



# Appendix B:

# Inventory of Services



# Connecting Jackson County

## Inventory of Services



June 2017



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## 1. Study Area Context and Description

The Jackson Area Transportation Authority (JATA) has been serving the Jackson area for over half of a century. It was initially formed through a partnership between the Chamber of Commerce and local merchants after a private transportation provider discontinued service in the area. From there it grew, gained new funding sources, and became an authority under Michigan's Public Act 196 in 1986. Today, JATA operates nine fixed-routes in the Jackson urbanized area and provides demand response service throughout both urban and rural Jackson County. In total, JATA provides about a half of a million trips annually.

JATA is the provider of public transportation services throughout Jackson County, and provides both fixed route and paratransit service.

- Fixed-routes are bus lines that provide public transportation according to set schedules and serving predetermined stops and roadways.
- Paratransit services are a demand-response service with the schedule and routes determined based on the requests of qualified users.

Beyond the services operated by JATA, there are a number of private paratransit services that assist people in mobility and allow Jackson County residence to age in place.



The study boundary for this analysis is the JATA service area which is all of Jackson County. The population of the City and County of Jackson along with other demographic categories that influence transit will be reviewed in this report. A high level overview of some of this data can be seen below. In addition to existing transit users we will also look at vehicular travel as it can help us understand travel patterns and areas that JATA could capture choice riders.

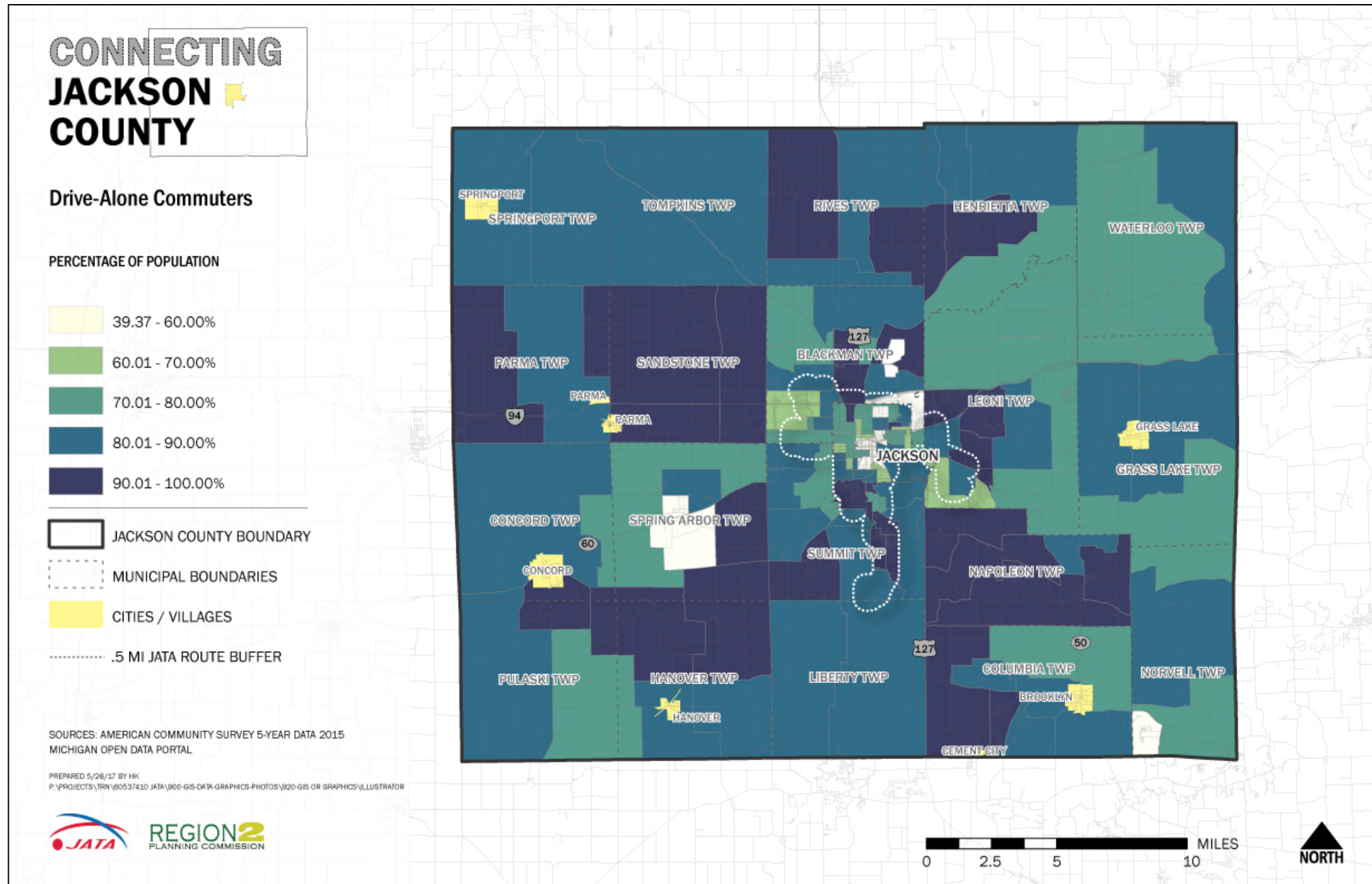
**Table 1: Population Statistics**

	City of Jackson	Jackson County	United States
Total Population	33,133	159,494	321,418,820
Households	12,650	60,591	116,926,305
Minority Population	29.10%	12.3%	22.9%
Persons 65 Years+	10.3%*	16.4%	14.9%
Persons Under 18 Years	28.5%*	21.9%	22.9%
With a Disability (under age 65)	15.2%	11.4%	8.6%
Persons in Poverty	36.0%	16.2%	13.5%
Median Household Income	\$28,087	\$46,326	\$53,889
Mean Travel Time to Work (minutes)	18.3	23.1	25.9

## 2 Inventory of Services



Figure 1: Drive-Alone Commuters in Jackson County by Census Block Group



## 2. Existing Conditions

The JATA is a multi-service system providing county-wide transit services to residents within Jackson County. JATA provides curb-to-curb transportation services to and from work, school, medical appointments, shopping, and social activities. JATA provides traditional bus service and many special programs like Reserve-A-Ride and Ride & Shop. However, JATA's fixed-route service is currently focused within the City of Jackson limits. Routes that go outside of the city limits must be funded partially or in whole by outside agencies and/or meet the needs of city residents. Routes 1,2,7,8, and 9 currently meet one or both of those requirements and extend beyond the city limits. Previously service was also available to Summit Township which ended in 2014 due to lack of ridership. These areas are now served several days a week with the Reserve-A-Ride program.

### 2.1 Fixed Route Service

#### Hours of Operation

Fixed-route services operate on weekdays from 6:15 a.m. to 6:15 p.m. and Saturdays from 10:15 a.m. to 6:15 p.m. There is no JATA fixed-route service on Sundays or on major holidays (New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas Day). Most routes operate at a service frequency of either every 30 minutes or every 60 minutes.

JATA's Reserve-A-Ride program provides general public demand response service as well as paratransit service for passengers who cannot utilize fixed-route services. Additionally, Reserve-A-Ride provides contract service to local agencies and organizations. In the City of Jackson the Reserve-A-Ride program operates from Monday through Friday 6:00 a.m. to 10:00 p.m., on Saturday from 10:00 a.m. to 10:00 p.m., and on Sunday from 7:00 a.m. to 4:00 p.m. The rest of the County can use the program from 6:00 a.m. to 6:00 p.m. on Monday, Wednesday, and Friday.

#### Fare Structure

For fixed-route services JATA currently charges \$1.50 per trip for standard trips but also offer many discounts to students, seniors, children, and persons with disabilities. Transfers are offered at no additional cost. Both 31 day passes and ticket books are available. The 31 day pass could be a financial benefit if a person rides the bus more than 36 times in the 31 day period. The ticket books however, do not offer any incentive financially to rider. A full breakdown of costs is shown below in Table 2.

**Table 2: JATA Fixed-Route Fare Media**

Age Group	Individual Tickets	31-Day Pass	Ticket Books
Adult	\$1.50	\$54	\$15
Student	\$1	\$34	\$10
Senior (60)	\$0.75	\$27	\$7.50
Child	\$0.75	\$27	\$7.50
People with disabilities	\$0.75	\$27	\$7.50

For Reserve-A-Ride fare structure, see Figure 16 and Table 11, in section 2.2.

**Table 3: JATA Total Ridership by Route**

JATA Route Total Ridership									
	Route 1	Route 2	Route 3	Route 4	Route 5	Route 6	Route 7	Route 8	Route 9
2016	104,431	88,071	47,954	38,642	90,959	54,952	42,065	25,421	NA
2015	85,588	76,027	44,208	31,390	84,194	54,499	37,448	50,647	NA

## Routes

The fixed-route service analysis presents important information about the JATA fixed-route network and will be an input into the service planning process. The analysis includes a presentation of fixed-route service statistics and the calculation of key financial efficiency and service effectiveness indicators that are used to evaluate the service. Also, route profiles are presented that provide an overview of the service and show when and where service is utilized.

Table 4 presents the amount of service provided by each of the fixed routes. The key statistics collected to describe the services provided are revenue hours of service (which describes the number of driver/bus hours that buses are in service and picking up passengers), the number of revenue miles (which describes the number of miles buses travel where they are picking up passengers), and the number of peak vehicles (which describes the maximum number of vehicles on a route). The table shows that Route 4 and Route 7 operate the most service in terms of revenue miles.

Figure 2: Existing JATA Fixed Routes

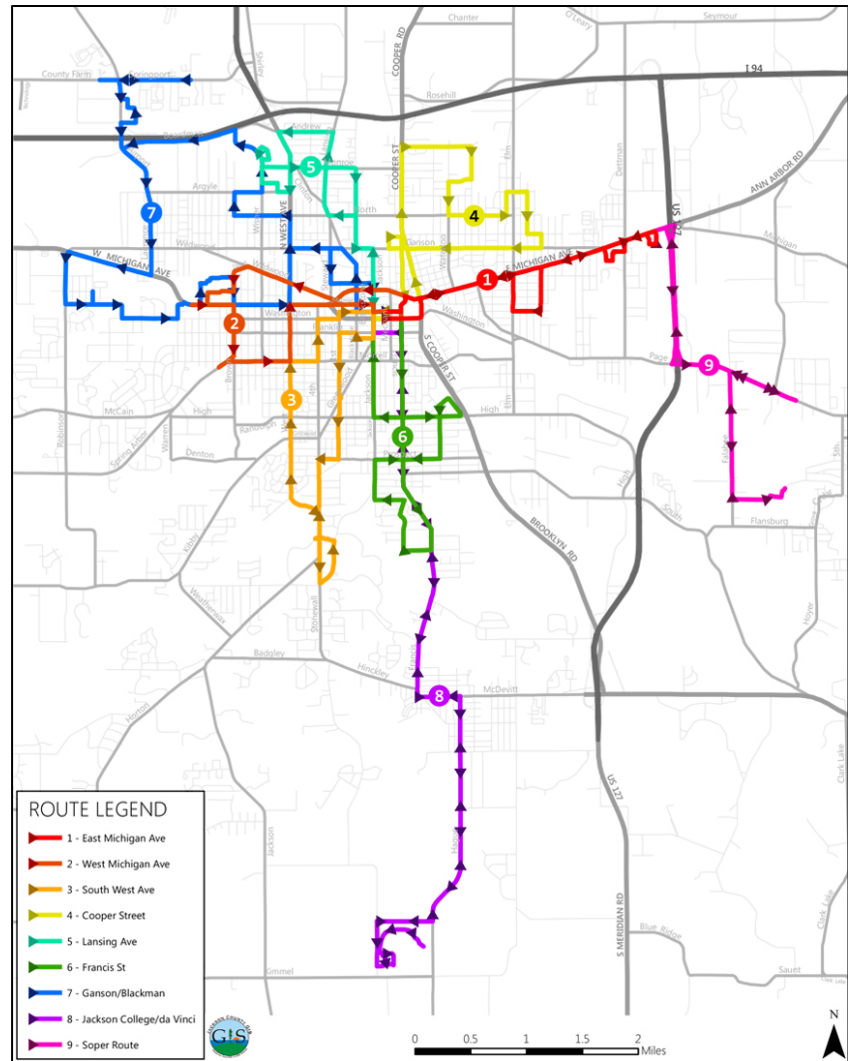


Table 4: Route Operation Details

JATA Route Operation Characteristics				
Route	Daily Revenue Hours	Revenue Miles per Trip	Revenue Miles per Day	Peak Vehicles
1	11 Hours, 58 Min	4.9	117.6	1
2	11 Hours, 58 Min	5.7	136.8	1
3	11 Hours, 58 Min	6.7	160.8	1
4	11 Hours, 58 Min	7.5	<b>180</b>	1
5	11 Hours, 58 Min	6.6	158.4	1
6	11 Hours, 58 Min	6.8	163.2	1
7	11 Hours, 55 Min	14.8	<b>177.6</b>	1
8	6 Hours, 20 Min	16.5	132	1
9	1 Hour, 29 Min	8.4	33.6	1

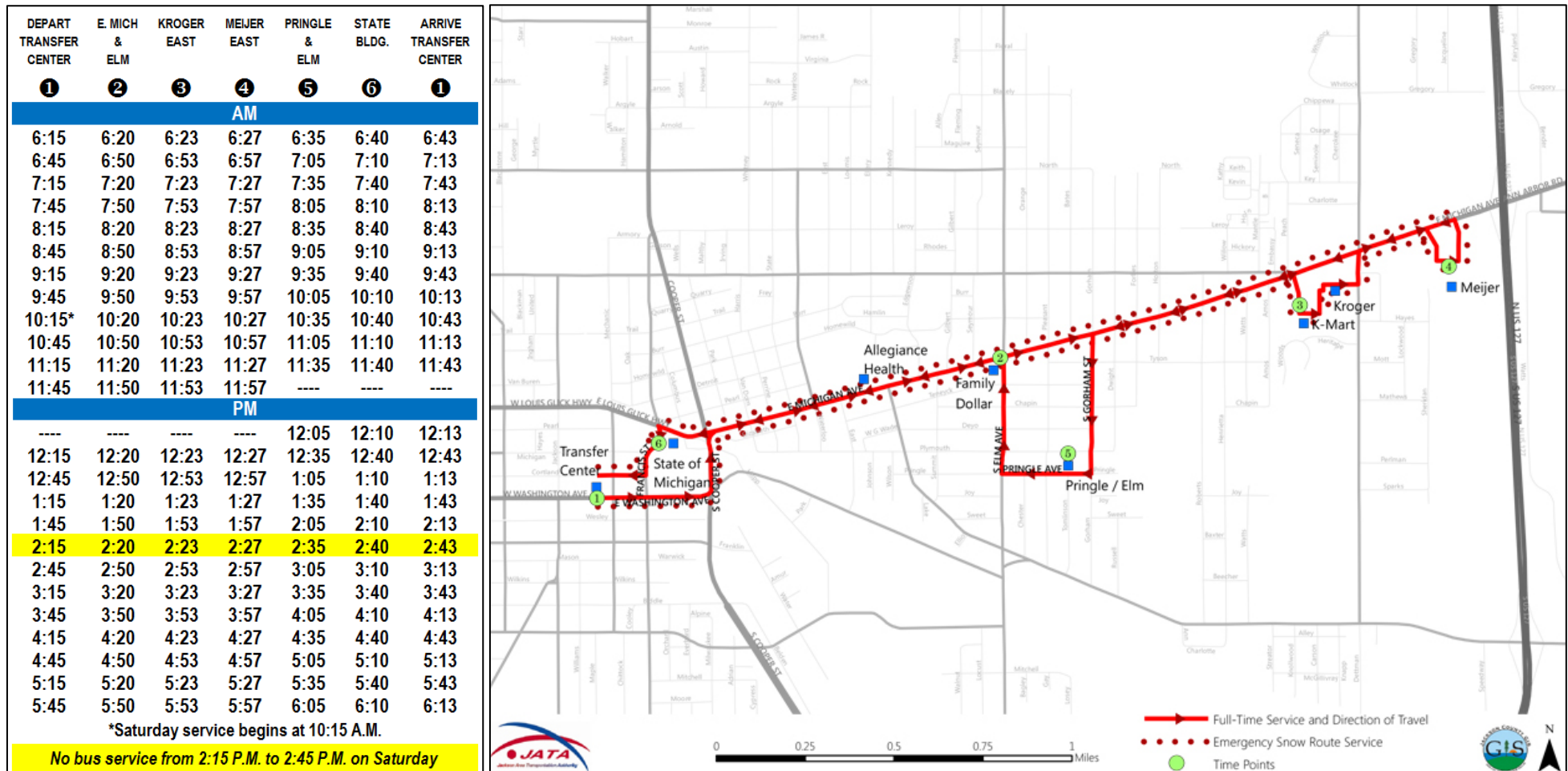


### Route 1 – E. Michigan Ave

Route 1 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include Allegiance Health, Kroger, and Meijer. This is also

the only route that connects to Route 9 with Meijer serving as the transfer location. In 2016, Route 1 had 104,431 unlinked passenger trips which was a 22% increase from 85,588 in 2015. This route routinely has the highest ridership of all of the JATA fixed routes.

Figure 3: Route #1 Map and Schedule

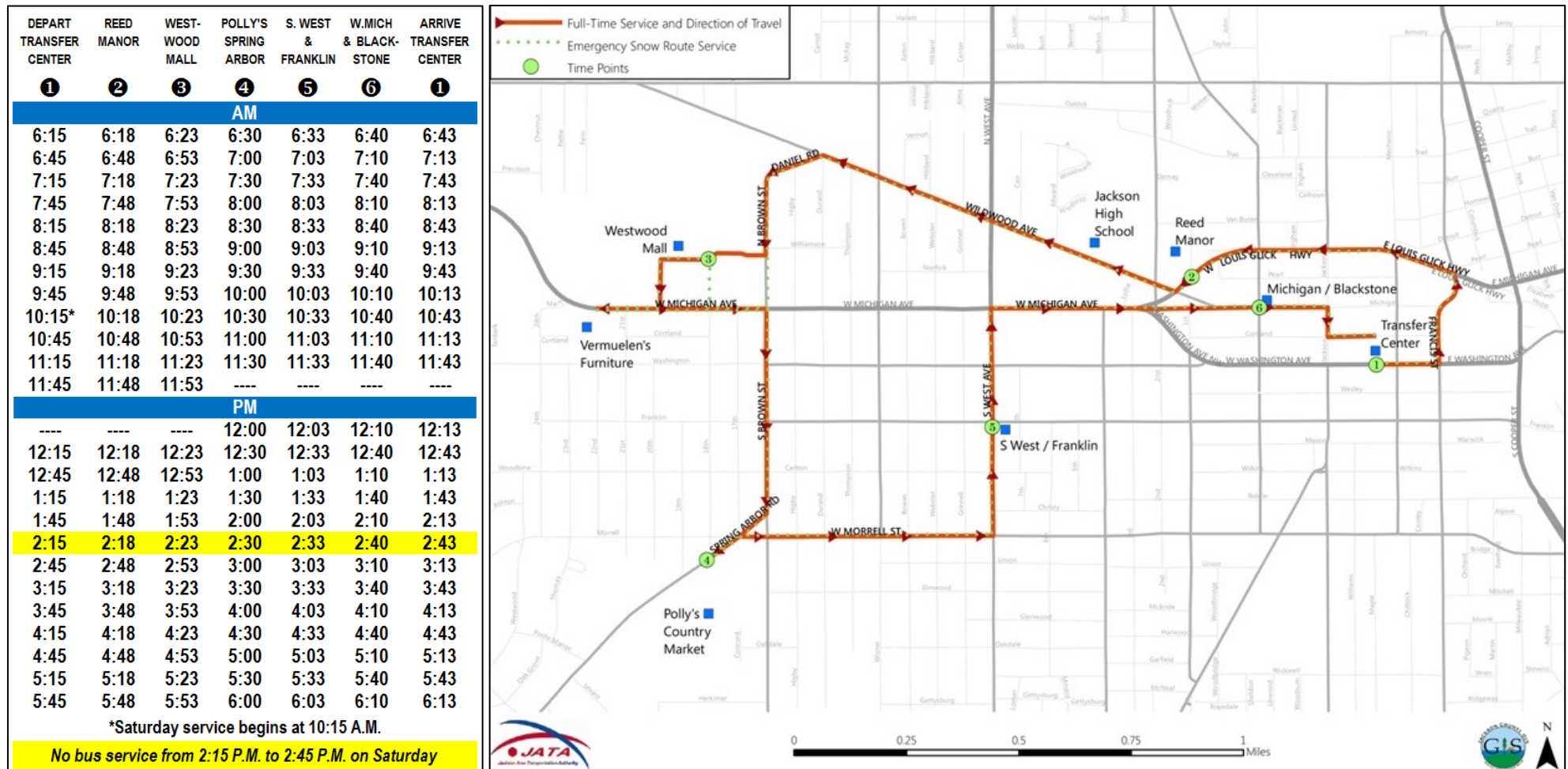


## Route 2 – W. Michigan Ave

Route 2 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include Reed Manor, Jackson High School, and Westwood

Mall. In 2016, Route 2 had 88,071 unlinked riders which was up from 76,027 in 2015. This route routinely has the 3<sup>rd</sup> highest ridership of all of the JATA fixed routes.

