

Chapter 4

The Existing Transportation System

The JACTS area is served by several forms of transportation. Though the focus of transportation planning tends to be on the road network, considering how all of the modes are used to safely move goods and people is important. The chapter is an overview of the existing transportation system within the Jackson Metropolitan Planning Area.

The Road Network

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

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

Existing Plans

City of Jackson Thoroughfare Plan 2002

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

City of Jackson Master Street Plan 2010

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

City of Jackson Community Master Plan 2016

The City of Jackson Community Master Plan, completed in 2016, proposes a framework focused on the City's long-term stability and redevelopment based on an assessment of the community's existing conditions. The mission of the plan is to build a better future community based on existing facilities and resources. The road network is seen as valuable infrastructure that can influence growth and development. The plan acknowledges the role the national functional classification system has in providing funding for federal-aid eligible roads. The City also considers street design for the transportation system through proposed "Transportation Typologies," tying together the

needs of the different transportation modes available, the City's Complete Streets policy, a broader land use context, and community priorities.

Goals and strategies in the plan related to transportation include:

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

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

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

Phase II focuses on housing and neighborhoods and includes the following priorities for the road network:

- Develop a vision for a "gateway treatment" at N Cooper Street 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.

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

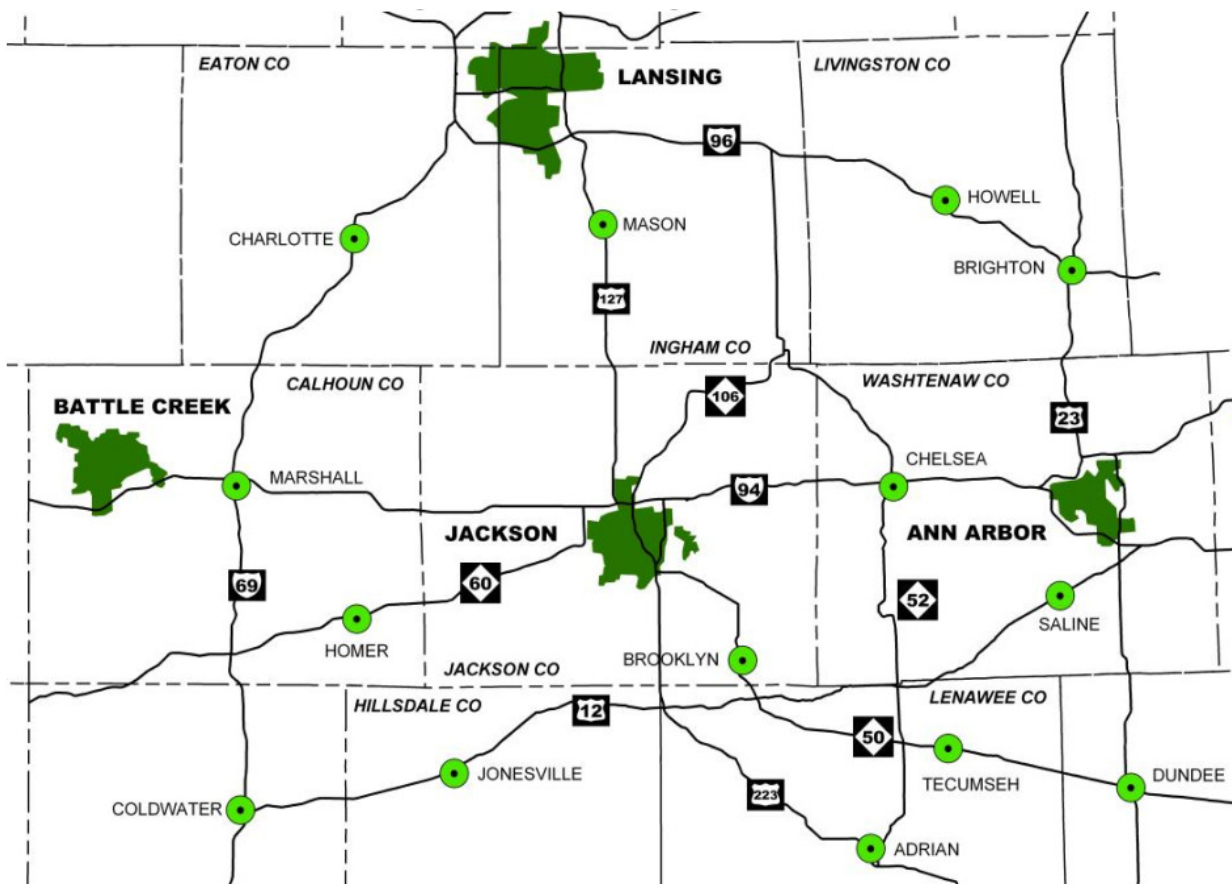
Existing Road Network

Regional Road Network

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

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

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

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

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

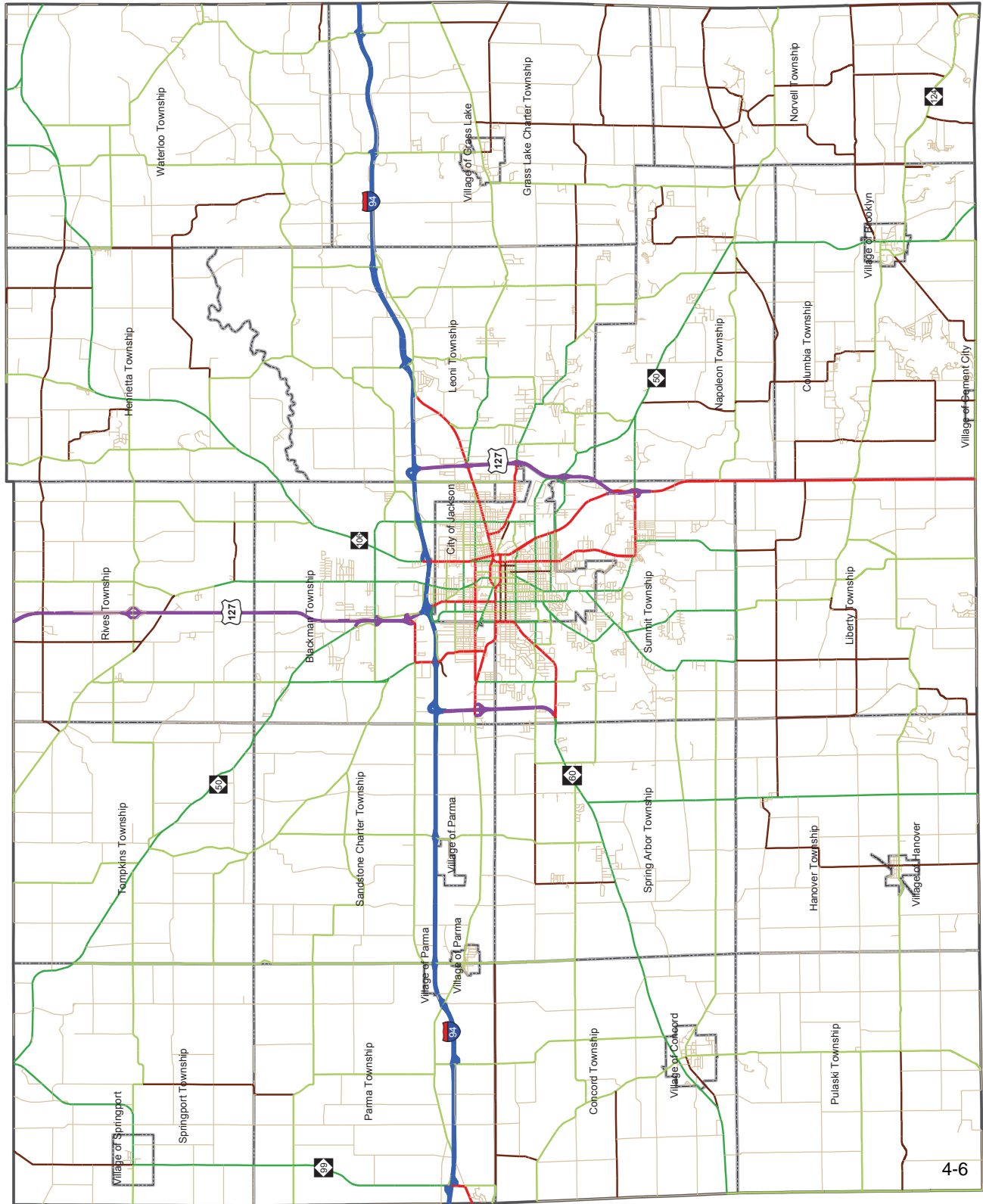
Figure 4-2, a map of the NFC system in Jackson County, is on the next page.

