project Name	Limits	Length	Primary Work Type	Project Description	Federal Budget	Federal Fund Source	State Budget	Local Budget	Total Phase Cost	Amendment Type
1	2024	209391	PE	Jackson	M-50	At Clark Lake Road in Napoleon Township	0.15	Traffic Safety	Install Center Left Turn Lane	~~$36,619~~ $105,919	HSIP	~~$4,069~~ $11,769	$0	~~$40,688~~ $117,688	Budget
2	2024	209391	CON	Jackson	M-50	At Clark Lake Road in Napoleon Township	0.15	Traffic Safety	Install Center Left Turn Lane	~~$432,350~~ $734,850	HSIP	~~$48,039~~ $81,650	$0	~~$80,369~~ $816,500	Budget
3	2024	211675	ROW	Jackson	I-94BL E	US-127 BR / M-106 over Grand River &I-94 BL / M-50 over Grand River Grand River, 38083-B02, in the City of Jackson	0	Bridge Replacement & Deck Replacement	Bridge Replacement, Deck replacement, bearing replacement, full paint, substructure repairs, epoxy crack injection, concrete surface coating and approach work.	$81,500	NH	$16,552	$1,588	$100,000	Add

Chapter 4
The Existing Transportation System

The Jackson MPO is served by several modes of transportation. Though the focus of transportation planning tends to be on the road network, the other modes of transportation are also essential to the community. It is important to consider how all of the modes are used, so that people and goods can move safely and efficiently. In this chapter, an overview of each existing mode of transportation within the Jackson MPO is given. Along with this, this chapter lays out the current local and regional plans of each mode and highlights future forecasts, issues, and needs that should be addressed. For information on how these modes coordinate with statewide plans and studies, see Chapter 5.

The Road Network

The road network is the largest component of the transportation system within the Jackson MPO. The roads are used by people in vehicles every day for work, travel and recreation. They are also used by the trucking industry to haul freight, pedestrians to travel in areas where there is no sidewalk, and by bicyclists where there is no separated bicycle infrastructure. The road network is the most critical part of the area's transportation infrastructure.

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

Existing Road Network

Regional Road Network

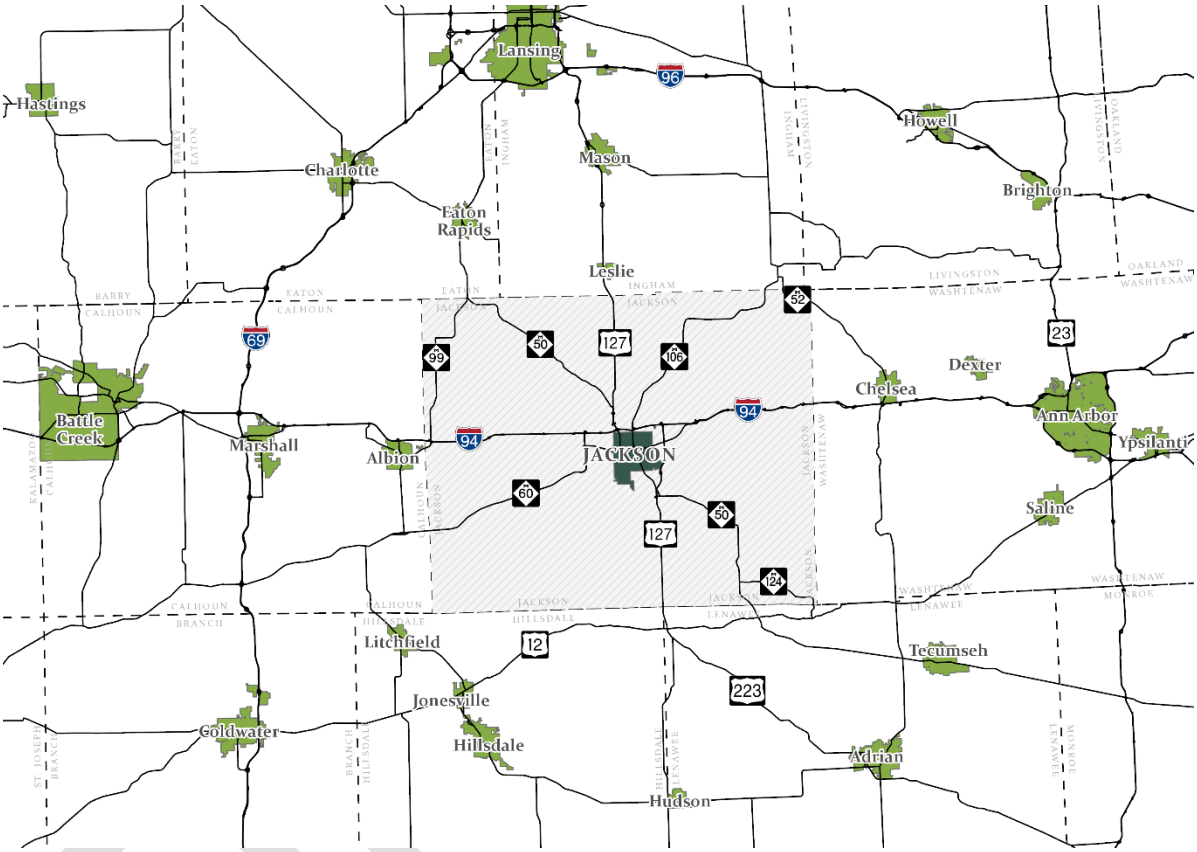
Jackson County, located in south-central Michigan, is fortunate to be positioned on the freeway network linking Michigan and the Midwest to other areas of the United States. Interstate 94 (I-94), connects the Jackson MPO to Ann Arbor, Detroit, and Canada to the east and Battle Creek, Kalamazoo, and Chicago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

There are additional highways within Jackson County outside of the City of Jackson. M-124 provides an alternate connection from the Village of Brooklyn to US-12. This route

travels through the scenic Irish Hills and provides access to many lakes and Walter J. Hayes State Park. M-99 passes through the Village of Springport. Going south, it connects to Albion in Calhoun County and to the north it runs concurrently with M-50 up to Eaton Rapids. From there, it splits and heads north to Lansing. M-52 also cuts through the northeast corner of Jackson County.

Figure 4-1
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 1,943 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 2021 is listed below.

Table 4-1: NFC Roadway System Length Miles for Jackson MPO Roads (2021)

National Functional Classification Type	National Functional Classification Number	Urban Miles	Rural Miles	Total Miles
Interstate	1	9	21	31
Other Freeway	2	14	5	20
Other Principal Arterial	3	36	7	43
Minor Arterial	4	80	71	151
Major Collector	5	67	287	347
Minor Collector	6	10	159	170
Local Collector	7	382	794	1,193
Total Mileage		**598**	**1,345**	**1,943**

Figure 4-2, a map of the NFC system in Jackson County, is on the next page.

NFC Types

There are eight different road categories within the NFC system. Categories 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 the Jackson MPO is listed below.

Interstates, Other Freeways, and Other Principal Arterials. The principal arterial road system includes freeway and non-freeway classifications. The NFC Numbers for the roads found in these categories are 1 for "Interstate," 2 for "Other Freeway," and 3 for "Other Principal Arterial." In the Jackson MPO, categories 1 and 2 this includes I-94 and portions of US-127 and M-60.

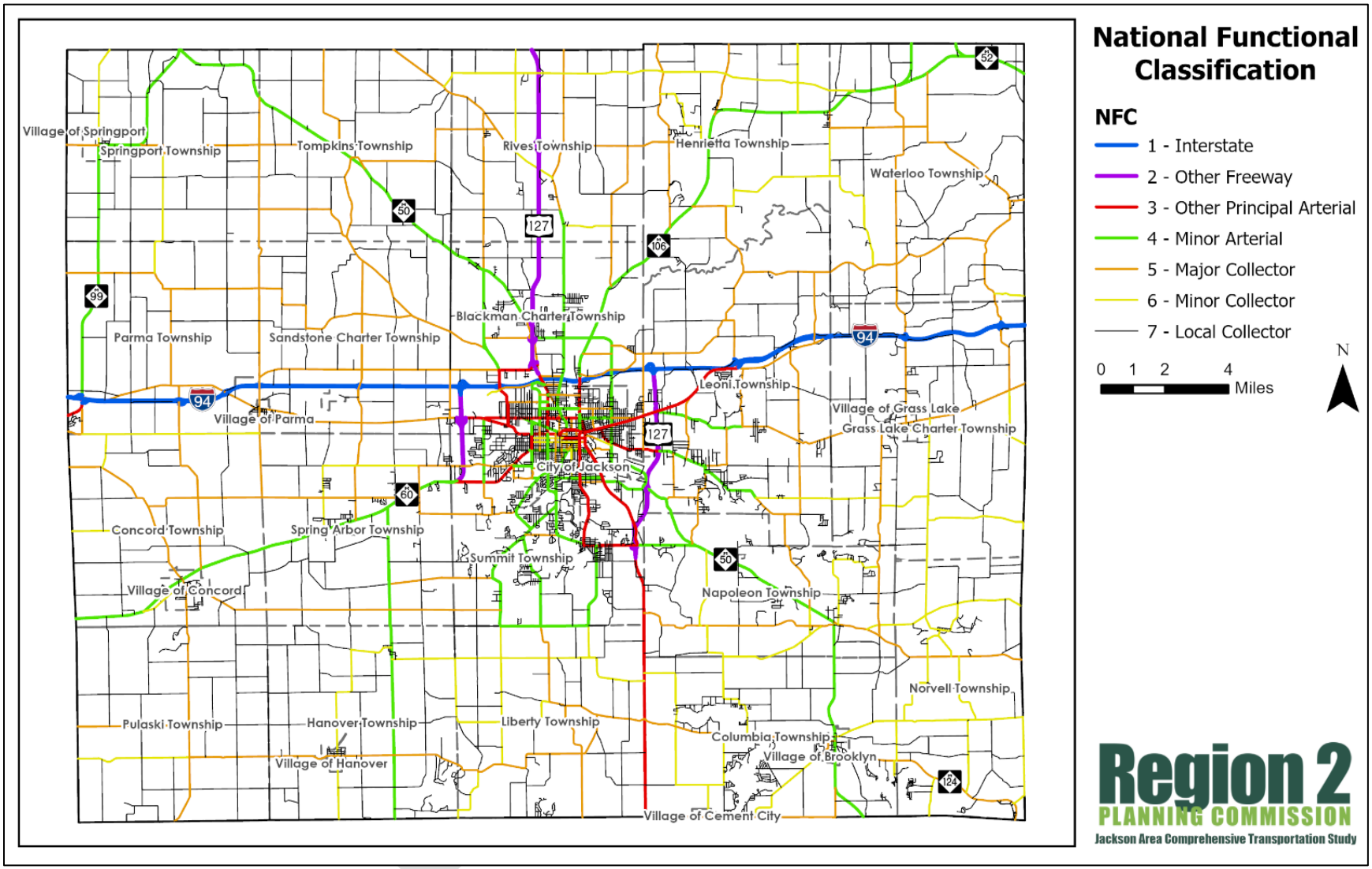
Principal arterial roads in the Jackson MPO serve the major centers of activity of the metropolitan area, have high traffic volumes, and the longest trip desires. They also carry a high proportion of the total urban area travel on a minimum amount of mileage.

Urban principal arterials that connect to rural minor arterials have been identified as portions of M-99/W Michigan Ave, Spring Arbor Rd, Springport Rd/Airport Rd/Laurence Ave, M-50/N West Ave/Business US-127, Cooper St/Business US-127, West and East Michigan Ave/Business 94, Louis Glick Highway, US-127 South, E McDevitt Ave and Francis St. These routes also serve major centers of activity and have high traffic volumes. These routes differ from interstates and freeways 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 NFC 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 NFC Number for the roads found in these categories are 5 for "Major Collector," 6 for "Minor Collector," and 7 for "Local Collector."

Figure 4-2: NFC System in Jackson County



Existing Policies & Programs

Road Maintenance & Funding

Figure 4-3
Robinson Road Under Construction

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 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 seven villages - Brooklyn, Cement City, 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 Ave and the City of Jackson Central Business District (CBD).

2) From US-127 South to commercial and industrial areas along E Michigan Ave, High Street, and the CBD.
3) From US-127 South into the CBD along S Cooper St (US-127 BR /M-50).
4) From the southwest at M-60 North to W Michigan Ave.
5) From the southwestern residential areas along Horton Rd and Kibby Rd to S West Ave and Fourth St into retail areas on N West Ave, W Michigan Ave and the CBD.

Other notable traffic movements in the area include Airport Rd from County Farm Rd to Wildwood Ave, S Brown St from W Michigan Avenue to Spring Arbor Rd, and along the Francis St corridor which carries traffic into Jackson 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 Ave 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 Ave was completed in 2012, and intersection improvements at W Ganson St, improved traffic flow. Traffic traveling to or from Downtown with destinations at commercial uses along N West Ave can also use Wildwood Ave or W Michigan Ave.

Lansing Ave is a minor arterial which provides travel between downtown and the northern suburbs. The route terminates near the urban center. Being a moderately traveled route, Lansing Ave experiences some delays for northbound traffic where it intersects with North St during peak periods. Traffic flow between Lansing Ave and Downtown is occasionally interrupted by the railroad that crosses Steward Ave and Blackstone St to the south. Access to the north along Lansing Ave is good as the route extends into Ingham County.

M-106 (Cooper St) provides the best access from I-94 into Downtown. M-106 links I-94 traffic to industrial areas east of Cooper St near the urban center. Travel from Cooper St traverses through Downtown and continues south as M-50/US-127 BR (Brooklyn Rd), eventually connecting to US-127 South. A railroad crossing at the Cooper St/E Michigan Ave intersection compounds access problems between the CBD and I-94. The City completed the conversion of Washington St and Louis Glick Highway from one-way to two-way between Michigan Ave and Cooper St 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 Rd in Jackson County. Since then, the M-60, West Ave, Cooper St, Elm Ave, Hawkins Rd, Dettman Rd and Sargent Rd overpasses have all been replaced. This stretch of freeway has also been widened and many exit and entrances lanes have been extended. Other upgrades include the replacement of the Grand River bridge and lights being installed.

Existing Plans

Regional Transportation Safety Plan 2017

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

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 Ave and Steward Ave, Cooper St and Milwaukee St. Many of these 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 Ave 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 St 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” at N Cooper St interchange welcoming visitors and providing wayfinding and introducing the Jackson brand.

Phase III highlights Citizen-Government relations, including:

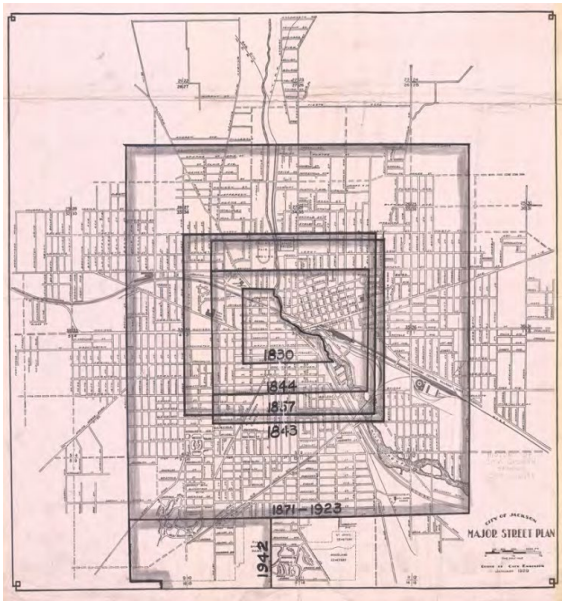
- Using visioning session data from the 2016 Master Plan as a starting point, make preliminary investigations into the feasibility of a node at the corner of High and Francis Streets that is specifically designed to meet the daily commercial and service needs of the residents of the south side of Jackson.

Future Forecasts, Issues, & 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 have been implemented. The City is continuing to look at what it can do to maintain and improve the road network.

JCDOT staff is considering a few 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 greater focus on planning. 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 Rd and considering modernizing traffic signals county wide is another priority. JCDOT is also supportive of installing non-motorized facilities, and looks to plan recommendations for the investment in strategic projects.

Figure 4-4
City of Jackson Boundaries & Years



Public Transit

Public transit is a critical element of the transportation system, providing the public access to jobs, shopping, health care services, and recreational activities. Public transit is especially important for the elderly, youth, individuals with disabilities, and those who don't drive or can't afford a car. Millennials and Baby Boomers are also demanding fixed routes and shared rider services at increased rates, which creates additional stress on transit services. Public transit services are also a great way to reduce traffic congestion, air 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 Transit Services

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.

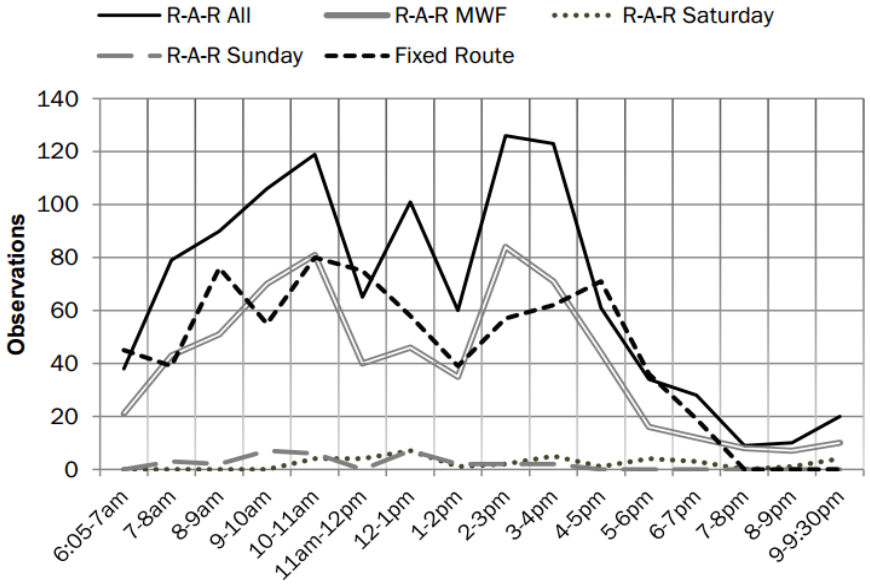
JATA is governed by a nine-member Board of Directors consisting of three members representing the City of Jackson and one representative from Jackson County, Blackman Township, Leoni Township, Summit Township, and two at-large members. The JATA Board meets monthly to oversee the public transportation 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.

Figure 4-5
JATA Bus in Downtown Jackson

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.

Figure 4-6
Ridership Levels on JATA



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.