Figure 4: Route #2 Map and Schedule

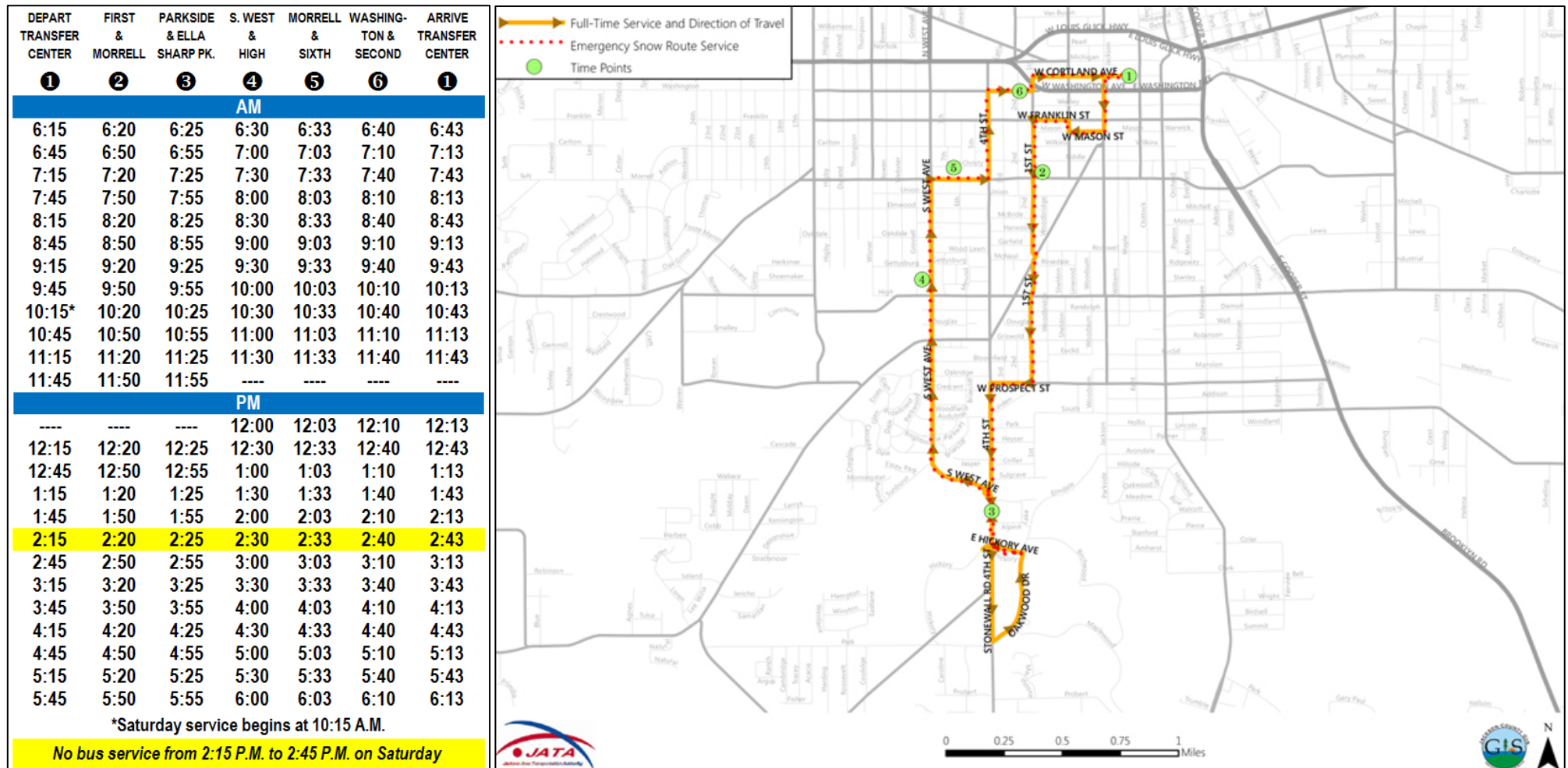


### Route 3 – S. West Ave

Route 3 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include Parkside Middle School, Ella Sharp Park, and

commercial businesses on Prospect St. In 2016, Route 3 had 47,954 unlinked riders which was up from 44,208 in 2015. This route is important as it reaches the residential neighborhoods in the southwest Jackson area.

Figure 5: Route #3 Map and Schedule



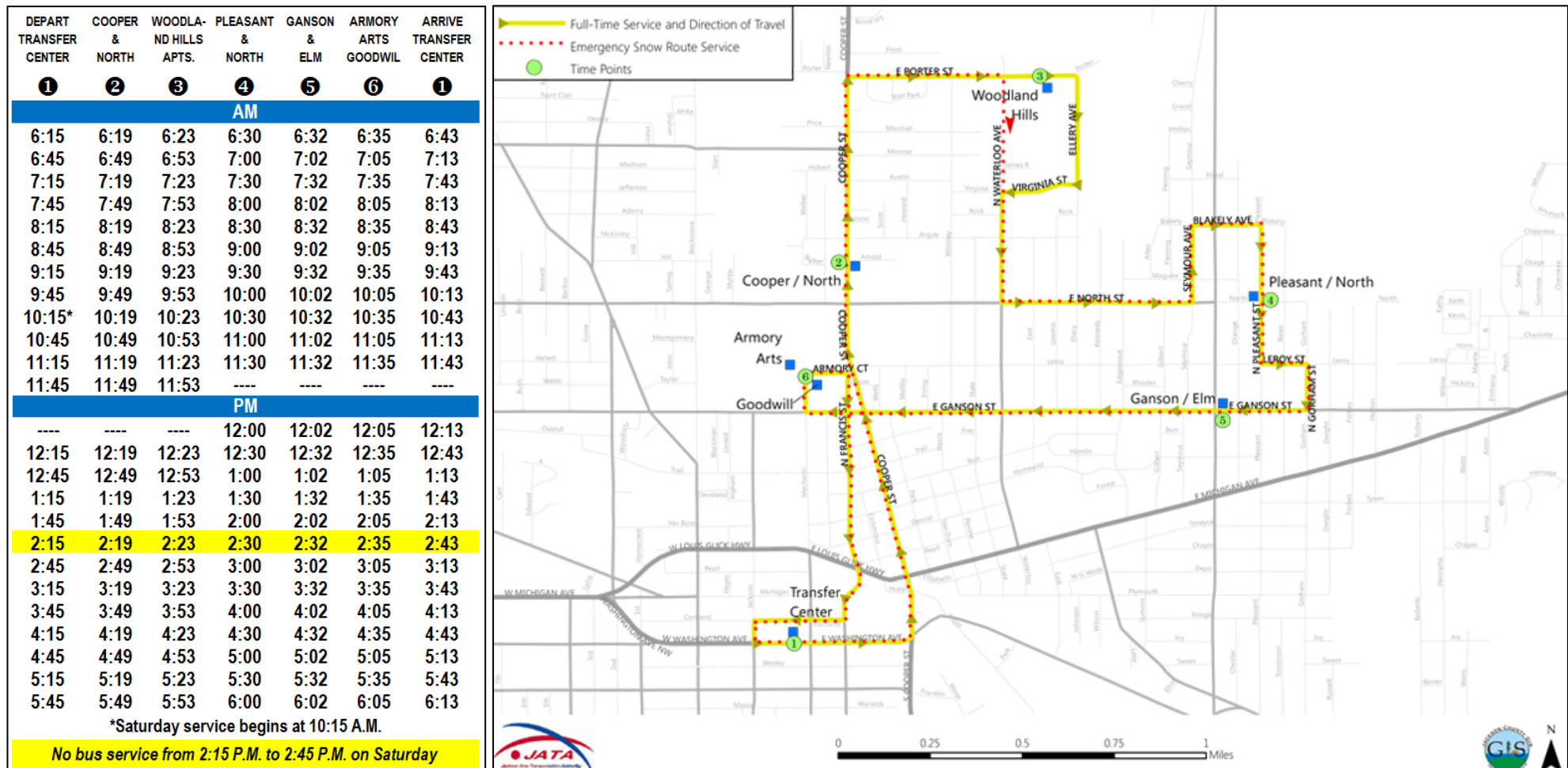


## Route 4 – Cooper Street

Route 4 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include the Armory Arts area including Jackson County

Fairgrounds and Goodwill, Woodland Hills Apartments, and Nixon Pool. In 2016, Route 4 had 38,642 unlinked riders which was up from 31,390 in 2015. This route is important as it reaches the residential neighborhoods in the northeast Jackson area and along Ganson St.

Figure 6: Route #4 Map and Schedule

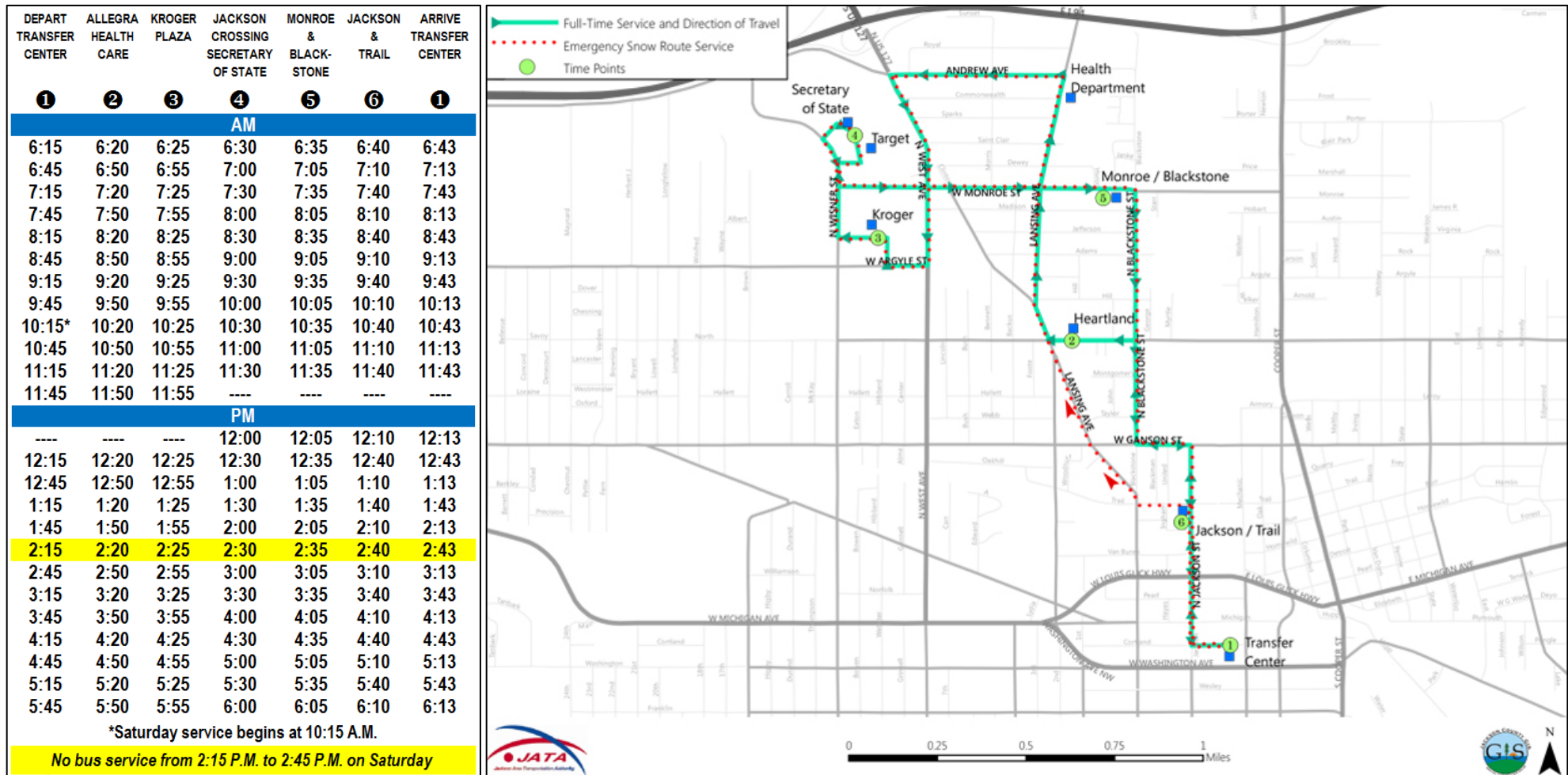


## Route 5 – Lansing Avenue

Route 5 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include Kroger, Secretary of State, Target, the Health

Department and a number of other major retail locations. In 2016, Route 5 had 90,959 unlinked riders which was up from 84,194 in 2015. This route is important as it reaches the most major retail areas in all of Jackson. Route 5 had the 2<sup>nd</sup> highest ridership in the JATA system for 2015 and 2016.

Figure 7: Route #5 Map and Schedule

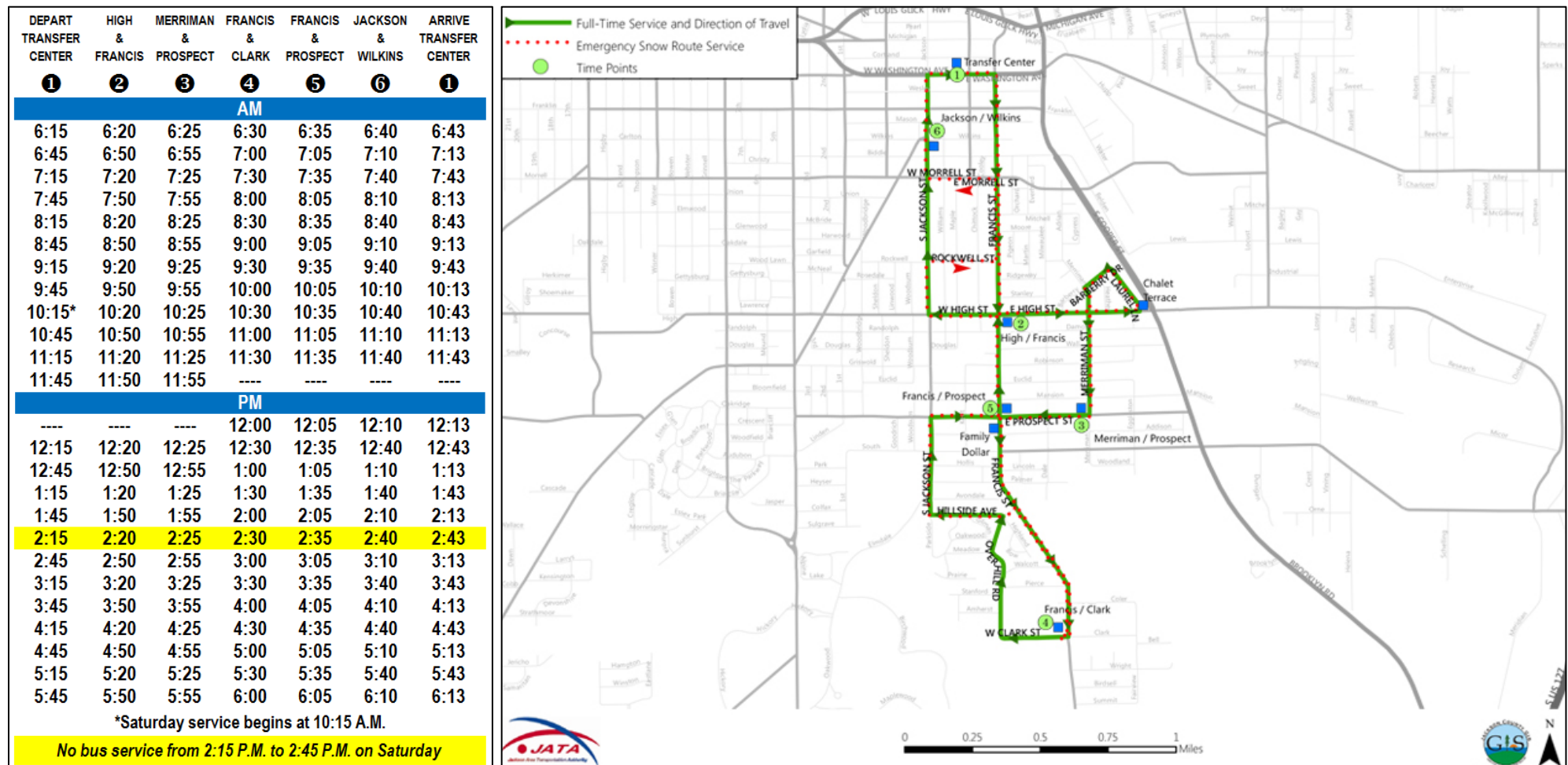


## Route 6 – Francis Street

Route 6 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:15 and 2:45 p.m. Key locations served by this route include Michigan Works, Jackson YMCA, Chalet Terrace

Apartments. It also provides a key connection to the Inter-City Bike Trail. In 2016, Route 6 had 54,952 unlinked riders which was up from 54,499 in 2015. This route is important as it reaches the residential neighborhoods in southern Jackson and several places of worship.