Road Types

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

Interstates and Other Freeways. The principal arterial road system includes freeways and non-freeway classifications. The National Classification Function Numbers for the roads found in these categories are 1 for "interstate" and 2 for "other freeway." In the Jackson area, that includes portions of I-94, US-127, and M-60.

Figure 4-2 National Function Classification Map



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

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

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

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

Existing Policies & Programs

Road Maintenance & Funding

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

Township roads in Jackson County are the responsibility of JCDOT, however, townships work with the County to ensure that the needs of the local community are being addressed. The assessment and determination of road maintenance and improvement project needs is facilitated through the collection of Average Annual Daily Traffic (AADT) volumes and pavement condition inventories (also called PASER). The six villages - Brooklyn, Concord, Grass Lake, Hanover, Parma and Springport - are responsible for the maintenance and operation of their street systems.

Figure 4-3
Robinson Road Under Construction



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

Complete Streets

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

Existing Traffic Conditions

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

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

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

West Avenue provides access from the urban center to the major commercial areas to the north and the residential areas to the south. A new bridge over the Norfolk Southern railroad at N. West Avenue was completed in 2012, and intersection improvements at Ganson Street, improving traffic flow. Traffic traveling to or from Downtown with destinations at commercial uses along N. West Avenue can also use Wildwood Avenue or West Michigan Avenue.

Lansing Avenue is a minor arterial which provides for travel between the urban center and the north. The route terminates near the urban center. A moderately traveled route, Lansing Avenue experiences some delays for northbound traffic at the intersection of Lansing Avenue and North Street during peak periods. Traffic flow between Lansing

Avenue and Downtown is occasionally interrupted by the railroad at Steward Avenue and Blackstone Street. Access to the north along Lansing Avenue is good as the route extends into Ingham County.

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

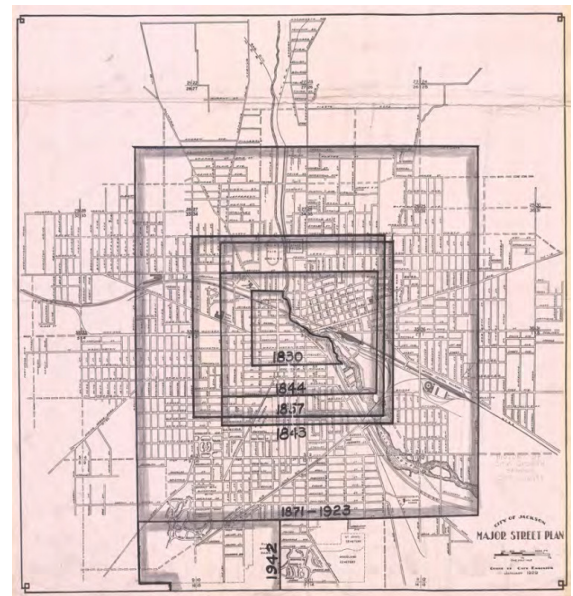
The I-94 Freeway Modernization Study, completed in 2005, evaluated the need and feasibility of upgrading nine miles of the interstate between M-60 and Sargent Road in Jackson County. The Hawkins Road, Dettman Road and Sargent Road bridges have been replaced.

Future Forecasts & 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 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 Road and considering modernizing traffic signals county wide is another priority. JCDOT is also supportive of installing non-motorized facilities, and looks to plan recommendations to invest in strategic projects.

Figure 4-4
City of Jackson Boundaries & Years



Transit

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

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

Existing Studies

Coordinated Mobility Plan: Region 9 2016

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

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

Jackson Area Transportation Authority (JATA) Countywide Survey 2015

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

Connecting Jackson County Study 2017

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

City of Jackson Community Master Plan 2016

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

Existing Transit Services

Intercity Bus Service

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

Figure 4-5
Greyhound Route Map



Rideshare Services

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

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

Taxi Cabs & Limousine Services

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

The Jackson Area Transportation Authority (JATA)

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

JATA is governed by a nine-member Board of Directors consisting of three members representing the City of Jackson and one representative from Jackson County, Blackman Township, Leoni Township, Summit 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 4-6
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.

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.

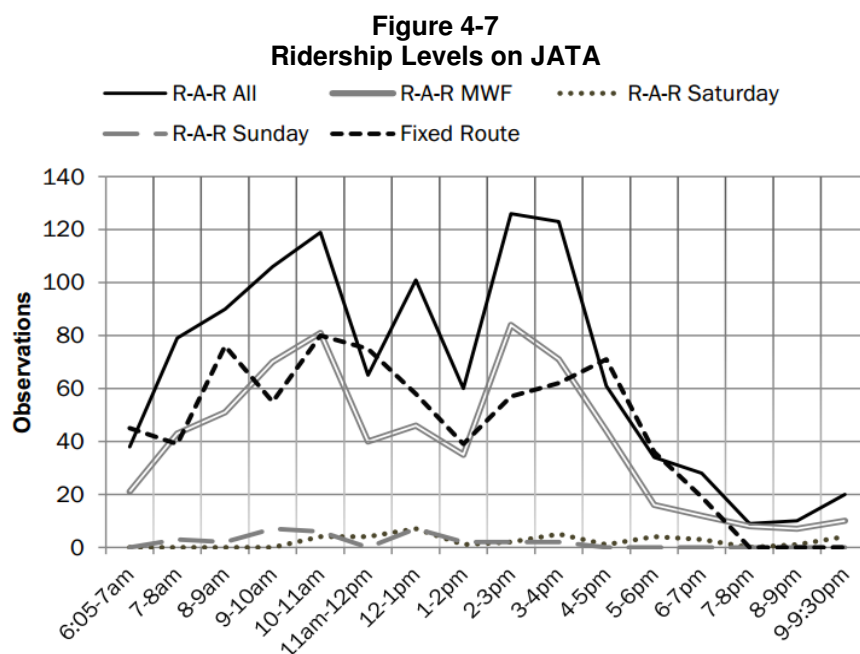


Figure 4-8, a map of the JATA transit service system routes, is on the next page.