Existing Vehicle Fleet

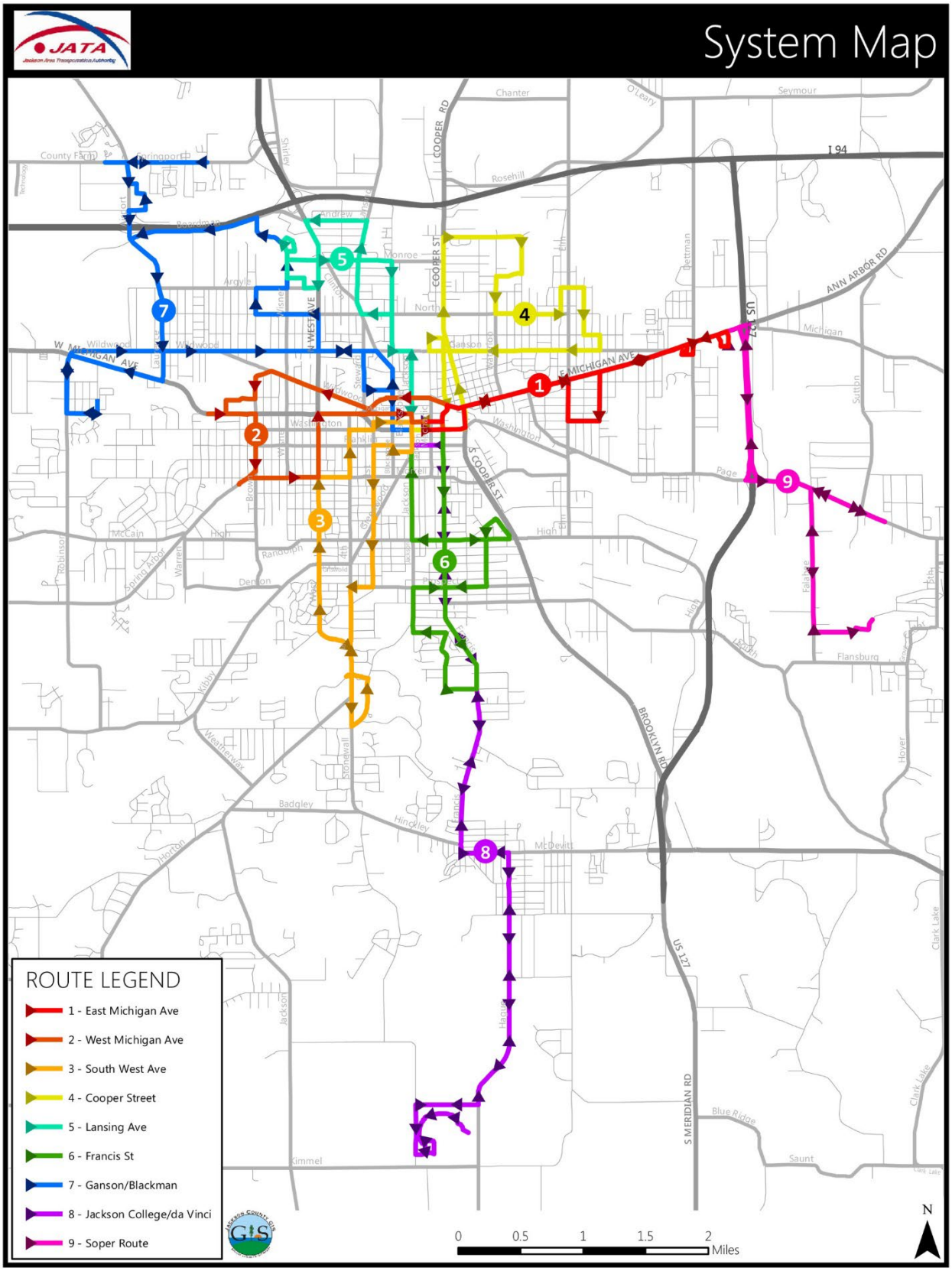
The 2022 JATA fleet consists of 14 full-sized buses, ranging from 29 feet long to 40 feet long. Almost 80% of these will be eligible for replacement within the next five years based on their age. There are 19 medium and light duty vehicles used for demand response. JATA also has five non-revenue vehicles 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:
Jackson Area Transportation Authority Ridership – Number of Trips 1991-2022

YEAR	FIXED ROUTE	DEMAND RESPONSE	SEMI-FIXED (contract)	HEAD START (contract)	RIDES TO WELLNESS	TOTAL
1991-1992	685,272	49,721	59,287	0	0	794,280
1992-1993	760,093	53,229	59,458	0	0	872,780
1993-1994	761,155	63,398	56,049	0	0	880,602
1994-1995	708,577	68,124	41,294	0	0	817,995
1995-1996	665,312	66,796	35,835	0	0	767,943
1996-1997	626,665	66,336	37,128	0	0	730,129
1997-1998	618,988	73,121	36,051	0	0	728,160
1998-1999	597,980	80,499	38,499	0	0	716,978
1999-2000	593,459	96,978	37,967	0	0	728,404
2000-2001	585,446	119,895	18,030	87,847	0	811,218
2001-2002	512,621	115,378	1,605	84,948	0	714,552
2002-2003	516,741	107,790	0	67,584	0	692,115
2003-2004	495,064	98,625	0	52,418	0	646,107
2004-2005	513,116	95,533	0	46,189	0	654,838
2005-2006	559,412	89,637	0	26,292	0	675,341
2006-2007	480,475	74,551	0	0	0	555,026
2007-2008	504,390	57,105	0	0	0	561,495
2008-2009	505,934	52,422	0	0	0	558,356
2009-2010	557,561	46,444	0	0	0	604,005
2010-2011	582,512	44,997	0	0	0	627,509
2011-2012	545,384	41,829	0	0	0	587,213
2012-2013	530,363	42,092	0	0	0	572,455
2013-2014	548,102	40,476	0	0	0	588,578
2014-2015	549,311	39,230	0	0	0	588,541
2015-2016	510,768	32,232	0	0	0	543,000
2016-2017	486,262	34,316	0	0	0	520,578
2017-2018	476,803	37,193	0	0	0	513,996
2018-2019	486,001	34,622	0	0	0	520,623
2020-2021	350,505	22,467	0	0	3,621	376,593
2021-2022	261,108	22,219	0	0	5,718	289,045
TOTAL	**16,575,380**	**1,867,255**	**421,203**	**365,278**	**9,339**	**19,238,455**

Figure 4-7, a map of the JATA transit service system routes, is on the next page.

Figure 4-7: JATA Service Map



Intercity Bus Service

Jackson County is serviced by Indian Trails Bus Lines which operates out of the Jackson Area Transportation Authority's Downtown Jackson Transfer Center. JATA acts as the agent for Indian Trails. 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 Lansing. Hoosier Rides, a part of Miller Transportation, is another intercity bus services that provides daily connections into and out of Jackson.

Figure 4-8
Indian Trails Route Map

Rideshare Services

MDOT offers ridesharing and commuter vanpool programs throughout the state. 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 & Limousine Services

Multiple 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.

Existing Plans and Studies

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 the “Future Forecasts, Issues & Needs” section.

Coordinated Mobility Plan: Region 9 2016

Michigan 2-1-1 and their partners were trying to develop 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 was 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.

Future Forecasts, Issues, & 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 2050 Long Range Transportation Plan. The JATA capital program is based on fleet replacement schedules and programs.

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 (2022) dollars and are inflated by 2 percent each year.

Table 4-3: Jackson Area Transportation Authority
Projected Capital & Operating Expenditures
(FY 2024 – 2050)

Year	Project	Est. Cost
2024	3 – Med. Duty Buses	$ 386,000
	Operating Program	7,950,900
2025	1 – 35 ft. Bus	$ 416,000
	Shop Equipment	18,000
	Operating Program	8,110,000
2026	3 – Vans	$ 149,000
	1 – 35 ft. Bus	425,000
	Operating Program	8,272,100
2027	CPU Upgrades	$ 114,400
	Operating Program	8,438,000
2028	3 – Med. Duty Buses	$ 400,000
	Security Imprv.	59,000
	Operating Program	8,606,300
2029	3 – Med. Duty Buses	$ 405,000
	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
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

Year	Project	Est. Cost
2043	1 – 35' 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
	Operating Program	12,200,000
2045	1 – 35 ft. Bus	$ 604,713
	Security Imprv.	95,234
	Operating Program	12,501,042
2046	3 – Med. Duty Buses	$ 507,790
	Security Imprv.	75,600
	Operating Program	12,501,042
2047	Service Vehicle	$ 63,000
	Security Imprv.	81,648
	Operating Program	13,006,040
2048	1 – 35 ft. Bus	$ 587,100
	Service Vehicle	65,200
	Maintenance Equipment	150,000
	Operating Program	13,266,160
2049	Security Imprv.	$ 88,180
	Facility Upgrades	145,300
	3 – Vans	203,700
	Operating Program	13,531,483
2050	1 – 35 ft. Bus	$ 604,713
	Security Imprv.	95,234
	Operating Program	13,802,112

JATA Long Range Transportation Plan

A summary of proposed activities in the JATA Long Range Transportation Plan 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.

Active Transportation

MDOT defines active transportation as “human-powered transportation that engages people in physical activity while they travel,” with the two main modes being walking and cycling. Active transportation facilities are important components to the transportation system. They provide an environmentally-friendly, low-cost mode of travel. There are also a number of benefits for people who choose active transportation travel, such as improved health, money saved on gas and car maintenance, and less traffic congestion due to less cars on the road. Some of these facilities can also double as recreational assets. Since 2002, there have been a number of investments made to improve the active transportation network in the Jackson MPO.

Existing Active Transportation Network

Sidewalks and Crosswalks

Pedestrian movement is generally accommodated by the presence of sidewalks and multi-use paths along with pedestrian crosswalks 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.

The City of Jackson has also started to implement raised crosswalks downtown, which provide a safer road crossing for pedestrians. Figure 4-9 provides an example of one. The benefits to raised crosswalks are that the crosswalk is at the same level as the sidewalk, rather than being level with the road. This creates a small speed bump for cars so that drivers are more aware of the crossing and they must slow down when approaching it. These function similar to continuous sidewalks, which is when a sidewalk continues across the road at a stop sign. At this time, continuous sidewalks have not been implemented anywhere in the Jackson MPO.

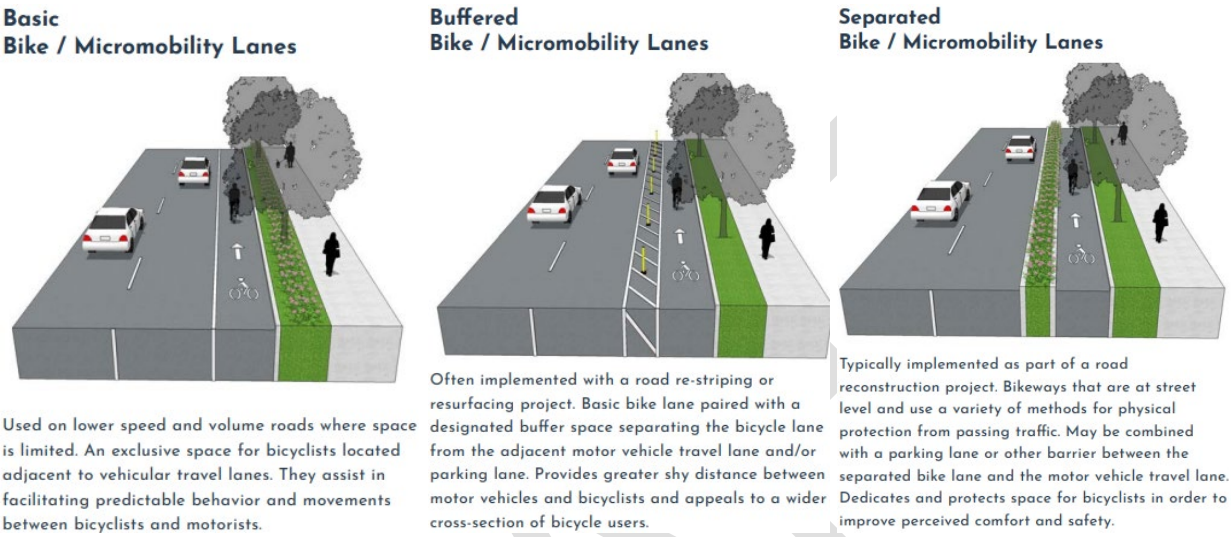
Figure 4-9
Raised Crosswalk in Downtown Jackson

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. There are generally three types of bike lanes: basic, buffered, and separated. Figure 4-10 demonstrates the differences between the three. Separated bike lanes are the most optimal since they completely separate bikes from cars, and therefore, tend to have the most usage. Along with providing buffering or separation between the

road and bike lane, another way bike lanes are made safer is through painting the lane green, which increases the visibility of them and helps make drivers more aware of their presence. Currently, all bike lanes in the Jackson MPO fall under the “basic” category, and while they all tend to feature good signage and pavement markings, none of them are painted green.

Figure 4-10: Different Types of Bike Lanes



Multi-Use Trails

Multi-use trails serve both pedestrians and bicycles and are a significant part of the active transportation network. These trails are separated from the road, which provides more safety and security than basic bike lanes. Multi-use trails are wider than sidewalks so that they can safely accommodate both pedestrians and bikes. These trails can also serve as recreation facilities. The following is a list of multi-use trails within the Jackson MPO:

- *Martin Luther King Jr. Equality Trail (Formerly the Intercity Trail)*: A 3 mile paved trail that traverses the city from E Washington St to Weatherwax Dr, where it then connects to the Falling Waters Trail. Constructed in 2000, this trail follows the route of a former Conrail rail line. The trail previously terminated at Merriman St but was extended to downtown Jackson in 2017. The Iron Belle Trail and Great Lake to Lake Trail routes align with the trail.
- *Falling Waters Trail*: A 10 mile paved trail extending from the City of Jackson to the Village of Concord. This trail travels through Summit, Spring Arbor and Concord townships. The trail starts at River St in Concord and ends at Weatherwax Dr in Jackson. This trail was built as an extension of the MLK Equality Trail in 2008, and also follows the former Conrail rail line. The trail passes through Lime Lake and provides access to Lime Lake County Park. The Iron Belle Trail and Great Lake to Lake Trail routes align with the trail.
- *Armory Arts Walk*: A 1 mile paved trail from W Monroe St to N Mechanic St. This trail follows alongside the Grand River. The Iron Belle Trail and Great Lake to Lake Trail routes align with the trail.

- *Mike Levine Lakelands Trail State Park*: 11 of this trail's 34 miles traverse through Jackson County, following a former Grand Trunk Western rail line. This unpaved trail currently starts at Hawkins Rd in Leoni Township and travels northeast through the Waterloo State Recreation Area. From there, it extends to the Stockbridge area with a terminus at Whitmore Lake. Future plans include paving this trail and extending it to connect with the Armory Arts Walk. The Iron Belle Trail and Great Lake to Lake Trail routes align with the trail.
- *PAKA Trail*: 1 mile paved trail that connects the MLK Equality Trail to Ella Sharp Park. This trail starts at New Leaf Park and connects to an unnamed trail at Park Rd.
- *Sparks Foundation County Park*: 2 miles of paved trail run through the park. A connection to the MLK Equality Trail was built in 2017.
- *Unnamed Trails*: There are a number of unnamed trails, most of which parallel roads. Table 4-4 lists all unnamed trails in the Jackson MPO as of 2023. A majority of these trails are unsigned.

Table 4-4: Unnamed Trails in the Jackson MPO

Municipality	Parallel Street	Distance	Endpoint 1	Endpoint 2
City of Jackson	Brown St	0.5 mi	Randolph St	Morrell St
	Elmdale Dr	0.5 mi	Hickory Ave	S Jackson St
	Kibby Rd	0.75 mi	The Cascades	Intercity Trail
Village of Concord	N/A	0.75 mi	N Main St	Allman Rd
Blackman Charter Township	Airport Rd	0.25 mi	McDonald's	I-94 East Entrance Ramp
	Rives Junction Rd	0.75 mi	M-50	Northwest Schools
Leoni Township	Ann Arbor Rd	2.6 mi	Hackett St	Gilletts Lake Rd
	Page Ave	1.35 mi	Menards	5th St
Spring Arbor Twp	Teft Rd	1.2 mi	W Main St	Falling Waters Trail
Summit Township	W High St	0.75 mi	Warren Ave	The Cascades
	Horton Rd	0.75 mi	PAKA Trail	Weatherwax Rd
	McDevitt Ave	1.5 mi	Francis St	Oak Lane Rd
	Probert Rd	0.25 mi	Francis St	Maplewood Dr
	Spring Arbor Rd	1.42 mi	Lumen Christi High School	Polly's Country Market
	Weatherwax Rd	0.5 mi	Horton Rd	Falling Waters Trail

Signed Bike Routes

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 they marked with any other indicator like a shared lane marking or "sharrow."

The Clark Lake Spirit Trail is a 7 mile signed bike route around Clark Lake. This route mostly follows along residential roads, but a few sections feature paved trails separate from the road.

Other Facilities

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.

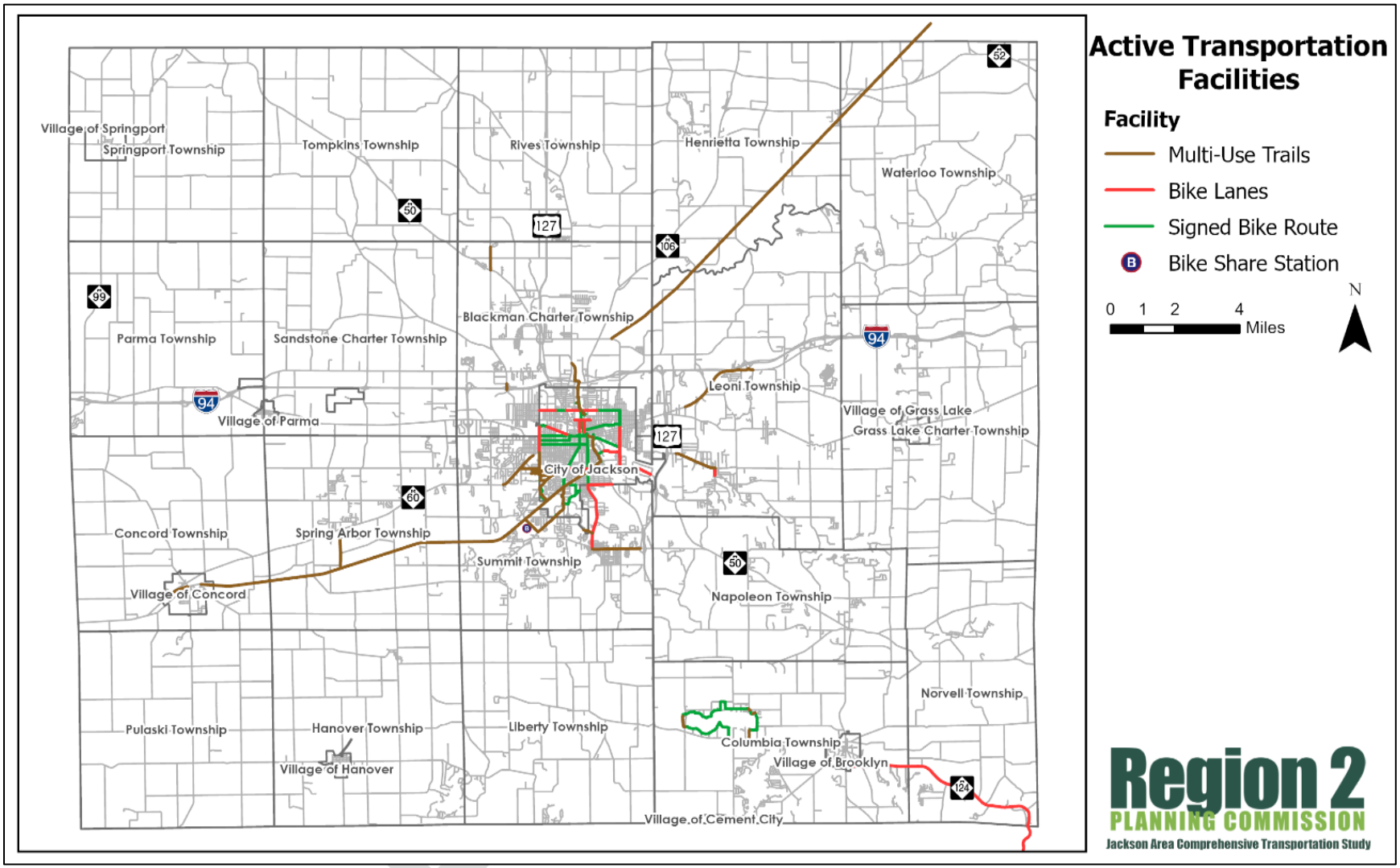
Bicycle parking in the Jackson MPO is accommodated through bike racks. Several bike racks have been installed along streets in downtown Jackson. All of the JATA fixed-routes buses have bicycle racks to help accommodate intermodal travel for its customers.

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 Dr. 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.

Figure 4-11
Jackson County Bike Share Station

Figure 4-12, a map of the existing active transportation facilities, is on the next page.

Figure 4-12: Active Transportation Facilities Map



Existing 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 active transportation 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 active transportation facilities when programming future road paving and reconstruction projects. Both agencies also review future locations for the addition of active transportation facilities that meet funding requirements through the Transportation Alternatives Program (TAP).

Policies

In the 2045 Long Range Transportation Plan, policies to address improvements to active transportation facilities in the Jackson MPO 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 signage, pavement markings, signals, drainage gate replacement, and rail crossings.
- Promote access between active transportation and other modes of transportation.

Safe Routes to School

The City of Jackson began working on Safe Routes to School (SRTS) 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.

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. Schools outside the city that have received SRTS grants include Napoleon Community Schools, Grass Lake Community Schools, Springport Public

Schools, and East Jackson Middle School. Columbia School District plans to apply for a SRTS grant in October 2023.