Figure 8: Route #6 Map and Schedule





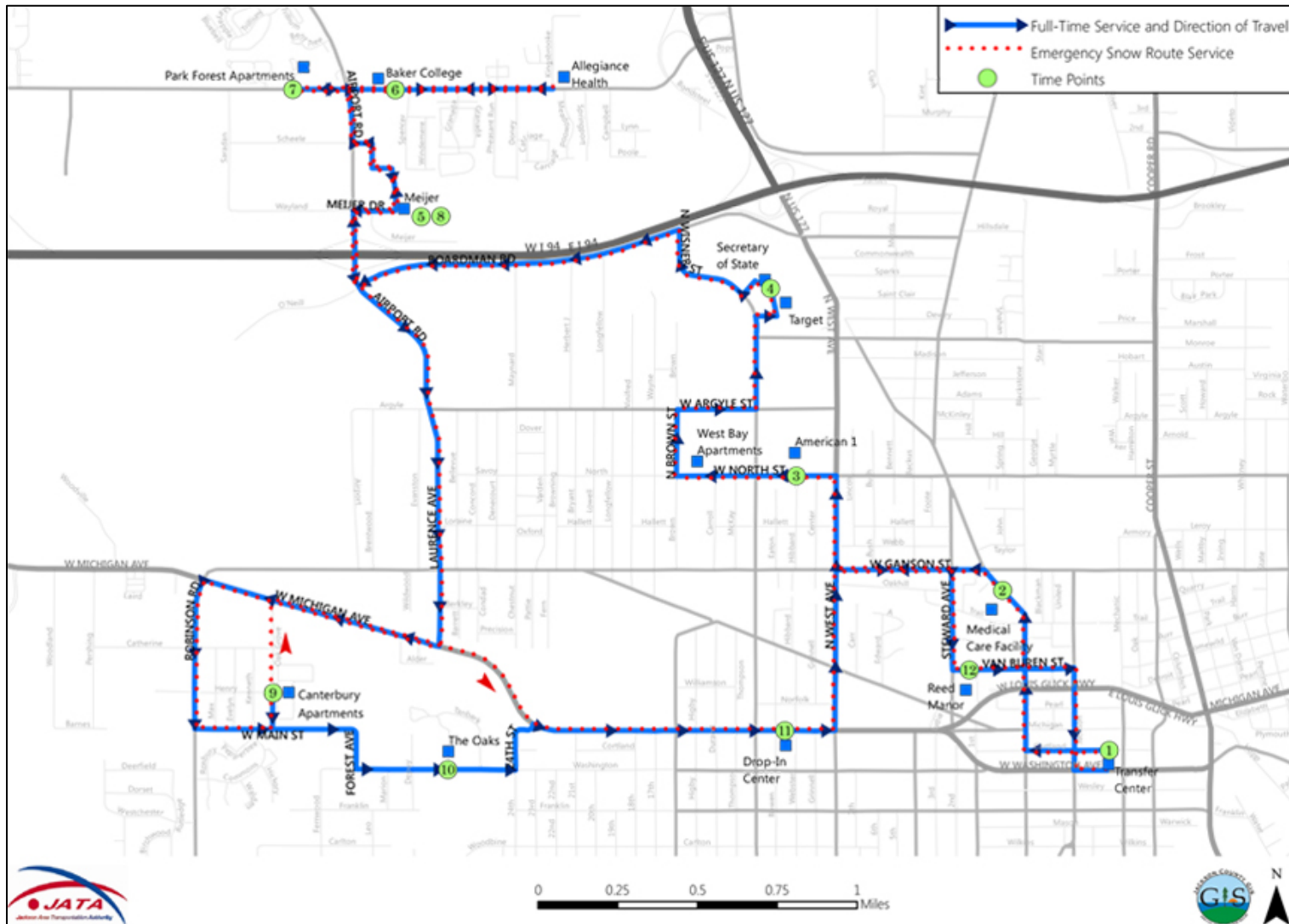
### Route 7 – Ganson/Blackman

Route 7 starts service at the transfer center daily at 6:15 a.m. and runs until 6:15 p.m. on weekdays. On Saturdays it operates from 10:15 a.m. until 6:15 p.m. with no service operating between 2:27 and 3:15 p.m. Key locations served by this route include Canterbury Apartments, Meijer, Baker College, and Target. In 2016, Route 7 had 42,065 unlinked riders which was up from 37,448 in 2015. This route is important as it reaches the shopping center in Blackman Township and the Jackson County Airport.

Figure 9: Route #7 Schedule

DEPART TRANSFER CENTER	MEDICAL CARE FACILITY	AMERICAN ONE	JACKSON CROSSING SEC. OF STATE	MEIJER	BAKER COLLEGE	PARK FOREST APTS.	MEIJER	CANTER- BURY APTS.	AIRPORT LANES	TLC EYECARE	REED MANOR	ARRIVE TRANSFER CENTER
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	①
<b>AM</b>												
6:15	6:19	6:23	6:27	6:33	6:39	6:42	6:45	6:52	6:55	6:59	7:04	7:10
7:15	7:19	7:23	7:27	7:33	7:39	7:42	7:45	7:52	7:55	7:59	8:04	8:10
8:15	8:19	8:23	8:27	8:33	8:39	8:42	8:45	8:52	8:55	8:59	9:04	9:10
9:15	9:19	9:23	9:27	9:33	9:39	9:42	9:45	9:52	9:55	9:59	10:04	10:10
10:15*	10:19	10:23	10:27	10:33	10:39	10:42	10:45	10:52	10:55	10:59	11:04	11:10
11:15	11:19	11:23	11:27	11:33	11:39	11:42	11:45	11:52	11:55	11:59	----	----
<b>PM</b>												
----	----	----	----	----	----	----	----	----	----	----	12:04	12:10
12:15	12:19	12:23	12:27	12:33	12:39	12:42	12:45	12:52	12:55	12:59	1:04	1:10
1:15	1:19	1:23	1:27	1:33	1:39	1:42	1:45	1:52	1:55	1:59	2:04	2:10
2:15	2:19	2:23	2:27	2:33	2:39	2:42	2:45	2:52	2:55	2:59	3:04	3:10
3:15	3:19	3:23	3:27	3:33	3:39	3:42	3:45	3:52	3:55	3:59	4:04	4:10
4:15	4:19	4:23	4:27	4:33	4:39	4:42	4:45	4:52	4:55	4:59	5:04	5:10
5:15	5:19	5:23	5:27	5:33	5:39	5:42	5:45	5:52	5:55	5:59	6:04	6:10
*Saturday service begins at 10:15 A.M.												
No bus service from 2:27 P.M. to 3:15 P.M. on Saturday												

Figure 10: Route #7 Map

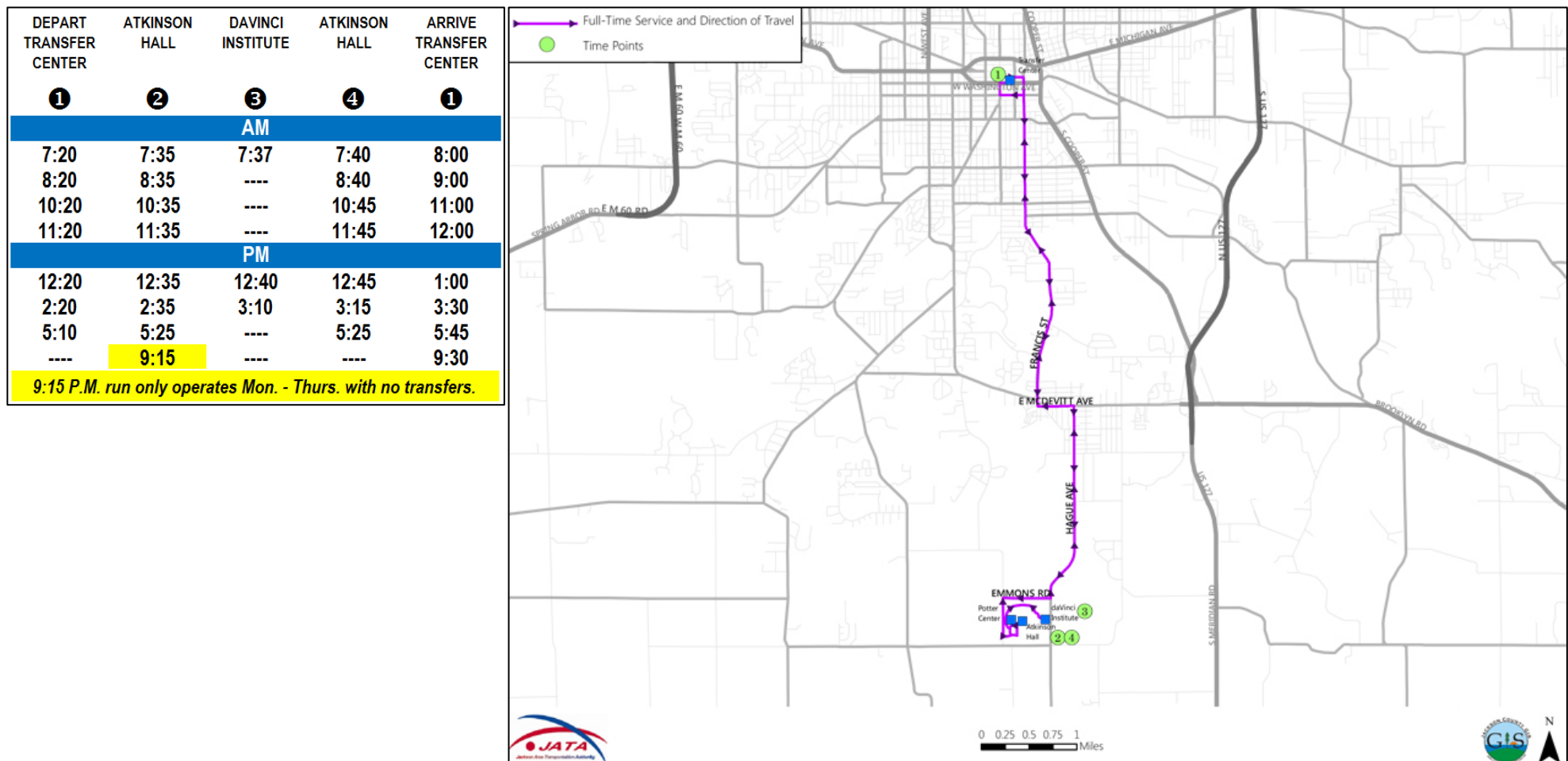


### Route 8 – Jackson College / da Vinci Shuttle

Route 8 starts service at the transfer center daily at 7:20 a.m. and runs until 5:45 p.m. on weekdays with a late night route running Monday through Thursday only. There is no Saturday service for this route. Key locations served by this route include Atkinson Hall at Jackson College, Potter Center, da Vinci

Institute, and downtown Vandercook Lake. In 2016, Route 8 had 25,421 unlinked riders which was down from 27,973 in 2015 making it the only JATA route with decreasing ridership. This route is important as it connects downtown Jackson to Jackson College.

Figure 11: Route #8 Map and Schedule



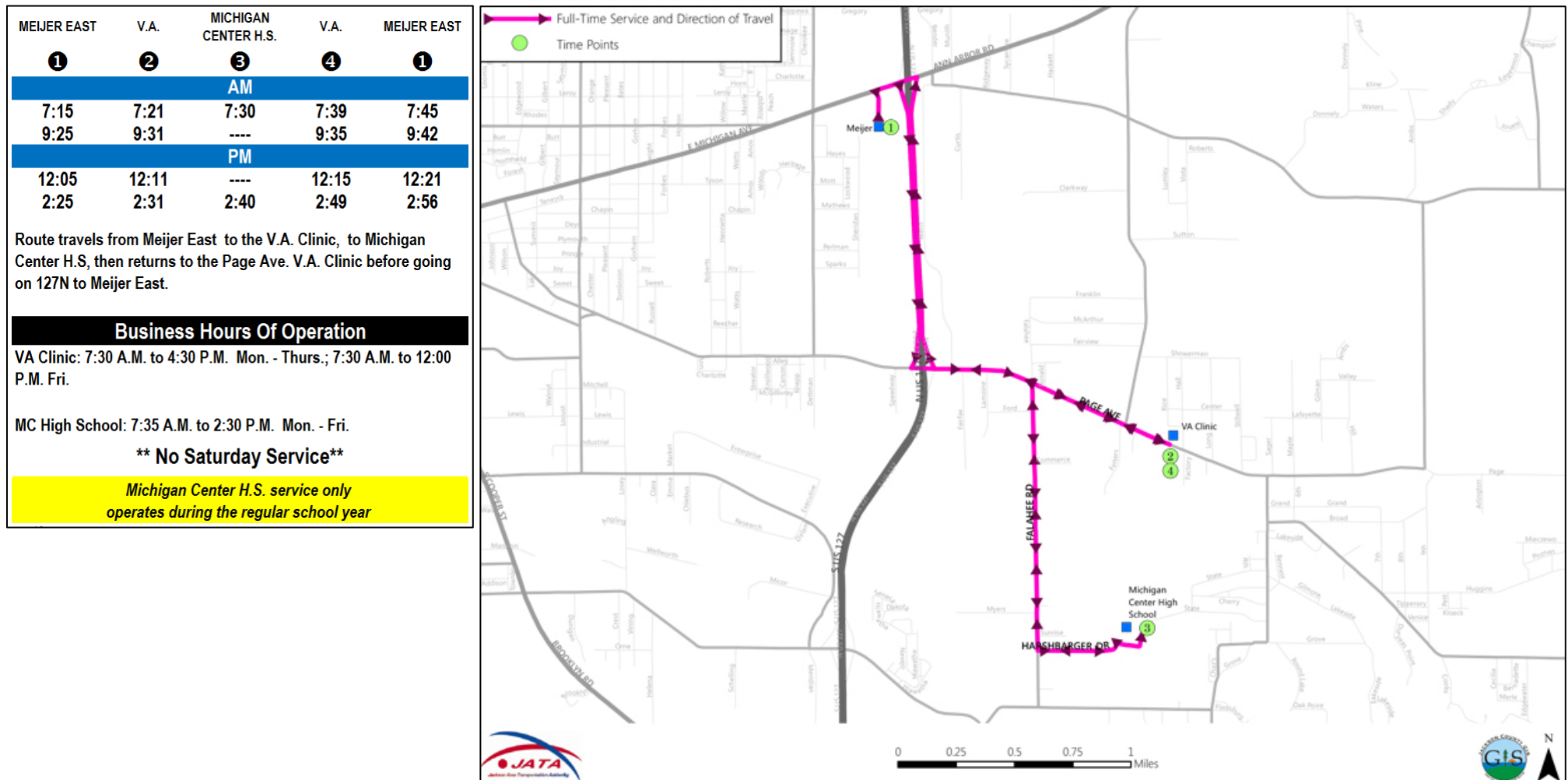


## Route 9 – Soper

Route 9 starts service at the Meijer transfer location daily at 7:15 a.m. and runs four daily trips at peak times only. There is no Saturday service for this route. Key locations served by this route include Meijer, the Veterans Affairs (VA) Medical Clinic, Michigan Center High School, and the Allegiance Medical

Labs. There is not sufficient reliable ridership data for this route at this time. This route is important as it reaches The VA Medical Clinic as well as shopping along Page Ave.

Figure 12: Route #9 Map and Schedule



### Route Utilization

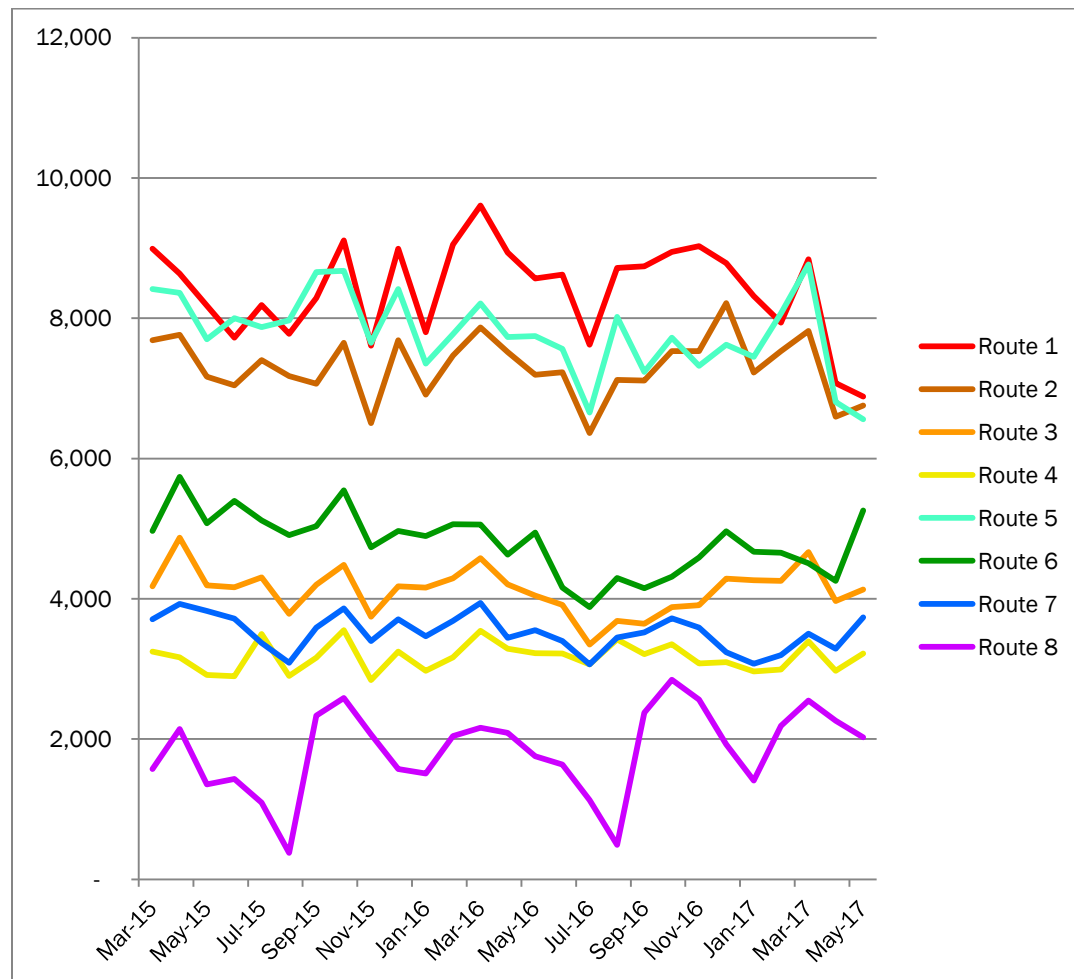
Table 5 and Figure 13 show the monthly ridership by route from March 2015 to May 2017. Route 1 is the highest ridership route overall, averaging 8,407 monthly riders, followed by Route 5 with 7,790 monthly riders. The lowest route by ridership is Route 8, which had 1,833 average monthly riders in this time period.

