



Appendix C:

Gaps and Opportunities

Connecting Jackson County

Gaps and Opportunities



October 2017

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1. Introduction

The purpose of this Gaps and Opportunities report is to identify areas of deficiency in the transportation network and to formulate an initial set of strategies necessary to address these deficiencies. The analysis evaluates the “gaps” between JATA’s current and future transit environment to determine the potential for providing new and effective service in an expanded market. The intention is also to address existing and future population growth, along with the implications of other modes of travel such as planned non-motorized facilities. Gaps can occur in various forms, including transit service based gaps, land use, infrastructure, and funding gaps. This document lays out the challenges and opportunities for transit within Jackson County, and begins the process of recommending a series of actions to make transit an efficient and effective travel option, ideally providing competition with automobile travel but more importantly providing all residents a mobility option.

This report brings together the analysis and findings of all of the data collection efforts completed previously in the Connecting Jackson County process, and provides the basis for developing specific strategies to address mobility gaps in the next phase of the study. The next phase will describe the specific methodologies and target populations that are the focus of the final Connecting Jackson County Plan report. These methodologies will include specific approaches and projects to help make the Jackson transportation network as efficient as possible.

The data collection detailed below informed a significant part of the Gaps and Opportunities report.

2. Data Collection Process

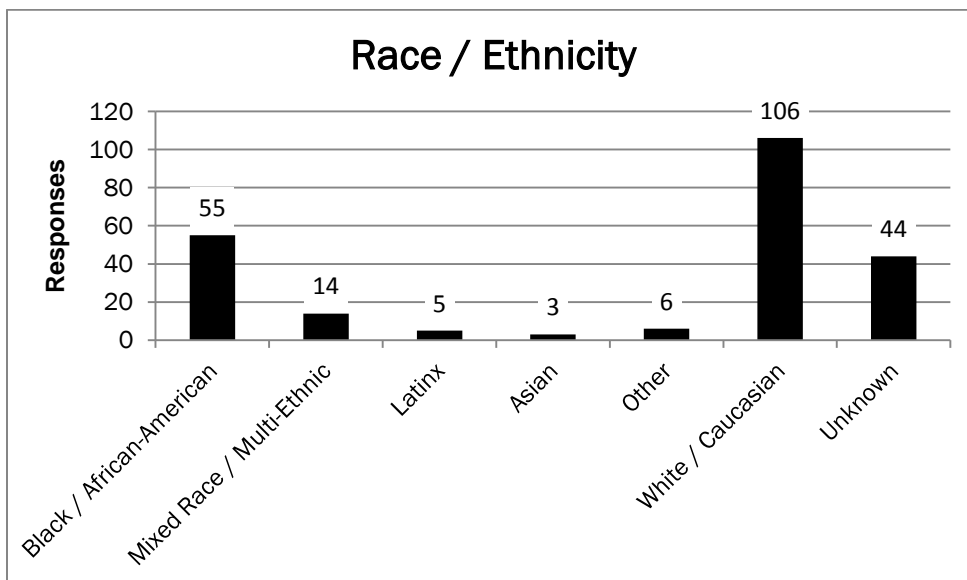
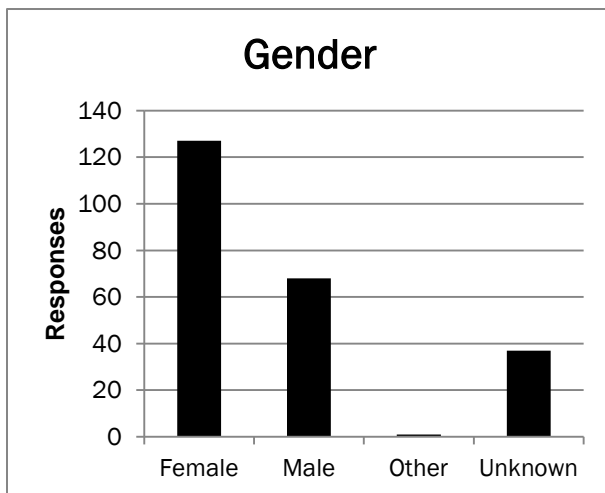
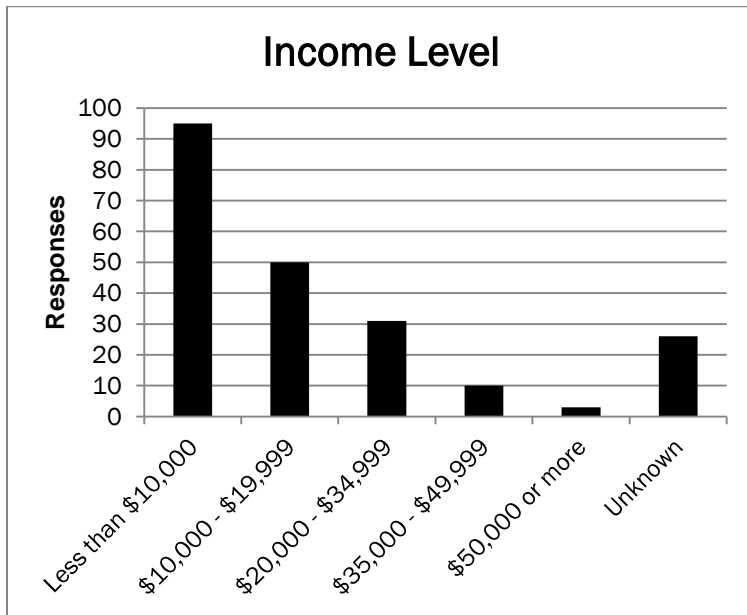
Customer Questionnaire Process

A customer questionnaire was distributed to JATA customers to collect information such as trip purpose, frequency with which riders use JATA services, service improvement desires, and whether customers have access to transportation other than JATA. This questionnaire was administered on buses during the stop activity count days (September 1st and September 6th, 2017), and was also made available for riders to take at the JATA Transfer Center until September 15th, 2017 or online in a mobile-friendly format, at www.menti.com. All customers that completed the questionnaire were offered a pass good for one free ride on any JATA fixed route as an incentive for participating in the questionnaire. In total 233 questionnaires were collected.