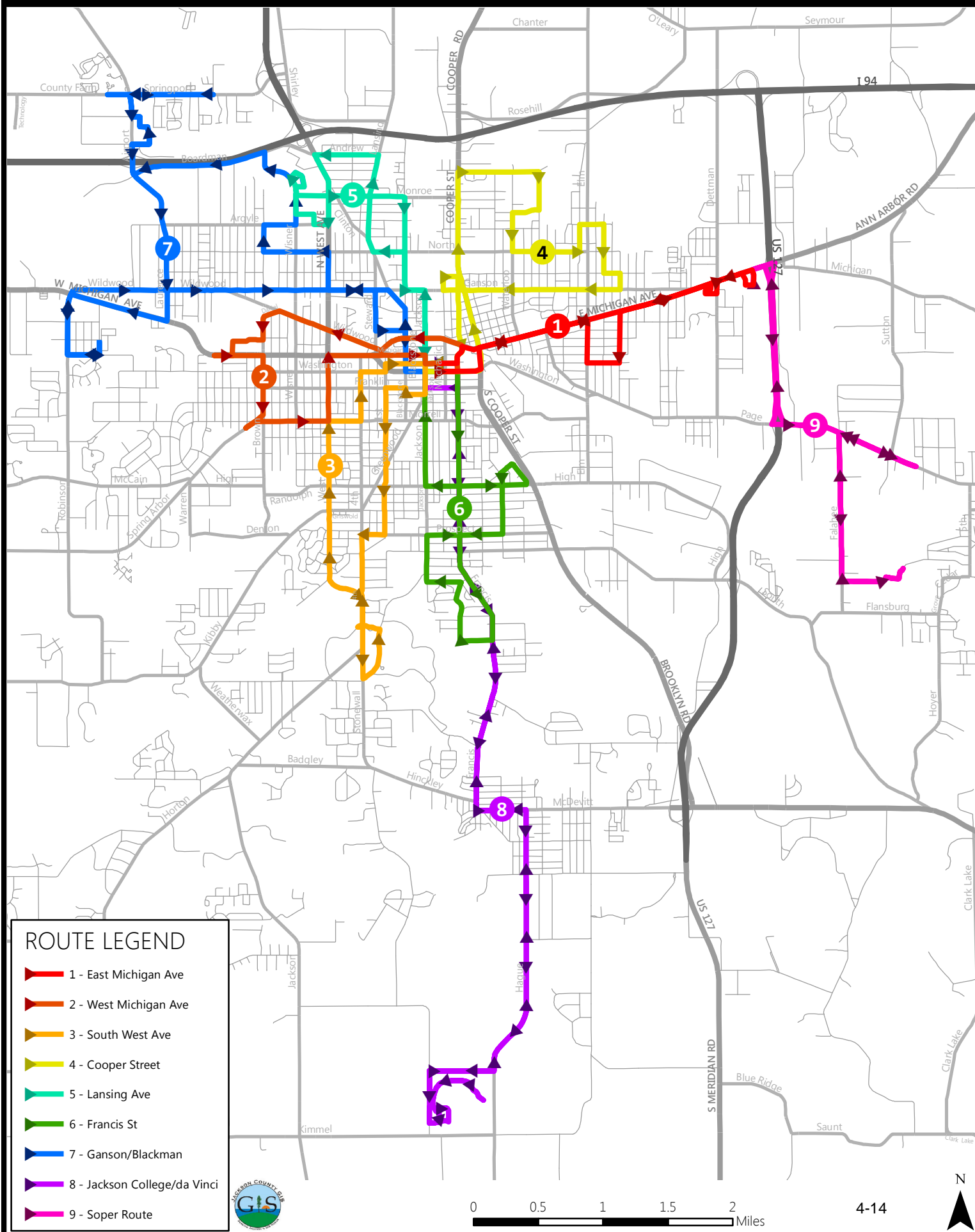
Existing Vehicle Fleet

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

Figure 4-8 JATA 2017 Routes Map



System Map



**Table 4-2 Jackson Area Transportation Authority Ridership – Number of Trips
1991 - 2017**

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

Future Forecasts, Issues, & Needs

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

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

The replacement cycles represent the replacement policies, in terms of age and miles, as established by the Federal Transit Administration (FTA) for specific vehicle types.

For the purpose of this Plan, JATA proposes to continue to operate their system at their current level of service. Although the focus of JATA will be to preserve and continue at the current level of service, this is not to imply that JATA will not be exploring service enhancement and delivery changes. However, similar to the road recommendations, only those projects which have an identified funding source are included in the list of projects.

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

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

Year	Project	Est. Cost
2016	Shop Equipment	\$ 10,000
	Tow Truck	100,000
	Operation Program	6,153,000
2017	3 – Vans	\$ 132,000
	2 – 45 ft. Hwy Coaches	1,200,000
	Operating Program	6,528,000
2018	3 – Med. Duty Buses	\$ 350,000
	2 – 45 ft. Hwy Coaches	1,224,000
	CPU Upgrades	100,000
	Operating Program	6,724,000
2019	3 – Med. Duty Buses	\$ 350,000
	3 – Vans	135,000
	2 – 35 ft. Buses	740,000
	Maintenance Equipment	100,000
	Operating Program	6,926,000
2020	1 – 35 ft. Bus	\$377,400
	Shop Equipment	13,000
	3 – Med. Duty Buses	364,000
	Operating Program	7,134,000
2021	1 – 35 ft. Bus	\$ 385,000
	3 – Vans	140,000
	Security Impr.	52,000
	Operation Program	7,348,000
2022	1 – 35 ft. Bus	\$ 393,000
	CPU Upgrades	104,000
	Operating Program	7,568,000
2023	3 – Vans	\$ 143,100
	2 – Service Vehicles	94,000
	1 – 35 ft. Bus	400,000
	Security Imprv.	56,000
	Operating Program	7,795,000

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
	1 – 35 ft. Bus	416,000
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 Impr.	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

Year	Project	Est. Cost
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 Improv.	81,648
	Operating Program	11,355,966
2043	1 – 35' Bus	\$ 587,100
	Service Vehicle	65,200
	Maintenance Equipment	150,000
	Operating Program	11,583,085

Year	Project	Est. Cost
2044	Security Imprv.	\$ 88,180
	CPU Upgrades	145,300
	3 – Vans	203,700
	1 – 35 ft. Bus	450,300
2045	1 – 35 ft. Bus	\$ 604,713
	Security Imprv.	95,234
	Operating Program	12,501,042

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

Service

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

Maintenance

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

Operational

- **Reserve-A-Ride Trip Scheduling.** A better tracking mechanism may be helpful for Reserve-A-Ride trips. The existing services seem to operate like a taxi service rather than a traditional paratransit system which would serve multiple customers simultaneously.
- **JATA's trip denial rate.** There are too many trips being provided that only carry one passenger at a time. This inefficiency lessens the ability for all trip needs to be met.
- **Timing of Route Transfers.** There are a few route crossings that could allow for transfers to occur outside of the Transfer Center, however the timing of these routes need adjustment to make these connections more useful.

Marketing / Branding

- **Awareness of services County wide.** There is reasonably high awareness for public transit services among the transportation disadvantaged population; however it is based largely on word of mouth and information from drivers. There

is a desire for better sources of information, especially the case for the rural parts of Jackson County. The limited understanding of services might be cause for some with transit needs to be utilizing other avenues that might not be as cost efficient for their limited budgets.

- **The JATA Brand.** The agency, though now known as JATA, was once operating as JTA. Many signs and shelters still include the JTA logo and branding. This may become confusing to riders trying to differentiate the two. This may also turn away potential advertisers who wish to display their advertisements on JATA buses or benches. Additionally, the JATA drivers are very knowledgeable, and prove to be a huge resource to riders. Customers indicated that the drivers are what they like best about JATA service - more than double that of the next highest response for this question. The knowledge and friendliness of these drivers could be used in a marketing campaign to attract and inform riders.