**Table 5: JATA Average Monthly Route Ridership March 2015 - May 2017**

Routes	Route 1	Route 2	Route 3	Route 4	Route 5	Route 6	Route 7	Route 8
<b>Average Ridership</b>	8,407	7,302	4,124	3,171	7,790	4,807	3,521	1,833

Source of Data: JATA, 2017

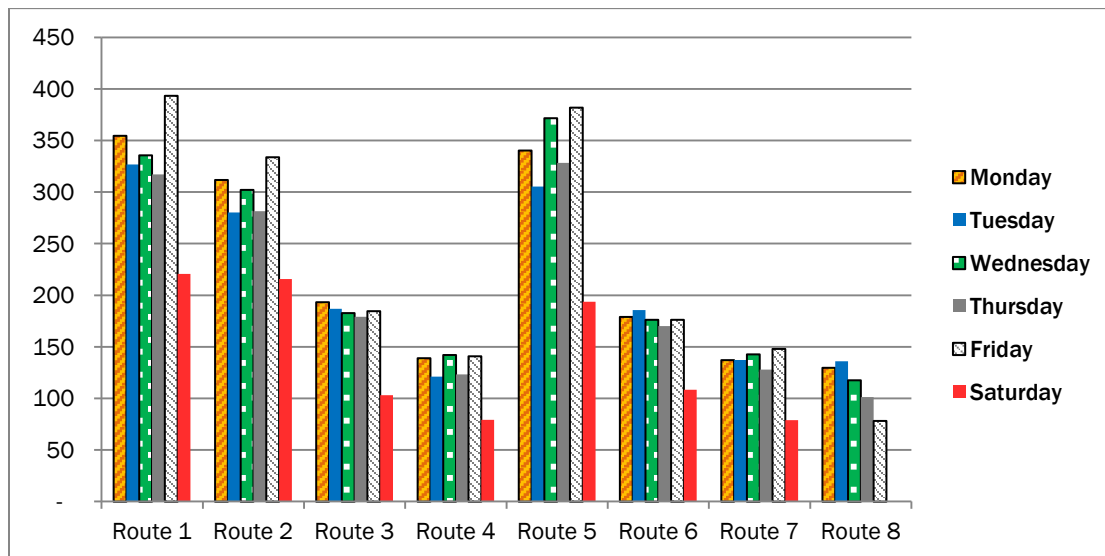
**Figure 13: JATA Average Monthly Ridership March 2015 - May 2017**



Source of Data: JATA, 2017

Looking further into current ridership data, Figure 14 shows average daily ridership for the recent month of March 2017. Fridays are the most popular day for riders, followed by Mondays and Wednesdays. Saturdays have the lowest ridership, perhaps also coinciding with limited service on this day.

Figure 14: JATA Average Daily Ridership, March 2017

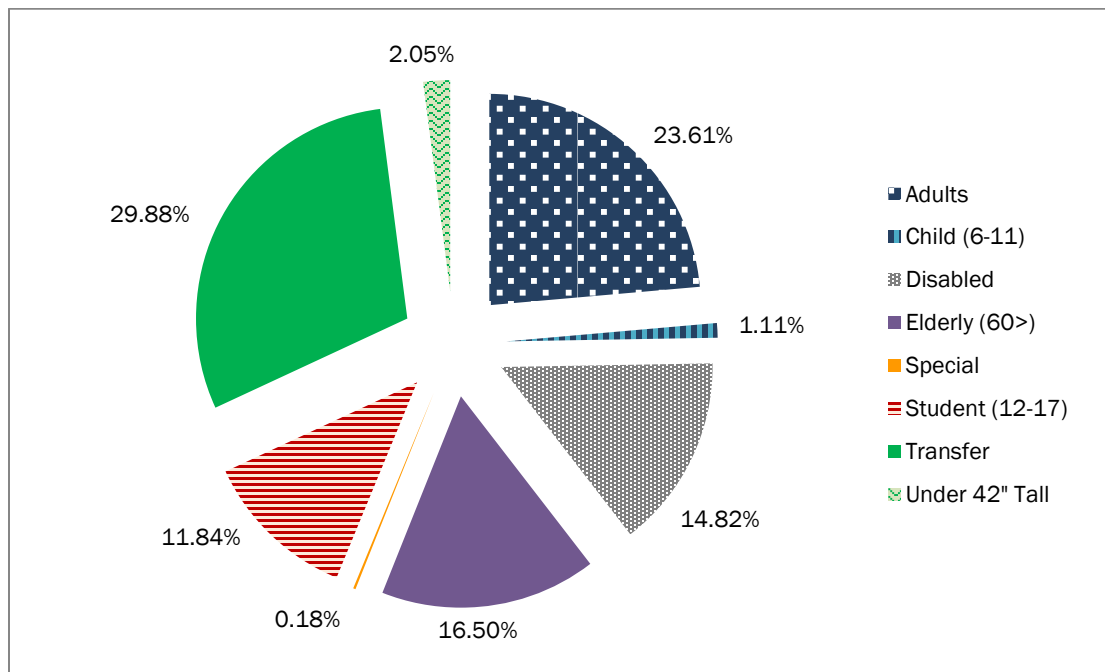


Source of Data: JATA, 2017

#### Fare Utilization

The largest fare type, after transfers, is made up by monthly passes (22.01%). Aside from transfers, adults make up the largest category of fare types at 23.61%. Adults are followed by older adult riders (16.5%), riders with disabilities (14.82%) and students (11.84%).

Figure 15: JATA Fare Utilization for March 2017



Source of Data: JATA, 2017



**Table 6: JATA March Fare Utilization by Fare Type**

	<b>Fare Count</b>	<b>% of Monthly</b>
<b>Adults</b>	8,235.00	18.7%
<b>Adults Mo Pass</b>	2,124.00	4.8%
<b>Child (6-11)</b>	483.00	1.1%
<b>Child (6-11) Mo Pass</b>	6.00	0.0%
<b>Disabled</b>	3,968.00	9.0%
<b>Disabled Mo Pass</b>	2,532.00	5.7%
<b>Elderly (60&gt;)</b>	3,740.00	8.5%
<b>Elderly (60&gt;) Mo Pass</b>	3,428.00	7.8%
<b>Employee Pass</b>	173.00	0.4%
<b>Special</b>	80.00	0.2%
<b>Sr/Dis (60&gt;)</b>	14.00	0.0%
<b>Sr/Dis (60&gt;) Mo Pass</b>	58.00	0.1%
<b>Student (12-17)</b>	3,821.00	8.7%
<b>Student (12-17) Mo Pass</b>	1,375.00	3.1%
<b>Transfer</b>	13,109.00	29.8%
<b>Under 42" Tall</b>	901.00	2.0%

Source of Data: JATA, 2017

## 2.2 Demand Response / Reserve-A-Ride Program

JATA operates demand-response service in the City of Jackson and the remainder of Jackson County via the Reserve-A-Ride program. City service is operated during the same hours of service as the fixed-route service plus additional evening and weekend service hours (weekdays 6 a.m.-10 p.m., Saturdays 10 a.m.- 10 p.m., and Sundays 7 a.m.-4 p.m.). County service is operated Mondays, Wednesdays, and Fridays from 6 a.m. to 6 p.m. The service is curb-to-curb and requires one day advance scheduling, though passengers may schedule up to two weeks in advance. Requests are scheduled according to space available without regard to trip purpose. However, passengers who are certified with Americans with Disabilities (ADA) Para-transit Certification are given priority in scheduling. Service is provided using accessible vehicles (lift or ramp equipped).

Customers are expected to be ready for pick-up during the assigned 30-minute pick-up window and cancellations can be made up to two hours in advance of the scheduled ride. Repeat cancellations with less than two hours advance notice and no-shows may result in the suspension of service for an individual.

### Operations

The Reserve-A-Ride program is operated nearly every day of the year. In 2016, the Reserve-A-Ride program provided 27,500 trips over 14,500 hours of service. Table 7 describes the annual operating statistics for the Reserve-A-Ride program for 2015 and 2016 and the change between the two years of service. Overall, the amount of service operated declined by 17% based on hours of service operated but the number of trips provided only declined by 8%. Fare revenue also remained about the same year-over-year. Also of note, the amount of non-revenue hours and miles of service declined at a higher rate than hours and miles of revenue service, which is positive from a service efficiency standpoint.

**Table 7: JATA Reserve-A-Ride Annual Operating Statistics 2015 - 2016**

Operating Statistics	2015	2016	% Change
Operating Days	353	364	3%
Revenue Hours	17,395	14,496	-17%
Non-Revenue Hours	6,967	5,607	-20%
Revenue Miles	249,583	190,092	-24%
Non-Revenue Miles	42,324	26,280	-38%
One-Way Trips	29,906	27,513	-8%
Fare Revenue	\$102,083	\$102,867	1%

Source of Data: JATA Routematch Report, 2017

As noted, the amount of total service provided and passenger trips declined from 2015 to 2016. This decline was due to changes in the program. For the first seven months of the 2016 calendar year (January 1- July 31), Reserve-A-Ride service was only provided for ADA certified passengers within ¾ mile of JATA fixed routes. The County service was not operated. Starting August 1, 2016, the County service was reinstated, but with fewer vehicles available to schedule trips.

Table 8 further breaks down the service provided by ridership category. The number of total passengers declined by 9%, but the number of attendants also declined by double that rate. Personal Care Attendants ride with ADA certified passengers at no charge and provide assistance above and beyond what JATA drivers are able to provide. Reductions in the number of attendants could result in drivers being asked to perform duties for which they are not trained, which is undesirable as it places an undue burden on drivers. No-shows and cancellations also decreased at a higher rate than overall ridership, which is positive from a service efficiency standpoint.

**Table 8: JATA Reserve-A-Ride Service Statistics 2015-2016**

Service Statistics	2015	2016	% Change
Total Passengers	36,096	32,811	-9%
Attendants	4,621	3,748	-19%
Companions	1,569	1,550	-1%
No Shows	2,835	1,738	-39%
Cancellations	4,523	3,930	-13%

Source of Data: JATA Routematch Report, 2017

With regard to the County service provided outside of the City of Jackson, Table 9 provides a summary of the number of trips taken in 2016 by other townships. The majority of the trips taken outside the City were taken by residents of the immediately adjacent townships (Blackman, Leoni, and Summit) in Zone 2. Other popular residence townships for Reserve-A-Ride passengers were Spring Arbor, Napoleon, and Waterloo. As noted, County service is provided Mondays, Wednesdays and Fridays, with Wednesdays being the busiest days, primarily due to the number of medical appointments.

**Table 9: County Reserve-A-Ride Service (Outside City of Jackson) 2016**

Township	Trips Taken by Residents
<b>Zone 2</b>	
Blackman Township	3,287
Leoni Township	3,485
Summit Township	2,576
<b>Zone 3</b>	
Columbia Township	16
Concord Township	15
Hanover Township	17
Liberty Township	31
Napoleon Township	138
Norvell Township	2
Parma Township	7
Pulaski Township	10
Rives Township	16
Sandstone Township	32
Spring Arbor Township	369
Waterloo Township	115
<b>Total</b>	<b>10,116</b>

Source of Data: JATA Rural Reserve-A-Ride Fact Sheet, 2017

### Performance

Service, ridership, and financial statistics are used to develop performance metrics that help identify areas of success and potential areas of improvement. Table 10 describes performance metrics for the Reserve-A-Ride program for 2015 and 2016 and the change over the two-year period. From 2015 to 2016, while the overall ridership declined in the program, the number of trips per hour and trips per mile increased by 10% and 20%, respectively, indicating an improvement in trip grouping and overall efficiency of the program. Additionally, from 2015 to 2016, the number of non-revenue miles and hours declined, indicating the more time was available for revenue service, thus also improving efficiency.

**Table 10: JATA Reserve-A-Ride Performance Metrics 2015-2016**

Performance Metric	Description	2015	2016	% Change
Trips/Revenue Hour	Total number of passengers riding per hour of service across all vehicles; higher number indicates greater efficiency	1.70	1.90	10.4%
Trips/Revenue Mile	Total number of passengers riding per mile of service across all vehicles; higher number indicates greater efficiency	0.12	0.14	20.8%
Miles/Hour (Revenue)	Miles driven per hour of service across all vehicles (in-service only)	14.35	13.11	-8.6%
Non-Revenue Hours/Total Service Hours	Hours operated while not in service (to/from garage, between calls, etc.) as a percentage of total hours operated across all vehicles; lower percentage is preferable	28.6%	27.9%	-2.5%
Non-Revenue Miles/Total Service Miles	Miles operated while not in service (to/from garage, between calls, etc.) as a percentage of total miles operated across all vehicles; lower percentage is preferable	14.5%	12.1%	-16.2%

Denials, missed trips, and excessive trip lengths have only recently been tracked in a comprehensive manner, so enough data to identify trends is not available.

With regard to the grouping of trips (transporting more than one passenger at a time when origins, destinations and appointment times, and trip purposes are compatible), the schedulers use scheduling software to identify possible groupings first, then manually identify potential groupings based on locations and appointment time flexibility depending on trip purposes. Grouping of trips is accomplished more regularly with the City service than with the County service because of the longer travel distances, lower population density, and less flexible timing due to the service only operating three days a week.

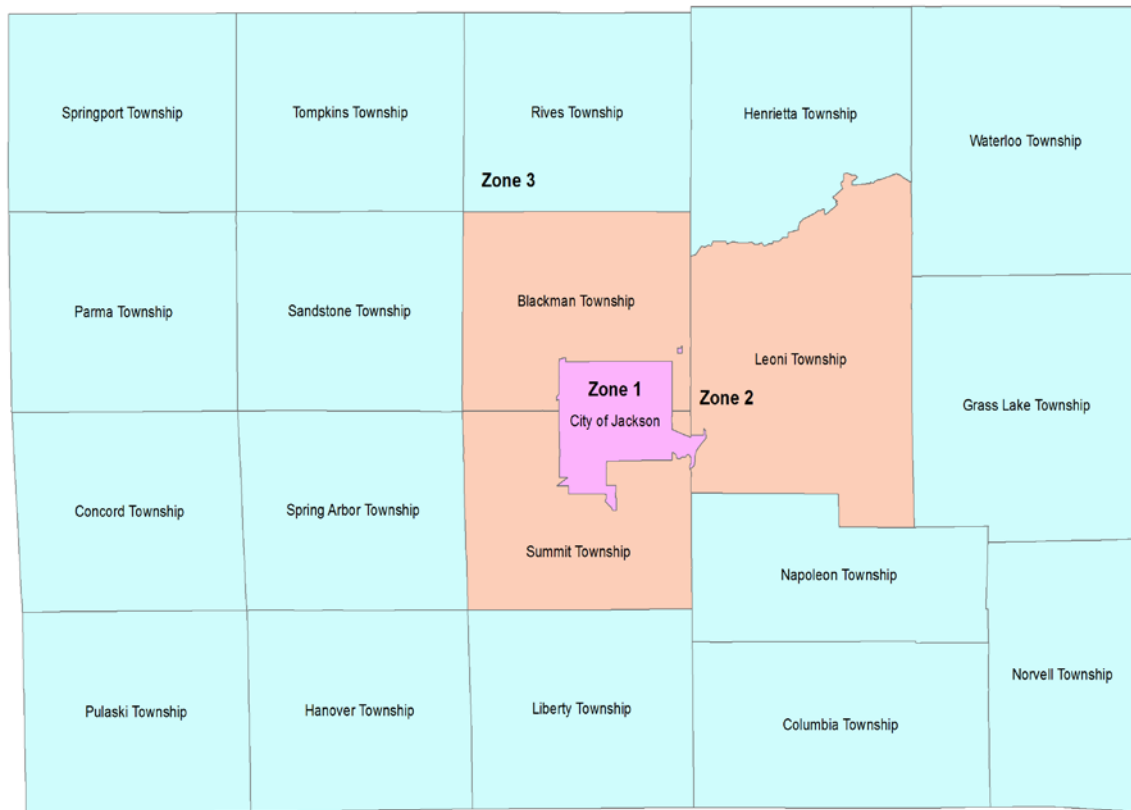
Recently JATA has made a change to scheduling protocol with regard to window times, and that has improved on-time performance and gives passengers a more reliable window during which they can expect the vehicle to arrive. Between February and May 2017, the Reserve-A-Ride program averaged 85.5% on-time performance. Time of day is the biggest obstacle to trip grouping, not geography, with most trips occurring between 10am and 2pm, with another peak between 3pm and 4pm for return trips. This timing is further complicated by the need for split shifts and lunch coverage for drivers.

### Fares

The fare for Reserve-A-Ride service is determined based on origins and destinations by zone. Zone 1 is the City of Jackson. Personal Care Attendants ride with ADA certified passengers at no charge. Companions or guests of passengers are charged the same fare as the passenger. Figure 16 and Table 11 show the fare and zonal structure for the Reserve-A-Ride program.



**Figure 16: JATA Reserve-A-Ride Zones**



**Table 11: JATA Reserve-A-Ride Fares and Zonal Structure**

Fare Type	Zone 1 to Zone 1	Zone 1 to Zone 2	Zone 1 to Zone 3	Zone 2 to Zone 1, 2, and 3	Zone 3 to Zone 1, 2 and 3
Adult	\$4	\$5	\$7.50	\$7.50	\$10.50
Student (ages 5-18; students over 18 with school identification)	\$2.50	\$3.50	\$7.50	\$7.50	\$10.50
Senior (60 years of age or older)/Disabled (Weekdays until 5pm)	\$2	\$2.50	\$3	\$3	\$3
Senior (60 years of age or older)/Disabled (Weekends, Weekday Evenings)	\$2	\$2.50	\$3	\$3	\$3
Children (ages under 5, accompanied by an adult)	\$0	\$0	\$0	\$0	\$0

## 2.3 Peer Comparison

To better understand JATA's performance, a comparison of similarly-sized agencies can provide metrics to reveal areas that could be addressed. Table 12 is a comparison chart of several peer transit agencies from across the country, showing some of the key categories that FTA reviews as it can determine funding for future transit needs. This table shows that JATA fits right in the average part of the curve for both trips per revenue mile and cost per revenue mile. However, JATA is in a unique situation in that the service area population is larger than the urbanized area population.

Much of this additional population lives outside of the City of Jackson limits and is not served by fixed route buses. This indicates that finding a way to tap into this market of additional population in a more productive way will be important for JATA as they have limited operating dollars. Another key metric is the number of unlinked trips per operating dollars. Again, though JATA is slightly below average, they are in the mean part of the curve. Improving efficiency with demand response services will greatly improve this number as well.

In addition to the categories described above, it is also important to look at the makeup of a community. Some communities have much more transit dependent demographics and/or a big difference in terms of average income levels. Table 13 shows a comparison of this type of data for JATA and its peers. To select peers, the Urban Integrated National Transit Database was used (<http://www.ftis.org/iNTD-Urban>). This database and tool allows planners to select peers based on methodology from the Transit Cooperative Research Program "Report 141: A Methodology for Performance Measurement and Peer Comparison in the Public Transportation Industry." "Likeness scores" are used to determine the level of similarity between a potential peer agency and the target agency both with respect to individual factors (e.g., urban area population, modes operated and service areas). A score of 0 indicates that the peer and target agency values are exactly alike, while a score of 1 indicates that one agency's value is twice the amount of the other.

Looking at this information, we see that for population density, low income population numbers, and the number of college students, Bay City is in reality the best peer agency to compare against. Looking back at Table 12, JATA is outperforming Bay City in almost every category.