Existing Plans and Studies

2020 Jackson City + County Non-Motorized Plan

The Jackson City + County Non-Motorized Plan was led by the Region 2 Planning Commission, Jackson County, and the City of Jackson. The goal of this study was to improve biking and walking conditions throughout the county and establish a connected network of sidewalks, bike lanes, and multi-use trails. This plan serves as an update to the 2002 Jackson County Regional Trailway Study, which looked to establish a network of multi-use trails in the county. Many of the proposed multi-use trails from the 2002 study are included in the 2020 plan. The 2020 plan proposes a non-motorized network in Jackson County consisting of many different types of routes, such as:

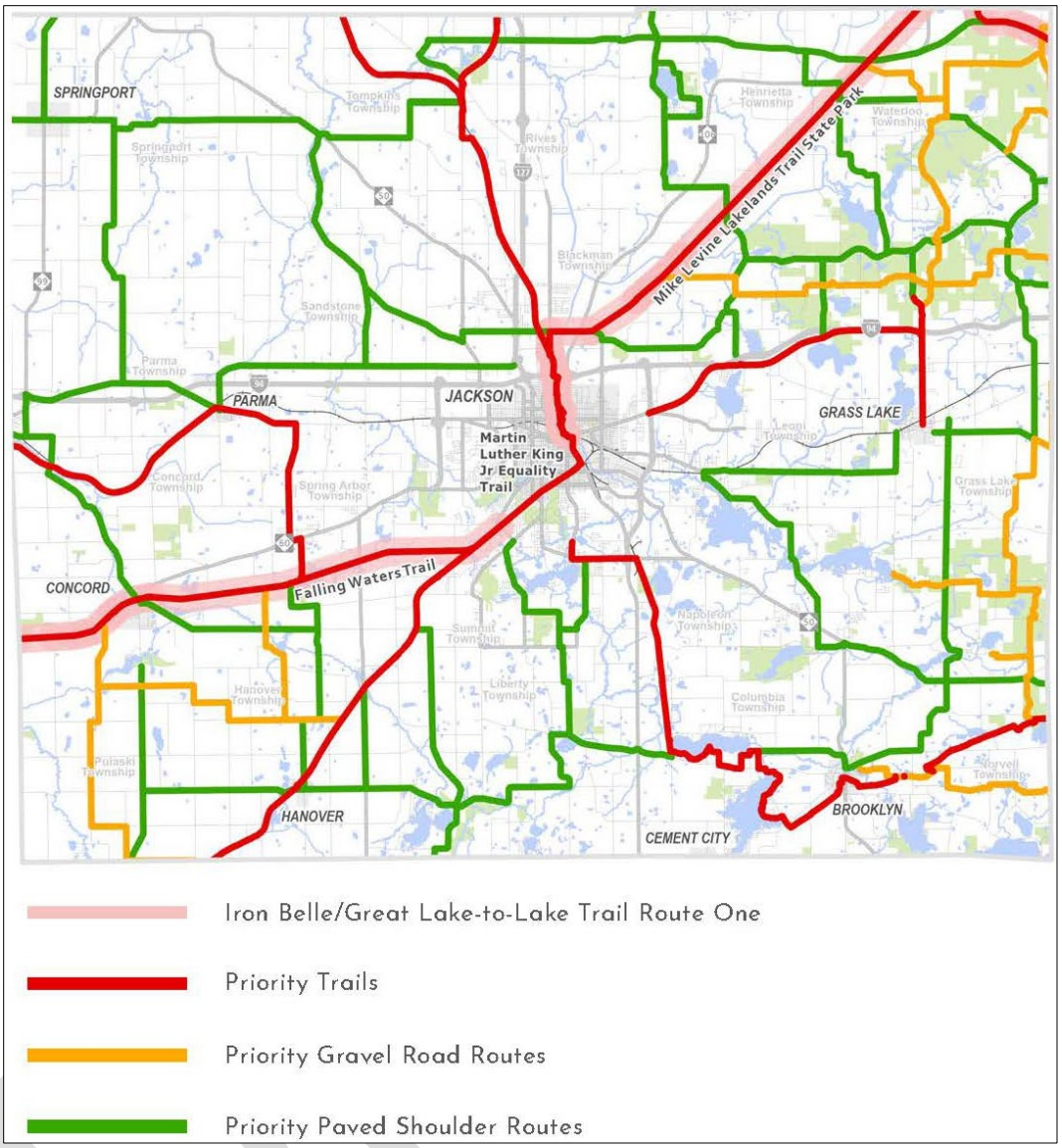
- Rail-trails
- Rail-with-trails
- Utility corridor trails
- Sidepaths
- Bike lanes
- Paved shoulder routes
- Gravel road routes
- Signed bike routes

Figure 4-13 shows a map of the proposed network. This network consists of 57.2 miles of new priority trails which would provide connections between communities within Jackson County. These would also help with statewide trail projects such as the Iron Belle Trail and Great Lake-to-Lake Trail Route 1. Along with new trails being developed, this plan also outlines other bike infrastructure that should be developed, such as bike parking, a uniform sign system, connected vehicle infrastructure, and bike sharing stations.

The plan outlines the costs of developing each trail and how much funding will come from federal, state, local, and private sources. It provides an outline of the costs and funding regarding nine priority trails that are proposed in the plan.

Ultimately, it would be in the best interest of Jackson County and the communities within the Jackson MPO to consider the developments in this plan. This proposed network would provide many benefits to the community by allowing alternatives to commuting by car and establishing more opportunities for recreation. The plan recommends that a countywide trail commission be established to oversee the construction and maintenance of the proposed county trail system.

Figure 4-13: Proposed Jackson County Non-Motorized Trail Network



Jackson County Recreation Plan 2020 – 2024 Edition

A priority of the Jackson County Recreation Plan 2020 – 2024 Edition was to develop and implement a recreation plan that responds to the desire of the public and enhances local parks and programs. A goal of the plan was to create a trail system throughout the county that will provide alternate modes of transportation as well as opportunities for recreation. An online survey was conducted in spring of 2019, which asked a question regarding the construction of non-motorized trails within Jackson County. About 86% of respondents showed support for developing a regional 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 City + County Non-Motorized Plan. Jackson County will implement portions of the plan as appropriate.

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 20 years.

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.

City of Jackson Recreation Plan 2020 – 2024 Edition

A priority of the City of Jackson Recreation Plan 2020 – 2024 Edition was to develop and implement a recreation plan that responds to the desire of the public and enhances local parks and programs. A goal of the plan was to develop trail networks that traverse Jackson in collaboration with other local governments and organizations. An online survey was conducted in the summer and fall of 2019, which asked a question regarding the construction of non-motorized trails within the city and surrounding area. About 72% of all 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 City + County Non-Motorized Plan. The City of Jackson will implement portions of the plan as opportunities arise and resources become available.

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 Trail Connector Feasibility Study 2017

The Michigan Department of Natural Resources, the Michigan Department of Transportation, Jackson County, and Blackman Charter Township worked together on the Jackson Trail Connector Feasibility Study in 2017 to examine an extension of the Lakelands Trail to the MLK Equality Trail. The study identified the location, benefits, and challenges for several routes, and identified a preferred trail option. As of 2023, the Lakelands Trail has been extended to Hawkins Rd in Leoni Township, with plans to extend it further underway.

Future Forecasts, Issues, & Needs

The Jackson City + County Non-Motorized Plan, which was completed in May 2020, outlined many issues and needs for Jackson County's non-motorized trail system. Through surveys and public input meetings, the planning committee was able to hear what current issues prevent people from walking or cycling. Some of the issues were:

Issues with walking

- Condition of existing sidewalks (poor/narrow/uneven)
- Lack of sidewalks outside of downtowns
- Drivers paying attention
- Lack of crosswalks
- Snow/ice removal

Issues with cycling

- Lack of separated bikeways
- Lack of bike parking
- Availability of safe bikeways
- Driver attitudes toward bikes
- Narrow roads/no paved shoulders
- High speed traffic
- Road pavement condition

In the near future, it would be best for Jackson County and the City of Jackson to consider these issues when planning road projects. They should also consider connecting missing segments of multi-use trails, bike lanes, and sidewalks to establish a better network and allow for more usage of the facilities. Other development to consider is converting basic bike lanes to buffered or separated lanes and implementing more bike share stations.

Future Planning Studies

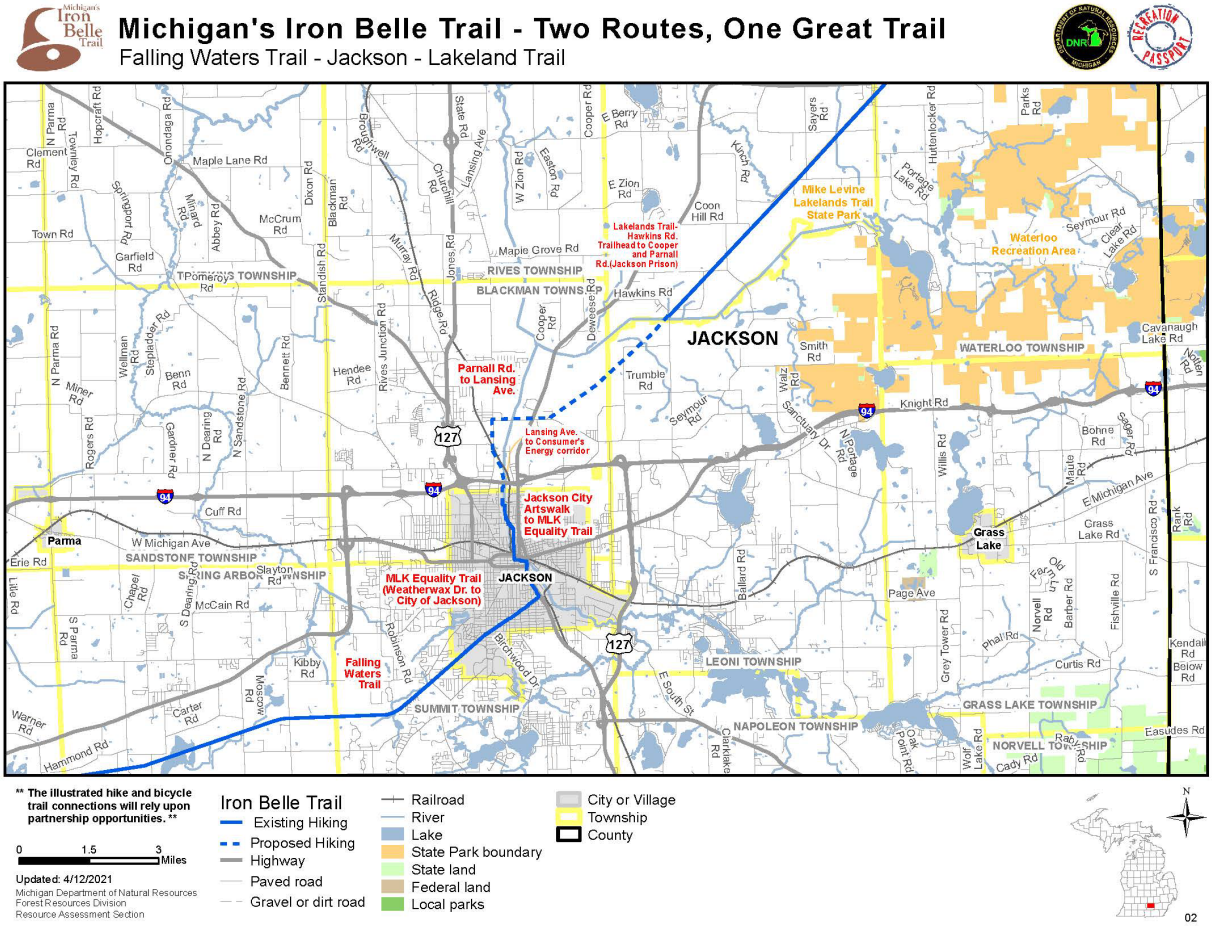
Energy and interest continue to grow to support the development of non-motorized facilities for transportation and recreation. Since a study of non-motorized transportation was done within the past few years, there are no known plans to develop a new non-motorized plan for Jackson County. Planners may see the need for a new study once more facilities get to be developed in the county. Proposed improvements from the 2020

Jackson City + County Non-Motorized Plan and 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 Michigan 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. In Jackson County, the route will follow the unpaved Lakelands Trail from Stockbridge, running through the northeast part of the county into the City of Jackson. Within the City of Jackson, it will follow the Armory Arts Walk, Grand River Walk and the MLK Equality Trail. From there, it will connect to the Falling Waters Trail, and continue along a proposed route to Homer in Calhoun County. The trail is mostly complete in Jackson County to date. Figure 4-14 provides a map of the trail in Jackson County and the current missing connections.

Figure 4-14
DNR Map of the Iron Belle Trail through Jackson County



The Great Lake to Lake Trail

The Great Lake to Lake Trail Route 1 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, MLK Equality Trail, Armory Arts Walk, and Lakelands Trail, following the same corridor as the Iron Belle Trail. The trail is mostly complete in Jackson County to date. Currently, the trail is missing connections in a few places that would make it possible to fully traverse Jackson County. These missing connections are an extension of the Falling Waters Trail west of Concord toward Homer, a connection of the MLK Equality Trail to the Armory Arts Walk, and a connection of the Armory Arts Walk to the Lakelands Trail. Figure 4-15 provides a map of GLTLT Route 1.

Figure 4-15
Great Lake to Lake Trail Route 1

Passenger Rail

Rail plays a significant role in transportation planning, especially when considering economic development, safety, freight, and intermodal connectivity. Passenger rail service in Jackson is provided by Amtrak through the Wolverine line. There are also two freight rail lines serving the area, Norfolk Southern and the Jackson and Lansing Railroad. This section addresses the existing conditions and future needs of passenger rail in the community. For more information on freight service in the Jackson MPO, see page 4-40.

Existing Rail Service

Amtrak Service

Jackson is located on the Detroit-Chicago intercity rail passenger corridor. Amtrak operates the Wolverine Line between Pontiac and Chicago, which consists of three daily passenger trains in each direction. The section of the Wolverine Line from Dearborn to Kalamazoo is also operated by Norfolk Southern (NS), and was purchased by MDOT in 2013. With purchasing this track from Amtrak, MDOT seeks other ways this line could be used in the future, such as a state-operated commuter rail.

While usage of the Wolverine Line had fluctuated in the past, COVID-19 resulted in a massive decrease in ridership and revenues. Passenger use of the Wolverine Line went from around 501,124 passengers in 2019 to 244,500 passengers in 2020 and even lower to 153,929 in 2021. This resulted in a 69.3% decrease from 2019 to 2021. At the Jackson Amtrak Station, ridership was 23,615 in 2019 with numbers dropping to 11,741 in 2020 and 7,852 in 2021. Additionally, operating revenues across the Wolverine Line decreased from $31.3 million in 2019 to $11.5 million in 2021. Since 2021 however, ridership on the Wolverine Line has greatly increased, going up to 367,254 in 2022, a jump of 138.6%.

High-Speed Rail

High-speed rail on the Wolverine Line was first established in September 2013 when the state received $196.5 million to upgrade and engineer improvements from Porter, IN to Kalamazoo which brought track speeds up to 110 mph. These upgrades improved safety, comfort, and travel times for passengers along this corridor. With MDOT's purchase of the Dearborn-Kalamazoo corridor in 2013, over 200 miles of the line are now under the control of Amtrak and MDOT. Together, they both aim to reduce 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. Upgrades to the line include replacement of ties, rails, and switches, improvements to grade crossings, and extension of an advanced signal system. In 2021, the section of line from Kalamazoo to Albion was officially upgraded to high-speed rail, with speeds increasing from 79 mph to 110 mph. Amtrak and MDOT plan to increase speeds from Albion to Dearborn over the next several years.

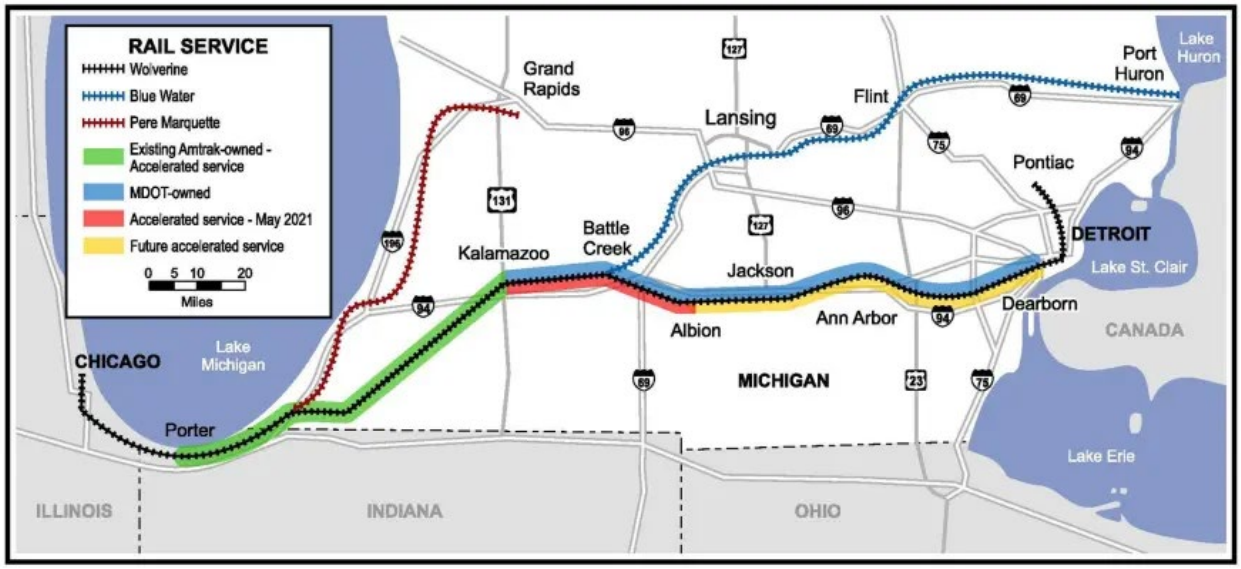
Amtrak, through an ongoing partnership with the Federal Railroad Administration and the State of Michigan, developed a radio-based train communication system, the Incremental Train Control 4 System (ITCS). It is currently in high-speed revenue service on 80 miles of Amtrak-owned track in Michigan and 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 in Jackson and along the rail corridor by strengthening the local region's connection to economically vital megaregions such as Detroit and Chicago. 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, specifically I-94, which the route runs parallel to.

Figure 4-16 highlights the Wolverine Line, showing the sections of high-speed rail and the ownership of each corridor. The Blue Water and Pere Marquette lines are also shown.

Figure 4-16
Amtrak Wolverine Line



Existing Plans and Studies

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. Figure 4-17 provides an outlook of how the station and surrounding area could be revitalized. This plan would involve the bus station to be moved next to the train station, which would provide a more convenient way for people to get to and from the station. The plan also includes the construction of 356 paved parking spaces, temporary parking, vehicular drop-off, bike lockers, an additional platform with a canopy, and an extension of the river walk.

An updated report of this study was completed in 2010 with the intent to refine the design recommendations, update the construction budget estimate, and propose a schedule for how the city could plan and implement this project. The new proposed design would only utilize space on the north side of the tracks, which would help lower the cost and prevent the demolition of some buildings. This new design also features less parking spaces, with 207 total. Despite less development than the 2005 concept, the project would still be heavily beneficial for Jackson. The new alternate design can be found in Figure 4-18.

Figure 4-17
2005 City of Jackson Amtrak Depot Site Development Plan

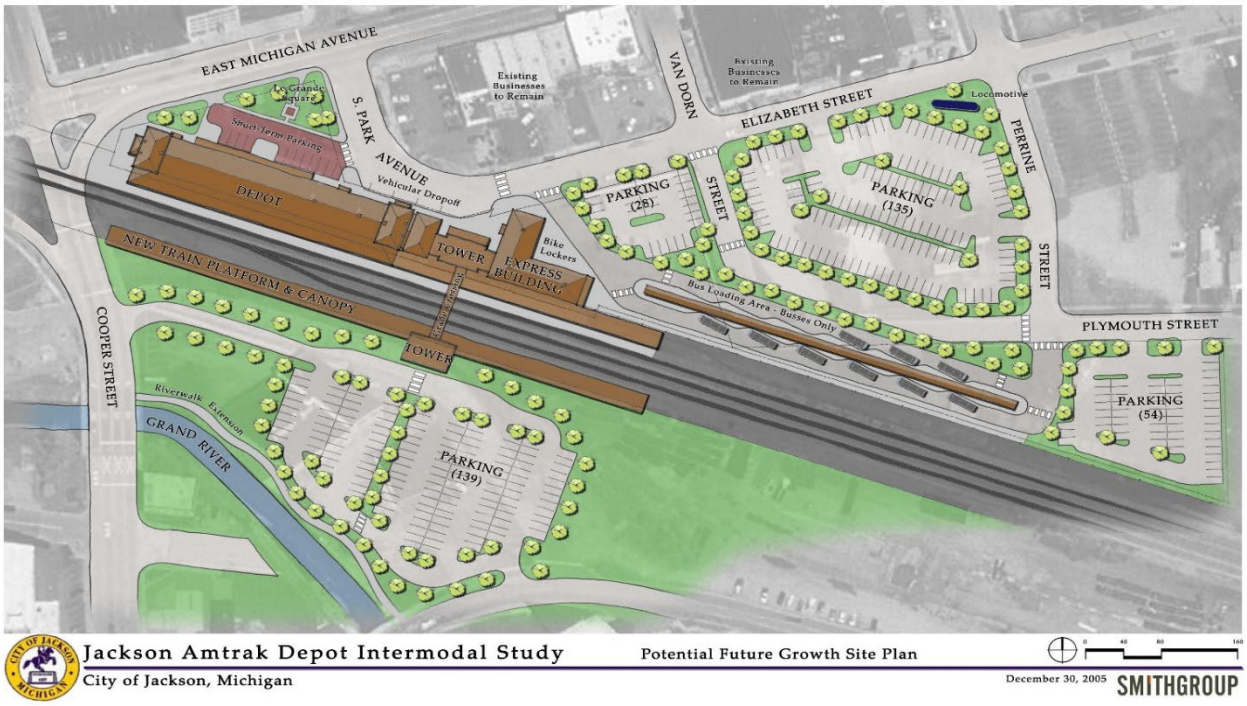
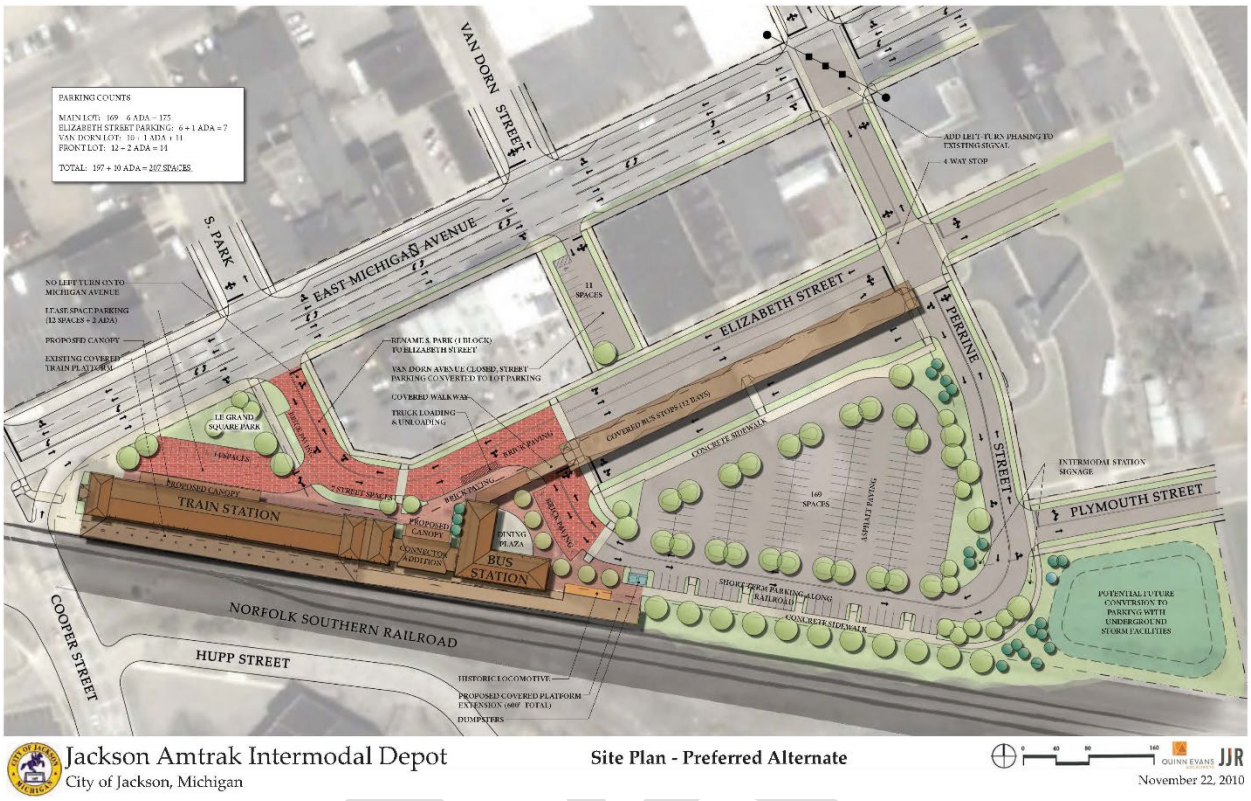


Figure 4-18
2010 City of Jackson Amtrak Depot Alternate Site Plan



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
3) Service Development Plan

A Draft Environmental Impact Statement 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.