Coordination with other Agencies

- **Ridesharing and bicycling are just as important as public transit.** Carpools and vanpools have significantly more flexibility for certain types of trips than public transit. There would appear to be an opportunity to build on the already high level of ridesharing developing in Michigan and around the Country. Ridesharing services and matching could be useful in filling many of the mobility gaps. Additionally, the new bike share program could better supplement the existing transit system to provide more mobility by expanding with new locations in areas served by JATA fixed route service. Coordination with the appropriate agencies could make this a reality.
- **Medical Programs and Social Service Agencies are providing services in rural communities.** There are currently a number of trips that are denied in the reserve-a-ride program due to lack of availability. Many of the JATA services to the rural parts of the County are used on medical trips that in many cases are needed 3 times a week which is all that JATA serves the area. Coordination with hospitals to better align the appointments for the patients.
- **Additional Service Providers.** Services such as Michigan Flyer (AirRide) and Michivan (vRide) offer additional mobility options. The Michigan Flyer is currently investigating opportunities to add additional stop locations in Livingston County. If agencies in Jackson, including JATA, worked with them, Jackson might be able to show the need for service that once existed. This would include the City of Jackson, the Region 2 Planning Commission, Jackson County and others working together to achieve a common goal and need. Similarly the Michivan service could be a rideshare option for Jackson residents who need to travel to other counties for their daily job commute. This could benefit those without vehicles but could also prove to be more cost effective to existing riders. This service is already active in Jackson County with 18 current vans that travel to and from Jackson to Lansing, Ann Arbor, Plymouth, and Novi at differing times and locations.

Funding

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

Jackson Area Transportation Authority's Long Range Transportation Plan

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

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

Rail

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

Existing Plans

Chicago-Detroit/Pontiac Passenger Rail Corridor Program Study

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

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

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

The 2005 City of Jackson Amtrak Depot Intermodal Feasibility Study

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

Figure 4-9
City of Jackson Amtrak Depot Intermodal Rendering



Jackson Amtrak Depot Intermodal Study
 City of Jackson, Michigan

Potential Future Growth Site Plan

December 30, 2005 **SMITHGROUP**

Existing Rail Service

Passenger Service

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

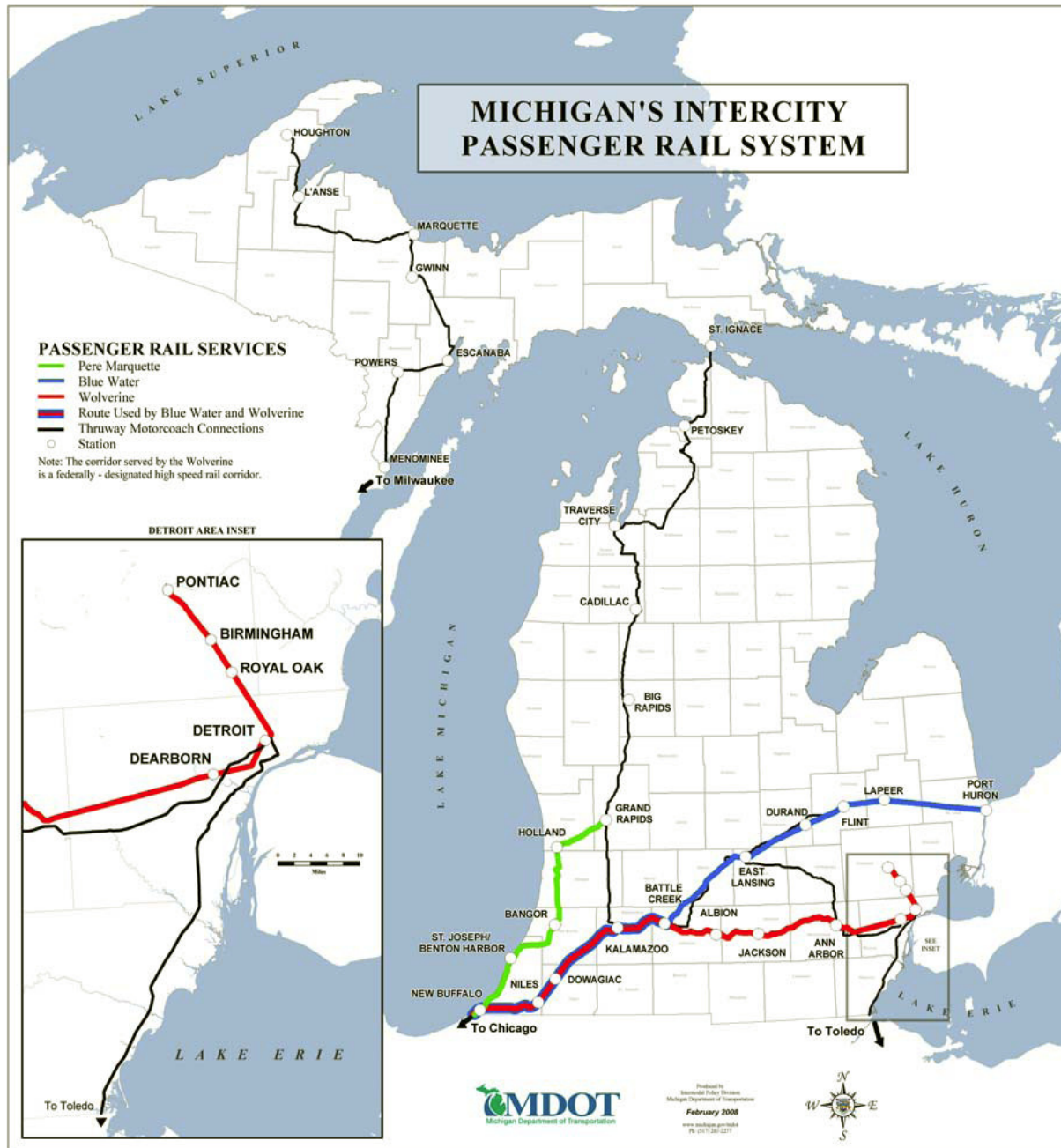
The partnership of Amtrak, Norfolk-Southern, and MDOT continues to make significant operational and marketing improvements to this passenger rail corridor. In summer 2011, the State of Michigan and Norfolk Southern (NS) came to an agreement on the terms for the sale of the Dearborn-Kalamazoo portion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