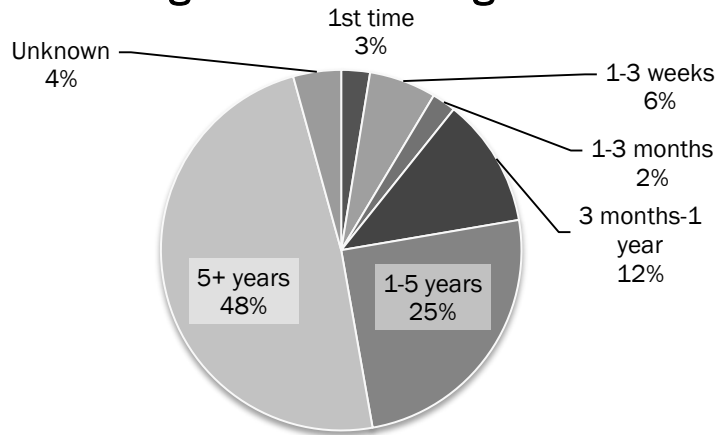
The customer questionnaire results indicate that the typical respondent:

- Primarily earns less than \$10,000 annually (44%)
- Identifies as Female (54%) more than Male (29%) or other gender identities (one respondent)
- Identifies with White / Caucasian (45%) more than a race or ethnicity other than White / Caucasian (36%)
- Belongs to the age range 45-64 (38%) or 21-44 (34%)
- Is a long time rider who has been riding for over 5 years (48%) and rides daily (55%) or at least 1-2 times per week (30%)
- Does not have access to a vehicle (79%) and would Walk / Bike to make the same trip (43%) if JATA was not available
- Principally was traveling for Shopping (30%), Work (26%), or a Medical related trip (16%)

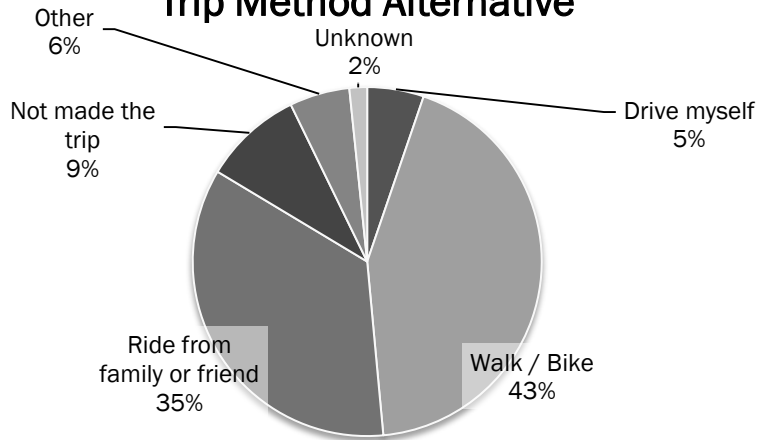
These results are depicted on the following pages.



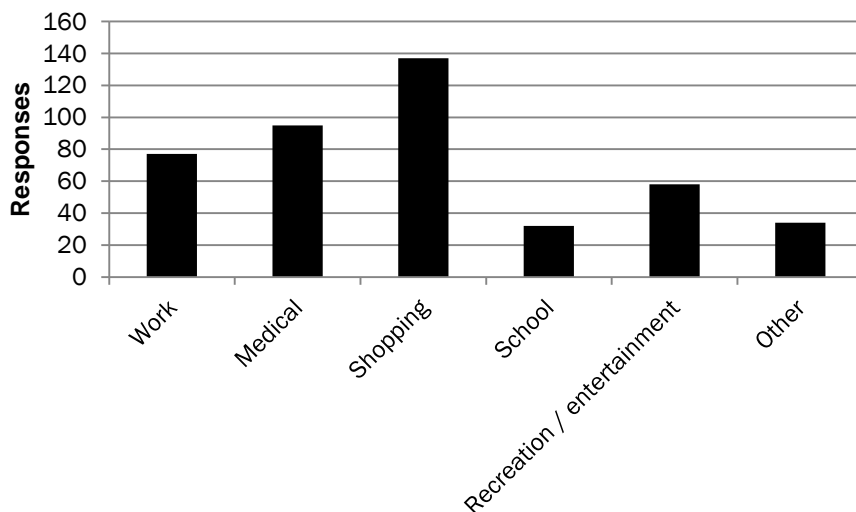
Length of Time Riding JATA



Trip Method Alternative



Trip Purpose



Ridership Activity Data Collection Process

Over the days of Friday, September 1st and Wednesday, September 6th, stop-level activity data (customer boardings and alightings) was collected for all JATA fixed route buses. Stop level data geographically illustrates customer demand, and assists in understanding route dynamics and service expansion opportunities. This data additionally provides insight into high-need locations for bus stop amenities. Although this kind of stop-level data is not currently available for the JATA system, the agency is currently in the process of procuring automatic passenger counters which would provide this information in the future.

Reserve-A-Ride Data review

In addition to the activities focused on JATA's fixed-route services, detailed JATA Reserve-a-Ride service data was requested and reviewed for trips made during the same two week time-frame as the fixed-route data collection. Data reviewed includes demographic data, trip purpose, trip frequency, trip origin and other information.

Jackson Walkable Communities Coalition

An overview presentation was made to the Jackson Walkable Communities Coalition at a meeting on Tuesday, June 13, 2017. The meeting was held at disAbility Connections at 409 Linden Ave in Jackson. The group is made up of local agencies such as the YMCA and Allegiance Health as well as members of the biking community, active retirees, and community leaders. The focus of the Jackson Walkable Communities Coalition is improving the nonmotorized network in Jackson. Members of the Coalition were prompted for feedback on issues and opportunities for JATA during a group exercise. This feedback is incorporated into the below document.