Future Forecasts, Issues, & Needs

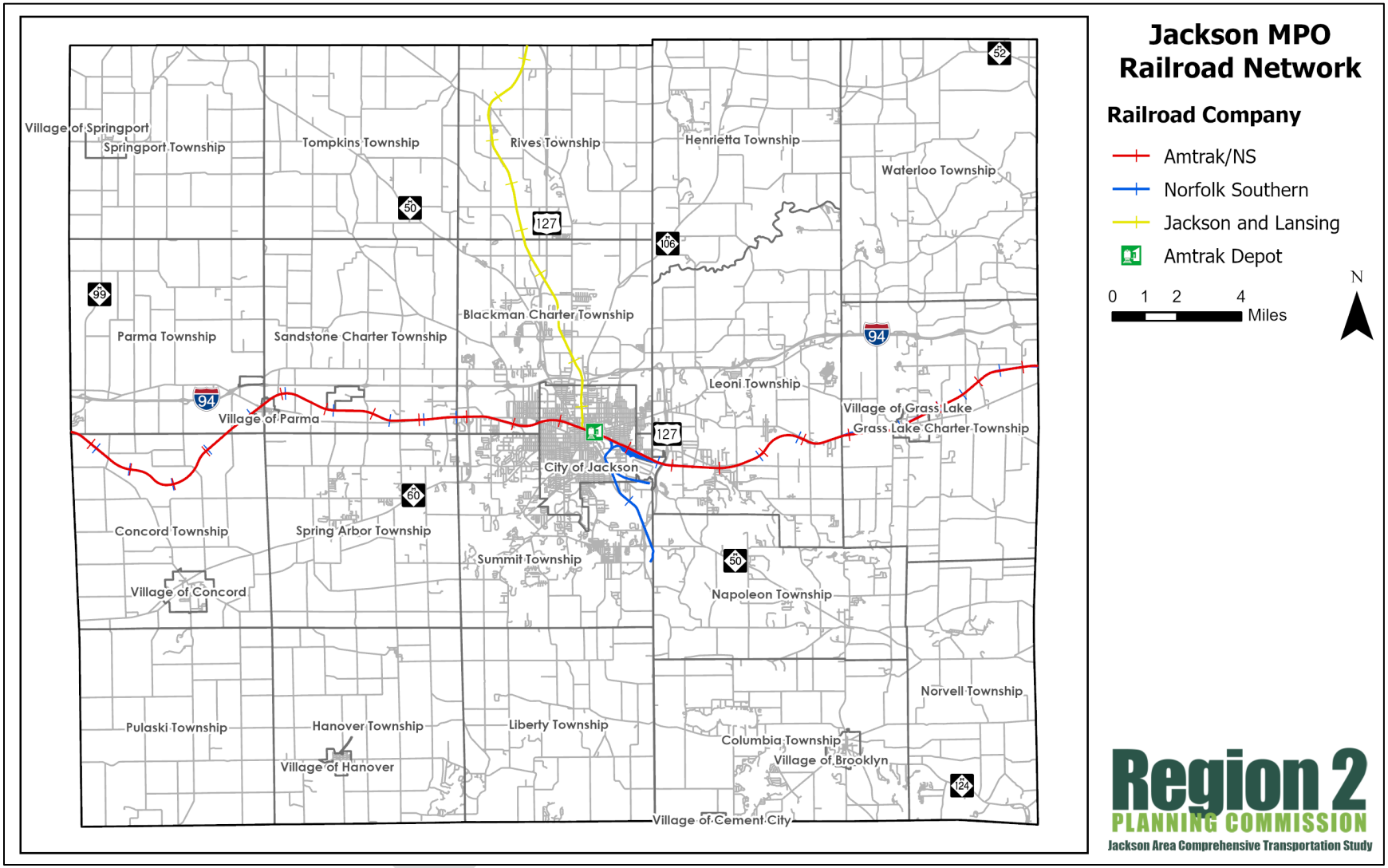
Passenger rail transportation will continue to be available to the residents of Jackson County, with any future investment decisions determined by the private sector. The continuing efforts to develop high-speed passenger service along the Chicago-Detroit

corridor is encouraged for the successful advancement of rail service as an alternate mode of transportation.

The City of Jackson should also continue to revisit and explore the recommendations of the 2005 Jackson Amtrak Depot Intermodal Feasibility Study and the 2010 alternate site plan. These improvements to the Jackson Amtrak Depot would be very beneficial for the city by allowing multiple modes of travel to and from the station. This would also help revitalize the area outside the station and make it more attractive to those who are visiting Jackson by train.

Figure 4-19, a map of the railroad network in Jackson County, is on the next page.

Figure 4-19: Map of Railroad Network



Air Transportation

The Jackson MPO contains several public-use airports, with the largest being the Jackson County Airport - Reynolds Field (JXN). The Jackson County Airport serves the Jackson area by accommodating non-commercial charter and freight flights. There are more than 40,000 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 Jackson MPO's goods and services.

Existing Airport Conditions

Jackson County Airport - Reynolds Field

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 Rd and Wildwood Ave. 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.

Figure 4-20
Historic Picture of Jackson County Airport - Reynolds Field

The airport has two paved runways: Runway 7-25 is 5,357 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 105 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 $40 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.

Other Public-Use Airports

- Napoleon Airport
- Shamrock Airport
- Van Wagnen Field
- Wolf Lake Airport

Future Forecasts, Issues & 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.

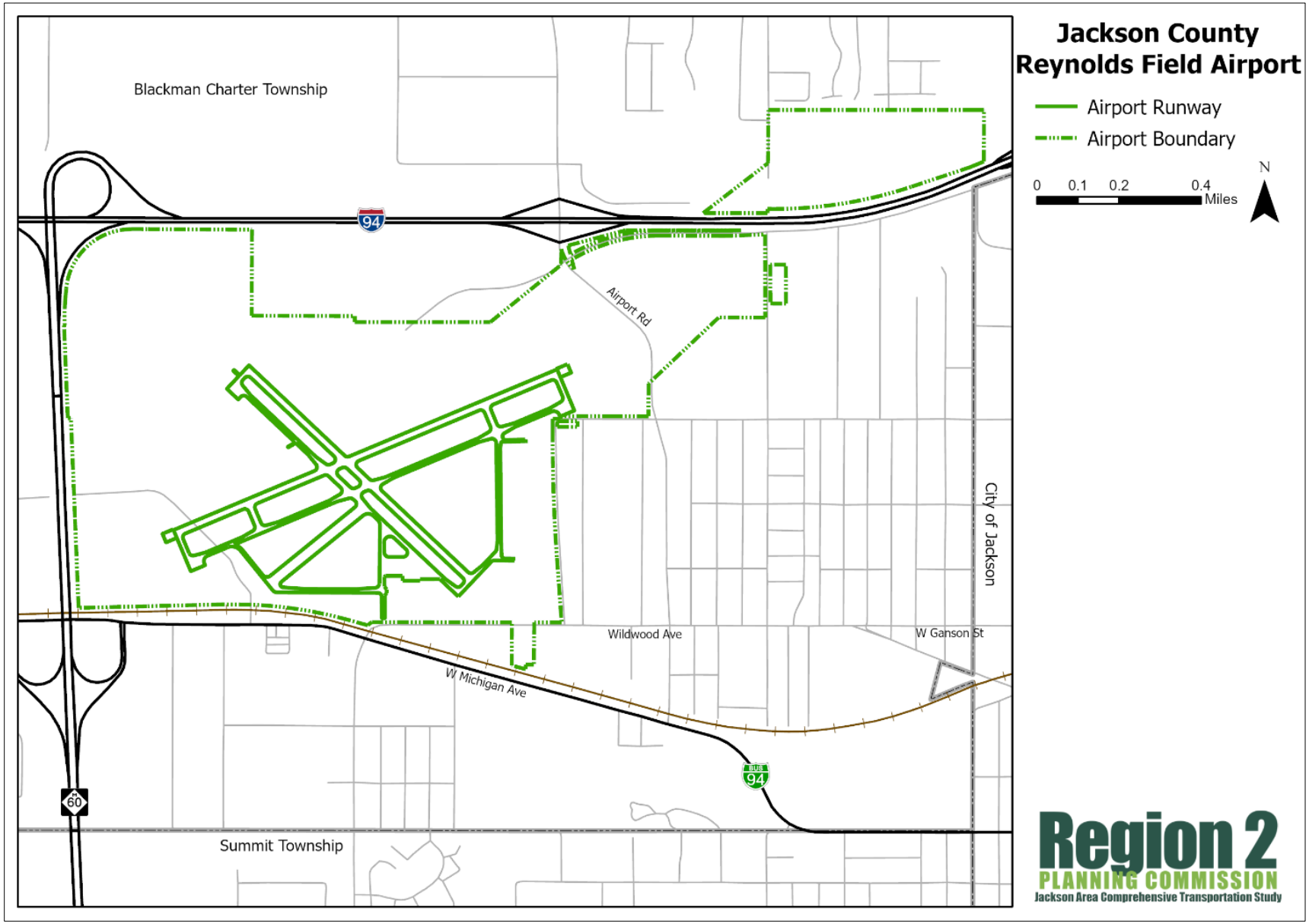
The annual economic value of the airport to the greater Jackson area is determined to be $40 million (2019). The airport is expected to continue to provide air services to Jackson County businesses and private individuals by being a major player in the economic development of the region and being a significant 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 5,357 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.

Figure 4-21, a map of the airport runways and property boundary, is on the next page.

Figure 4-21: Jackson County Airport Map



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 2019, trucking accounted for 65%, rail handled 21%, water handled 14% and aviation handled less than 1%. Of the $792 billion freight moved, trucks moved 74%, rail moved 21%, aviation moved 4%, and water handled 1%. These modes work together to achieve the safe and efficient delivery of goods across the state and within Jackson.

Existing Network & Conditions

Freight on the Road Network

The highways throughout the Jackson MPO accommodate lots of truck traffic, especially the freeways of I-94 and US-127. MDOT classified I-94 between Chicago and Detroit as the corridor with the highest amount of freight traffic in the state. Within the MPO, there are also several major businesses, corporations, and factories which generate truck traffic at their facilities.

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 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 of Jackson and Jackson County have specific listings of streets that can accommodate the heavy trucks.

Rail Freight

The main freight rail line in Jackson County is the former Michigan Central Line, which roughly runs parallel to I-94. Norfolk Southern (NS) uses this line for freight service from Detroit to Kalamazoo. Including this line, NS also operates local freight service on two smaller lines in Jackson that both split from the main line near Washington Ave and Elm Ave. One lines roughly parallels M-50/US-127 BR and terminates at MISA Specialty Processing. This line also serves Omni Source and Gerdau. The other line travels a short distance to the Dawn Food Products factory. NS also has a railyard located within Jackson County on Mitchell St, near the intersection of Page Ave and Elm Ave.

A secondary mainline in Jackson County, the Jackson and Lansing Railroad Company (JAIL), connects with Norfolk Southern in Jackson, and CSX and Canadian National (CN) in Lansing with daily freight-only service. JAIL is a subsidiary of the Adrian and Blissfield Railroad.

Aircraft Freight

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.

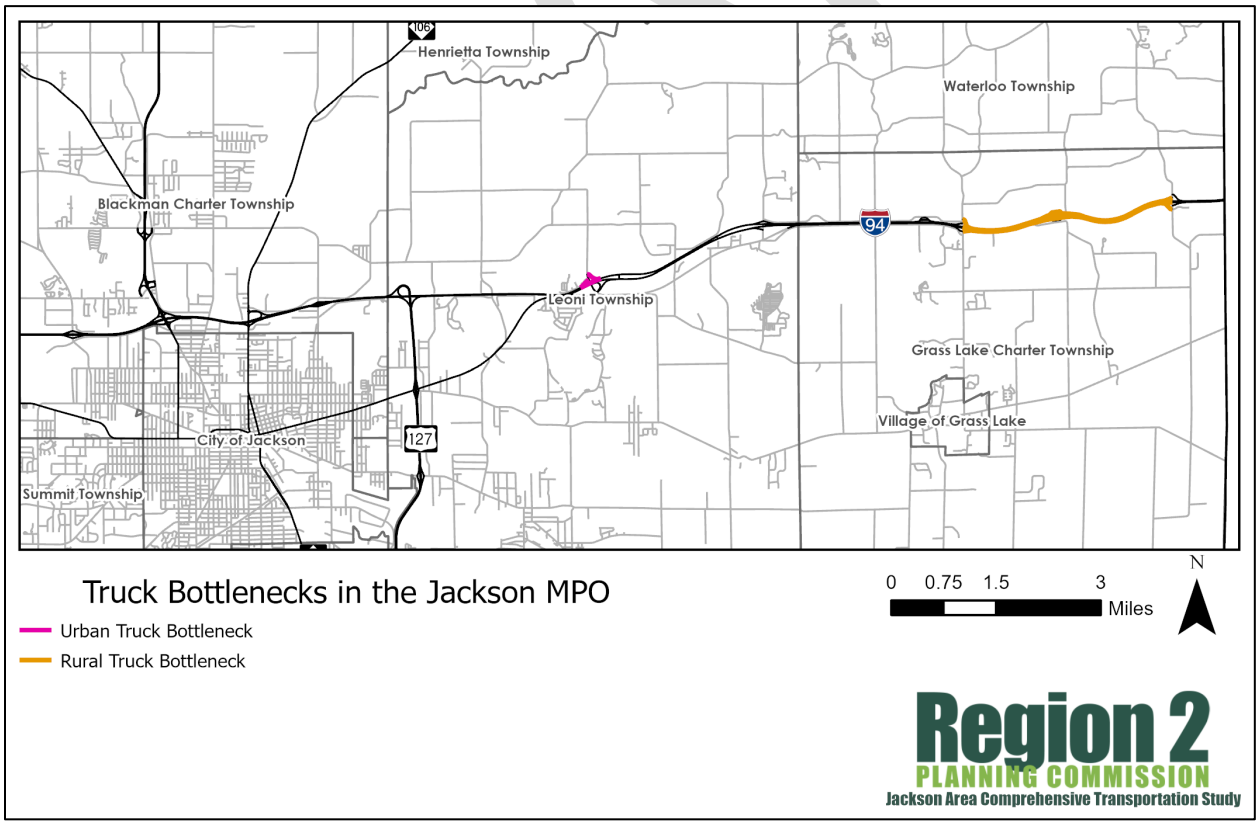
Existing Plans

Michigan Mobility 2045

The State Freight Plan, which was developed as part of Michigan Mobility 2045, 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.

MM2045 identified urban and rural truck bottlenecks throughout the state for 2019. These bottlenecks are places where truck traffic commonly gets backed up and delayed. Each bottleneck was evaluated on how much money they cost each user a day. The Jackson MPO contains one urban and one rural bottleneck, both of which are along I-94. The urban truck bottleneck occurs on I-94 westbound at the Sargent Rd interchange and has a user cost of $31,058 per day. The rural truck bottleneck occurs on I-94 in both directions between Mt Hope Rd and Clear Lake Rd. This bottleneck has a user cost of $31,724 per day, the fifth most costly in the state. Figure 4-22 is a map of each bottleneck's location.

Figure 4-22: Truck Bottlenecks in the Jackson MPO



Future Forecasts, Issues, & Needs

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. The City of Jackson and Jackson County will need to continue to track and maintain its freight infrastructure to keep up with growth projections. Freight traffic impacts congestion, safety, pavement life, air quality, and quality of life.

MDOT has projected a significant amount of growth in freight across the state out to 2045. 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 in Table 4-5.

Table 4-5: MDOT's Freight Projections

Direction	Mode	Tons (000)			$Millions		
		2019	2045	% Growth	2019	2045	% Growth
Inbound	Truck	113,535	144,279	27%	186,701	293,443	57%
	Rail	29,744	28,397	-5%	43,185	61,579	43%
	Water	19,920	17,748	-11%	1,884	1,770	-6%
	Pipeline	8,011	4,308	-46%	2,345	1,259	-46%
	Air	123	201	64%	16,254	32,210	98%
	TOTAL	**171,333**	**194,932**	**14%**	**250,369**	**390,261**	**56%**
Outbound	Truck	100,808	113,567	13%	171,479	219,837	28%
	Rail	20,459	22,890	12%	64,583	71,800	11%
	Water	20,265	15,605	-23%	1,603	1,825	14%
	Pipeline	23	78	239%	22	77	250%
	Air	143	372	160%	16,528	19,318	17%
	TOTAL	**141,698**	**152,511**	**8%**	**254,214**	**312,856**	**23%**
Within	Truck	142,475	129,888	-9%	116,910	130,375	12%
	Rail	8,037	8,226	2%	3,995	5,109	28%
	Water	11,034	7,594	-31%	821	652	-21%
	Air	1	8	517%	108	201	87%
	TOTAL	**161,547**	**145,717**	**-10%**	**121,834**	**136,337**	**12%**
Pass-Through	Truck	33,599	62,023	85%	115,641	213,697	85%
	Rail	27,381	49,358	80%	56,070	113,713	103%
	TOTAL	**60,980**	**111,381**	**83%**	**171,711**	**327,409**	**91%**
TOTAL	Truck	390,417	449,757	15%	590,731	857,352	45%
	Rail	85,622	108,871	27%	167,832	252,200	50%
	Water	51,219	40,946	-20%	4,309	4,247	-1%
	Pipeline	8,034	4,385	-45%	2,367	1,335	-44%
	Air	267	580	118%	32,890	51,729	57%
	TOTAL	**535,559**	**604,540**	**13%**	**798,129**	**1,166,862**	**46%**

Emerging Technology within the Transportation System

Connected & Automated Vehicles

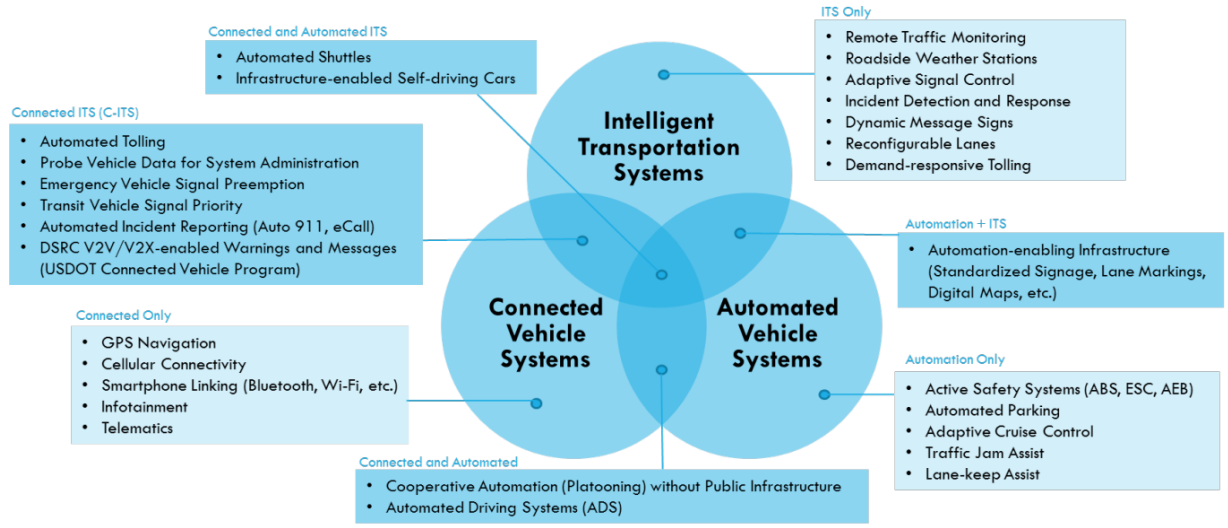
Connected and automated vehicles (CAVs) are already impacting the state of Michigan. MDOT has a connected vehicle program that is supported by GM, Ford, the University of Michigan, Oakland County Road Commission, and others. Program assets and testing areas are currently just east of the Jackson MPO. 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.