High-speed rail

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

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

Figure 4-10
Michigan's Inter-City Passenger Rail System



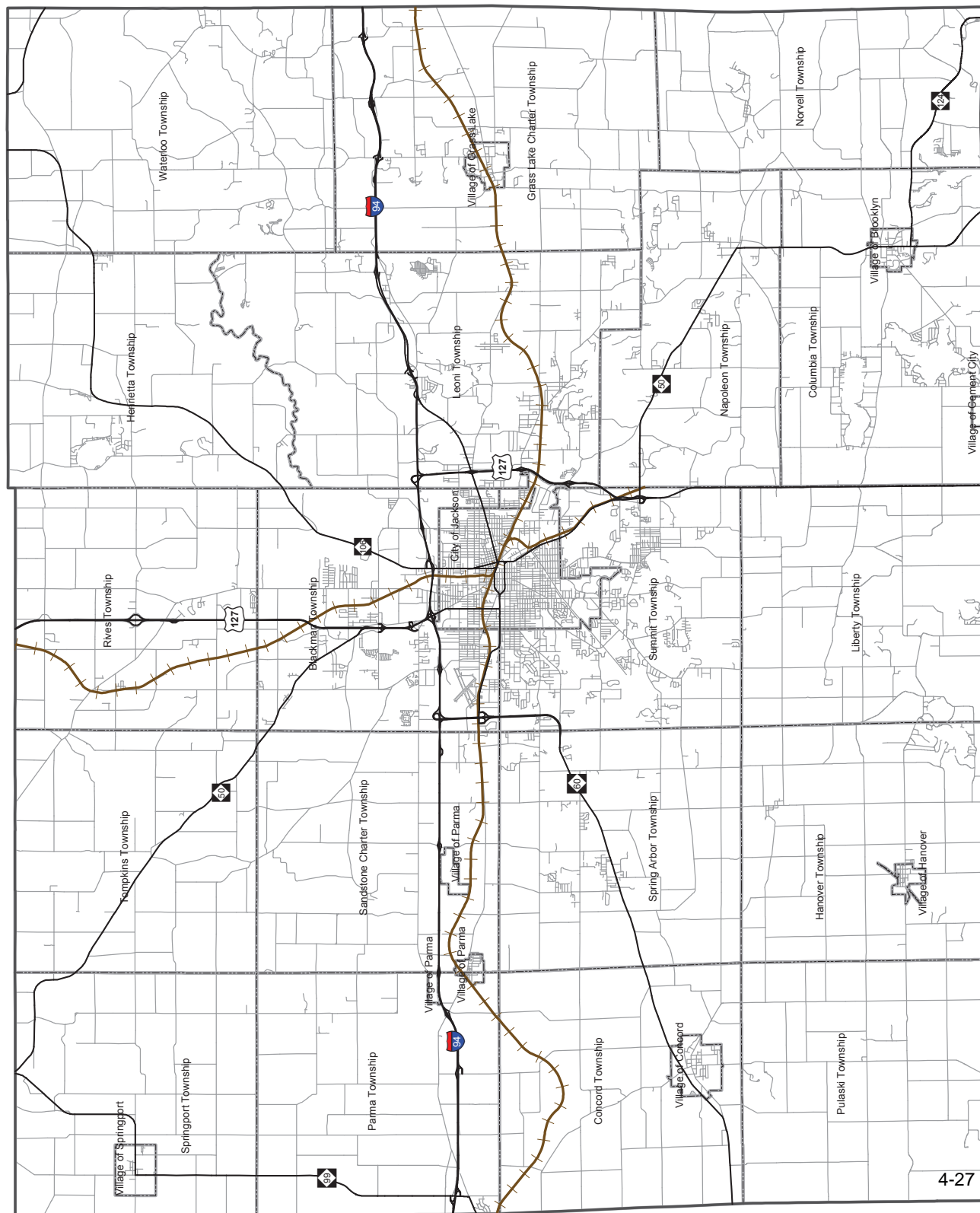
The development of high-speed rail would spur business productivity along the rail corridor and in Jackson by strengthening the local region's connection to economically vital megaregions such as Chicago and Detroit. Faster service and increased transfer points will expand options for citizens in rural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

Future Forecasts & Needs

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

Figure 4-11, a map of the railroads, is on the next page.

Figure 4-11 The Railroad Network Map



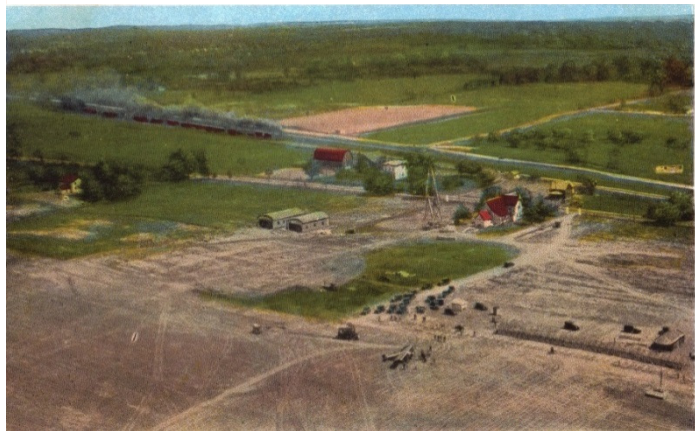
Air Transportation

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

Figure 4-12
Historic Picture of Jackson County
Airport-Reynolds Field

Existing Airport Conditions

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



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

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

The airport is characterized by the Federal Aviation Administration as a Regional General Aviation Airport and is one of only fourteen airports in Michigan with an operating air traffic control tower. The air traffic control services are provided by a private contractor, Midwest Air Traffic Services, Inc., and operate from 7:00 AM until 9:00 PM daily. After hours, arriving and departing aircraft utilize the assigned radio frequency for this airport to announce their intentions to other aircraft in the area.

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

Future Forecasts & Needs

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

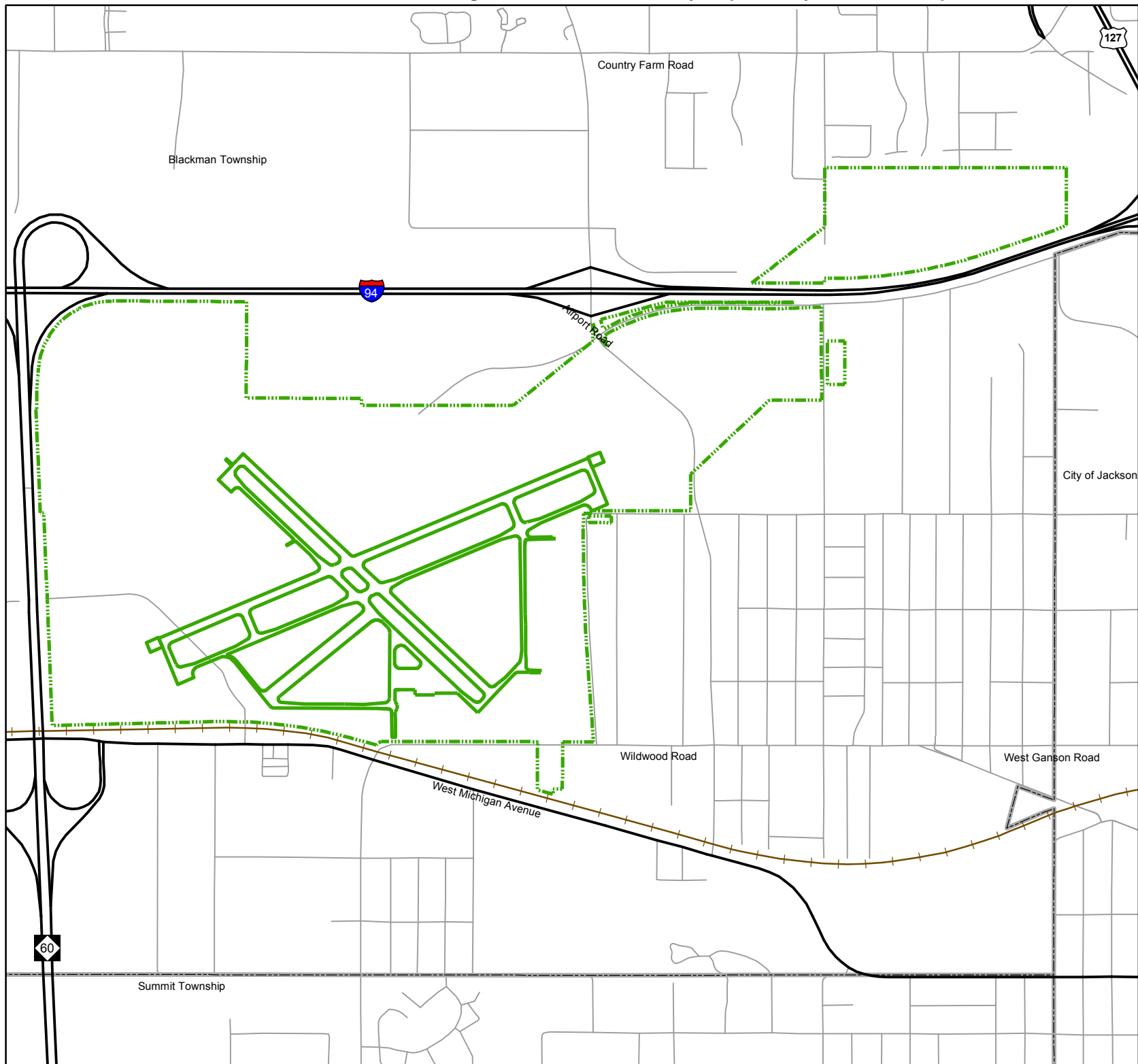
The annual economic value of the airport to the greater Jackson area is determined to be \$18 million (2017). The airport is expected to continue to provide air services to Jackson County businesses and private individuals by being a major player in the economic development of the region and being a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

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

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

Figure 4-13, a map of the airport runways and property boundary, is on the next page.