3. Fixed Route Analysis

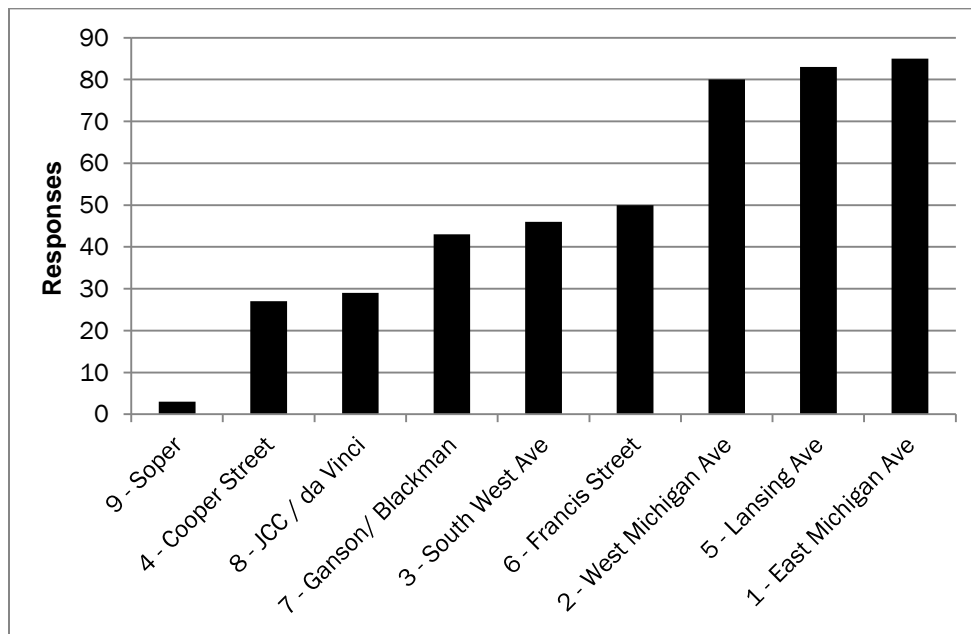
3.1 Service and Ridership Trends

Large clusters of ridership from the questionnaire period are displayed in Map 3.1. Over the course of the data collection, study period, 712 trips were recorded. The on/off data collection shows some of JATA's most popular destinations, such as the following:

- Park Forest Apartments and Meijer along Airport Road
- Cluster of businesses near Jackson Crossing and between N W Avenue, N Wisner Street, 1-94 and W Argyle Street
- Intersection of N Blackstone Street and W Monroe Street
- Walmart Supercenter and Westwood Mall commercial area at N Brown and W Michigan Avenue
- Area at Wildwood and Steward Avenues encompassing Jackson High School and Reed Manor
- E Michigan Avenue corridor
- Francis Street corridor from E Franklin Street to Prospect Street, with a significant activity cluster at the location of the Family Dollar and Dollar general at Francis and Prospect
- Jackson College and Jackson Preparatory / Da Vinci academic campuses

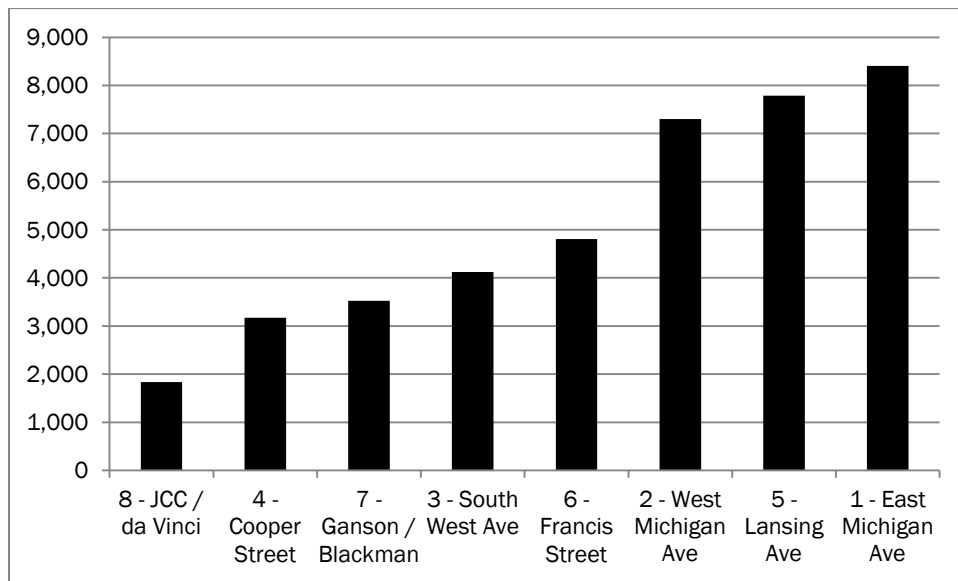
The routes that questionnaire participants self-identified as their most utilized routes correspond with on/off stop activity. Figure 3.1 shows self-reported popular routes.

Figure 3.1 "Which route do you ride the most?"



The routes that customers self-reported match very closely with actual JATA ridership trends. Based on 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 (see Figure 3.2). Route 8 likely dips below Route 4 in multi-year monthly summary because of its dependence on school ridership.