Defining Connected & 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 below and in Figure 4-23.

- ***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.

Figure 4-23
Connected & Automated Vehicle Terms



Impact

The impact of CAVs is largely unknown because their deployment has been primarily limited to test environments. Researchers have begun to consider how transportation will change as a result of this disruptive technology. The influence of computer-driven vehicles may require changes to transportation laws, policy, infrastructure, and access management. The full impact in urban, suburban, and rural environments is unknown.

Road and highway infrastructure is one aspect of transportation that will be affected. Current design standards have been developed to meet the needs of human drivers, and may need to change to accommodate CAVs. Road markings are a critical part of the road system, and CAV's adherence to these markings is imperative to safety and to maintain consistent road operations. Some automated vehicles rely on identifying road markings, but this could be complicated by snow and rain weather events. Not all roads, especially in rural areas, have complete road markings. With the goal of producing a self-driving car, automakers are exploring other ways to automate lane keeping.

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

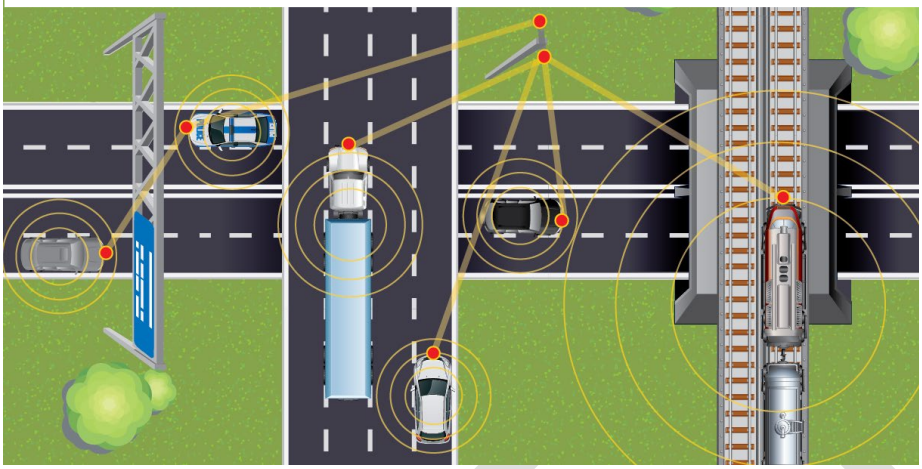
- **Zero occupancy VMT.** Vehicular miles traveled could increase due to vehicles traveling without passengers between drop-off and pick-up locations.

- **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 traveled.
- **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.

Figure 4-24
Example of How Technology
Can allow for Communication among Modes of Travel



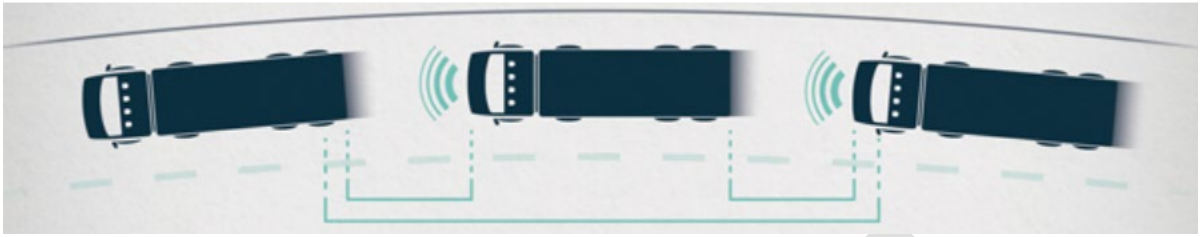
Intermodal Implications

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. 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.

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.

Figure 4-25
Freight Platooning



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.

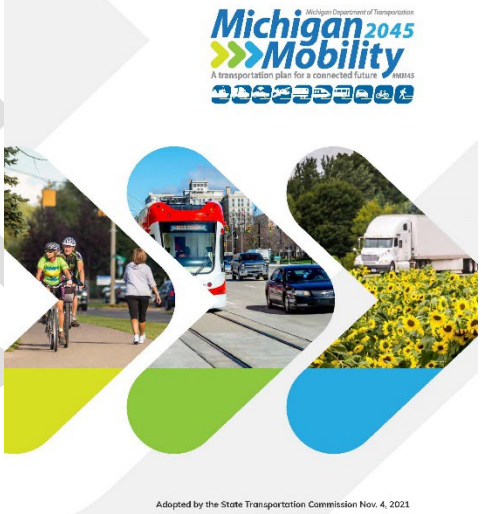
Chapter 5
Coordination with Statewide & Regional Plans

IIJA legislation provides funding certainty for surface transportation through FY 2026, 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.

Michigan Mobility 2045 Plan

In November 2021, the Michigan State Transportation Commission approved the MDOT Michigan Mobility 2045 Plan, which serves as an update to the Michigan 2040 State Long Range Transportation Plan. This 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 strategic multimodal corridors 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.

Figure 5-1
Michigan Mobility 2045 Plan



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:

"In 2045, Michigan's mobility network is safe, efficient, future-driven, and adaptable. This interconnected multimodal system is people-focused, equitable, reliable, convenient for all users, and enriches Michigan's economic and societal vitality.

Through collaboration and innovation, Michigan will deliver a well-maintained and sustainably funded network where strategic investments are made in mobility options that improve quality of life, support public health, and promote resiliency."

Goals & Objectives

The transportation planning process historically defines goals and objectives, identifies problems, generates and evaluates alternatives, and develops short and long term plans. The Michigan Mobility 2045 Plan identifies six goals based on input from MDOT, stakeholders, public comments, national goals, and federal planning factors. Each goal is accompanied by measurable, outcome-based objectives that describe what must be done to achieve the goal and advance the MM2045 vision.

Goal 1. Quality of Life

Enhance quality of life for all communities and users of the transportation network.

Goal 2. Mobility

Enhance mobility choices for all users of the transportation network through efficient and effective operations and reliable multimodal opportunities.

Goal 3. Safety and Security

Enhance the safety and ensure the security of the transportation network for all users and workers.

Goal 4. Network Condition

Through investment strategies and innovation, preserve and improve the condition of Michigan's transportation network so that all modes are reliable, resilient, and adaptable.

Goal 5. Economy and Stewardship

Improve the movement of people and goods to attract and sustain diverse economic opportunities while investing resources responsibly.

Goal 6. Partnership

Strengthen, expand and promote collaboration with all users through effective public and private partnerships.

The state's goals were reviewed and are consistent with those included in the JACTS 2050 Long Range Transportation Plan.

Strategic Multimodal Corridors

In the MM2045, MDOT defined a network of strategic multimodal corridors representing an integrated, multimodal system to support the safe and efficient movement of people, services, and goods. Corridors that traverse through Jackson County include the I-94 corridor and US-127 corridor. A report was conducted on these corridors, which included information regarding traffic safety, infrastructure condition, multimodal assets/services, traffic, and congestion. This information was provided for each corridor statewide and for each section within the University Region, where Jackson County is located.

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 Michigan Mobility Plan updates.

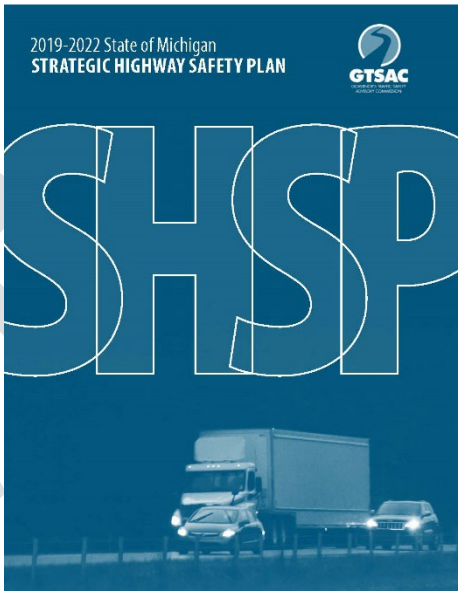
Supplement Plans

The Michigan Mobility 2045 Plan is the first of its kind to incorporate two federally required documents: the State Rail Plan and the State Freight Plan. Combined, these three documents provide a streamlined vision of Michigan's transportation future across all modes. MM2045 also incorporates the statewide Active Transportation Plan, which provides a vision for walking and cycling infrastructure across the state. The Jackson MPO used these supplementing plans as resources in the development of the 2050 LRTP and other local and regional plans.

2019-2022 State of Michigan Strategic Highway Safety Plan

The 2019-2022 State of Michigan Strategic Highway Safety Plan (SHSP) was completed by the Governor's Traffic Safety Advisory Commission in December 2019. 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 goals of reducing the state crash fatalities from 974 in 2018 to 945 in 2022 and reducing suspected serious injuries from 5,586 in 2018 to 4,994 in 2022. Data from the Office of Highway Safety Planning shows an upward trend in fatalities and a downward trend in serious injuries. Deaths in 2018 were up 11.83% since 2009 however, incapacitating injuries were down 14.21% in 2018 since 2009.

Figure 5-2
2019-2022 Strategic Highway Safety Plan



Emphasis Areas and Action Teams

The 2019-2022 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
  - Motorcycle Safety
  - Pedestrian and Bicycle Safety
  - Senior Mobility and Safety
  - Drivers Age 20 and Younger
- Engineering Infrastructure
  - Traffic Safety Engineering
  - Connected and Autonomous Vehicles
- 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:

- 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.
- Determine focus communities, cities, and agencies for priority assistance using data.
- Provide recommendations related to pedestrian and bicyclist safety legislation.
- Support, promote, and implement the Toward Zero Deaths national policy.

The Region 2 Planning Commission agrees with the data and strategies presented in the 2019-2022 State of Michigan Strategic Highway Safety Plan. For more information and a full list of strategies, please refer to the 2019-2022 State of Michigan SHSP.

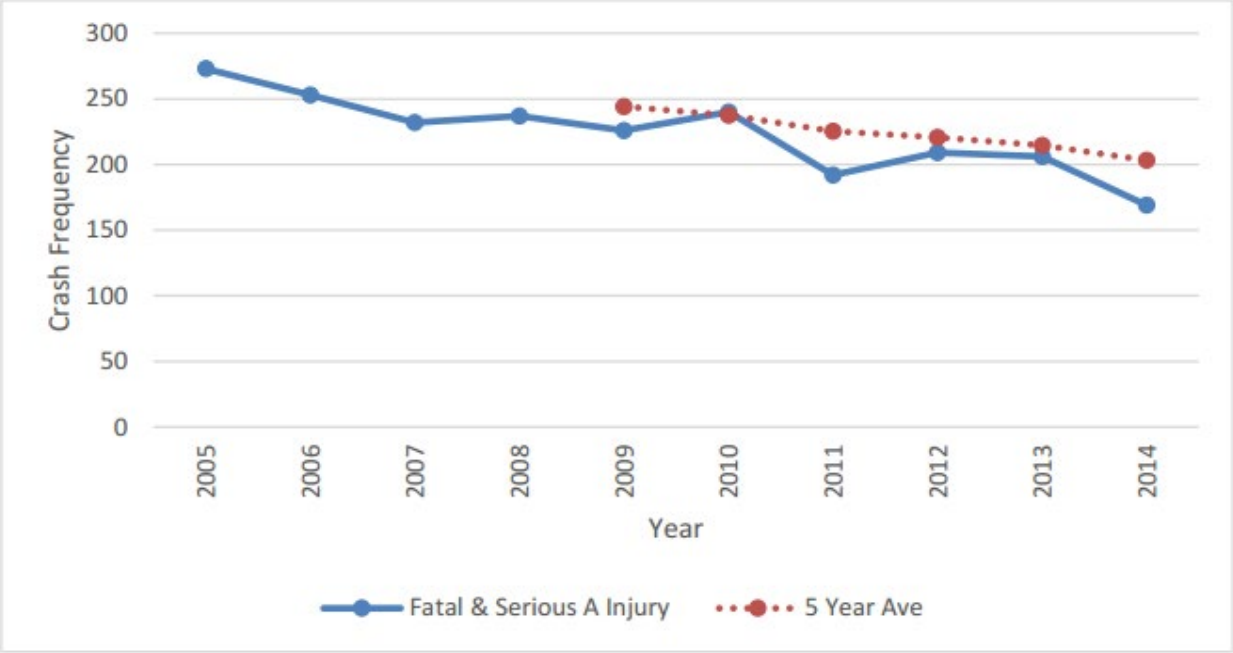
2017 Regional Transportation Safety Plan

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.

Figure 5-3
2017 Regional Safety Plan's Region's Historic Fatal & 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.

Chapter 7
Socio-Economic Conditions

For MDOT to develop the Travel Demand Forecast Model (the model) for the Jackson MPO roadway network, which estimates traffic volumes and travel behavior in the area, an analysis of the 2018 land use and socio-economic conditions, as well as a 2050 projection for these characteristics, was used. The 2050 socio-economic 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 for the base year 2018 and the horizon year 2050 have been distributed to the 534 Traffic Analysis Zones (TAZs) that comprise the model area. TAZs are geographic areas (polygons) that divide a planning region into similar areas of land use and travel activity and act as a simplification of origin and destination points within the community. TAZs are different in each community and can change in size over time. TAZs are established to obtain a meaningful representation of traffic behavior. A map with the TAZ's for Jackson area is presented on the following page.

The base year SE data was obtained based on information from the 2018 American Community Survey (ACS) 5-Year Estimate and from the MDOT employment list which contains the number of employees, the sector, and the geolocation of businesses residing within the Jackson MPO. This "master list" of data is purchased by MDOT from two database sources: InfoGroup (a InfoUSA Company) and Hoovers (a Dunn-Bradstreet Company).

The SE data forecast for the model was obtained considering the recently released 2020 Census data and the Regional Economic Models, Incorporated, or REMI model as well as MDOT projections. Growth assumptions were also 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 for the base year and future years, including future year growth factors by TAZ, was provided to each governmental jurisdiction through memorandums, spreadsheets, and area-specific maps of the socio-economic data by analysis year for comment and review. After the review, the socio-economic data was adjusted where needed, sent for the approval of the JACTS Technical and Policy committees, and included in the model to develop base year and future year travel patterns.

Figure 7-1: Traffic Analysis Zones – Jackson County

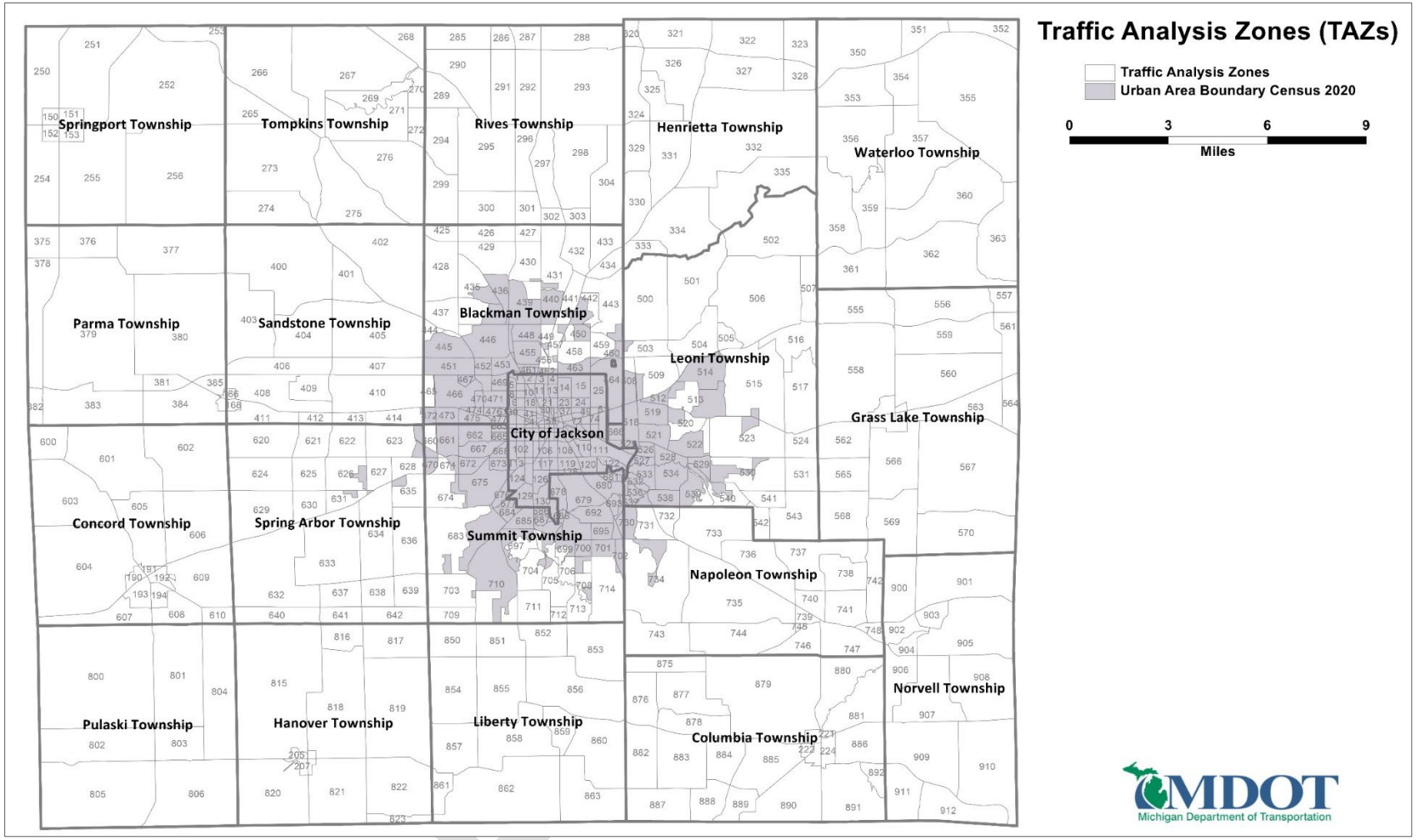
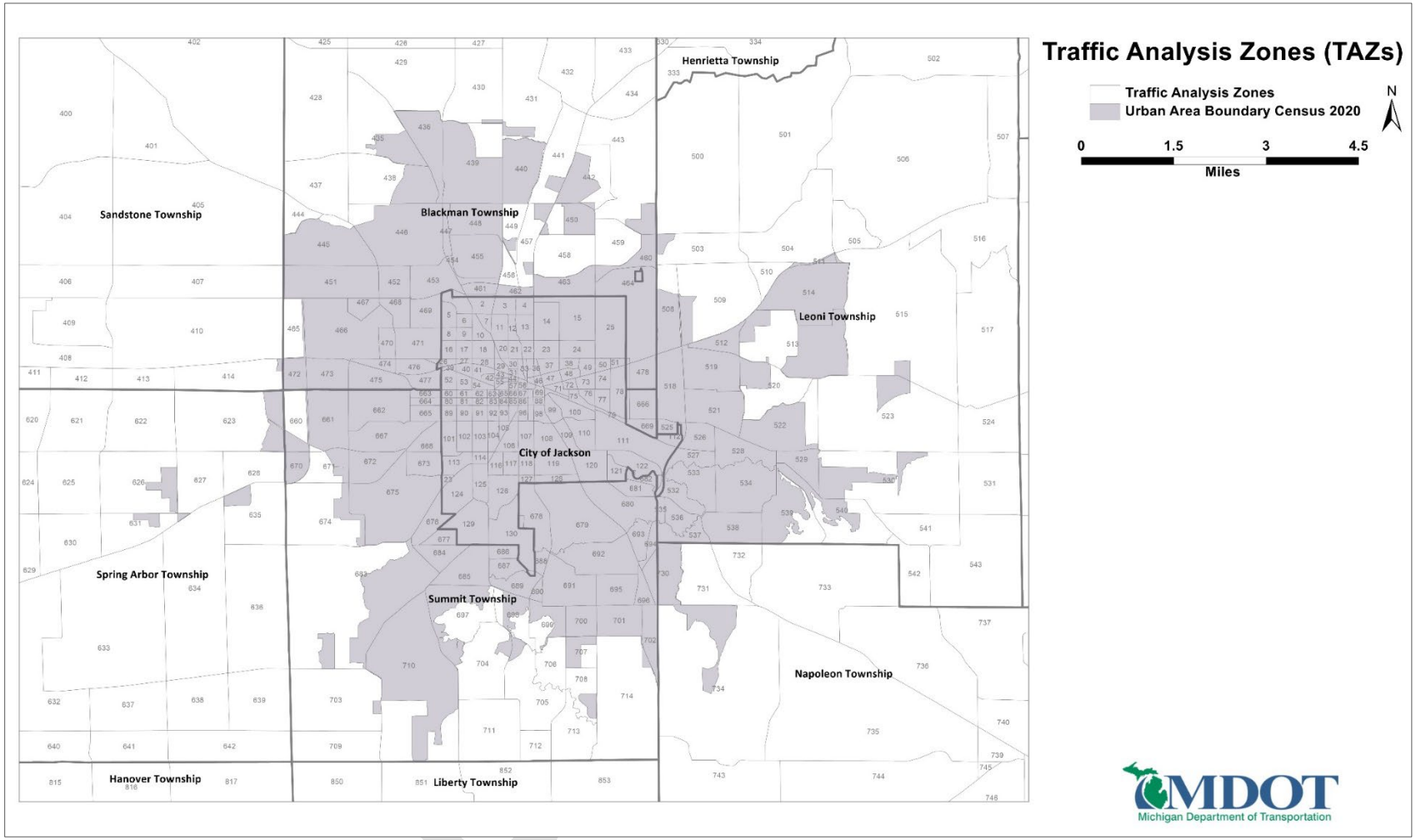


Figure 7-2: Traffic Analysis Zones – Jackson Urban Area



Population

The base year population for the plan was based on previous trends as depicted by the 2018 ACS Estimate. The population projection for 2050 considered the 2020 Census, the REMI forecast data, MDOT SE data projections, and inputs from the local community. The population projections were developed for all jurisdictions within the County and then broken down to the TAZ level.