Table 12: JATA Peer Comparison by Metric

Metric	Transit Agency Peer									
	JATA	Bay City, MI	Fort Smith, AR	Kenosha, WI	Decatur, IL	Altoona, PA	Saginaw, MI	Holland, MI	Concord, NC	Average
Urbanized Area Population	90,057	70,585	122,947	124,064	93,863	79,930	126,265	99,941	214,881	116,560
Service Area Population	160,248	107,000	86,209	124,064	81,337	69,608	127,000	71,572	95,043	95,229
Service Area (miles)	58	40	65	51	53	25	63	42	63	50
Operating Expenses (Millions \$)	\$4.53	\$8.26	\$2.30	\$5.90	\$6.14	\$4.53	\$6.49	\$3.92	\$3.02	\$5.07
Annual Unlinked Trips	588,701	548,766	272,987	1,319,931	1,497,237	642,524	988,376	488,697	470,015	778,567
Annual Passenger Miles	1,714,952	3,958,526	N/A	4,424,925	4,363,749	1,911,397	3,394,144	1,951,424	N/A	3,334,028
Annual Vehicle Revenue Miles	714,331	1,471,697	467,217	1,008,991	1,139,239	573,866	876,395	805,599	597,289	867,537
Cost Per Passenger Trip	\$7.69	\$15.05	\$8.43	\$4.47	\$4.10	\$7.05	\$6.56	\$8.02	\$6.42	\$7.51
Trips Per Revenue Mile	0.82	0.37	0.58	1.31	1.31	1.12	1.13	0.61	0.79	0.9
Unlinked Trips per Operating Dollar	0.13	0.07	0.12	0.22	0.24	0.14	0.15	0.12	0.16	0.15
Cost Per Revenue Mile	\$6.34	\$5.61	\$4.92	\$5.85	\$5.39	\$7.90	\$7.40	\$4.87	\$5.05	\$5.87

National Transit Database, 2014 and Urban Integrated National Transit Database (<http://www.ftis.org/INTD-Urban>)

Table 13: JATA Peer Comparison by Likeness Score, 2014

Likeness Score	Transit Agency Peer								
	JATA	Bay Metropolitan Transit Authority	Fort Smith Transit	Kenosha Transit	Decatur Public Transit System	Altoona Metro Transit	Saginaw Transit Authority Regional Service	Macatawa Area Express Transportation Authority	Concord Kannapolis Area Transit
Location	Jackson, MI	Bay City, MI	Fort Smith, AR	Kenosha, WI	Decatur, IL	Altoona, PA	Saginaw, MI	Holland, MI	Concord, NC
Population Density	1,542	1,746	1,691	2,432	1,515	2,012	1,707	1,750	1,856
Likeness Score	0	0.13	0.10	0.58	0.02	0.30	0.11	0.13	0.20
% College Students	20.0%	19.0%	19.0%	29.0%	24.0%	21.0%	21.0%	30.0%	42.4%
Likeness Score	0	0.04	0	0	0	0	0	1	1.16
Pop Growth Rate	2.58	1.83	5.58	3.03	-0.97	-0.51	-3.98	7.93	42.79
Likeness Score	0	0.15	0.60	0.09	0.71	0.62	1.31	1.07	8.04
% Low Income	21.9%	21.4%	24.3%	19.2%	17.3%	14.1%	20.9%	11.3%	13.8%
Likeness Score	0.00	0.02	0.11	0.14	0.27	0.55	0.05	0.94	0.59
% Service Demand Resp.	46.0%	26.0%	45.0%	19.0%	17.0%	37.0%	13.0%	62.0%	0.0%
Likeness Score	0	0.41	0.02	0.55	0.59	0.19	0.68	0.31	0.93
% Service Purchased	14%	0%	0%	19%	20%	34%	0%	0%	100%
Likeness Score	0	0.71	0.71	0.23	0.29	1.00	0.71	0.71	4.29
Total Likeness	0	1.48	1.58	2.04	2.10	2.75	2.95	3.69	15.21

National Transit Database, 2014 and Urban Integrated National Transit Database (<http://www.ftis.org/iNTD-Urban>)



## 2.4 Facilities

### Transfer Center

JATA currently has one main transfer location which is located in downtown Jackson at 127 W. Cortland Street. The transfer center operates as a pulse system in 30 minute increments.

The transfer center has a covered waiting area on both sides to help shield riders from poor weather conditions. Additionally, the facility has an indoor waiting area for riders which includes seating, public restrooms, vending services, and ticket sales offices. The ticket offices are staffed during building hours, which allow riders to inquire about uncertainties with their transit service. Route maps and schedules are also provided in this area with large print, braille, and audio options available upon request.

The transfer center has eight bus bays in total with four on the east side of the building and four on the west. The location of each bus is clearly marked to allow riders to be aware of the specific side of the building the bus they are waiting on will be in.

### Garages

JATA has one maintenance garage which is located at 2350 East High Street. The maintenance garage is connected to the storage barn and the administrative offices.

The maintenance garage has six total bus bays. Four of these bays are for maintenance purposes, while one is the paint booth and the other is strictly for wheel alignment. In addition to the bus bays, the maintenance garage also contains a parts room where frequently needed parts are kept on-hand and stored. The facility is operated by the facility manager and a staff of eight other employees. These employees include a shop manager, five full-time mechanics, a parts clerk, and a utility worker. JATA performs all repairs in house. These repairs range from full engine rebuilds to oil changes. The only thing outsourced at this time is the wheel alignment for vehicles other than full-size buses. The in-house wheel alignment booth is only for full-size buses.

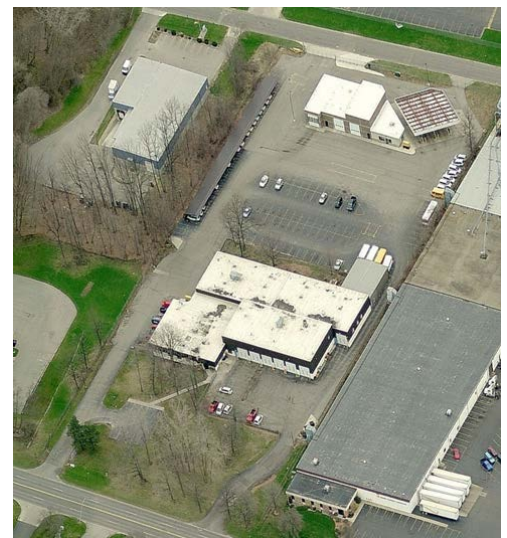


### Storage Barn

The JATA storage yard has over 100,000 square feet of space including a storage facility where most vehicles are housed. The storage facility is attached to JATA's administrative and maintenance facilities. This area provides ample room for the storage of both active and non-active vehicles. There are covered parking spaces for many of the smaller vehicles on the west side of the lot.

### Offices

The JATA main facility, the Paul Dupuis Administrative Facility, is located at 2350 East High Street. The administrative offices are roughly 8,500 square feet with numerous offices, restrooms, a waiting area, a conference room, and a break area amongst other things. JATA staff performs almost all administrative tasks in house. However, the sale of bus and bus shelter advertising space is handled by Crosstown Communications.



### Vehicles

JATA has a number of different vehicles in its fleet. These vehicles include both buses, vans, and other non-revenue producing vehicles such as a wrecker/tow truck to assist with disabled vehicles. A complete list of the vehicles can be seen in the table that follows.



Table 14: JATA Bus Inventory

Unit #	YEAR	Asset Class	Years of Useful Life	Current Age	Remaining Life	Make	Model	Capacity	Date Received
475	2008	Bus	12	9	3	Gillig- Blue	Low floor 40'	40 or 33+2	1-Oct-08
476	2008	Bus	12	9	3	Gillig-Yellow	Low Floor35'	32 or 25 + 2	1-Oct-08
477	2008	Bus	12	9	3	Gillig-Silver	Low floor 35'	32 or 25 + 2	1-Oct-08
478	2008	Bus	12	9	3	Gillig-Black	Low floor 35'	32 or 25 + 2	1-Oct-08
479	2008	Bus	12	9	3	Gillig-Fuschia	Low floor 29'	28 or 24 + 2	1-Oct-08
480	2008	Bus	12	9	3	Gillig-Lime	Low floor 29'	28 or 24 + 2	1-Oct-08
481	2008	Bus	12	9	3	Gillig-DarkRed	Low floor 29'	28 or 24 + 2	1-Oct-08
494	2010	Bus	12	7	5	Gillig-Orange	Low Floor 35'	32 or 25 + 2	28-Jun-10
495	2010	Bus	12	7	5	Gillig-Tang	Low Floor 35"	32 OR 25+2	30-Jun-10
496	2010	Bus	12	7	5	Gillig-White	Low Floor 35'	32 or 25 + 2	2-Jul-10
497	2010	Bus	12	7	5	Gillig-Purple	Low Floor 35"	32 or 25 + 2	6-Jul-10
506	2012	Bus	12	5	7	Gillig-RED	Low Floor 35'	32 or 25 + 2	1-Apr-12
507	2012	Bus	12	5	7	Gillig-Black	Low Floor 35'	32 or 25 + 2	1-Apr-12
515	2004	Bus	12	13	-1	International	3000 series	63	28-Feb-15
499	2010	Non-Rev	4	7	-3	Dodge	Caravan	4+1	10-Dec-10
503	2010	Non-Rev	4	7	-3	Dodge	Caravan	4+1	10-Dec-10
504	2010	Light Duty	4	7	-3	Dodge	Caravan	4+1	10-Dec-10
508	2012	Light Duty	4	5	-1	Dodge	Caravan	4+1	1-Oct-12
509	2012	Light Duty	4	5	-1	Dodge	Caravan	4+1	1-Oct-12
510	2012	Light Duty	4	5	-1	Dodge	Caravan	4+1	1-Oct-12
517	2016	Light Duty	4	1	3	Ford	Transit	5+1	26-Apr-16
518	2016	Light Duty	4	1	3	Ford	Transit	5+1	26-Apr-16
519	2016	Light Duty	4	1	3	Ford	Transit	5+1	26-Apr-16
520	2016	Light Duty	4	1	3	Ford	Transit	5+1	26-Apr-16
521	2016	Light Duty	4	1	3	Ford	Transit	5+1	26-Apr-16
487	2009	Med Duty	7	8	-1	Daimler-Pink	Sprinter-S	14 or 3+4	07-Jan-10
488	2009	Med Duty	7	8	-1	Daimler-Blue	Sprinter-S	14 or 3+4	07-Jan-10
489	2009	Med Duty	7	8	-1	Daimler-Red	Sprinter-S	14 or 3+4	07-Jan-10
490	2009	Med Duty	7	8	-1	Daimler-White	Sprinter-S	14 or 3+4	07-Jan-10
491	2009	Med Duty	7	8	-1	Daimler-Green	Sprinter-R	14 or 3+4	07-Jan-10
492	2009	Med Duty	7	8	-1	Daimler-Black	Sprinter-R	14 or 3+4	4-Jan-10
493	2009	Med Duty	7	8	-1	Daimler-Yellow	Sprinter-R	14 or 3+4	4-Jan-10
505	2009	Med Duty	7	8	-1	Daimler-Camo	Sprinter-R	14 OR 3+4	24-May-11
511	2013	Med Duty	7	4	3	Interntional	Eldorado	20 or 6	30-Nov-12
512	2013	Med Duty	7	4	3	Interntional	Eldorado	20 or 6	30-Nov-12
513	2013	Med Duty	7	4	3	Interntional	Eldorado	20 or 6	30-Nov-12
516	2016	Med Duty	7	1	6	Interntional	Eldorado	20 or 6	18-Mar-16
482	2009	Non-Rev	4	8	-4	Dodge	Caravan	4+1	1-Apr-09
483	2009	Non-Rev	4	8	-4	Dodge	Caravan	4+1	1-Apr-09
484	2009	Non-Rev	4	8	-4	Dodge	Caravan	4+1	1-Apr-09
485	2009	Non-Rev	4	8	-4	Dodge	Caravan	4+1	1-Apr-09
486	2009	Non-Rev	4	8	-4	Dodge	Caravan	4+1	1-Apr-09
501	2001	Utility	15	16	-1	Freightliner	FL-60 Wrecker	2	24-Dec-01
500	2000	Utility	5	17	-12	CHEVROLET	PICKUP	3	15-Jul-00
514	2013	Utility	5	4	1	CHEVROLET	PICKUP	3	1-Jun-13

## 2.5 Rail

Jackson has a train station located at 501 East Michigan Avenue that is currently served by Amtrak along its Wolverine Line. The station itself was first constructed in 1872 and was last renovated in 1978. The station has one side platform and one island platform. There are currently two tracks at the station. Jackson station had 26,674 passengers in 2015 which was a slight decline from 2014, but only had 22,475 passengers in 2016 according to Amtrak.



Jackson Station also serves as a branch of Amtrak's engineering department that is tasked with maintaining the tracks between Kalamazoo and Dearborn. Jackson also hosts a new maintenance base (2013) that is currently making infrastructure upgrades to allow for future high speed rail.























































































The Wolverine Line is a passenger service line that provides three daily round trips between Chicago and Pontiac with stops at numerous places in between including, Kalamazoo, Jackson, Ann Arbor, Dearborn, and Detroit. The entire line is 304 miles in length. Eastbound trains stop in Jackson at 12:18pm, 5:33pm, and 10:37pm. Westbound trains stop in Jackson at 8:06am, 12:56pm, and 7:59pm. For a full schedule see Table 15 below.



The Jackson Station is currently served by JATA fixed routes #1 E. Michigan Avenue and #4 Cooper Street. The City of Jackson and MDOT have previously expressed interest in modernizing the station and converting it to a true intermodal facility. This would require JATA to move its transfer center from a downtown location to a location that is not currently convenient to most routes and not safe for approaching pedestrians.



Table 15: Wolverine Line Schedule

Wolverine Service	Wolverine Service	Blue Water	Wolverine Service	Pere Marquette	Thruway	◀ Train Name ▶			Pere Marquette	Wolverine Service	Blue Water	Wolverine Service	Wolverine Service	Thruway		
350	352	364	354	370	8356	◀ Train Number ▶			371	351	365	353	355	8651		
Daily	Daily	Daily	Daily	Daily	Daily	◀ Normal Days of Operation ▶			Daily	Daily	Daily	Daily	Daily	Daily		
						◀ On Board Service ▶										
8364/8150	8958		8354			◀ Connecting Thruway Number ▶				8465		8353/8653	8555/8655			
Read Down					Mile	▼		Symbol	▲	Read Up						
7 20A	12 50P	4 00P	6 00P	6 30P		0	Dp	CHICAGO, IL —Union Station (CT)		Ar	9 11A	10 46A	11 45A	3 57P	10 56P	
7 46A	1 16P					16	↓	Hammond-Whiting, IN		↑				L3 09P	L10 07P	↑
	1 58P		7 01P			52	↓	Michigan City, IN (CT)		↑					9 33P	
				9 15P		89	↓	St. Joseph-Benton Harbor, MI (ET)		↑	8 16A					
				9 51P		116	↓	Bangor, MI		↑	7 38A					
				10 34P		151	↓	Holland, MI		↑	6 54A					
9 37A	3 09P	6 10P	8 12P			62	↓	New Buffalo, MI		↑			11 24A	3 27P	10 23P	
10 07A	3 33P	6 33P	8 35P			89	↓	Niles, MI		↑			11 03A	2 57P	10 02P	
10 17A		6 43P				102	↓	Dowagiac, MI		↑			10 50A		9 50P	
10 52A	4 08P	7 12P	9 10P			138	Ar	Kalamazoo, MI		Dp		9 34A		2 24P	9 25P	
							Dp	Traverse City, St. Ignace—see back		Ar		9 00A				8 20P
				11 39P		176	Ar	GRAND RAPIDS, MI		Dp	6 00A		8 03A			7 23P
11 24A	4 40P	7 45P	9 47P			160	Ar	Battle Creek, MI		Dp		9 01A	9 52A	1 53P	8 54P	
						208	Dp	East Lansing, MI		Ar			8 45A			5 50P
						249	↓	Owosso, MI		↑						
						238	↓	Durand, MI		↑						
						256	↓	Flint, MI		↑			8 04A			
						274	↓	Lapeer, MI		↑			7 32A			4 00P
						319	Ar	PORT HURON, MI		Ar			7 06A			
	L5 07P					184	Dp	Albion, MI		↑				L 1 18P		
12 18P	5 33P		10 37P			208	Dp	Jackson, MI		↑	8 06A			12 56P	7 59P	
1 05P	6 16P		11 20P			243	Dp	Ann Arbor, MI		↑	7 24A			12 15P	7 19P	
L1 33P	L6 44P		L11 48P			271	Ar	Dearborn, MI		Dp	6 50A			11 42A	6 44P	
						281	Dp			Ar						4 05P
L2 00P	L7 11P		L12 15A			292	↓	DETROIT, MI —Amtrak Station		↑	6 28A			11 20A	6 23P	
L2 24P	L7 35P		L12 39A			296	↓	Royal Oak, MI		↑	6 05A			10 57A	6 00P	
L2 32P	L7 42P		L12 46A			296	↓	Troy, MI		↑	5 58A			10 49A	5 53P	
3 00P	8 11P		1 17A			304	Ar	PONTIAC, MI		Dp	5 45A			10 35A	5 40P	
							Ar	Windsor, ON—Greyhound Station		Dp						
							Ar	London, ON		Dp						
							Ar	TORONTO, ON —Greyhound Station (ET)		Dp						

SCHEDULES EFFECTIVE 10/31/16

### 3. Demographic Conditions

The existing socioeconomic conditions analysis was developed using JATA's service area (identical to the Jackson County Boundary) and with data obtained from the Michigan Department of Transportation (MDOT) and the United States Census Bureau. The demographic indicators will be used to determine the areas in Jackson County with the greatest potential for transit ridership and the results will guide the findings and recommendations in this plan.

#### 3.1 Population + Population Density

Population density varies throughout Jackson County. Population is most heavily concentrated in block groups around the City of Jackson, along with Townships near this central city. Existing JATA service appears to serve most of the highest density areas in the County. Some large pockets of dense population fall outside of the JATA fixed-route service area, including in Spring Arbor (possibly university population), Summit Township and Blackman Township. These areas will be investigated more closely in later analysis.