Figure 3.2 Average Monthly Ridership by Route March 2015 - May 2017*



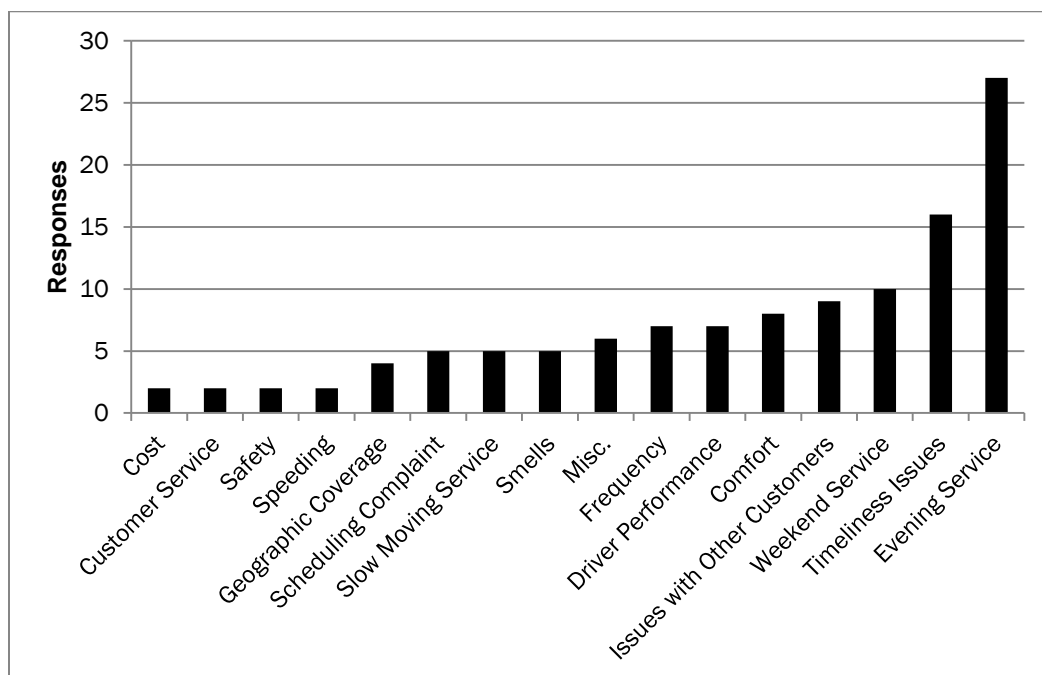
* Route 9 – Soper summary data not available

3.2 Service Gaps and Overlap

Customer Issues with Existing Service

Almost half of the customers responding to the questionnaire (45%) did not have any complaints or issues with JATA service. The remaining respondents primarily were concerned with expanded service hours in evenings and on weekends, and with service on-time performance. Other concerns included issues with other customers, comfort (smells, potholes, isle access) and desires for frequency or better driver behavior/friendliness. A graph showing customer complaints is shown below in Figure 3.3.

Figure 3.3 "What is your biggest complaint about JATA?"



Map 3.1 JATA Fixed Route Stop Activity, September 1st and 6th 2017

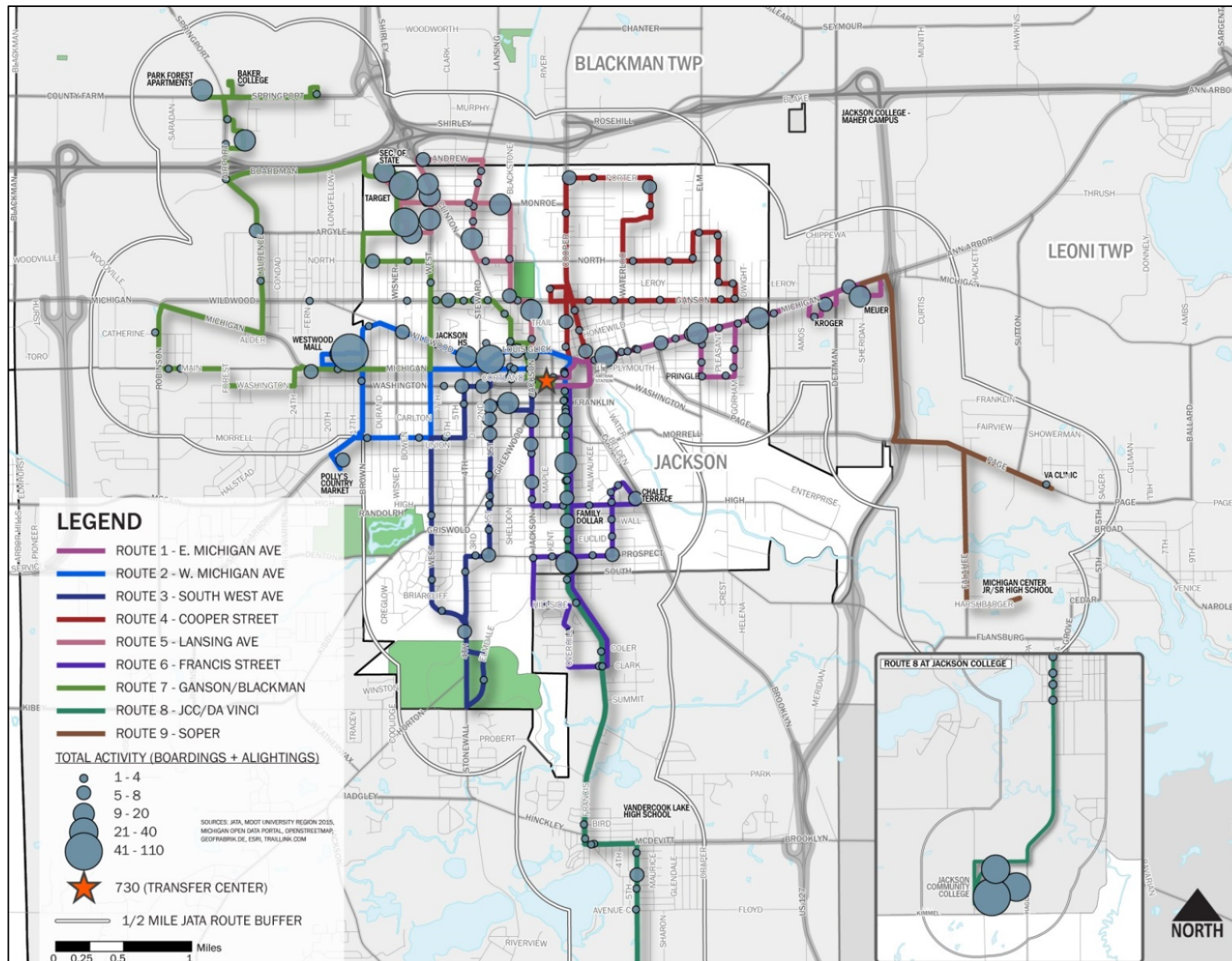
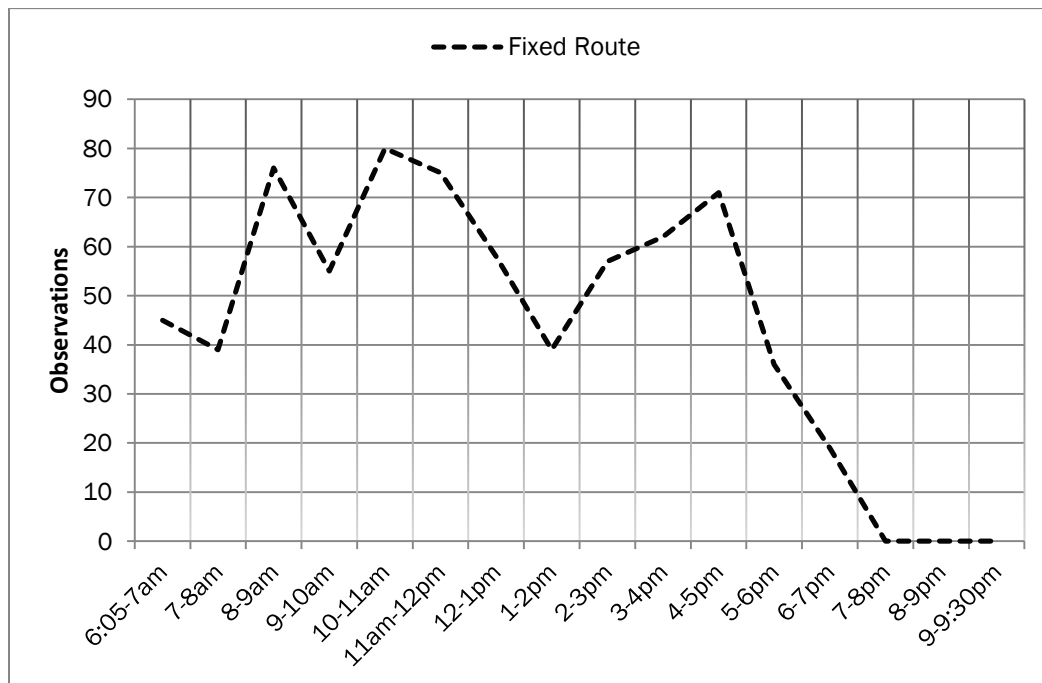