Figure 4-13 Jackson County Airport - Reynolds Field Map



Jackson County Reynolds Field Airport

- Airport Boundary
- Airport Runway

0 0.125 0.25
Miles



Region 2
Planning Commission

Serving Hillsdale, Jackson, and Monroe Counties

Jackson Area Comprehensive Transportation Study

Freight

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

The movement of goods has increased over time, and commodity forecasts project the increase to continue. The nature of that movement will continue to change along with technology as consumer's demand change. Freight traffic impacts congestion, safety, pavement life, air quality, and quality of life.

Existing Plans

MDOT Freight Plan

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

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

Figure 4-14, a map of the Critical Rural and Critical Freight Corridors in the Jackson MPO, can be found on the next page.

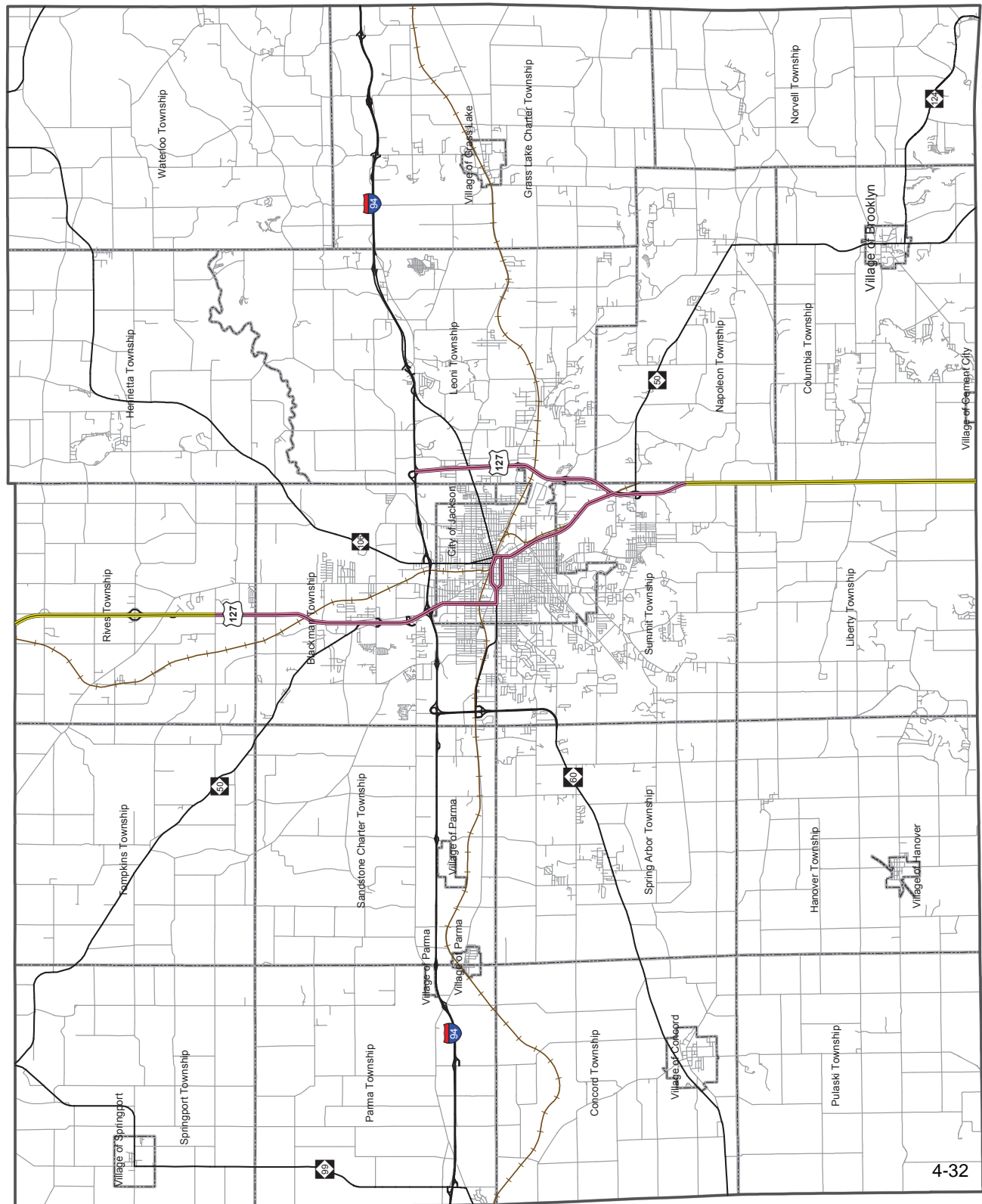
Existing Network & Conditions

Freight on the Road Network

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

There are approximately 12 trucking operations of varying sizes in Jackson County. They account for hundreds of truck movements daily. There also are several major

Figure 4-14 Critical Freight Corridors Map



businesses and corporations like Walmart which generate truck traffic at their facilities. The JACTS area will need to continue to track and maintain its freight infrastructure to keep up with the growth projections, especially along the Critical Urban and Rural Freight Corridors.

Jackson County Airport

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

Rail Freight

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

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

Future Forecasts, Issues, & Needs

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

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

The MDOT Freight Plan identified a significant amount of growth in freight across the state out to 2040. The Jackson MPO should consider how it could play a part and prepare for the growth in freight traffic across the state. The projections are in Table 4-4.

Table 4-4 MDOT's Freight Projections

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

*Tons in Millions

Non-Motorized Transportation

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

Existing Plans

University Region Non-Motorized Plan 2015

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

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

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

Jackson County Regional Trailway Study 2002

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

Jackson Trail Connector Feasibility Study 2017

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

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

A priority of Jackson County and the City of Jackson Joint Recreation Plan 2015 – 2019 Edition was to develop and implement a joint recreation plan that responds to the desire of the public and enhances local parks and programs. A Citizen Opinion Survey highlighted the strong support for non-motorized trails within the community. 88% of respondents showed support for developing a coordinated trail system. Impacts to the local transportation system include the support of developing a non-motorized trail network, including implementing the recommendations from the Jackson County Regional Trailway Study and encouraging local governments to plan for and develop additional non-motorized trails to supplement the Trailway Study proposed framework.

City of Jackson Community Master Plan 2016

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

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

2003 City of Jackson Bike Route Map

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

Existing Non-Motorized Network

Sidewalks

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

Bike Lanes

Dedicated bicycle facilities create opportunities for a range of users. Bike lanes are found on a number of streets near and within the City of Jackson. They provide a

separated space for bicycles to operate, helping drivers understand where they can expect bicyclists to be in the roadway. Bike lanes discourage wrong way riding, and are useful on collector and arterial roads.