**Table 16: Population by Municipality**

Municipality	Population	Households	Muni Sq. Mi.
Jackson City	33,255	12,650	10.97
Blackman Township	23,982	7,929	31.87
Brooklyn Village	1,309	546	1.02
Cement City Village	466	183	0.19
Columbia Township	7,413	2,962	39.57
Concord Township	2,714	1,005	36.17
Concord Village	1,127	436	1.55
Grass Lake Township	5,799	2,200	47.98
Grass Lake Village	1,285	510	0.94
Hanover Township	3,692	1,303	35.75
Hanover Village	363	121	0.45
Henrietta Township	4,696	1,739	37.06
Leoni Township	13,764	5,724	51.16
Liberty Township	2,959	1,195	35.59
Napoleon Township	6,766	2,802	31.38
Norvell Township	2,956	1,234	32.14
Parma Township	2,718	1,063	36.37
Parma Village	870	277	0.57
Pulaski Township	2,038	770	36.65
Rives Township	4,658	1,640	36.25
Sandstone Township	3,986	1,408	36.16
Spring Arbor Township	8,206	2,579	35.72
Springport Township	2,188	858	36.34
Springport Village	740	282	1.26
Summit Township	22,468	9,323	29.99
Tompkins Township	2,659	1,075	36.33
Waterloo Township	2,842	1,132	49.48
Jackson County	159,759	62,946	722.92

Figure 17: Population Concentration in Jackson County by Census Block Group

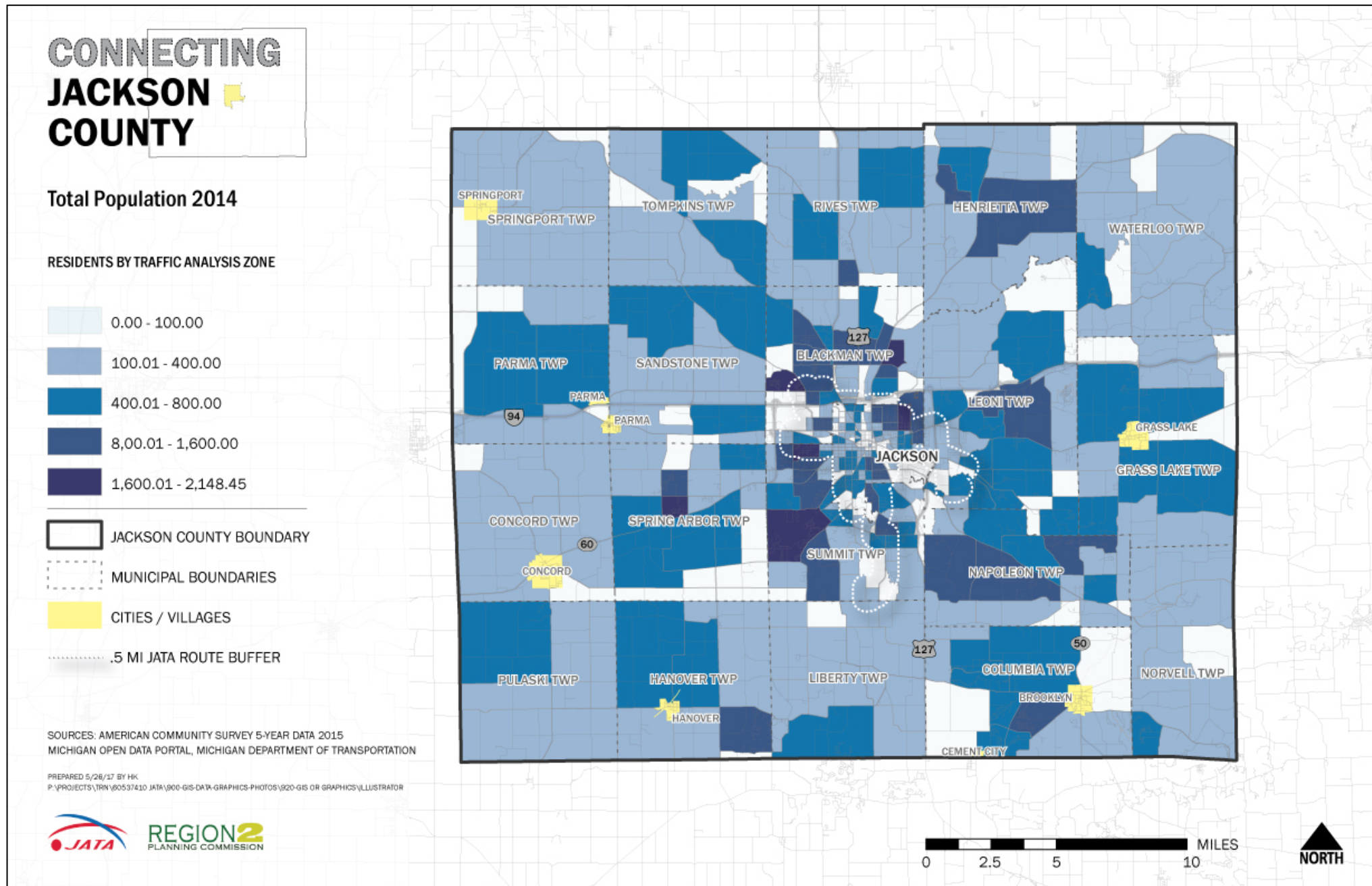
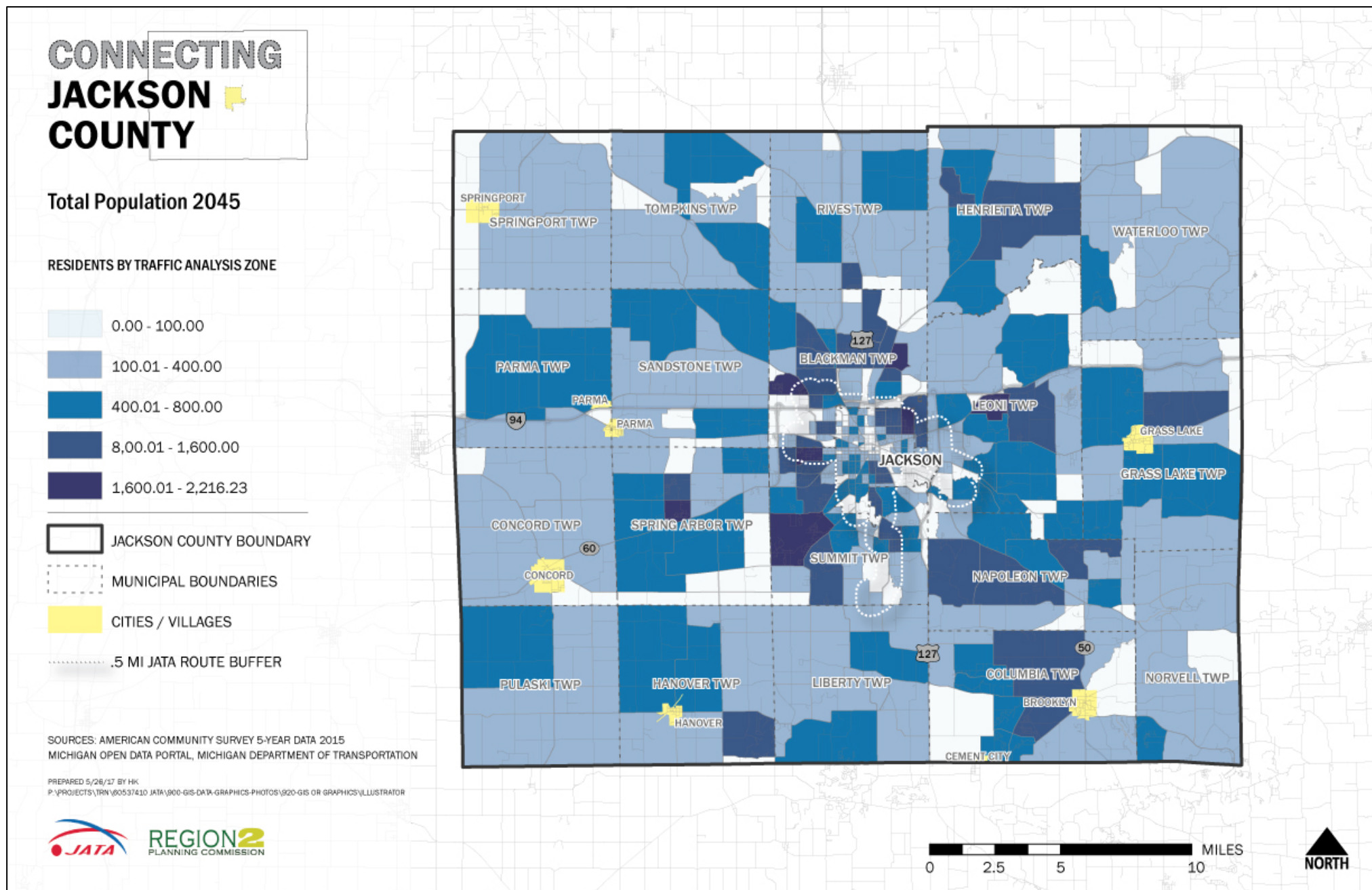




Figure 18: 2045 Population Concentrations in Jackson County by Census Block Group





### 3.2 Current and Future Employment

Employment density in Jackson County mostly mirrors its population density. The highest concentrations of employment density are in the City of Jackson. One exception in employment is in Blackman Township. Most of these areas are currently served by JATA fixed route buses. The largest employers in Jackson County are:

**Table 17: Major Employers in Jackson County**

<b>Major employers in Jackson County</b>		
Category	Company Name	Employees
<b>Healthcare</b>		<b>5,790</b>
	Allegiance Health	3,620
	Great Lakes Home Health Hospice	1,120
	Duane L Waters Hospital	300
	Jackson County Medical Care	250
	Trellis Gardens	250
	Vista Grande Villa	250
<b>Utilities, Media, Business Services</b>		<b>4,017</b>
	Consumers Energy	2,400
	News Group/Midwest News	750
	Call Center HR	400
	Anesthesia Bus. Consultants	260
	Commonwealth Assoc. Engineer.	100
<b>Steel, Metal, and/or Auto Parts</b>		<b>3,785</b>
	Mich. Automotive Compressor	800
	Eaton Corporation	600
	TAC Manufacturing, Inc.	590
	Gerdau Jackson / Mac Steel	350
	Alro Steel	325
	Melling Tool	255
	Allied Chucker & Engineering	145
	Omni Source Grp., Scrap Metal	135
	Production Engineering	100
	Classic Turning	100
	C. Thorrez Industries	100
	Industrial Steel Treating	100
	Mid-America Machining	100
	Lomar Machine & Tool	85
<b>Retail Trade</b>		<b>2,720</b>
	Walmart Supercenter	415
	Meijer Supercenter	400
	Meijer Supercenter	355
	J C Penney Co.	300
	Sears Holdings Corp.	300
	Polly's Markets	245
	McDonald's Chain	450
	Goodwill Industries	130
	Kroger	125

Category	Company Name	Employees
<b>Anchor Institutions - Education</b>		<b>2,230</b>
	Jackson Area Public Schools	780
	Jackson College	650
	Jackson Co. Intermed. Schools	500
	Spring Arbor University	300
<b>Michigan Dept. of Corrections</b>		<b>2,040</b>
	Miscellaneous operations	745
	Cotton Regional Corrections	480
	Jackson County Intermediate	450
	Parnall Correctional Facility	365
<b>Food Products</b>		<b>1,010</b>
	Dawn Food Products	483
	Rostemi-Dawn Inc.	375
	Aunt Millie's Bakery	152
<b>City and County Government</b>		<b>870</b>
	Jackson State Office Building	300
	Cooper Street Correctional	275
	Jackson County Dept On Aging	250
	Other local gov. functions	45
<b>Plastics, Vinyls, Adhesives</b>		<b>712</b>
	Milsco Michigan Seat / Canvas	235
	Adco Products (adhesives)	230
	Certain Teed Corp (vinyls)	147
	Mid-Amer. Products (plastics)	100
<b>Construction</b>		<b>285</b>
	Applegate HVCA	285
<b>Medical Devices (Metal)</b>		<b>235</b>
	Midbrook Medical Devices	165
	Orbitform, Inc.	70

*Italics indicate businesses outside of the City of Jackson. Educational institutions which operate in both are grouped by majority of employees.*

Underlying data provided by Infogroup and licensed to LandUse|USA. List may not be all-inclusive; any imperfections are integral to the Infogroup data. Exhibit and analysis prepared by LandUse|USA, 2014.

Source: Jackson Community Master Plan, 2016

Figure 19: Total Employment Density

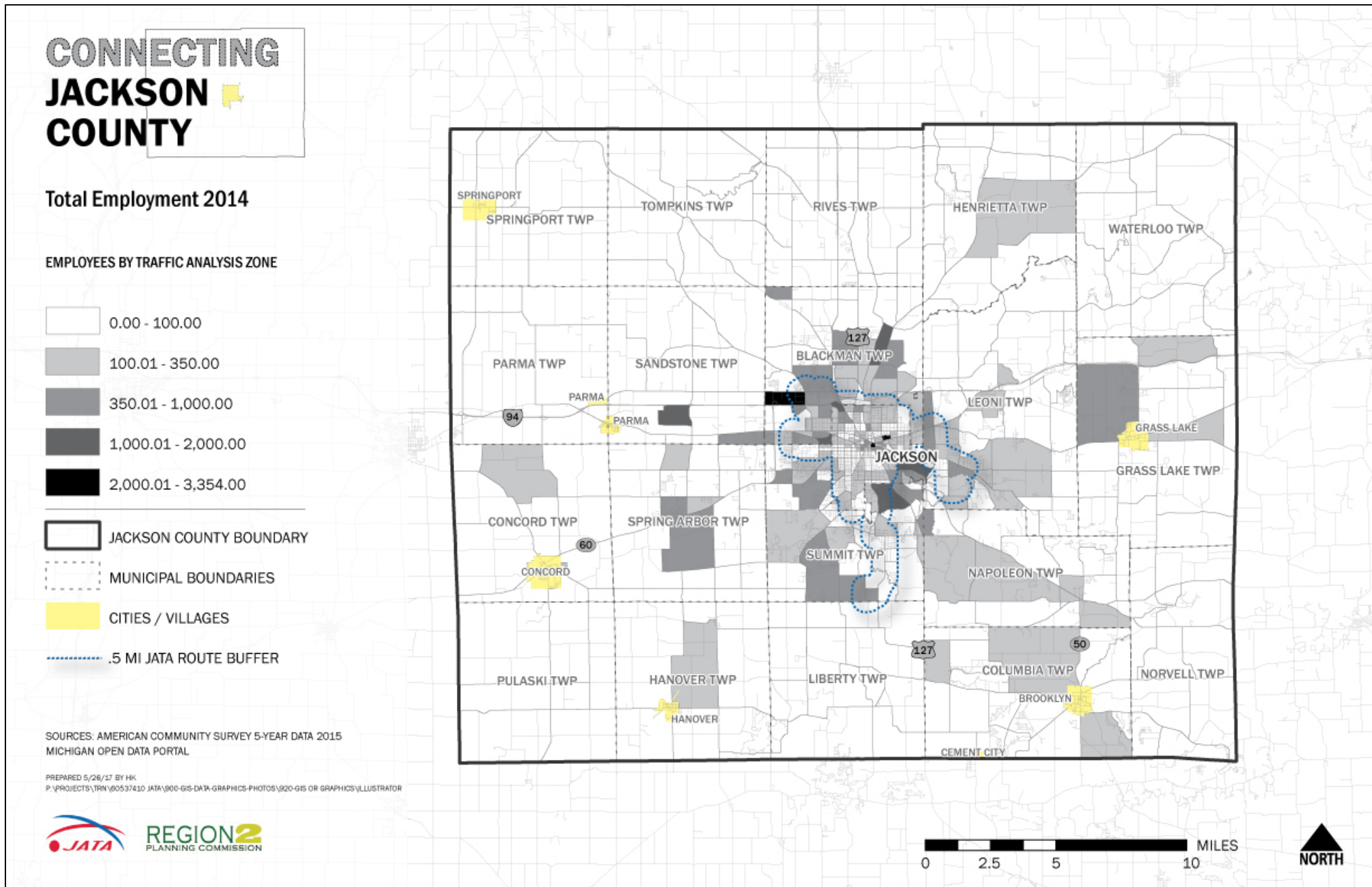
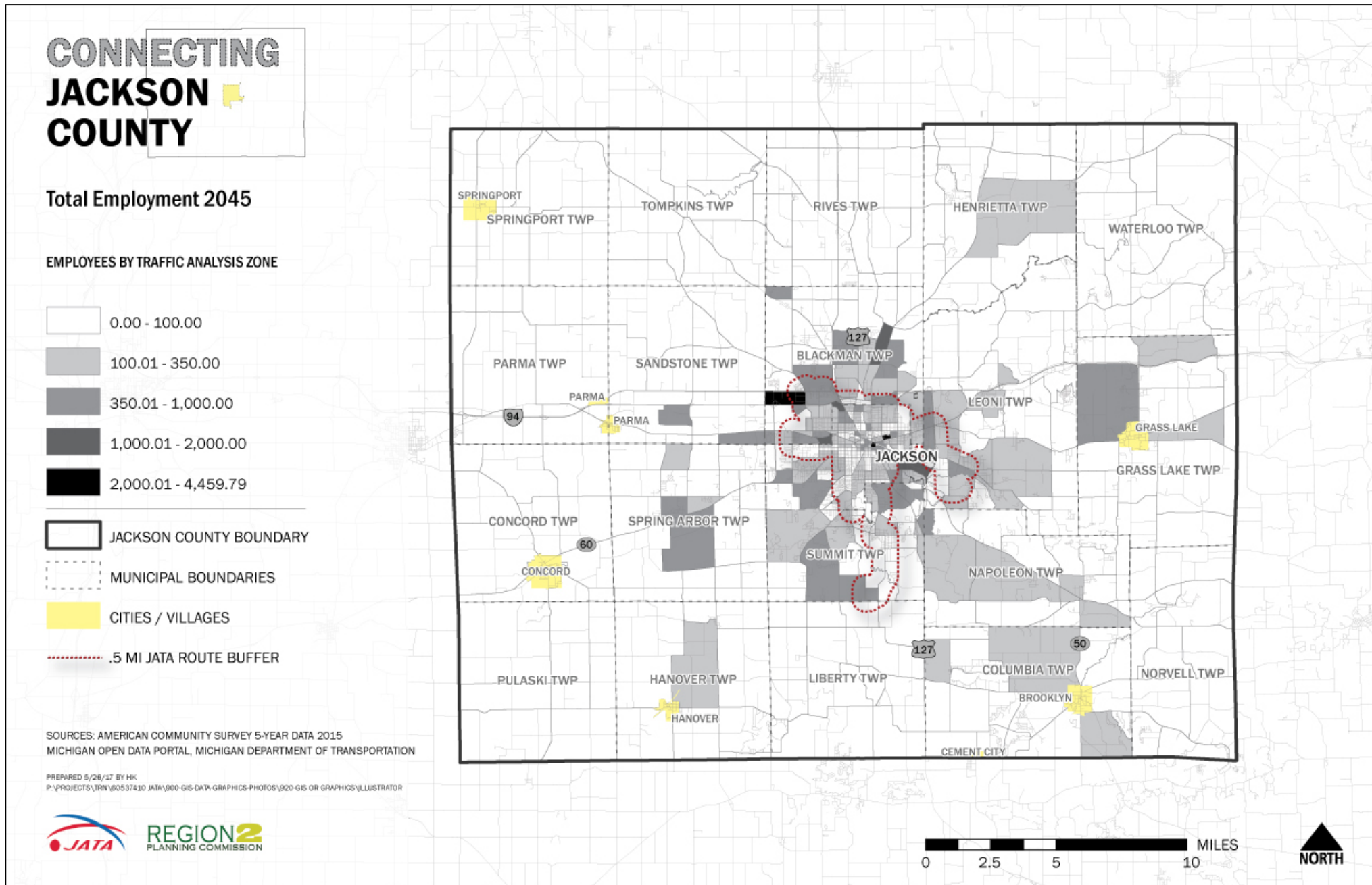


Figure 20: 2045 Total Employment Density



### 3.3 Minority Population

Over a quarter (29%) of City of Jackson residents are racial minorities, higher than any municipality in Jackson County. Following the City of Jackson in high minority populations are Blackman Township (22%), Summit Township (11%), Parma Township (7%) and Henrietta Township (6%). Figure 22 shows population concentrations by block group in Jackson County. These include nearly all of the City of Jackson, southern and eastern portions of Blackman Township and southwest Summit Township. Napoleon and Parma Townships also contain block groups with minority populations above 10%.

Racial minorities are protected from discrimination under local and federal law. Many majority-minority communities in the United States have experienced historical injustice, including in accessing transportation resources. The area minority population is reviewed here in order to determine access. Although the majority of high-minority block groups are served by JATA fixed route services, some mentioned above are not within easy walking distance.