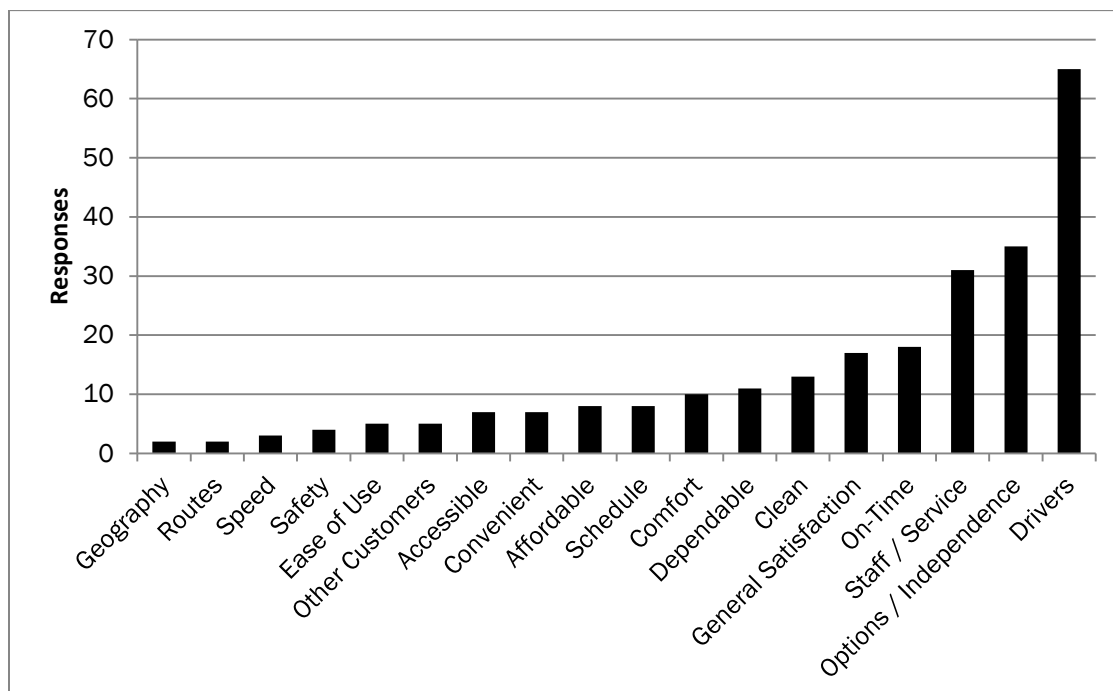
Figure 3.4 Fixed Route Ridership by Time of Day



What Customers Like Best about Existing Service

Appreciation of JATA drivers (26% of comments) and friendly customer service staff (12%) topped the list of what riders like best about JATA service. Having the option and independence to travel where needed was another top benefit cited by questionnaire participants (14% of comments). Other benefits listed were JATA's on-time performance and overall experience followed by cleanliness, dependability and comfort of services. A graph showing customer responses is shown below in Figure 3.3.

Figure 3.5 "What do you like best about JATA?"



Desired Destinations

The desired destinations of JATA riders are shown in Map 3.2. Destinations include a number of smaller clusters both near and far from the current transit service area. The most desired destination in Jackson, not yet accessible by bus, is a Sam's Club store located in the northwest area of the city at 3600 O'Neill Drive. A total of 7 individuals wished that a bus route could take them to this Sam's Club. The next highest desired destination by JATA riders, with 4 requests, was the Michigan Center, located just east of the current service area.