Table 7-1: 2018 & 2050 Population Estimates and 2020 Census Population by Local Unit of Government

Local Government	2018	2020 Census	2050	% Change (2018-50)
Blackman Township	23,559	25,568	28,406	14.4%
Columbia Township [a]	7,427	7,393	7,872	6.0%
Concord Township [a]	2,556	2,755	2,833	10.8%
Grass Lake Township [a]	5,740	6,069	6,762	17.8%
Hanover Township [a]	3,791	3,662	3,824	0.9%
Henrietta Township	4,746	4,673	4,968	4.7%
City of Jackson	32,900	31,383	28,143	-14.5%
Leoni Township	13,700	13,847	14,217	3.8%
Liberty Township	2,971	3,059	3,336	12.3%
Napoleon Township	6,731	6,788	7,066	5.0%
Norvell Township	2,933	2,800	2,794	-4.7%
Parma Township [b]	3,259	3,205	3,417	4.8%
Pulaski Township	2,123	1,883	1,811	-14.7%
Rives Township	4,634	4,750	4,873	5.2%
Sandstone Township	3,436	3,390	3,685	7.2%
Spring Arbor Township	8,169	8,530	9,062	10.9%
Springport Township [a]	2,166	2,142	2,062	-4.8%
Summit Township	22,814	22,920	24,454	7.2%
Tompkins Township	2,715	2,618	2,680	-1.3%
Waterloo Township	2,943	2,931	2,916	-0.9%
Jackson County	**159,313**	**160,366**	**163,802**	**2.8%**

a Township population includes village residents.
b Parma Village residents included in the Parma Township Total

The approved data estimated for the 2018 base year for Jackson County indicated a population of 159,313, which is 0.66% smaller than the 2020 Census total population of 160,366 recently released. Based on the estimates provided by MDOT the Jackson County population is projected to continue to grow and reach a total of 163,802 which would represent an increase of 2.14% from the 2020 Census data.

Occupied Housing Units

Occupied housing unit numbers for the base year are based on the 2018 ACS estimate while the forecast numbers are based on REMI and MDOT projections as well as local agencies' comments and knowledge of recent developments in the area. Because of the high correlation between occupied housing units and population, the occupied housing

unit projections are also used to estimate where increases or decreases in the population may potentially occur inside of the model area.

Table 7-2: 2018 & 2050 Occupied Housing Units by Local Unit of Government

Local Government	2018	2020 Census	2050	% Change (2018-50)
Blackman Township	8,098	8,675	9,653	19.2%
Columbia Township [a]	3,018	3,191	3,585	18.8%
Concord Township [a]	958	1,062	1,104	15.2%
Grass Lake Township [a]	2,254	2,355	2,744	21.7%
Hanover Township [a]	1,448	1,425	1,490	2.9%
Henrietta Township	1,835	1,900	2,025	10.4%
City of Jackson	12,817	12,751	12,859	0.3%
Leoni Township	5,816	5,649	5,748	-1.2%
Liberty Township	1,202	1,236	1,383	15.1%
Napoleon Township	2,788	2,805	2,851	2.3%
Norvell Township	1,253	1,232	1,261	0.6%
Parma Township [b]	1,244	1,204	1,235	-0.7%
Pulaski Township	784	736	722	-7.9%
Rives Township	1,669	1,720	1,764	5.7%
Sandstone Township	1,269	1,297	1,464	15.4%
Spring Arbor Township	2,675	2,862	3,110	16.3%
Springport Township [a]	855	801	802	-6.2%
Summit Township	9,243	9,464	9,877	6.9%
Tompkins Township	1,127	1,025	1,137	0.9%
Waterloo Township	1,158	1,177	1,180	1.9%
Jackson County	**61,511**	**62,567**	**65,994**	**7.0%**

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 number of persons per household was 3.14, falling to 2.76 in 1980, 2.63 in 1990, 2.59 in 2000, and 2.53 in 2018. 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 reflected the national decline until 2010, falling from 3.23 in 1970 to 2.62 in 1990 and continuing to decline to 2.55 persons per household in 2000 and 2.48 persons per household in 2010. However, based on the 2020 Census this number was reverted to 2.56 persons per household, which is just 1% smaller than the 2.59 estimated by the approved 2018 population and occupied housing unit numbers. The average household size in Jackson County is projected to align with the national trends and see a slight decrease to approximately 2.48 persons per household by the year 2050. Michigan is expected to see an increase in employment over the next 30 years 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 which also create a demand for housing.

The 2018 model base year data estimates that there were 61,511 occupied housing units within the study area, which is above the 2010 number of 60,771 occupied housing units and below the 2020 Census number of 62,567 occupied housing units. By the year 2050, the projections estimate a total of 65,994 occupied housing units in Jackson County, which is an increase of 5.5% when compared to the 2020 Census numbers. 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 the MDOT employment list containing InfoGroup and Hoovers employment data, 2018 employment for Jackson County was approximately 74,311, with a breakdown of 63,398 in non-retail (manufacturing, service, government-related, and others) and 10,913 in retail jobs.

Table 7-3: 2018 & 2050 Employment Estimates by Local Unit of Government

Local Government	Retail 2018	Retail 2050	% Change (2018-50)	Non-Retail 2018	Non-Retail 2050	% Change (2018-50)	Total 2018	Total 2050	% Change (2018-50)
Blackman Township	4,461	4,485	0.5%	13,025	13,741	5.5%	17,486	18,227	4.2%
Columbia Township [a]	552	621	12.5%	2,255	2,524	11.9%	2,807	3,145	12.0%
Concord Township [a]	89	94	5.6%	849	923	8.7%	938	1,015	8.2%
Grass Lake Township [a]	186	186	0.0%	1,580	1,719	8.8%	1,766	1,905	7.9%
Hanover Township [a]	48	53	10.4%	696	765	9.9%	744	818	9.9%
Henrietta Township	68	69	1.5%	433	487	12.5%	501	556	11.0%
City of Jackson	3,335	3,513	5.3%	25,156	28,955	15.1%	28,491	32,468	14.0%
Leoni Township	729	762	4.5%	4,596	5,466	18.9%	5,325	6,229	17.0%
Liberty Township	66	67	1.5%	370	438	18.4%	436	505	15.8%
Napoleon Township	107	108	0.9%	1,516	1,656	9.2%	1,623	1,764	8.7%
Norvell Township	29	34	17.2%	207	247	19.3%	236	282	19.5%
Parma Township [b]	64	64	0.0%	508	596	17.3%	530	616	16.2%
Pulaski Township	9	9	0.0%	133	158	18.8%	142	167	17.6%
Rives Township	27	28	3.7%	462	556	20.3%	489	584	19.4%
Sandstone Township	79	80	1.3%	1,666	1,869	12.2%	1,745	1,949	11.7%
Spring Arbor Township	159	163	2.5%	1,888	2,043	8.2%	2,047	2,206	7.8%
Springport Township [a]	19	19	0.0%	433	459	6.0%	452	479	6.0%
Summit Township	796	852	7.0%	7,057	7,554	7.0%	7,853	8,406	7.0%
Tompkins Township	27	28	3.7%	174	223	28.2%	201	251	24.9%
Waterloo Township	63	65	3.2%	394	464	17.8%	457	528	15.5%
Jackson County	**10,913**	**11,300**	**3.5%**	**63,398**	**70,843**	**11.7%**	**74,311**	**82,145**	**10.5%**

a Township population includes village residents

b Parma Village residents included in the Parma Township

In the year 2050, the total labor force for the study area is projected to increase by 10.5% to a total of 82,145 workers with 70,843 workers in non-retail and 11,300 in retail jobs. The study area employment by type was applied to the 534 TAZs based on assumptions of growth, stabilization, and current trends for each employment sector.

Employment 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 growth 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 Jackson 2050 LRTP, summarized in Table 7-4, will be re-evaluated periodically to address changes in the population, occupied housing units, and employment that may occur.

Table 7-4: 2018 & 2050 Jackson County Totals

Year	Total Population	Occupied Households	Employment		
			Retail	Non-Retail	Total
2018	159,313	61,511	10,913	63,398	74,311
2050	163,802	65,994	11300	70,843	82,145

Chapter 8
Travel Demand Forecasting & Modeling

The Travel Demand Forecast Model (TDFM) 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, 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 on the dissemination and distribution of model input and output data for review, comment, and subsequent approval.

Travel Demand Forecast Models are used to identify and evaluate the capacity demands of a region’s federal-aid road network. Identification of roadway capacity deficiencies and analysis of the system as a whole, for the base year through and up to the horizon year of the plan in order to determine where future congestion is projected to occur, is vital in the development of the plan.

The TDFM results are useful in aiding the decision-making process. The identification and analysis of congested corridors and links are intended to serve as the basis for forming decisions regarding system improvement, expansion, or for other roadway capacity changes. However, in essence, the roadway congestion analysis, and the plan (prepared by the MPO with input from the MDOT) are "snapshots in time, “reflecting the conditions and trends at the time of development. As economic conditions, transportation system trends, financial outlooks, and land use environments change, it is important that the plan be updated to reflect and account for these changes. The plan, following federal laws and regulations, is reevaluated and/or updated every five years to reassess the travel demands on the federal-aid transportation system. Along with the plan update, the TDFM is also redeveloped or updated to include the changes associated with the new plan. Socio-economic trends and forecasts are also reexamined, which alters travel behavior and demand on the federal-aid road network and may potentially change the strategies of the Jackson MPO.

This chapter describes the base, interim, and horizon years Travel Demand Forecast Model development process for the 2050 LRTP.

Model Process Description

Travel demand forecast models (TDFM) are computer simulations of current and future traffic conditions. The Jackson TDFM is a regional-level transportation planning model, developed by MDOT using the TransCAD Transportation Planning Software Package, provided by Caliper, and focusing on long-term transportation planning concerns and regional travel characteristics. Model results provide road link traffic volumes (known in the modeling tool as “traffic flow”) for AM Peak (7:00am – 9:00am), Mid-Day (9:00am – 3:00pm), PM Peak (3:00pm - 6:00pm), and Off Peak (6:00pm – 7:00am) periods as well

as for the 24-hour time period. The traffic flows are then compared to the capacity allowance of the road links providing a volume-over-capacity ratio for each period which is used to calculate the level of relative congestion on the road links.

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

Step 1. Data Development, Collection, and Organization

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

Step 2. Trip Generation

Determines who is making trips, how many trips are being made, and why (for what purpose) are trips being made. It does this by calculating the number of trips produced in or attracted to a TAZ by trip purpose based on land use, household demographics, employment, and other SE-data characteristics.

Step 3. Trip Distribution

Determines where people are making trips by calculating how much travel occurs between TAZs, based on the "attractiveness" of the other zones.

Step 4. Mode Choice and Time of Day

Determines how people are making trips (by what mode), and when they are making the trips (what time of day), by allocating trips across the model network into modes of travel such as auto, non-motorized, and transit. After the split into modes, the auto trips are distributed into one of the time periods.

Step 5. Traffic Assignment

Determines what specific routes people are making for their trips based on the shortest travel time, by assigning auto trips between zones to a route/path in the transportation system.

Step 6. Model Calibration/Validation

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

Step 7. System Analysis and Model Applications

Involves the use of the calibrated and validated model in the development of the metropolitan transportation plan, Air Quality conformity analysis, project identification and prioritization, and/or impact analysis.

The following sections present detailed information on how these steps were performed in the Jackson Travel Demand Model development.

Data Development, Collection, and Organization

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

The model road network includes various roadway attributes and generally contains links of the "collector" functional classification and higher. “Local” roads are included in the model network only to maintain continuity, for connectivity purposes, or if these links are regionally significant.

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

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

Both TAZ and network files contain information required to run the model and were developed for the base year 2018, then for the interim years 2025, 2030, 2040, and the horizon year 2050. After the development, TAZ and network layers were provided to the Jackson MPO staff and Jackson Technical Advisory Committee members for review and comment.

Model Road Network

The model road network consists primarily of the federal-aid road system within Jackson MPO and was obtained from the Michigan Roads and Highways network. Aerial images, site visits, and old Jackson model networks were also used in the process when needed.

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

The Jackson 2018 calibrated/validated network includes approximately 950 miles of roadway network (excluding centroid connectors) with the classifications in Table 8-1:

Table 8-1: TDFM Network Mile Summary

	CBD	Urban	Suburban	Fringe	Rural	**Total**
Freeway	0	7	30	26	38	**101**
Freeway-to-Freeway Ramp	0	0	4	0	0	**4**
Freeway On-Ramp	0	2	3	2	3	**10**

Freeway Off Ramp	0	2	3	2	3	**10**
Principal Arterial CLTL	2	8	4	1	2	**17**
Principal Arterial	0	8	15	2	5	**30**
One-way Minor Arterial	0	0	2	0	0	**2**
Minor Arterial with CLTL	0	6	3	1	0	**10**
Minor Arterial	0	13	41	41	45	**140**
One-way Collector	0	1	0	0	0	**1**
Collector with CLTL	0	1	0	0	0	**1**
Collector	0	13	71	181	244	**509**
Local Road with CLTL	0	0	0	0	0	**0**
Local Road	1	14	26	48	26	**115**
Total	**3**	**75**	**202**	**304**	**366**	**950**

The base network plus completed projects between 2018 and 2022, as well as the committed projects on the Transportation Improvement Plan (TIP), were accounted for the development of interim and future-year model road networks.

Traffic Analysis Zones (TAZs)

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

The 2018 TAZ structure development started by using the TAZ structure from the most recent TDFM, which was used in the 2045 LRTP. Adjustments to the structure were made based on previous recommendations, changes in socio-economic conditions, and to account for changes in traffic loading to the model road network. The 2050 LRTP TDFM has a total of 581 TAZs (534 within Jackson County and 47 of which are used as External Stations containing information about trips coming from outside of the model area).

Socio-Economic Data

Socio-economic data (SE-data) is comprised of demographic and employment information. The SE datasets were collected and processed for the model base year of 2018, and then forecasted out to the LRTP horizon year of 2050.

Other than the population, households, and employment data described in Chapter 7 – Socio-Economic Conditions, characteristics from the 2018 American Community Survey (ACS) 5-Year Estimate as the number of workers per household, the number of K12 students per household, vehicle availability, income levels, among others were used in the development of the model. Enrolment data were also used in the model and were collected from the Michigan School Data website.

As mentioned in chapter 7, after the initial collection of the base year SE data and the forecast SE data development, a thorough review by Jackson MPO staff and Jackson Technical Advisory Committee were conducted. Once reviewed, changes were incorporated into the population, occupied housing units, and employment dataset, and then formally provided to the various MPO committees for approval. Jackson MPO

committees approved the base year SE-data and the future year forecast SE-data for inclusion into the TDFM respectively in August 2021 and September 2022.

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

Trip Generation

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

Several Trip Generation methods exist, each having its own strengths and weaknesses. In this model, cross-classification methods were used to develop the trip productions. Cross-classification is used to combine two different data variables, such as household size and household income for example, to develop the zonal trip production rates. Trip attractions for this model used a simple regression equation. Both, trip production rates and trip attraction equations for each trip purpose of Jackson model were developed by MDOT Statewide and Urban Travel Analysis Section based on the most recent household travel survey data available – the 2015 *Comprehensive Household Travel Data Collection Program / MI Travel Counts III* (MITC3).

After calculated, trip productions and trip attractions were balanced so that the total productions and attractions were equal for the entire model area which results in each trip produced being attracted somewhere.

The methods described above apply to person trips that are generated for TAZs that are within the model area, called internal trips. Trips that originate or end outside the model area are called external trips. External trips that originate inside the model area and travel outside the model area are identified as “internal to external” (I-E) trips, and trips from outside the model area (external) into the model area are referred to as “external to internal” (E-I) trips. Trips that pass through the model area without stopping are called “external to external” (E-E) trips. External travel is originally provided from the Michigan Statewide model. The information is then further processed and combined with traffic count volumes to develop an estimate of the number of E-I, I-E, and E-E trips for the model area.

Person trips calculated during the trip generation step include Non-Motorized (NM) trips. However, NM trips are relatively minor for this model area when compared to the total amount of trips being generated in the model area, therefore NM trips were not distributed, nor assigned to the road network, but simply taken out of the total person trips being produced. Non-motorized factors for each trip purpose were also developed by MDOT Statewide and Urban Travel Analysis Section based on MITC3.

Commercial vehicle trips are also calculated during the trip generation step. Internal-Internal and Internal-External commercial vehicle production and attractions are based on employment numbers by sector and are obtained using regression equations. After

calculated, production and attraction commercial vehicle trips are also balanced to guarantee that every I-I and I-E commercial vehicle trip produced is attracted somewhere. External – External commercial vehicle trips are also calculated based on information from the Michigan Statewide model combined with traffic count volumes.

The output of the Trip Generation step is a balanced trip table containing passenger car trips for all trip purposes and commercial vehicle trips, which is used as one of the inputs for the next step of the traditional four-step TDFM, Trip Distribution.

Trip Distribution

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

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

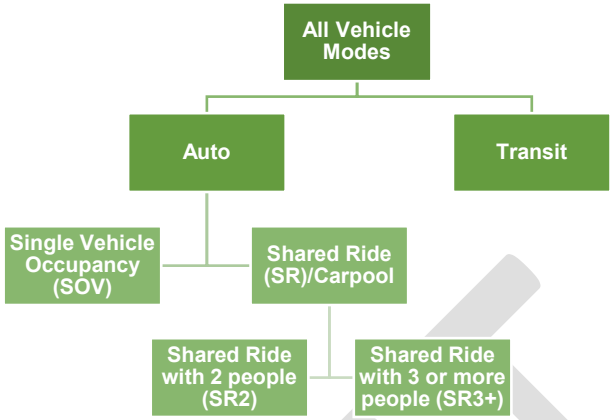
The gravity model assumes that a destination zone attracts trips based on the activity in that zone (number of employees and/or households) and the proximity to the zone of origin. Using the gravity model, trips produced in one zone are "distributed" to all other zones. The gravity model is calibrated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

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

Mode Choice and Time of Day

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

Figure 8-1: Motorized Modes



Transit trips, different than auto trips, are not assigned to the TDFM road network due to the complex nature of the trip interactions and socio-economic conditions related to 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 result of the mode choice component is a series of person-trip tables by vehicular mode and trip purpose for each TAZ Origin-Destination pair.

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

Mode Choice, along with auto occupancy and Time-of-Day modeling, factors, and parameters are based on data provided by the *2015 Comprehensive Household Travel Data Collection Program/MI Travel Counts III* program conducted by MDOT.

Traffic Assignment

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

Different methods and supporting functions can be used in the traffic assignment step. The Jackson model uses the bi-conjugate Frank-Wolfe equilibrium assignment method which takes advantage of multi-threaded processors and converges relatively quickly when compared to other available equilibrium assignment methods.

This assignment method considers the volume as well as the capacity of the road links. During this process, 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 and if the delay is significant, an alternative road may be used to accommodate that traffic. This continues until the system reaches equilibrium.

After the first iteration of the traffic assignment, the model starts a processed call feedback loop. In this process, the congested travel speeds resulting from the traffic assignment are used to re-compute zone-to-zone travel times. At this point, a comparison is made between the initial and the updated zone-to-zone travel times. If the travel times are not reasonably similar, the updated travel times are then used to rerun trip distribution and the subsequent model steps. This process is repeated iteratively until a convergence criterion or iteration limit is met.