Trails

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

- Martin Luther King Jr. Equality Trail (formerly known as the Inter-City Trail): 3 mile paved trail that traverse the city from Weatherwax Drive through East Washington Street. The trail connects to the Falling Waters Trail. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the City.
- Falling Waters Trail: 10 mile paved asphalt trail extending from the City of Jackson to the Village of Concord and connects the City of Jackson, Summit, Spring Arbor and Concord townships and crosses Lime Lake on an old Michigan Central railroad rail bed. The trail connects to Jackson's Martin Luther King Jr. Equality Trail. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the County.
- Armory Arts Walk: 1 mile paved trail from West Monroe Street to North Mechanic Street. The Iron Belle Trail and Great Lakes to Lakes Trail routes align with the trail through the City.
- Lakeland Trail: 11 mile unpaved recreational trail that begins in the Waterloo State Recreation Area and extends to the Stockbridge area. Future plans include paving this trail.
- Sparks Foundation County Park: 2 miles of paved trail that runs through the park.
- PAKA Trail: 1 mile paved trail that connects the Martin Luther King Jr. Equality Trail to Ella Sharp Park.
- Spirit Trail: 7 mile paved and unpaved trail around Clark Lake.
- Unnamed Trails: There are a number of unnamed trails, most of which parallel roads including Weatherwax Drive, Horton Road, Ann Arbor Road, Spring Arbor Road, Page Avenue and Probert Road.

Other Facilities

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

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

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

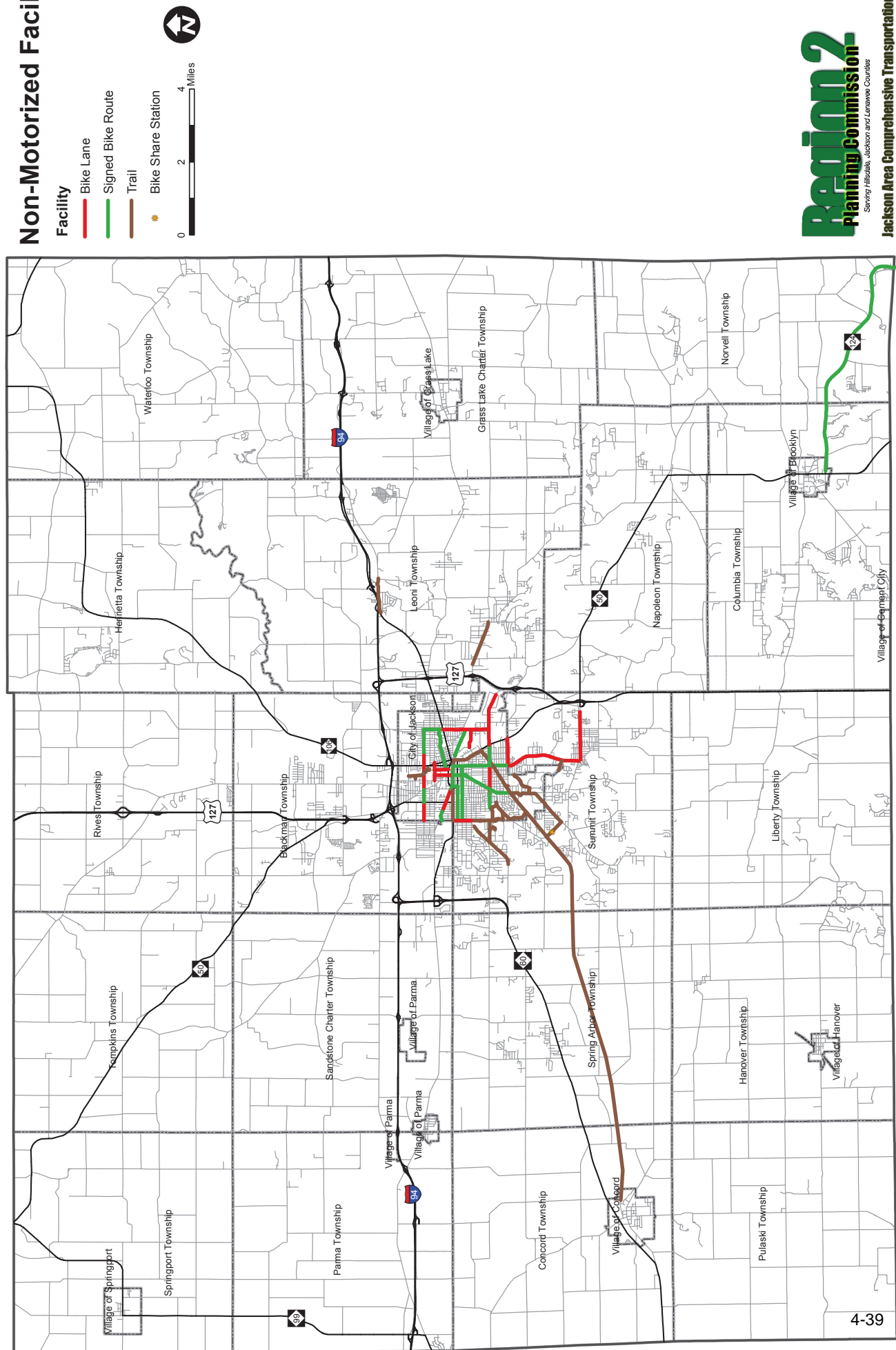
Jackson County supports one bike share station at the parking lot/trailhead where the Falling Waters Trail meets the Martin Luther King Jr. Equality Trail on Weatherwax Drive. The BCycle bike share station was installed in May 2017. In the first four months after installation, there were over 600 bicycle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

Figure 4-15
Jackson County Bike Share Station



Figure 4-16, a map of the existing non-motorized facilities, is on the next page.

Figure 4-16 Non-Motorized Facilities Map



Policies & Programs

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

Safe Routes to School

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

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

Future Forecasts, Issues, & Needs

Future Planning Studies

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

Iron Belle Trail

The Department of Natural Resources announced the plan for the Iron Belle Trail in 2015. The trail, which has two routes, one biking and one hiking, will run from Belle Isle Park in Detroit to Ironwood in the Upper Peninsula. The hiking route will follow the existing unpaved Lakeland Trail from Stockbridge, running along a proposed route into the City of Jackson. The route would follow the existing Armory Arts Walk, Grand River Walk and the Martin Luther King Jr. Equality Trail. From there, it would connect to the

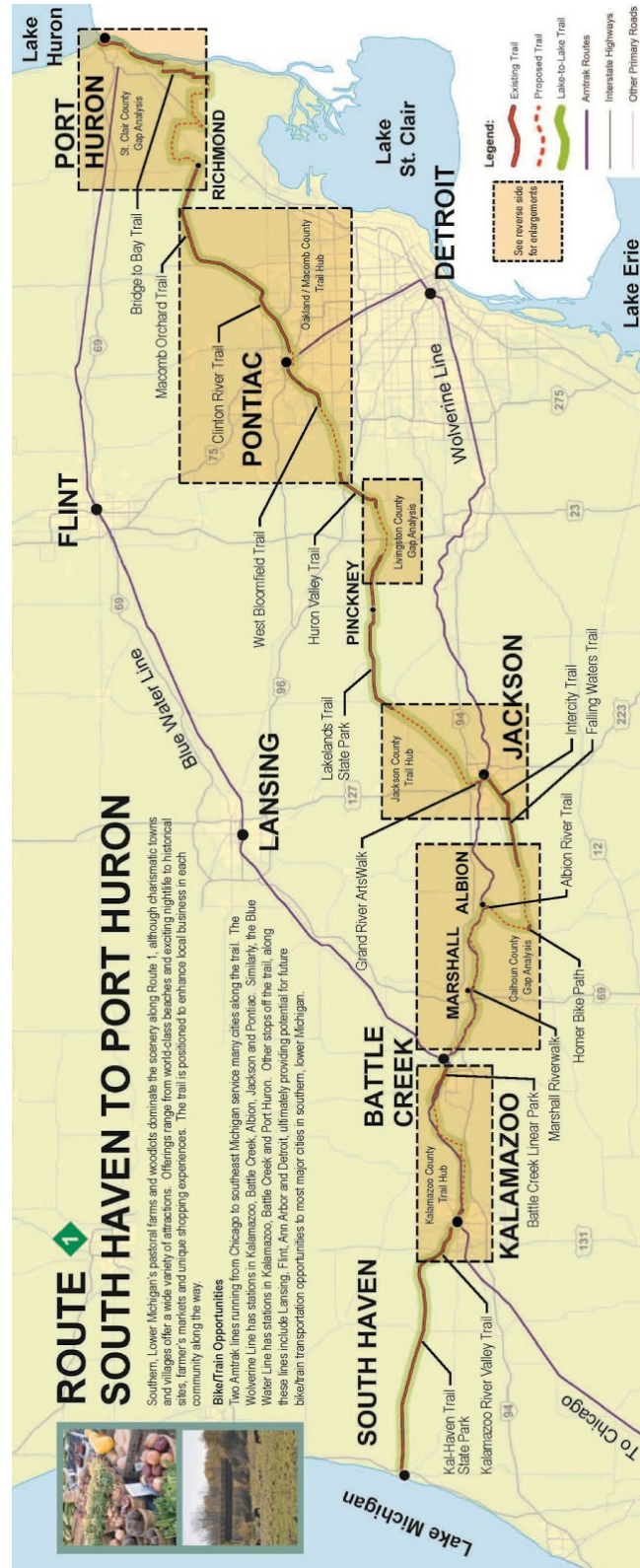
Figure 4-17
DNR Map of the
Iron Belle Trail through Jackson County
Including the Falling Waters Trail & the Lakeland Trail