Although most riders opted for very specific location responses, there were also more general service requests, most of which were not able to be mapped. Six responses indicated a desire for service outside of the City of Jackson or all over Jackson County, and one rider stated an interest in seeing service outside Jackson County. Other riders requested more service in more specific regions. Requests were categorized to best express their location, and are listed in order of popularity below:

- Sam's Club (7 responses)
- Northwest Jackson destinations (near border with Blackman Township – 7 responses)
- Vandercook Lake area (5 responses)
- Blackman Township destinations (near border with Jackson – 4 responses)
- Michigan Center (4 responses)
- The Cascades (4 responses)
- Summit Township destinations (4 responses)
- Gordon Food Service (3 responses)
- Spring Arbor (2 responses)
- Planet Fitness (2 responses)
- Xfinity (2 responses)
- Lansing (2 responses)
- Detroit, MI (2 responses)
- East Jackson (2 responses)
- North Jackson (1 response)
- Northeast Jackson (1 response)
- Horton, MI (1 response)
- Adrian, MI (1 response)
- Ann Arbor, MI (1 response)
- Leoni Township / Indian Village Mobile Home Community (1 response)
- Other responses:
 - Page Avenue
 - The Oaks Apartments
 - Frost Elementary
 - Meat Market
 - Park
 - "All the way down Ganson"

Data collected shows that the majority of new destinations are not significantly outside the footprint of existing JATA fixed route services. Table 3.1 shows that approximately half of desired destinations are already within a half mile of a JATA fixed routes.

Table 3.1 Customer Desired Destinations and Distance to Existing JATA Fixed Routes

	Distance from JATA Fixed Routes			
	.25 mile	.5 mile	.75 mile	1 mile
Customer Desired Destinations	34%	46%	57%	66%

Likely Transit Needs Index

To better understand the level of service that the JATA fixed route system is providing, a transit index was developed based on Traffic Analysis Zones (TAZs) for Jackson County and is shown in Map 3.3 and Map 3.4. TAZs are geographic units used in transportation modeling and constructed using census block information. The transit score spotlights target areas with higher concentrations of demographic criteria that may contribute to higher transit demand. Primary demographic indicators included in the index are:

- Population and employment density,
- Senior citizen population,
- Zero vehicle households,
- Disabled population, and
- Households below the poverty level.

In Jackson County, areas with the highest likely transit need score are located near the center of Jackson, and to a lesser extent in Spring Arbor. Other areas with high transit scores can be found extending to the south of downtown Jackson, between 4th street and Cooper Street and on the north side of Jackson between Lansing and Blackstone. Based on the transit score information compiled for Jackson County, the existing bus routes appear to be serving areas most likely to use transit in the region. Some additional service may be warranted south of E. Michigan Avenue between Dettman and Gorham and north of Page Street where some of the TAZs show higher scores.

Latent Demand

In order to fully understand the needs of transit users in Jackson County, it is important to review a number of key items. First, incorporating ridership activity from both fixed route and Reserve-A-Ride reveals current customer activity. Second, overlaying ridership and route data with customers' desired destinations (generated from on-board questionnaires) shows whether customers are able to travel or already traveling near these locations using existing services. Lastly, layering a selection of major employers identified in the Jackson County Master Plan shows the coincidence of travel patterns, desired destinations, and Jackson's employment-based destinations. Adding a layer of major employers assists in explaining existing high transit activity patterns, and identifying areas that are currently not accessible by transit - but could serve as trip generators if the location were made accessible via a new service. The visualization of this review can be seen in Map 3.4 and Map 3.5.

The trends from this data review emerged as follows:

- The vast majority of activity and demand is located in and around the City of Jackson. There is very little demand to better serve the outer edges of Jackson County.
- Areas outside of the City of Jackson that do show transit needs and potential are Spring Arbor, Blackman Township along the Parnall Road corridor, Summit Township along the Robinson Road corridor, and to a lesser extent the south Cooper Street and High Street corridors.
- The Reserve-A-Ride system currently sees fair activity levels in the Ashton Ridge Apartments which is an affordable housing neighborhood, technically within the City of Jackson. This facility is immediately adjacent to Jackson Community College North Campus and a medical facility.

Spring Arbor

Spring Arbor is home to Spring Arbor University, which is a major Jackson County employer and institution. In addition to being a major employer, the University enrolls almost 3,000 undergraduate students that may have transit needs. These students travel from across the country, and may desire to access Greyhound and Amtrak services, or the downtown campus of the University. This area was identified as a desired destination by existing users, and the Reserve-A-Ride system shows healthy levels of usage in this area. Lastly, the likely transit need score in Spring Arbor was higher than any other location in the county outside of the City of Jackson and immediately surrounding areas.

Robinson and Spring Arbor Road Corridors

The Robinson Road corridor and the Spring Arbor Road corridor could prove to have large transit usage if served with a fixed route. A number of medical facilities are located along Robinson Road, including the Ridge Crest Health Campus, and senior housing facilities such as Countryside Manor, Ganton's Retirement Home, and Ganton Home Care. The intersection of Robinson and Spring Arbor Roads is home to the Jackson Lumen Christi Schools, which is a potential trip generator and was identified by riders as a location where they desired service. Spring Arbor Road also has a number of medical facilities and places of worship, and was identified as a desired location by existing riders.

Parnall Road Corridor

The Parnall Road Corridor is home to several large employers - including the Consumers Energy facility and the Parnall Correctional facility. This corridor has existing activity from Reserve-A-Ride services, and was identified as a desirable location to existing fixed route customers. The planned and programmed Lakelands non-motorized facility will soon have a trailhead at Parnall Road. This could provide another modal connection, and allow the JATA service shed to grow. In addition to the potential employee demand for trips at the Parnall Correctional Facility, there may also be a need to serve this area for visitors to Michigan Department of Corrections facilities.