When the feedback convergence criterion is met the Traffic Assignment step results in 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 which is considered the final output of a TDFM.

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

Notice that the TDFMs used for LRTP purposes do not include human-related factors when assigning trips, such as road geometrics (hills, tight curves, etc.), road conditions, and other considerations.

Model Calibration/Validation

The most important, and ultimate goal of the TDFM is to ensure that the base year assigned volumes are reflecting the observed base year conditions. To achieve this goal the TDFM base year assigned volumes need to be within a reasonable level of the traffic counts collected around the model base year. Traffic counts on the federal-aid road system from all respective maintaining road agencies within the MPO are crucial to perform these comparisons and without this information, the effectiveness of the model is limited. For the 2050 LRTP TDFM calibration process, traffic counts provided by MDOT Transportation Data Management System (TDMS) and local road agencies within Jackson MPO were used.

Very often the preliminary model results don’t meet the established criteria and model adjustments are needed. These model adjustments are called model calibration and consist of returning to a previous step in the modeling process to calibrate inputs and/or outputs data when it is necessary. Model calibration is applied for each step of the TDFM development process and for the entire model system to adjust the model to achieve model outputs that simulate (within established validation criteria) the actual base year traffic counts. When the calibration is completed, the base year model is considered validated or statistically acceptable.

Application of the Validated Travel Demand Forecast Model

Once the model is validated it can be used (confidently) to forecast “future travel demand”. In this the base year socio-economic data is substituted by forecasted socio-economic data and the base road network is substituted by a road network accounting for changes finalized or committed on the TIP. Then the trip generation, trip distribution, and traffic assignment can be repeated, and future trips can be simulated as part of the planning process. The assumption is that model formulas and relations developed for the base year model structure remain constant over time, as to provide an unbiased forecast. For the 2050 Long Range Transportation Plan, five scenarios were developed: Base year 2018 (validated), Interim year 2025, Interim year 2030, Interim year 2040, and Horizon year 2050. The model results for the base year and the horizon year scenarios are discussed in more detail in Chapter 9: Roadway Congestion, Congested Links, and Recommended Projects.

Different scenarios can be prepared & tested anytime for any significant developments of housing or employment, or for changes to the transportation network as needed. The Jackson TDFM can also be used for additional transportation system analysis outside of the planning process, which includes, but is not limited, to the following:

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

Chapter 12
Equity and Environmental Justice

The roadway and transit projects identified and programmed in the JACTS 2050 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 are:

- 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.
- 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 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:

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

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 2021 American Community Survey Data, the countywide averages for the minority populations are as follows: African American 8.2%, Hispanic 3.9%, Asian and Pacific Islander 0.6%, and American Indian and Alaskan Natives 0.004%.

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 2021 American Community Survey data, 11.2% of Jackson County's population falls below the national poverty threshold.

Figures 12-1 – 12-5 on the next several pages show where these populations are located within the Jackson MPO overlapped with the capacity improvement projects mentioned in Chapter 9.

Figure 12-1: Environmental Justice – Black and African American

Figure 12-2: Environmental Justice – Asian and Pacific Islander

Figure 12-3: Environmental Justice – American Indian or Alaska Native

Figure 12-4: Environmental Justice – Hispanic or Latino/a

Figure 12-5: Environmental Justice – Impoverished Individuals

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 Rd to Emerson Rd~~

~~2) Reconstruction and realignment of the Cooper St interchange at I-94~~

~~3) Reconstruction of I-94 from M-60 to Sargent Rd~~

~~4) Reconstruction of I-94 interchange at Elm Ave~~

~~5) Realignment and bridge structure replacement over the Jackson and Lansing Railroad (JAIL) 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 St interchange and the reconstruction/realignment project began in 2012. The final design of the Cooper St 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.

Figure 12-6: Environmental Justice and JATA Routes – Blacks and African Americans

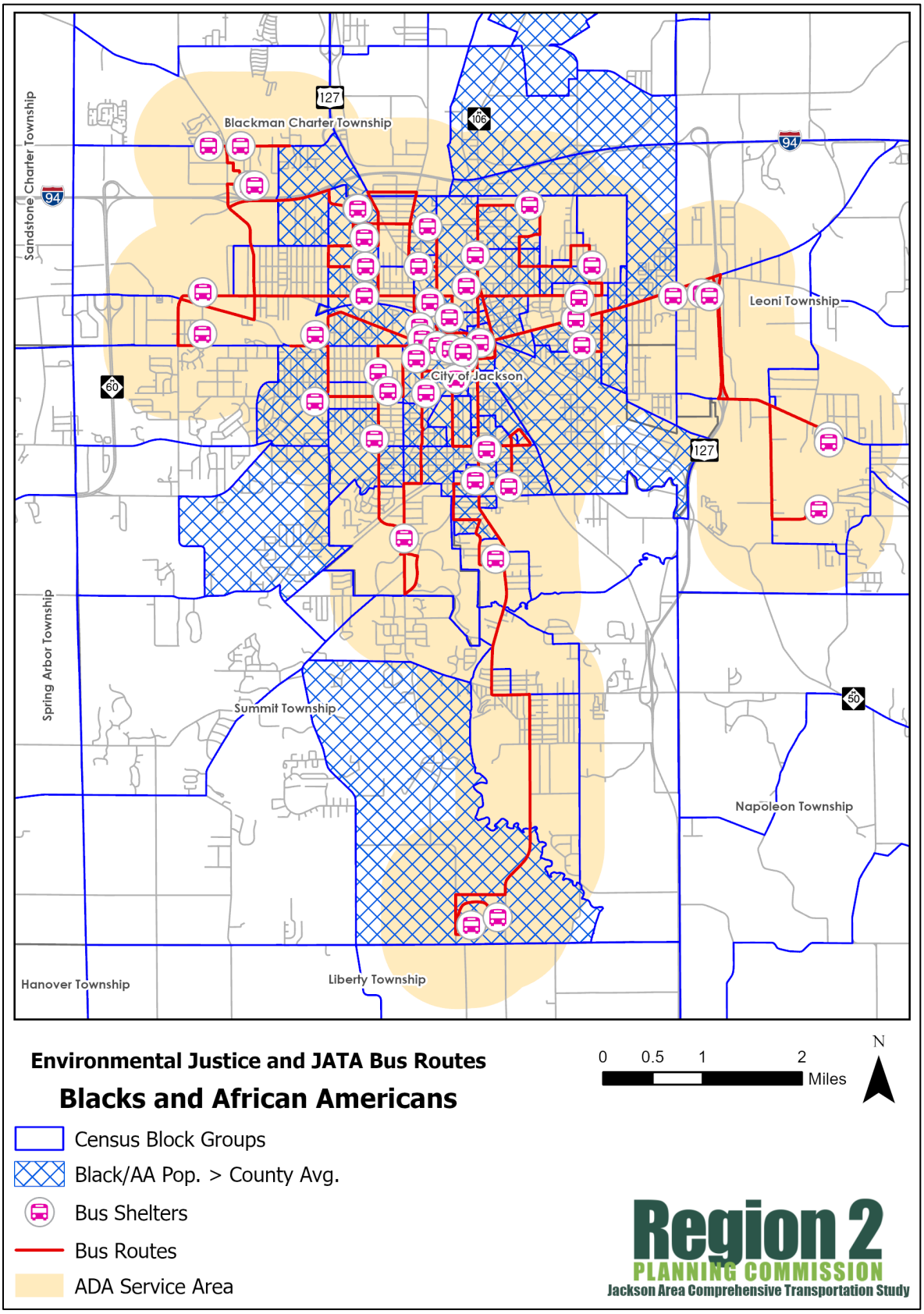


Figure 12-7: Environmental Justice and JATA Routes – Asians and Pacific Islanders

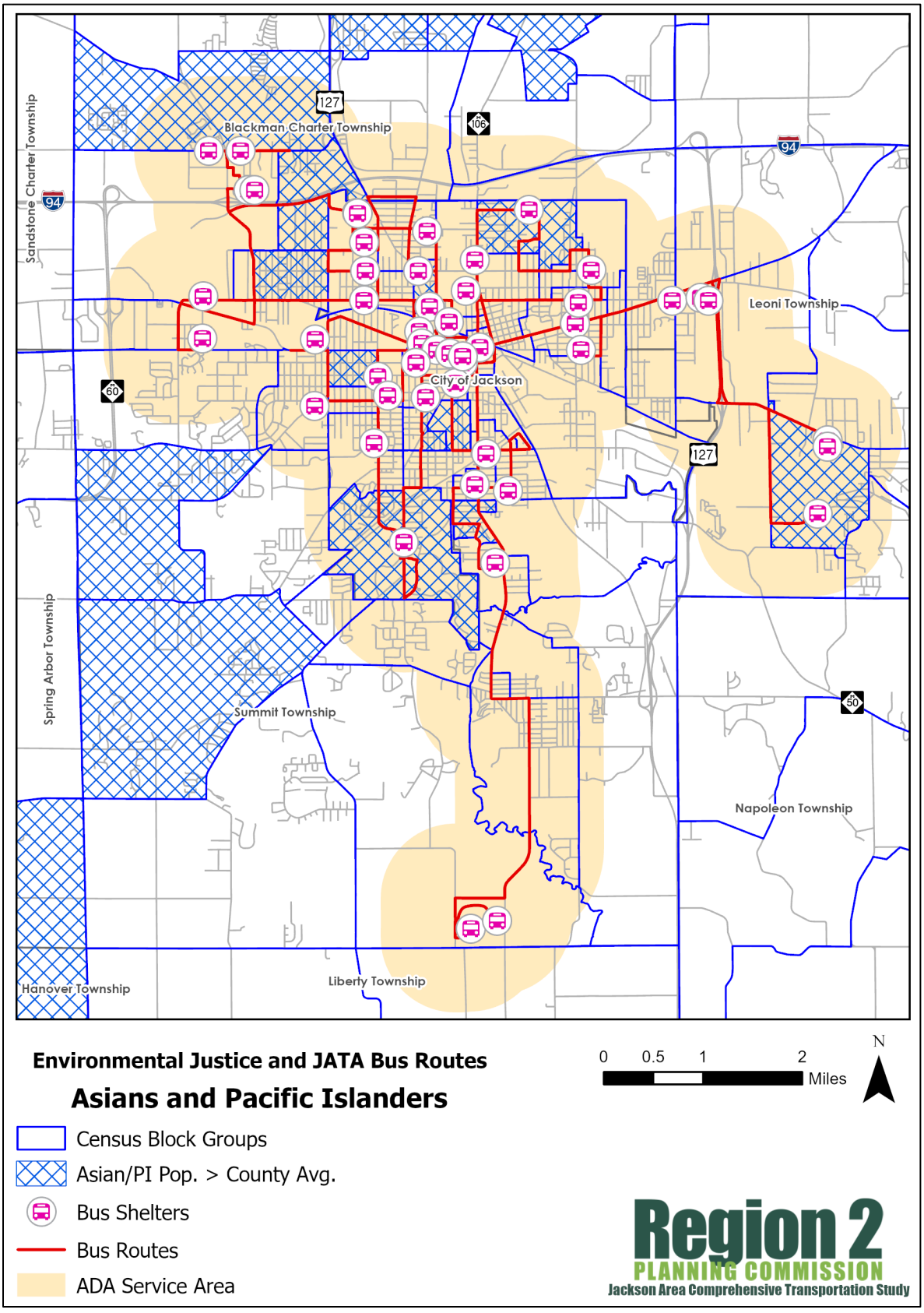


Figure 12-8: Environmental Justice and JATA Routes – American Indians and Alaskan Natives

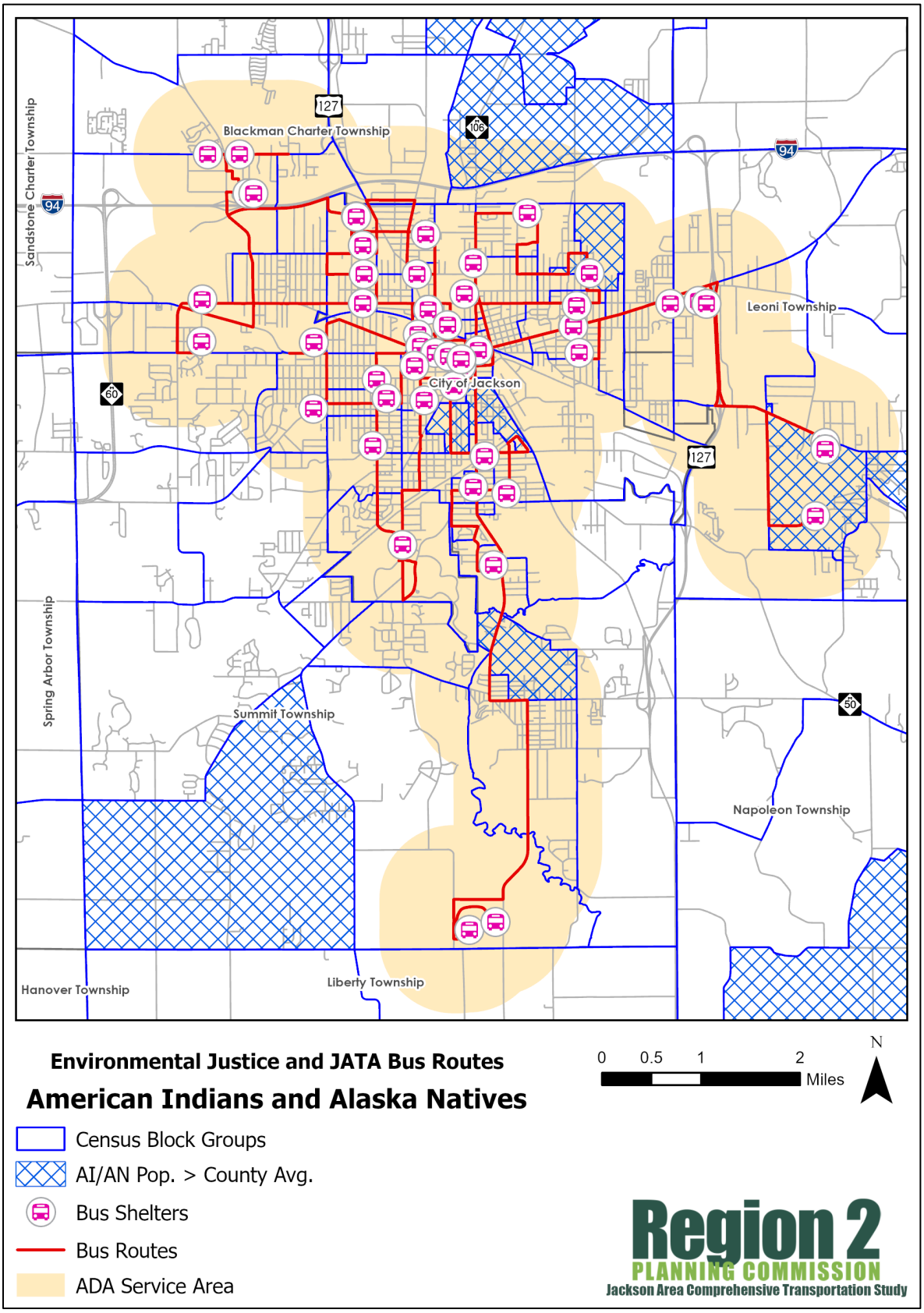


Figure 12-9: Environmental Justice and JATA Routes – Hispanic and Latino/a

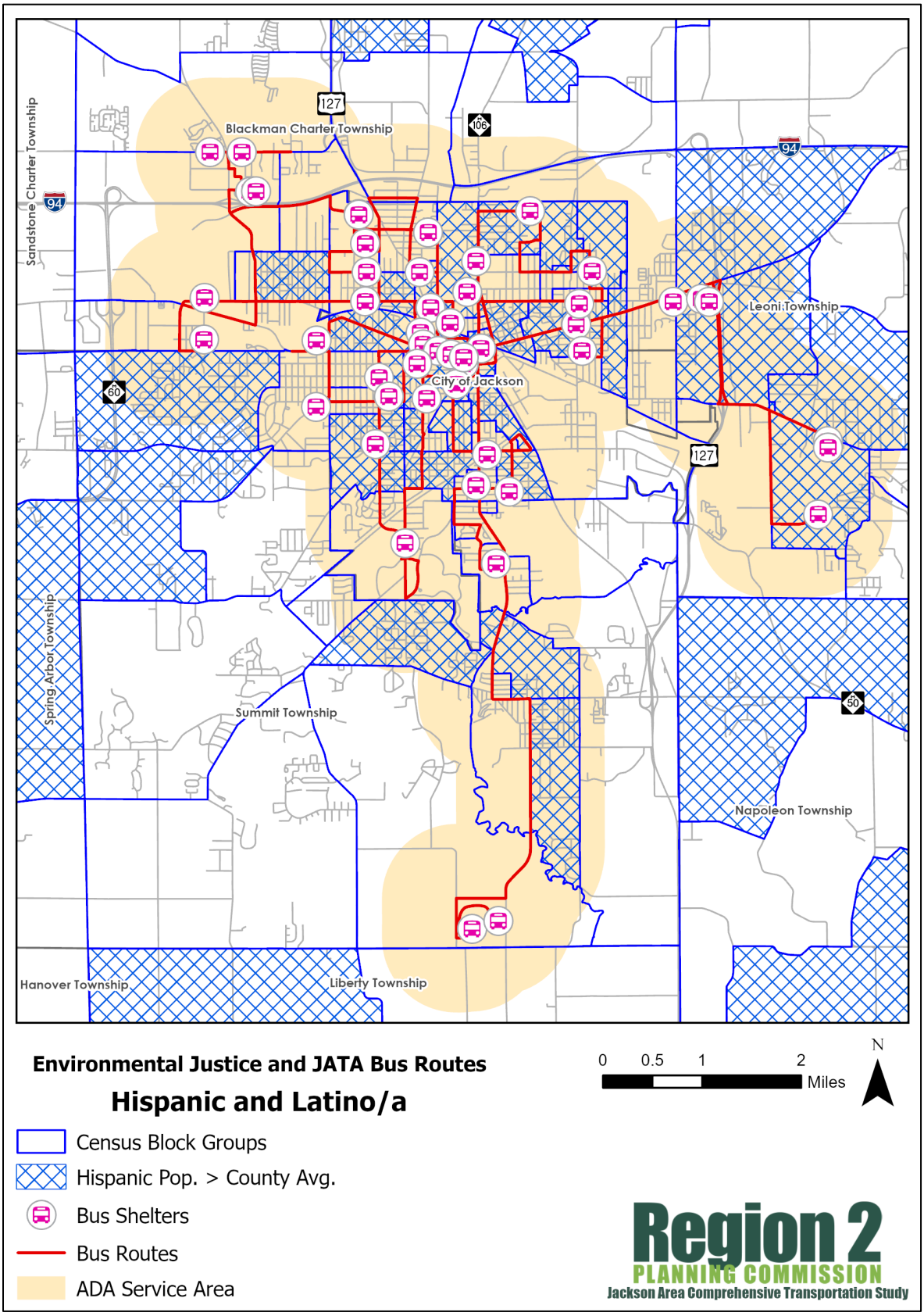
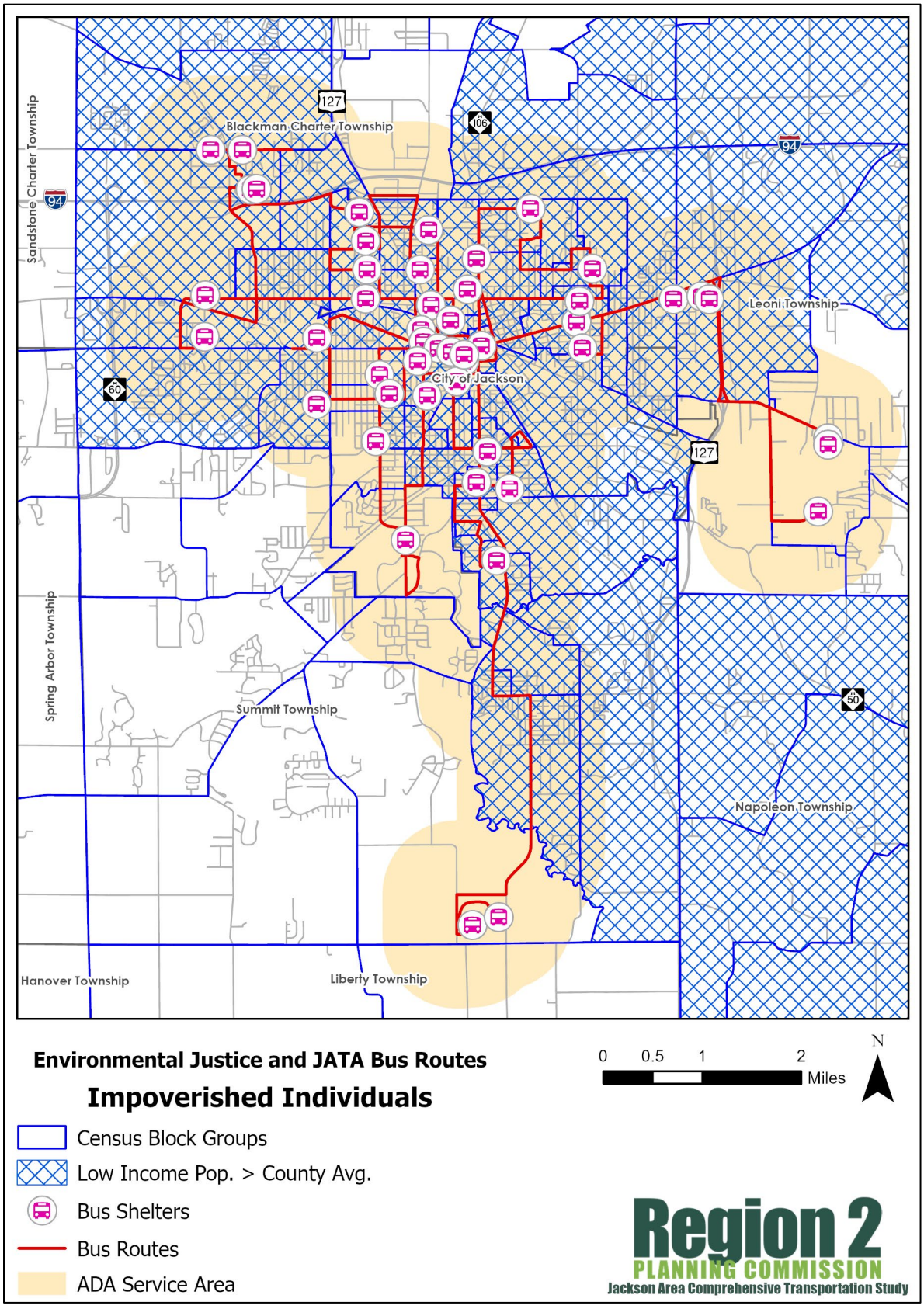


Figure 12-10: Environmental Justice and JATA Routes – Impoverished Individuals



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

BRADLEY C. WIEFERICH, P.E.
ACTING DIRECTOR

April 13, 2023

Region 2 Planning Commission
120 W. Michigan Ave.
Jackson MI 49201

Subject: Post 2020 United States Adjusted Census Urban Boundary Update

Following each decennial U.S. Census, federal rules allow the Michigan Department of Transportation (MDOT), in cooperation with partners, the option to adjust the United States Census Urban Area (CUA) boundaries.