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 and the proposed Lakeland Trail, following the same corridor as the Iron Belle Trail would follow. The trail is partially completed in Jackson County to date.

Figure 4-18
Great Lake to Lake Trail Route 1



Policies

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

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

Emerging Technology within the Transportation System: Connected & Automated Vehicles

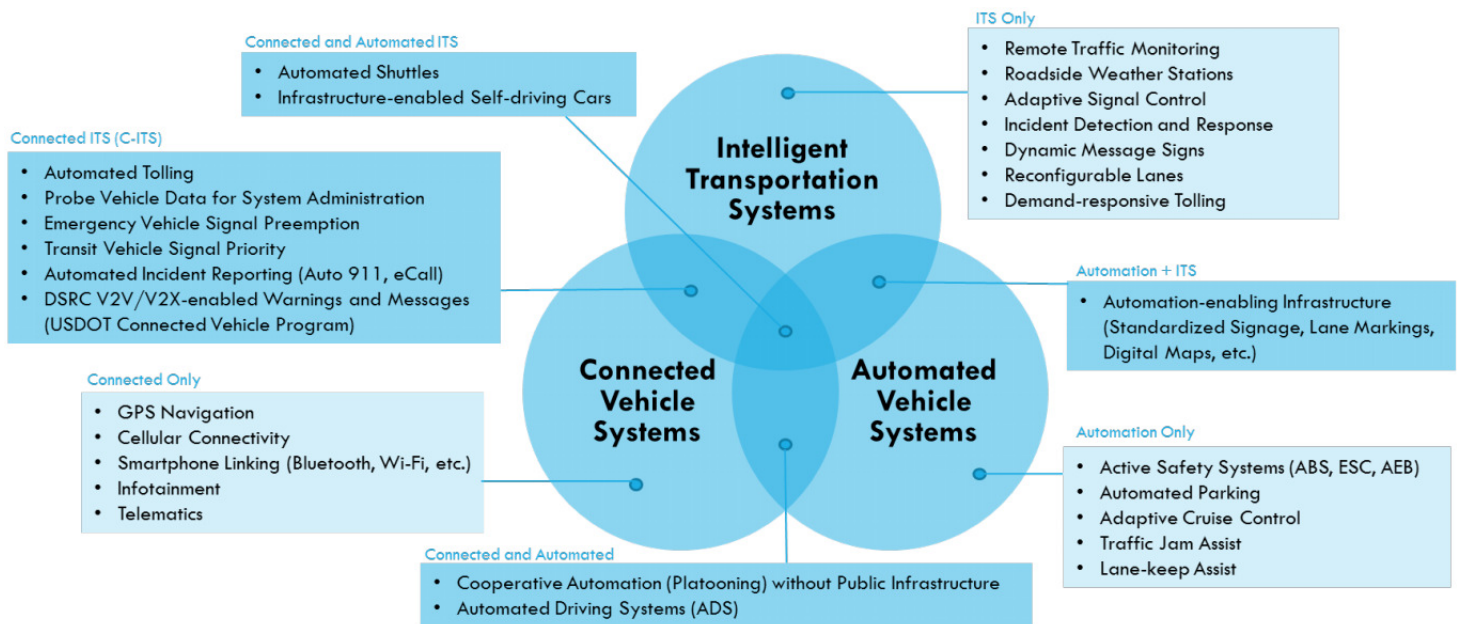
Connected and automated vehicles (CAVs) are already impacting the state of Michigan. MDOT has a connected vehicle program that is supported by GM, Ford, the University of Michigan, Oakland County Road Commission, and others. Program assets and testing areas are currently just east of the Jackson MPO. 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 4-19.

- ***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 4-19
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.

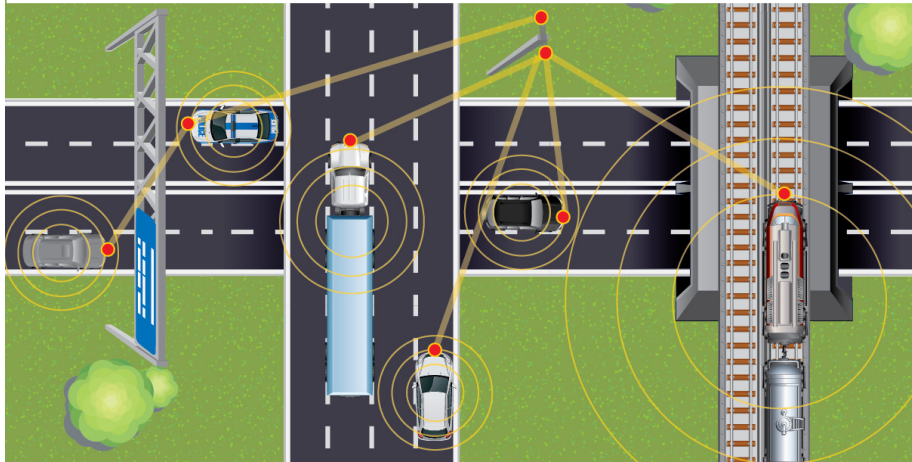
Factors potentially increasing VMT

- **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 4-20
Example of How Technology
Can allow for Communication Among Modes of Travel



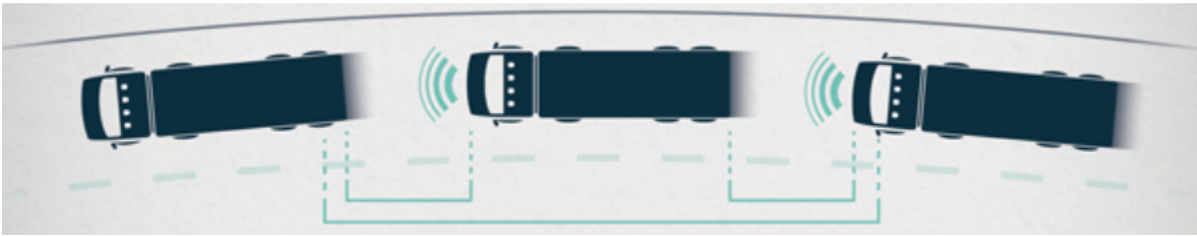
Intermodal Implications

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 4-21
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.