Henrietta Township

Although very rural in appearance, this township has a visible cluster of zero vehicle households, households in poverty and drive-alone commuters. The township is projected to grow toward Jackson in the southwest direction between now and 2045. Additionally, the township is home to several mobile home communities:

- Vinings Trailer Park
- Coachman's Cove Mobile Home Park
- Pleasant Lake Mobile Home Court

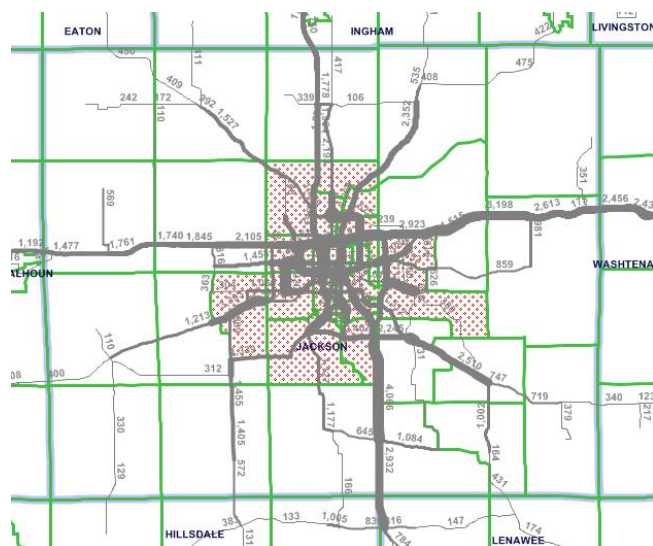
The data we have is not detailed enough to understand exactly where in the township the transit indicating statistics are located, however mobile home parks are often, though not always, locations that generate these statistics due to the affordable housing they provide. While Vinings and Coachman's Cove are near one another on Portage Lake Road, Pleasant Lake is located on Bunkerhill Road near a cluster of houses fronting Pleasant Lake. Though they are potential areas of transit need, their remote location may make them difficult to serve in an efficient manner.

Other Locations Outside of Jackson County

Data was accessed from MDOT and their statewide travel model which is showing total numbers of one-way home-based work passenger vehicle trips per day (in 2015) in order to discover an estimate of the proportion of work trips leaving Jackson County for various surrounding cities. The data access can be described as follows:

- All trips are one-way trips and the volumes reflect the combination of morning and evening commutes.
- Freeways are represented by separate segments for each direction - labels reflect only half of the total freeway volume.
- Trips include both Jackson residents working elsewhere and outside residents commuting to Jackson.
- Numbers only encompass home-based work trips, which would include some additional trips that were part of commuting tours (perhaps an additional 10-20%).

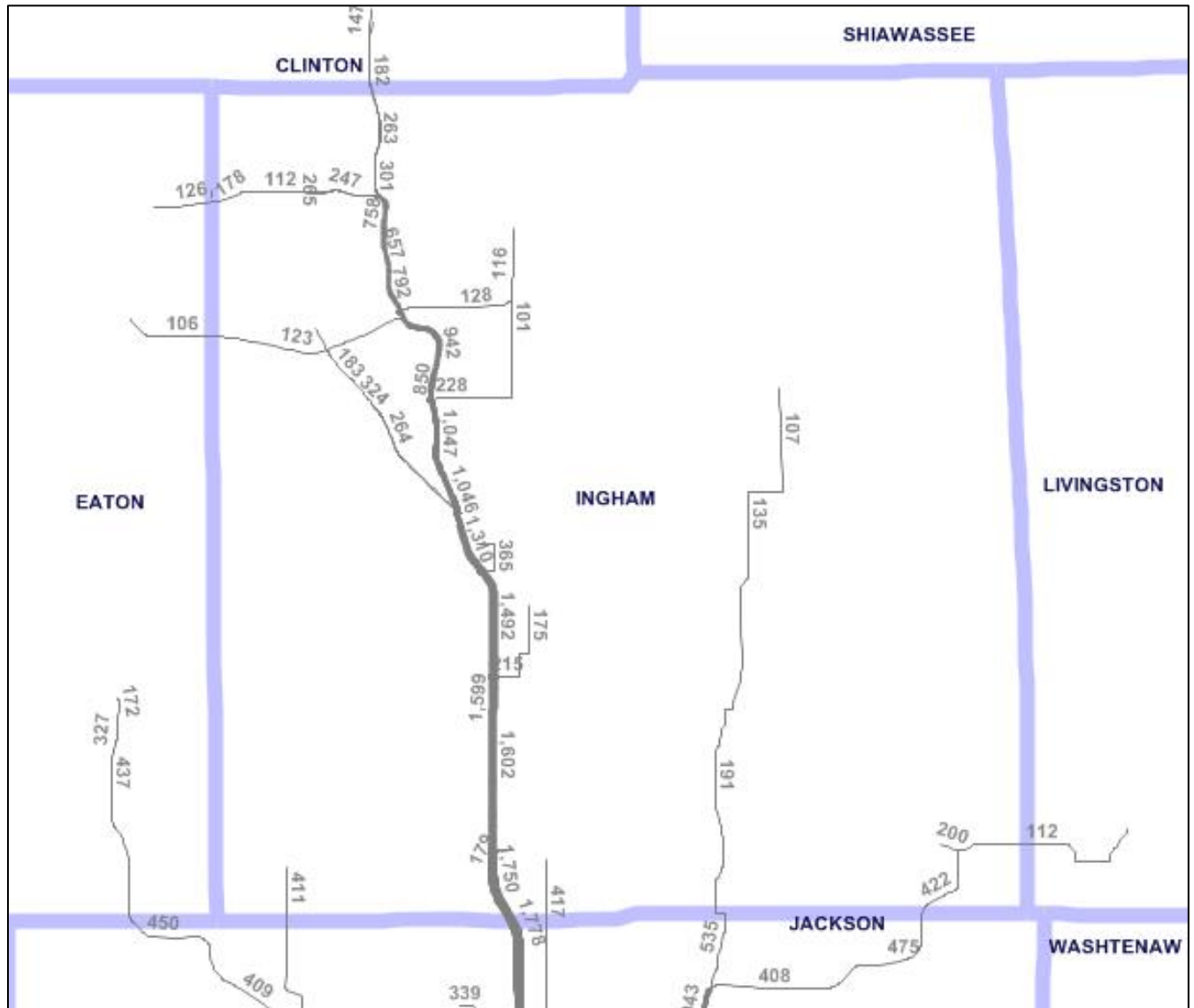
Approximately 75,000 total home-based work trips (2015) originate in Jackson County according to the numbers in the MDOT statewide travel model. Of these trips, 61,156 both start and end within Jackson County. Of these trips, roughly 33,700 trips originate in the Jackson urbanized area and end within Jackson County. This shows that 82% of all home-based work trips originating in Jackson County stay within the County. This is a strong relationship of residents to job opportunities and ranks higher than most Counties in Michigan in a similar comparison according to MDOT.