This letter is to inform you that your agency will be invited to attend an in-person workshop(s) to create the Adjusted Census Urban Boundaries (ACUBs). ACUBs are important to transportation agencies for the following reasons:

- ACUBs may be used to determine eligibility for certain Title 23 funding categories (e.g., Surface Transportation Program).
- ACUBs may have a greater density of federal aid roads compared to rural as described by using the National Functional Classification system.
- For county transportation agencies, the location of this boundary affects funding distributions from the Michigan Transportation Fund.

The planned timeline for the ACUB process is:

• US Census releases the 2020 Urban Areas	December 29, 2022
• Statewide ACUB review materials distributed	April 2023
• MDOT ACUB in-person Workshops	April - October 2023
• Proposed ACUB's sent to Governor/FHWA	December 2023

For your information, enclosed is an ACUB information document and the resolution document. Urban Area maps of the 2020 Census Urban Areas can be accessed digitally by following the instructions within the included insert.

You will be contacted by David Fairchild, Transportation Planner, to schedule your ACUB workshop. David's contact information is FairchildD1@Michigan.gov or 517-290-8996.

Sincerely,

Todd White, Director
Bureau of Transportation Planning

Enclosure

cc: David Fairchild, MDOT

bcc: Todd White, MDOT
Jean Ruestman, MDOT
Wendi Burton, MDOT
Craig Newell, MDOT
Jeff Franklin, MDOT
Don Mayle, MDOT
Karen Faussett, MDOT
Niles Annelin, MDOT
Richard Bayus, MDOT
Andy Pickard, FHWA
Christina Nicholaides, FHWA
Andrew Siebold, FHWA
Mark Christensen, CRA
Daniel P. Gilmartin, MML

MDOT ACUB PROCEDURE DOCUMENT

PURPOSE: At MDOT, this is the resulting area from adjusting the U.S. Census decennial urban areas over 5,000 populations outward in a cooperative process by transportation agencies following federal guidelines. The roads, cities, and villages within or on the ACUB border are urban, the roads, cities, and villages outside the ACUB are rural.

PROCESS: The process of adjusting the Census Urban Areas is a cooperative process where local transportation agencies will be invited by MDOT to collectively review and adjust the Census Urban Areas outward in workshops held throughout the state. Agencies that do not attend the workshops may not have a chance to share their input.

Until the proposed 2020 ACUB boundaries are approved by the Federal Highway Administration (FHWA) and entered within the MDOT databases in 2025, the 2010 ACUB's will continue to be in effect. The U.S. census urban areas are only used as a base for the ACUB. The ACUB determines which roads have rural or urban road designation. The ACUB is for transportation funding purposes only, it is not used for land use designation.

Adjusting the ACUB's does not affect the population numbers or the federal metropolitan planning (PL) funding levels that are available to local agencies.

The ACUB area does affect the Act 51 county urban distribution. Adding an ACUB does not increase or decrease the total Act 51 urban funding but may affect the distribution percentages among the county's Act 51 urban funding. Once the ACUB's are FHWA approved, they will be shared with counties, and the counties will implement the new urban mileage into the normal Act 51 certification map process during 2025.

If your agency was removed or deleted from the U.S. Census Urban Areas, MDOT does not have any recourse to change this. MDOT and local transportation agencies must follow the FHWA guidelines and Urban Area (UA's) released by U.S. Census. Your agency would have to directly contact and work with the U.S. Census Bureau to contest the UA determination.

Keep the adjustment process simple. Smoothing is the main criteria for the adjustment process, Smoothing creates a simpler urban area shape. The goal is to prevent a road from switching back and forth between rural and urban federal funding sources and avoid confusion from irregular boundaries. The old ACUB may be used as a base for the 2020 proposed ACUB's except where the new census urban areas extend outside the old ACUB.

The new ACUB must include all of the UA. Where modifications are proposed to the old ACUB, ask what changes occurred in the area since the last Census? Does this justify an increase in urban? Are their old ACUB areas that no longer smooth the area or do not act as urban? Areas can be removed or added to the old ACUB to create the new proposed ACUB.

Agencies in attendance are encouraged to provide input to additions, deletions, or no change. After local agency input is provided, if disagreements arise, the boundary decision is up to the MDOT ACUB coordinator. If necessary, FHWA may be called in to act as an arbitrator as a last resort. Signature of the resolution document shows that local officials were offered to be part of the process and will accept the proposed ACUB.

Ideally, proposed ACUB's can be determined in the field from data shown on maps. They should follow jurisdictional and geographical features.

In cases where a single UA extends across state borders, the contiguous states are encouraged to agree on the proposed ACUB at the state line and avoid irregularities.

Planned Timeline:

U.S. Census releases the 2020 Urban Areas	December 29, 2022
Statewide ACUB review materials sent out	April 2023
MDOT ACUB Workshops	April – October 2023
Proposed ACUB's sent to Governor/FHWA	December 2023

Resources:

Included within this mailing are maps. They show the current ACUB and the 2020 U.S. Census Urban Areas. Review these maps, materials, and coordinate with the MDOT ACUB Coordinator to schedule a workshop to adjust the urban areas and create the relevant proposed ACUBs.

As a resource, and to aid in communicating Proposed ACUB adjustments, MDOT created a website that will display data submitted to the Proposed ACUB process. The website may be accessed through the MDOT federal-aid highways home page:

https://www.michigan.gov/mdot/programs/highway-programs/nfc

Or directly at:
https://mdot.maps.arcgis.com/apps/webappviewer/index.html?id=3eafa64de17049989b6968f0faa8e191

Related sections from United States Code Title 23 USC and the Code of Federal Regulations

Title 23 USC 101 Definitions and Declaration of Policy

(a) Definitions. – In this title, the following definitions apply.

(35)Urban area.-The term "urban area" means an urbanized area or, in the case of an urbanized area encompassing more than one State, that part of the urbanized area in each such State, or urban place as designated by the Bureau of the Census having a population of 5,000 or more and not within any urbanized area, within boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary. Such boundaries shall encompass, at a minimum, the entire urban place designated by the Bureau of the Census, except in the case of cities in the State of Maine and in the State of New Hampshire.

(36)Urbanized area.-The term "urbanized area" means an area with a population of 50,000 or more designated by the Bureau of the Census, within boundaries to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary. Such boundaries shall encompass, at a minimum, the entire urbanized area within a State as designated by the Bureau of the Census.

§ 470.105 Urban area boundaries and highway functional classification.

(a) ***Urban area boundaries.*** Routes on the Federal-aid highway systems may be designated in both rural and urban areas. Guidance for determining the boundaries of urbanized and nonurbanized urban areas is provided in the FHWA's Functional Classification Guidelines.[1]

§ 470.109 System procedures - General.

(a) The State transportation agency, in consultation with responsible local officials, shall have the responsibility for proposing to the Federal Highway Administration all official actions regarding the designation, or revision, of the Federal-aid highway systems.

(b) The routes of the Federal-aid highway systems shall be proposed by coordinated action of the State transportation agencies where the routes involve State-line connections.

(c) The designation of routes on the Federal-aid highway systems shall be in accordance with the planning process required, pursuant to the provisions at 23 U.S.C. 135, and, in urbanized areas, the provisions at 23 U.S.C. 134(a). The State shall cooperate with local and regional officials. In urbanized areas, the local officials shall act through the metropolitan planning organizations designated for such areas under 23 U.S.C. 134.

Census Urban Areas Outside of MPO Planning Boundaries

For Census Urban Areas outside of MPO planning boundaries, cooperation during the Census Urban Area Boundary Review is outlined within the Regional Planning Agency Work Plan.

FHWA created a website which provides information about the Census UA's, the FHWA urban adjustment process, MPO's and TMA's.

Census Urbanized Areas and MPO/TMA Designation - Census Issues - Planning - FHWA (dot.gov)

Special conditions not covered will be considered on an individual basis. MDOT will post information regarding Proposed ACUB meetings on the following website, and will send meeting invitations by email. Adjusted Census Urban Boundary (ACUB) Statewide Review (michigan.gov)

A "Proposed Adjusted Census Urban Boundary" web mapping application was developed by MDOT to provide a communication and information aid for Proposed ACUB submittals, and to serve as a resource to print additional maps.

https://mdot.maps.arcgis.com/apps/webappviewer/index.html?id=3eafa64de17049989b6968f0faa8e191

Link to 2020 U.S. Census Urban Area shape file:
https://www2.census.gov/geo/tiger/TIGER_RD18/LAYER/UAC20/

Link to MI 2020 U.S. Census Block shape file with population:
https://www2.census.gov/geo/tiger/TIGER_RD18/LAYER/TABBLOCK20/

Please sign the resolution indicating that you have cooperated in the ACUB update process. A sample resolution is enclosed. Signatures should represent all that apply: the Metropolitan Planning Organization (MPO), county transportation agencies, city or village officials, transit agencies, and Sovereign Tribal Governments as appropriate.

To view the list of the removed UA's, as well as the newly added UA's for 2020, please visit the following link: Adjusted Census Urban Boundary (ACUB) Statewide Review (michigan.gov)

Correspondence related to the 2020 U.S. Census Urban Area Review can be mailed to the address below:

David Fairchild, Transportation Planner
MDOT- Bureau of Planning, Mail code: B340
System Monitoring and Reporting Unit
425 W. Ottawa Street
Lansing, MI 48909

The "Proposed Adjusted Census Urban Boundary" website mapping application https://mdot.maps.arcgis.com/apps/webappviewer/index.html?id=3eafa64de17049989b6968f0faa8e191 will be updated to reflect your submitted Proposed ACUB areas. This will serve as your check to verify the Proposed ACUB has been recorded properly to be submitted to FHWA.

This material is subject to change as needed to conform to any new urban adjustment guidance that may be released by FHWA during this process. At time of this publishing, April 2023, MDOT's understanding is that this process and information is correct for U.S. Code (USC) Title 23 and the new authorization, the **Infrastructure, Investment and Jobs Act**.

Updates and information can be accessed from the MDOT Federal-Aid Highway & Urban Areas website at http://www.michigan.gov/mdot/0,1607,7-151-9622_11033_11155---,00.html & the FHWA site Census Urbanized Areas and MPO/TMS Designation http://www.fhwa.dot.gov/planning/census_issues/urbanized_areas_and_mpo_tma/

2020 Census Urban Area Maps

The 2020 Census Urban Area maps are available digitally on the Michigan Department of Transportation NFC – NHS – ACUB Web Application. A full-size map can be mailed upon request.

To view the digital version of your 2020 Census Urban Area map, go to the following website:

https://www.michigan.gov/mdot/programs/highway-programs/nfc/acub-statewide-review

Click on the **"NFC, NHS & ACUB Web Map"** or **"ACUB Mapping Application"** links, (figure 1) and then select the **"2020 Census Urban Areas for ACUB Review"** layer from the layer options within the app. (figure 2)

Figure 1

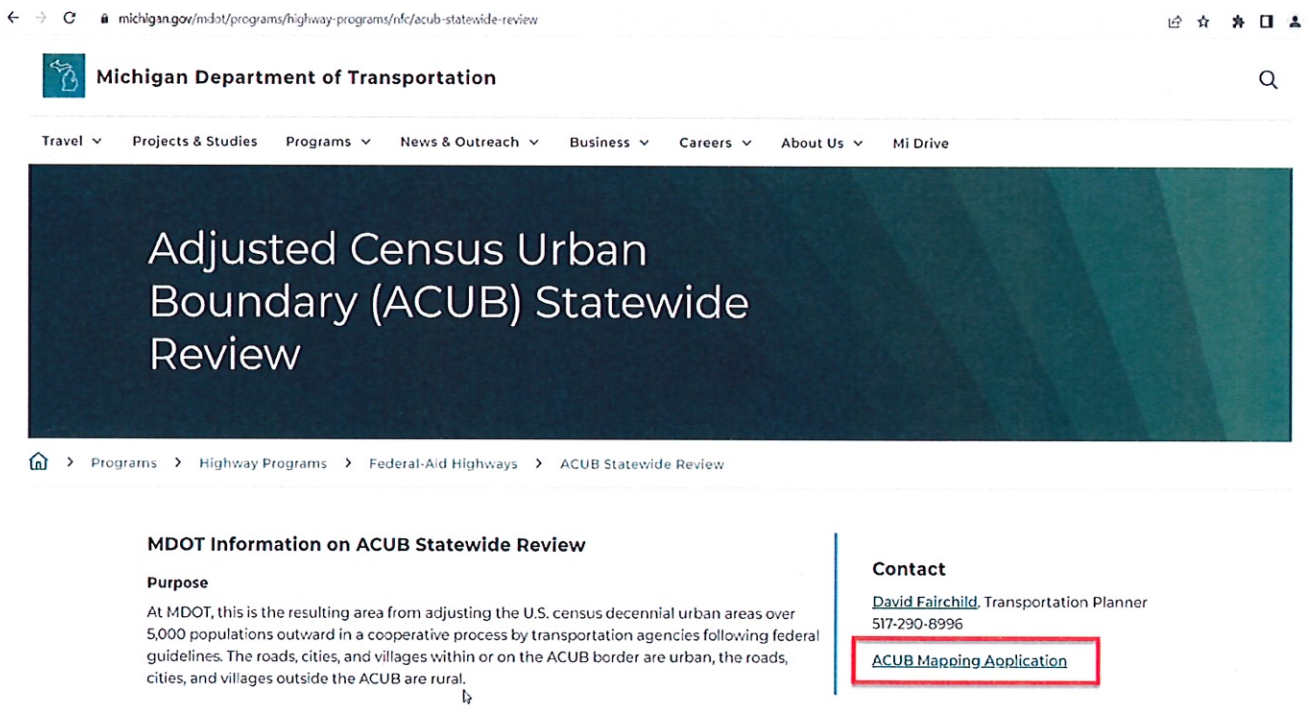
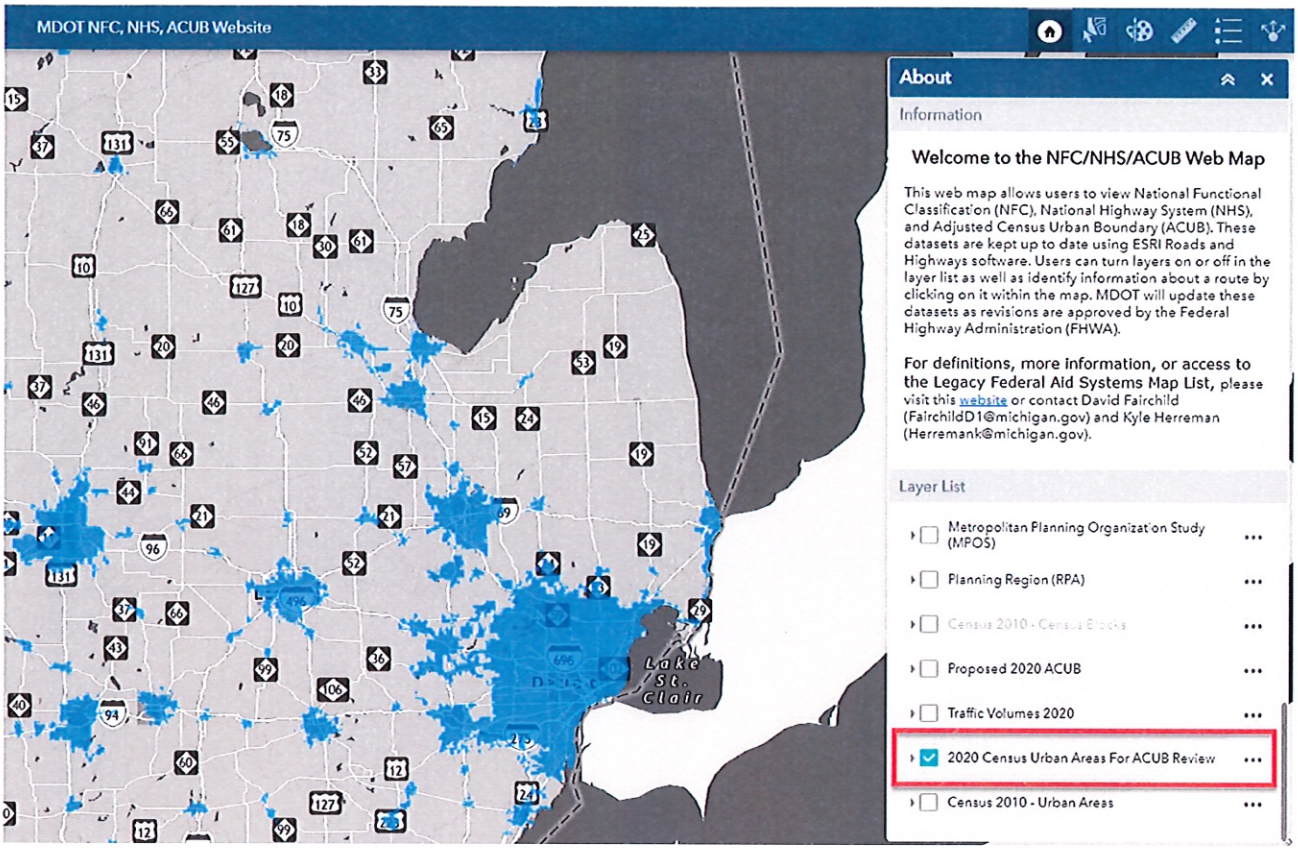


Figure 2


MDOT NFC, NHS, ACUB Website
About
Information
Welcome to the NFC/NHS/ACUB Web Map
This web map allows users to view National Functional Classification (NFC), National Highway System (NHS), and Adjusted Census Urban Boundary (ACUB). These datasets are kept up to date using ESRI Roads and Highways software. Users can turn layers on or off in the layer list as well as identify information about a route by clicking on it within the map. MDOT will update these datasets as revisions are approved by the Federal Highway Administration (FHWA).
For definitions, more information, or access to the Legacy Federal Aid Systems Map List, please visit this website or contact David Fairchild (FairchildD1@michigan.gov) and Kyle Herreman (Herremank@michigan.gov).
Layer List
Metropolitan Planning Organization Study (MPOS)
Planning Region (RPA)
Census 2010 - Census Blocks
Proposed 2020 ACUB
Traffic Volumes 2020
2020 Census Urban Areas For ACUB Review
Census 2010 - Urban Areas
Lake St. Clair

MICHIGAN DEPARTMENT OF TRANSPORTATION

2020 CENSUS

STATEMENT OF AGREEMENT FOR ADJUSTED CENSUS URBAN BOUNDARY ESTABLISHMENT AND REVISION

Section 101(a) amended of Title 23, United States Codes, states that the boundary locations for urban and urbanized areas shall be fixed by responsible state and local officials in cooperation with each other.

The undersigned hereby certify that these provisions have been complied with in establishing

the adjusted census urban boundary locations for the _____
Urban/Urbanized Area.

_____ _____
Name, Title Date

_____
Agency

_____ _____
Name, Title Date

_____
Agency

_____ _____
Name, Title Date

_____
Agency