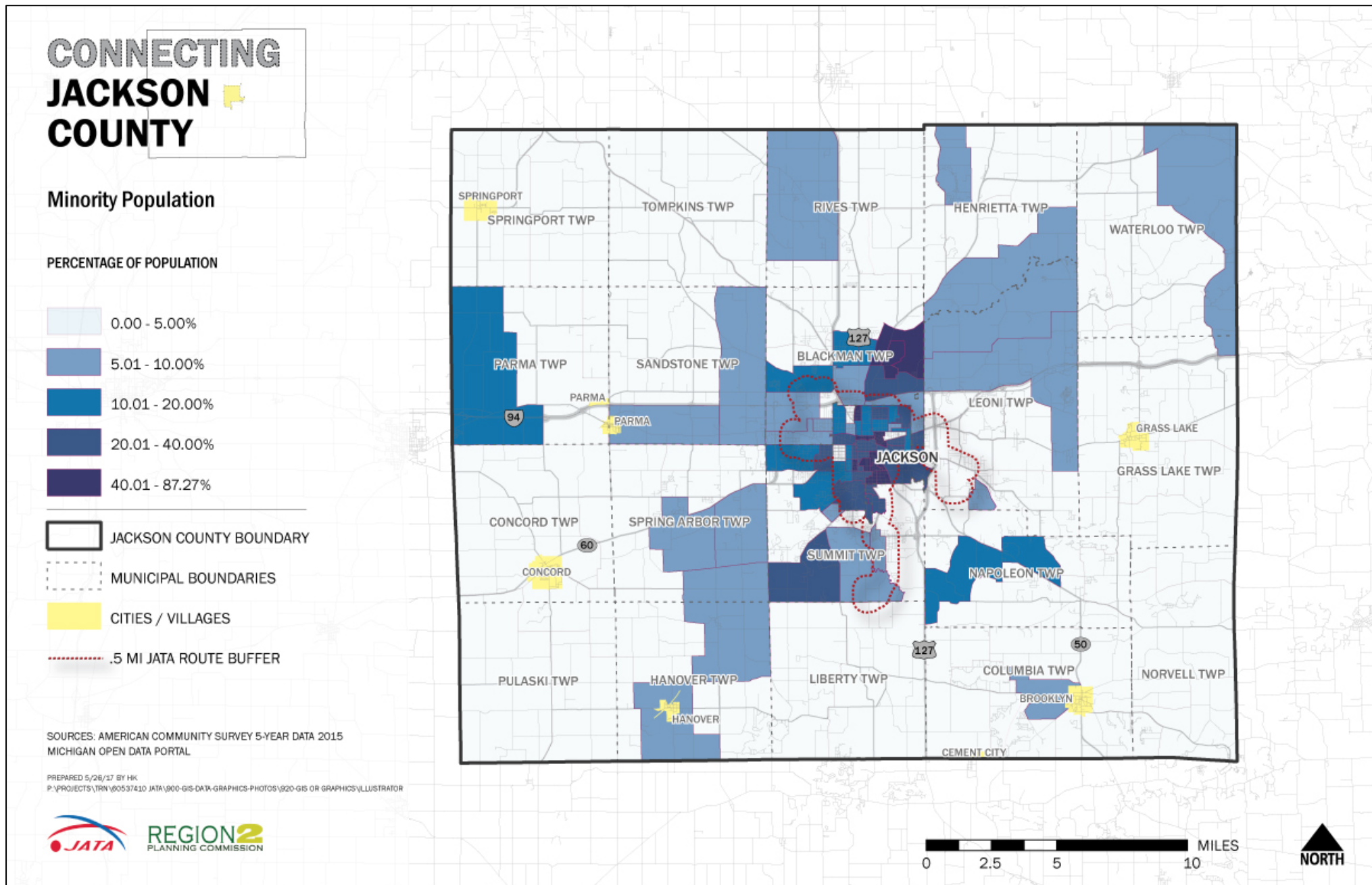
**Table 18: Minority Population in Jackson County by Municipality**

(Source: American Community Survey 2011 – 2015)

Municipality	Total Population	2015 Minority Population		
		Total Minority	Density (people/sq. mile)	% of Total Population
Jackson City	33,255	9,667	881	<b>29%</b>
Blackman Township	23,982	5,173	162	<b>22%</b>
Brooklyn Village	1,309	58	57	4%
Cement City Village	466	10	52	2%
Columbia Township	7,413	192	5	3%
Concord Township	2,714	19	1	1%
Concord Village	1,127	19	12	2%
Grass Lake Township	5,799	173	4	3%
Grass Lake Village	1,285	67	71	5%
Hanover Township	3,692	125	3	3%
Hanover Village	363	16	36	4%
Henrietta Township	4,696	303	8	<b>6%</b>
Leoni Township	13,764	430	8	3%
Liberty Township	2,959	40	1	1%
Napoleon Township	6,766	229	7	3%
Norvell Township	2,956	85	3	3%
Parma Township	2,718	187	5	<b>7%</b>
Parma Village	870	27	47	3%
Pulaski Township	2,038	55	2	3%
Rives Township	4,658	160	4	3%
Sandstone Township	3,986	146	4	4%
Spring Arbor Township	8,206	337	9	4%
Springport Township	2,188	44	1	2%
Springport Village	740	29	23	4%
Summit Township	22,468	2,418	81	<b>11%</b>
Tompkins Township	2,659	38	1	1%
Waterloo Township	2,842	75	2	3%
Jackson County	159,759	20,122	28	13%



Figure 21: Minority Population in Jackson County by Census Block Group





### 3.4 Limited English Proficiency (LEP) Households

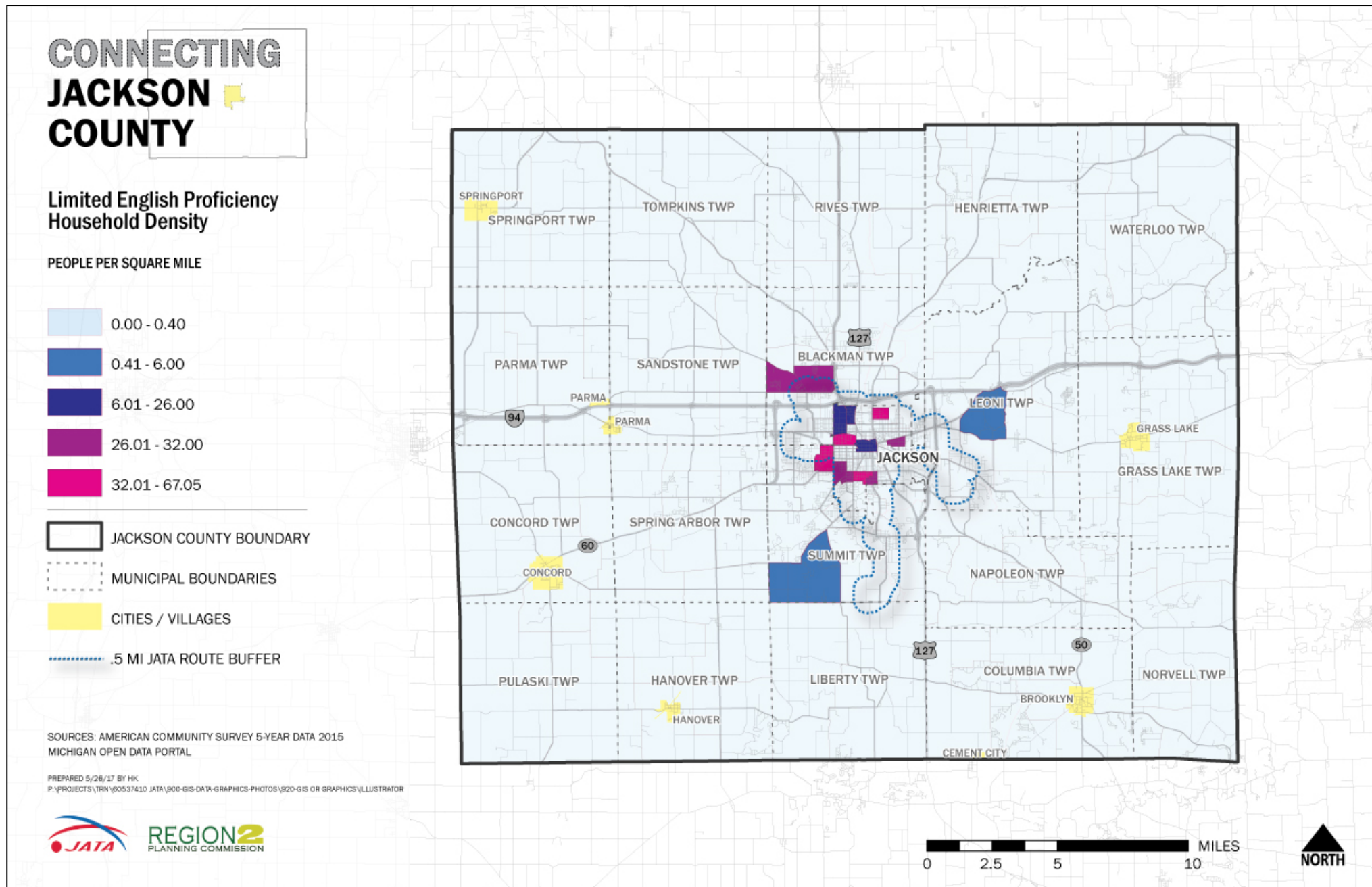
Limited English Proficient (LEP) refers to persons for whom English is not their primary language and who have a limited ability to read, write, speak or understand English. This includes those who have reported to the U.S. Census that they speak English less than very well, not well, or not at all. Limited proficiency in English can indicate households with vulnerability in accessing public services, including transportation. Within Jackson County, LEP households make up almost 1% of all households in the City of Jackson, Blackman, Pulaski and Summit Townships. Concentrations of LEP households by Census block group are shown in Figure 23; concentrations are found in the central area of Blackman Township, as well as throughout the City of Jackson. Overall, less than 1% of Jackson County households have low English proficiency.

**Table 19: LEP Households in Jackson County by Municipality**

(Source: American Community Survey 2011 – 2015)

Municipality	Total Households	2015 LEP Households		
		Total LEP	Density (households/mile <sup>2</sup> )	% of Total Households
Jackson City	12,650	100	9	<b>1%</b>
Blackman Township	7,929	77	2	<b>1%</b>
Brooklyn Village	546	0	0	0%
Cement City Village	183	0	0	0%
Columbia Township	2,962	0	0	0%
Concord Township	1,005	0	0	0%
Concord Village	436	0	0	0%
Grass Lake Township	2,200	0	0	0%
Grass Lake Village	510	0	0	0%
Hanover Township	1,303	0	0	0%
Hanover Village	121	0	0	0%
Henrietta Township	1,739	8	0	0%
Leoni Township	5,724	15	0	0%
Liberty Township	1,195	5	0	0%
Napoleon Township	2,802	0	0	0%
Norvell Township	1,234	0	0	0%
Parma Township	1,063	0	0	0%
Parma Village	277	0	0	0%
Pulaski Township	770	5	0	<b>1%</b>
Rives Township	1,640	0	0	0%
Sandstone Township	1,408	0	0	0%
Spring Arbor Township	2,579	0	0	0%
Springport Township	858	0	0	0%
Springport Village	282	0	0	0%
Summit Township	9,323	61	2	<b>1%</b>
Tompkins Township	1,075	0	0	0%
Waterloo Township	1,132	0	0	0%
Jackson County	62,946	271	0	0%

Figure 22: LEP Households in Jackson County by Census Block Group



### 3.5 Households in Poverty

Roughly 1 out of 3 City of Jackson residents are living in poverty (36%), higher than any municipality in Jackson County. Following the City of Jackson are Springport Village (25%), Hanover Village (22%), Henrietta Township (20%) and Brooklyn Village (19%). Figure 24 reveals poverty concentrations by block group in Jackson County. Block groups with high poverty include central, north-central and eastern areas in the City of Jackson, north-central Spring Arbor Township, and central Henrietta Township. Additional concentrations exist in southern Rives and Blackman Townships, as well as portions of Leoni and Norvell Townships.

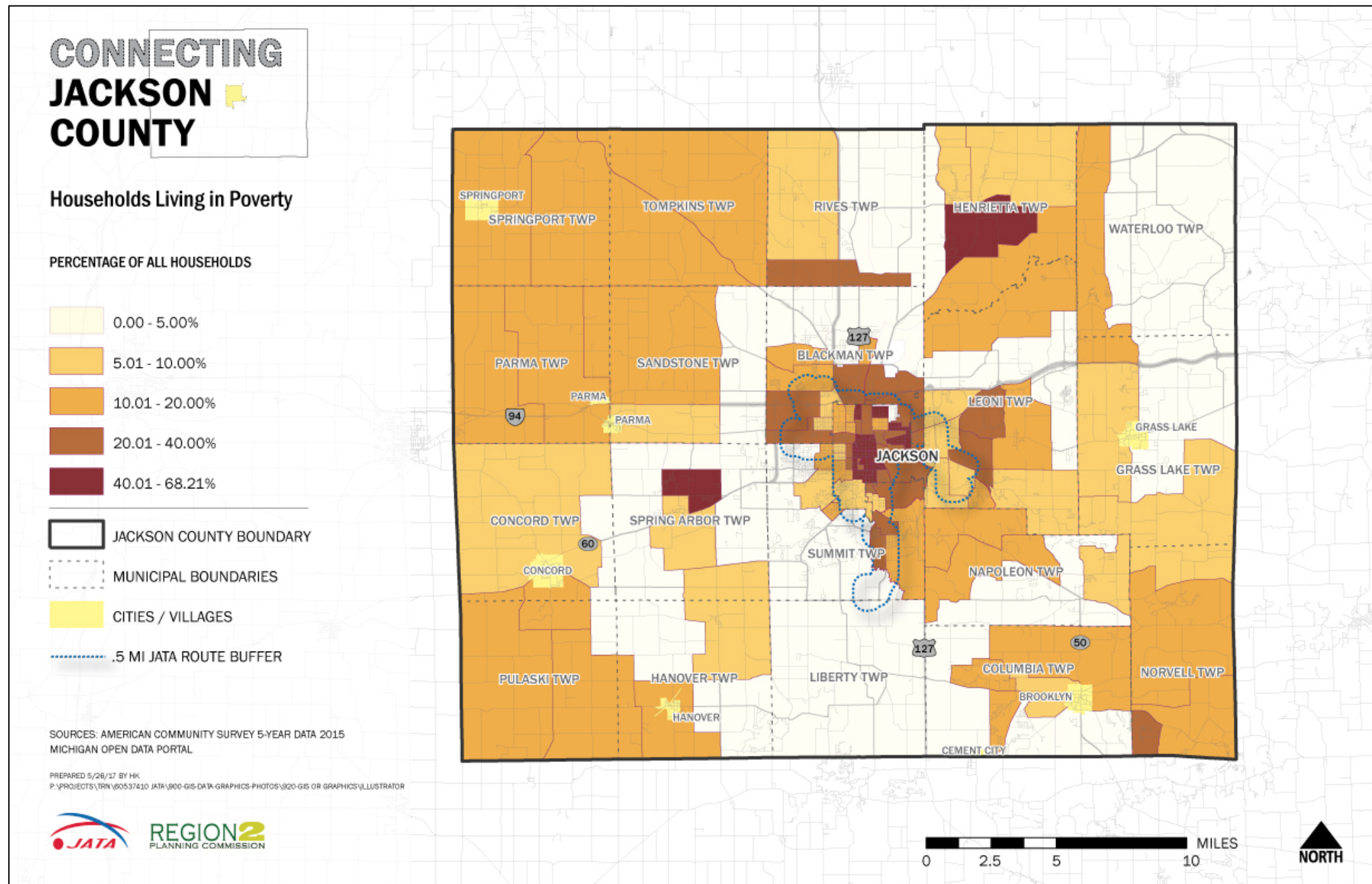
Several areas of concentrated poverty are farther than a half mile from JATA's fixed route network. Due to the high cost of car ownership and dispersion of jobs in the county, residents living in poverty may have unmet transportation needs which could be served through public transportation.

**Table 20: Households in Poverty in Jackson County by Municipality**

(Source: American Community Survey 2011 – 2015)

Municipality	Total Population	2015 Population in Poverty			
		Surveyed Population	Total in Poverty	Density (people/mile <sup>2</sup> )	% of Surveyed Population
Jackson City	33,255	32,509	11,702	1,067	<b>36%</b>
Blackman Township	23,982	17,145	2656	83	15%
Brooklyn Village	1,309	1,309	246	241	<b>19%</b>
Cement City Village	466	464	46	240	10%
Columbia Township	7,413	7,371	649	16	9%
Concord Township	2,714	2,704	274	8	10%
Concord Village	1,127	1,117	145	93	13%
Grass Lake Township	5,799	5,795	289	6	5%
Grass Lake Village	1,285	1,281	76	81	6%
Hanover Township	3,692	3,675	205	6	6%
Hanover Village	363	357	80	179	<b>22%</b>
Henrietta Township	4,696	4,685	952	26	<b>20%</b>
Leoni Township	13,764	13,713	1,939	38	14%
Liberty Township	2,959	2,933	103	3	4%
Napoleon Township	6,766	6,639	532	17	8%
Norvell Township	2,956	2,921	481	15	16%
Parma Township	2,718	2,690	299	8	11%
Parma Village	870	842	125	219	15%
Pulaski Township	2,038	2,027	235	6	12%
Rives Township	4,658	4,625	509	14	11%
Sandstone Township	3,986	3,904	414	11	11%
Spring Arbor Township	8,206	7,021	1,072	30	15%
Springport Township	2,188	2,157	387	11	18%
Springport Village	740	736	187	149	<b>25%</b>
Summit Township	22,468	21,922	2,284	76	10%
Tompkins Township	2,659	2,636	265	7	10%
Waterloo Township	2,842	2,823	217	4	8%
Jackson County	159,759	156,001	26,369	36	17%

Figure 23: Households in Poverty Jackson County by Census Block Group



### 3.6 Zero Car Households

This demographic indicator is one of the most closely linked to transit demand. The data in Table 21 and in Figure 25 below show the prevalence of households without vehicles in Jackson County. The City of Jackson (17%), Brooklyn Village (16%), Blackman (12%), Spring Arbor (11%) and Parma (7%) Townships lead with highest proportions of carless households. Central Jackson contains the only block groups in the most extreme category of no vehicle access (above 40%), although Blackman Township contains several block groups where lack of vehicles is prevalent in 20-40% of households. Other pockets of no vehicle access in the County include Parma, Henrietta, Spring Arbor, Summit, Leoni and Columbia Townships. All of the most extreme concentrations of no access are within one half mile of the existing JATA fixed route service boundary.

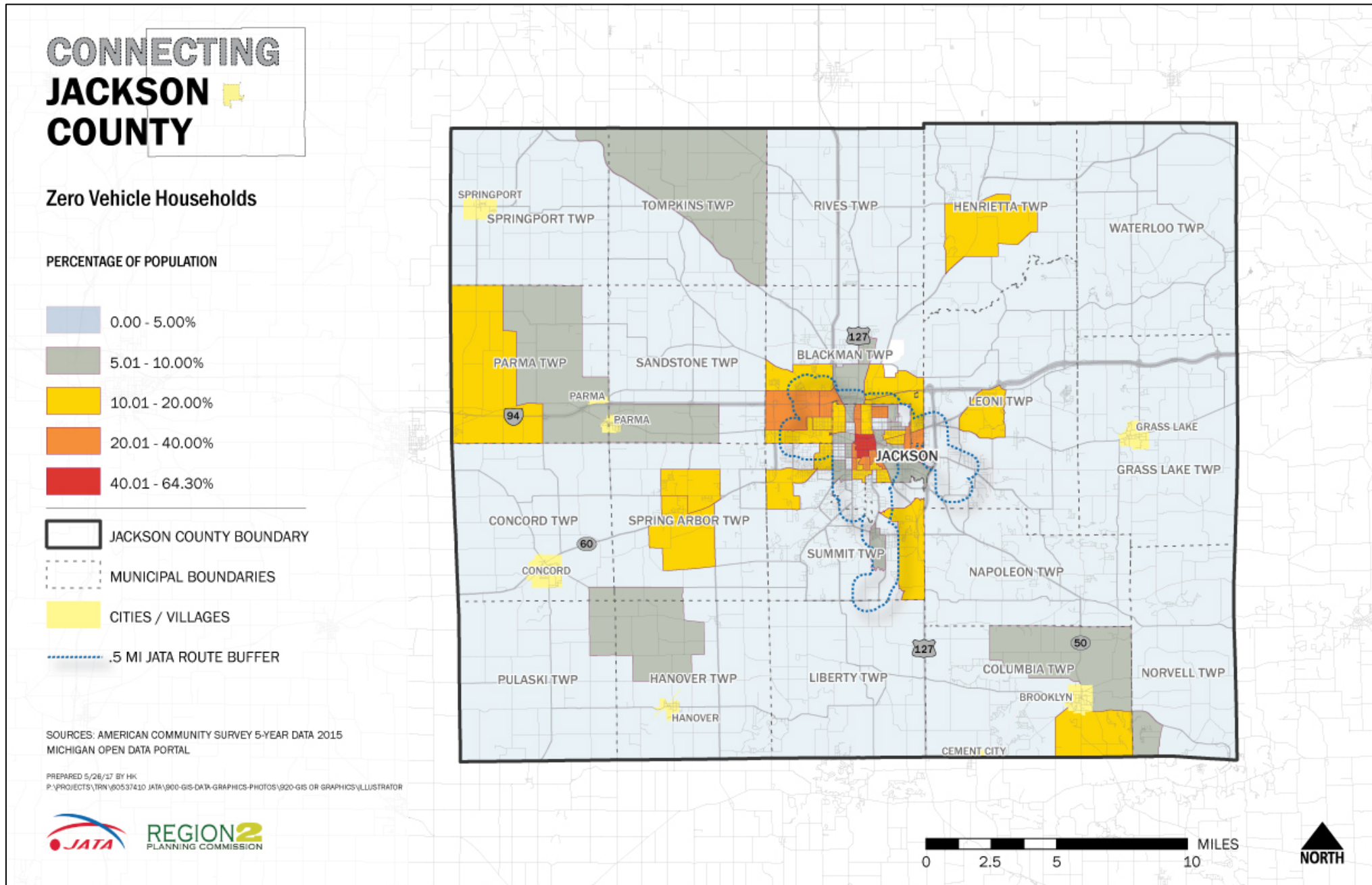
**Table 21: Zero Car Households in Jackson County by Municipality**

(Source: American Community Survey 2011 – 2015)

Municipality	Total Households	2015 Zero Car Households			
		Surveyed Households	Total Zero Car	Density (people/sq. mile)	% of Total Households
Jackson City	12,650	12,650	2,127	194	<b>17%</b>
Blackman Township	7,929	7,929	988	31	<b>12%</b>
Brooklyn Village	546	546	85	83	<b>16%</b>
Cement City Village	183	183	6	31	3%
Columbia Township	2,962	2,962	106	3	4%
Concord Township	1,005	1,005	15	0	1%
Concord Village	436	436	15	10	3%
Grass Lake Township	2,200	2,200	50	1	2%
Grass Lake Village	510	510	32	34	6%
Hanover Township	1,303	1,303	4	0	0%
Hanover Village	121	121	4	9	3%
Henrietta Township	1,739	1,739	69	2	4%
Leoni Township	5,724	5,724	211	4	4%
Liberty Township	1,195	1,195	33	1	3%
Napoleon Township	2,802	2,802	38	1	1%
Norvell Township	1,234	1,234	40	1	3%
Parma Township	1,063	1,063	79	2	<b>7%</b>
Parma Village	277	277	6	11	2%
Pulaski Township	770	770	21	1	3%
Rives Township	1,640	1,640	26	1	2%
Sandstone Township	1,408	1,408	34	1	2%
Spring Arbor Township	2,579	2,579	287	8	<b>11%</b>
Springport Township	858	858	24	1	3%
Springport Village	282	282	13	10	5%
Summit Township	9,323	9,323	542	18	6%
Tompkins Township	1,075	1,075	54	1	5%
Waterloo Township	1,132	1,132	24	0	2%
Jackson County	62,946	62,946	4,933	7	8%



Figure 24: Zero Vehicle Households in Jackson County by Census Block Group



### 3.7 Median Household Income (MHI)

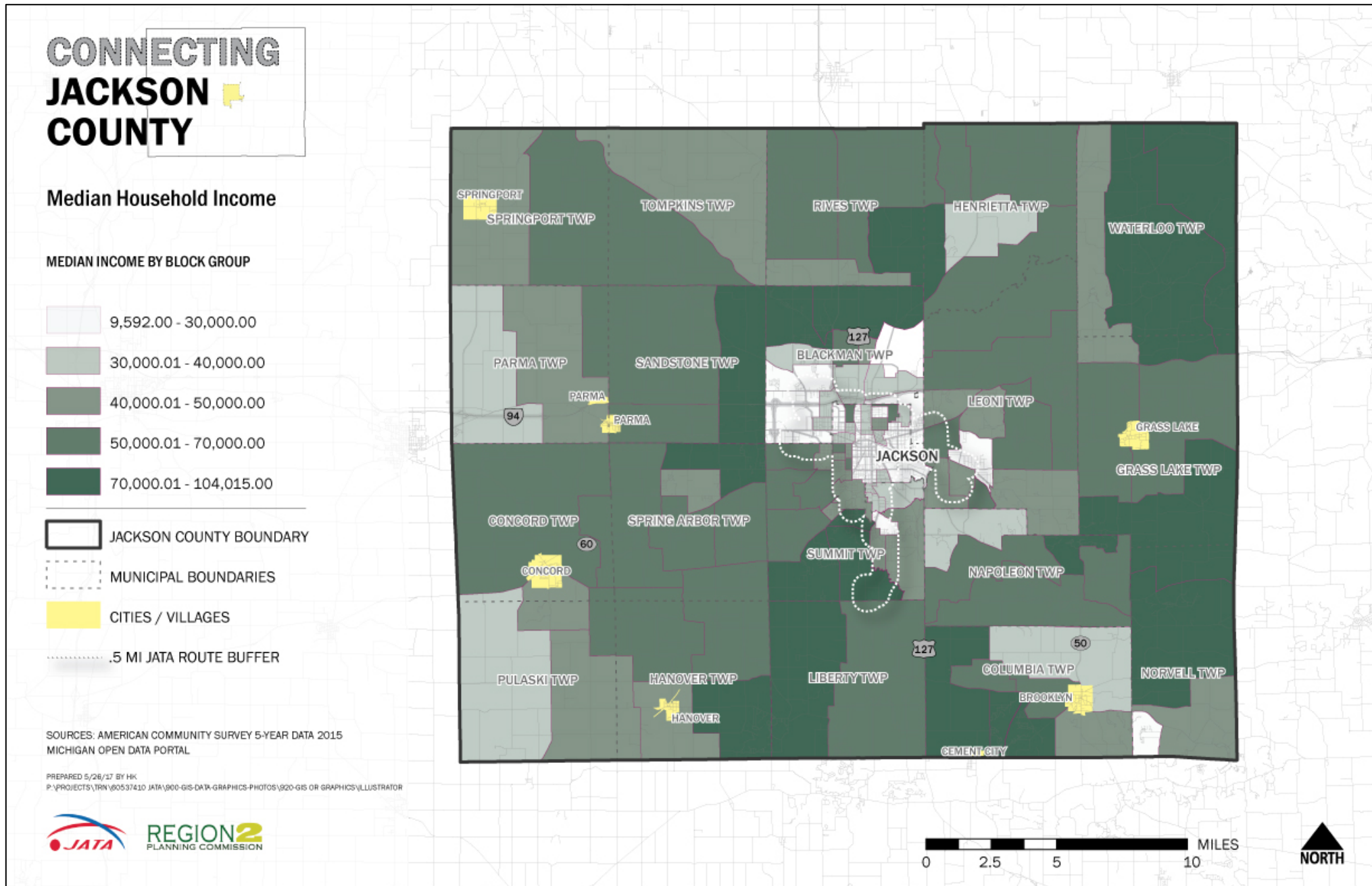
Table 22 and Figure 26 below show the variation in median household incomes in Jackson County. The municipalities with the highest median income include Waterloo (\$24,768 above County median) and Hanover (\$21,143 above County median) Townships. The City of Jackson and Blackman Township contained the greatest variation from the County median, at \$18,239 and \$10,058 below, respectively. A review of block group level median incomes supports these municipal based figures. Areas outside of the City of Jackson and Blackman Township show higher median income values.

Median incomes can show households' ability to pay for transportation. Households with lower median incomes may be more likely to consider alternative transportation modes like public transit.

**Table 22: Median Household Income in Jackson County by Municipality**  
(Source: American Community Survey 2011 – 2015)

Municipality	Total Households	2015 Median Household Income	
		Median Income (\$)	Local MHI minus County MHI (\$)
Jackson City	12,650	28,087	-18,239
Blackman Township	7,929	36,268	-10,058
Brooklyn Village	546	37,500	-8,826
Cement City Village	183	41,964	-4,362
Columbia Township	2,962	60,187	13,861
Concord Township	1,005	55,636	9,310
Concord Village	436	44,130	-2,196
Grass Lake Township	2,200	65,878	19,552
Grass Lake Village	510	55,208	8,882
Hanover Township	1,303	67,469	21,143
Hanover Village	121	50,750	4,424
Henrietta Township	1,739	55,650	9,324
Leoni Township	5,724	44,127	-2,199
Liberty Township	1,195	63,750	17,424
Napoleon Township	2,802	53,259	6,933
Norvell Township	1,234	45,071	-1,255
Parma Township	1,063	43,977	-2,349
Parma Village	277	53,083	6,757
Pulaski Township	770	45,167	-1,159
Rives Township	1,640	61,436	15,110
Sandstone Township	1,408	59,352	13,026
Spring Arbor Township	2,579	53,550	7,224
Springport Township	858	47,500	1,174
Springport Village	282	39,643	-6,683
Summit Township	9,323	56,905	10,579
Tompkins Township	1,075	55,074	8,748
Waterloo Township	1,132	71,094	24,768
Jackson County	62,946	46,326	-

Figure 25: Median Household Income in Jackson County by Census Block Group



### 3.8 Senior Population (60+ years old)

Older adults may be more likely to have personal circumstances that limit their ability to operate a motor vehicle. Additionally, for older adults who do not drive, having access to transportation is critical to health outcomes, diminished risk for loneliness and better quality of life (AARP “Waiting for a Ride: Transit Access and America’s Aging Population “

In Jackson County, municipalities with the highest concentrations of senior citizens include Norvell (31%), Liberty (28%), Columbia (28%), Summit (27%) and Pulaski (26%) Townships. The Village of Brooklyn is also comprised of over a quarter older adults. By block group, concentrations are visible in the area where Concord, Spring Arbor, Pulaski and especially Hanover Township intersect. Western Summit Township, the area of Blackman Township just northwest of the City of Jackson, central-west Leoni Township and Norvell Township contain high concentrations of older adults (over 40% of population).

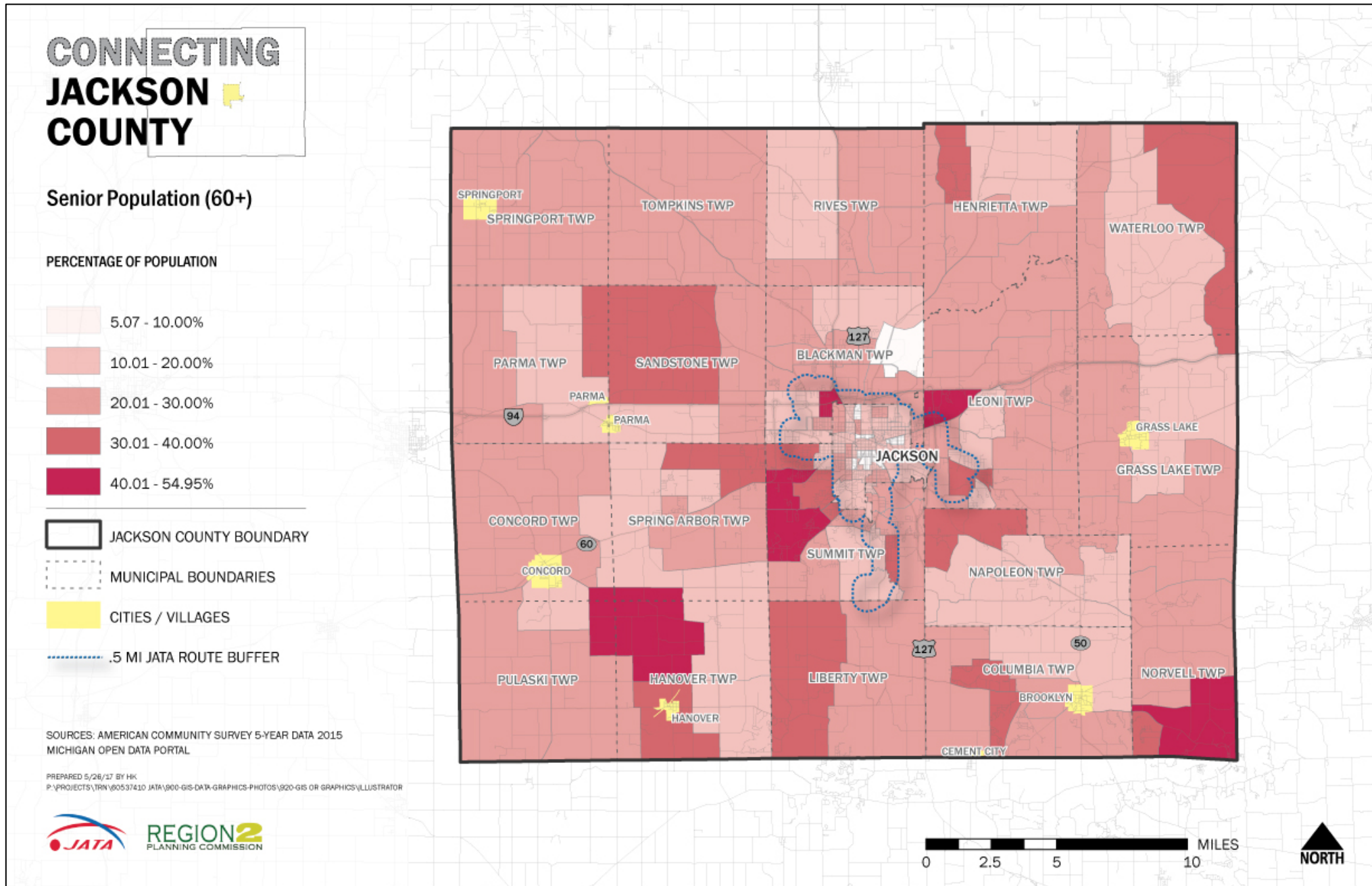
**Table 23: Senior Population in Jackson County by Municipality**

(Source: American Community Survey 2011 – 2015)

Municipality	Total Population	2015 Senior Population		
		Total Seniors	Density (people/sq. mile)	% of Total Population
Jackson City	33,255	5,049	460	15%
Blackman Township	23,982	4612	145	19%
Brooklyn Village	1,309	335	329	26%
Cement City Village	466	95	495	20%
Columbia Township	7,413	2,054	52	<b>28%</b>
Concord Township	2,714	543	15	20%
Concord Village	1,127	210	135	19%
Grass Lake Township	5,799	1,259	26	22%
Grass Lake Village	1,285	238	253	19%
Hanover Township	3,692	844	24	23%
Hanover Village	363	59	132	16%
Henrietta Township	4,696	1,060	29	23%
Leoni Township	13,764	3,342	65	24%
Liberty Township	2,959	842	24	<b>28%</b>
Napoleon Township	6,766	1,458	46	22%
Norvell Township	2,956	907	28	<b>31%</b>
Parma Township	2,718	585	16	22%
Parma Village	870	91	159	10%
Pulaski Township	2,038	533	15	<b>26%</b>
Rives Township	4,658	925	26	20%
Sandstone Township	3,986	1,005	28	25%
Spring Arbor Township	8,206	1,615	45	20%
Springport Township	2,188	462	13	21%
Springport Village	740	127	101	17%
Summit Township	22,468	6,126	204	<b>27%</b>
Tompkins Township	2,659	586	16	22%
Waterloo Township	2,842	708	14	25%
Jackson County	159,759	35,670	49	21%



Figure 26: Senior Population in Jackson County by Census Block Group





### 3.9 School Age Population (Kindergarten through College)

School enrollment is one possible indicator of demand for alternative transportation. This is because many students still reside with family and may have limited income or be too young to drive a vehicle. Municipalities with high proportions of students in Jackson County include Spring Arbor Township (40%), the Villages of Parma (33%) and Springport (32%), the City of Jackson (30%) and Hanover Township (28%).

**Table 24: School Age Population in Jackson County by Municipality**  
(Source: American Community Survey 2011 – 2015)

Municipality	Total Population	Surveyed Population	2015 School Age Population		
			Total School Age	Density (people/mile <sup>2</sup> )	% of Total Population
Jackson City	33,255	31,509	9,321	850	<b>30%</b>
Blackman Township	23,982	23,398	4021	126	17%
Brooklyn Village	1,309	1,252	308	302	25%
Cement City Village	466	455	105	547	23%
Columbia Township	7,413	7,204	1,338	34	19%
Concord Township	2,714	2,587	650	18	25%
Concord Village	1,127	1,057	263	169	25%
Grass Lake Township	5,799	5,676	1,352	28	24%
Grass Lake Village	1,285	1,256	269	286	21%
Hanover Township	3,692	3,560	995	28	<b>28%</b>
Hanover Village	363	341	90	202	26%
Henrietta Township	4,696	4,503	1,055	28	23%
Leoni Township	13,764	13,505	3,008	59	22%
Liberty Township	2,959	2,891	608	17	21%
Napoleon Township	6,766	6,597	1,607	51	24%
Norvell Township	2,956	2,880	606	19	21%
Parma Township	2,718	2,637	613	17	23%
Parma Village	870	846	279	489	<b>33%</b>
Pulaski Township	2,038	1,975	347	9	18%
Rives Township	4,658	4,520	1,201	33	27%
Sandstone Township	3,986	3,834	956	26	25%
Spring Arbor Township	8,206	8,003	3,214	90	<b>40%</b>
Springport Township	2,188	2,108	506	14	24%
Springport Village	740	710	227	180	<b>32%</b>
Summit Township	22,468	21,832	4,929	164	23%
Tompkins Township	2,659	2,550	484	13	19%
Waterloo Township	2,842	2,805	547	11	20%
Jackson County	159,759	160,491	38,899	54	24%