Source: MDOT Statewide Travel Model

Ingham County

Approximately 3,500 total trips cross the Ingham County line on US-127 in both directions, with about 800 (23%) of these trips interacting with Lansing or further north. This is roughly equivalent to 400 vehicles making round trips each day, with some share of those being Jackson residents working in Lansing and the others being Lansing-area residents working in Jackson. However, with almost 200 of those trips traveling beyond Lansing and considering that many of the trips are Lansing residents working in Jackson, it can be concluded that Lansing is not an area with demand that would typically justify service being provided by anything more than carpooling services.

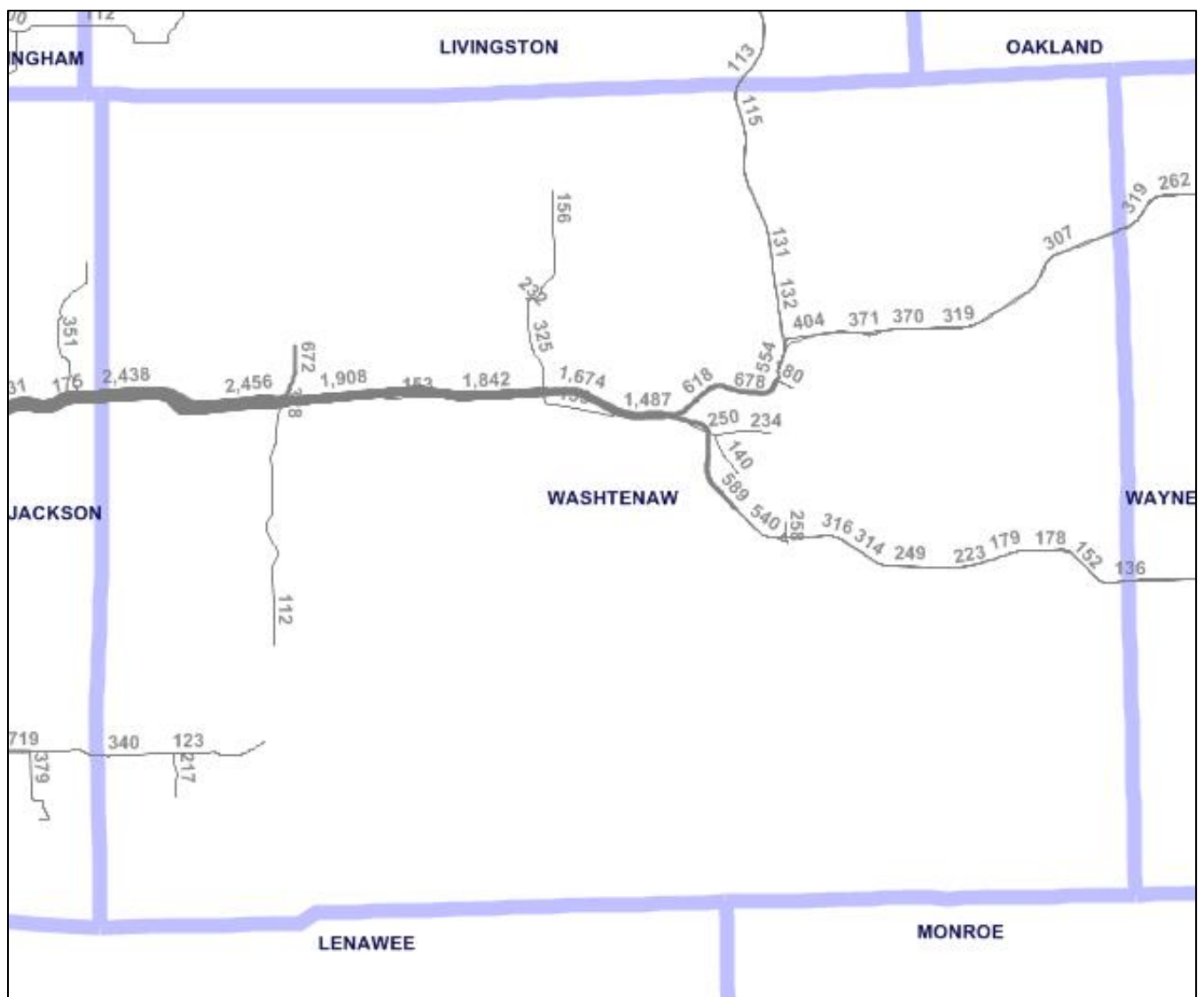


Source: MDOT Statewide Travel Model

Washtenaw County

Approximately 4,800 total trips cross the Washtenaw County line on I-94, with about 3,000 (63%) of these trips interacting with Ann Arbor or further east. About 900 (19%) of these trips interact with Wayne County and another 100 interact with Livingston County. Ypsilanti also receives roughly 250 of these trips as well. That means approximately 1,750 actually interact with Ann Arbor. This makes Ann Arbor the single largest out of County demand location for Jackson residents. However, this attraction represents only 2% of the total home-based work trips for Jackson County and that doesn't take into consideration that some of the 1,750 trips could be Ann Arbor residents working in Jackson.

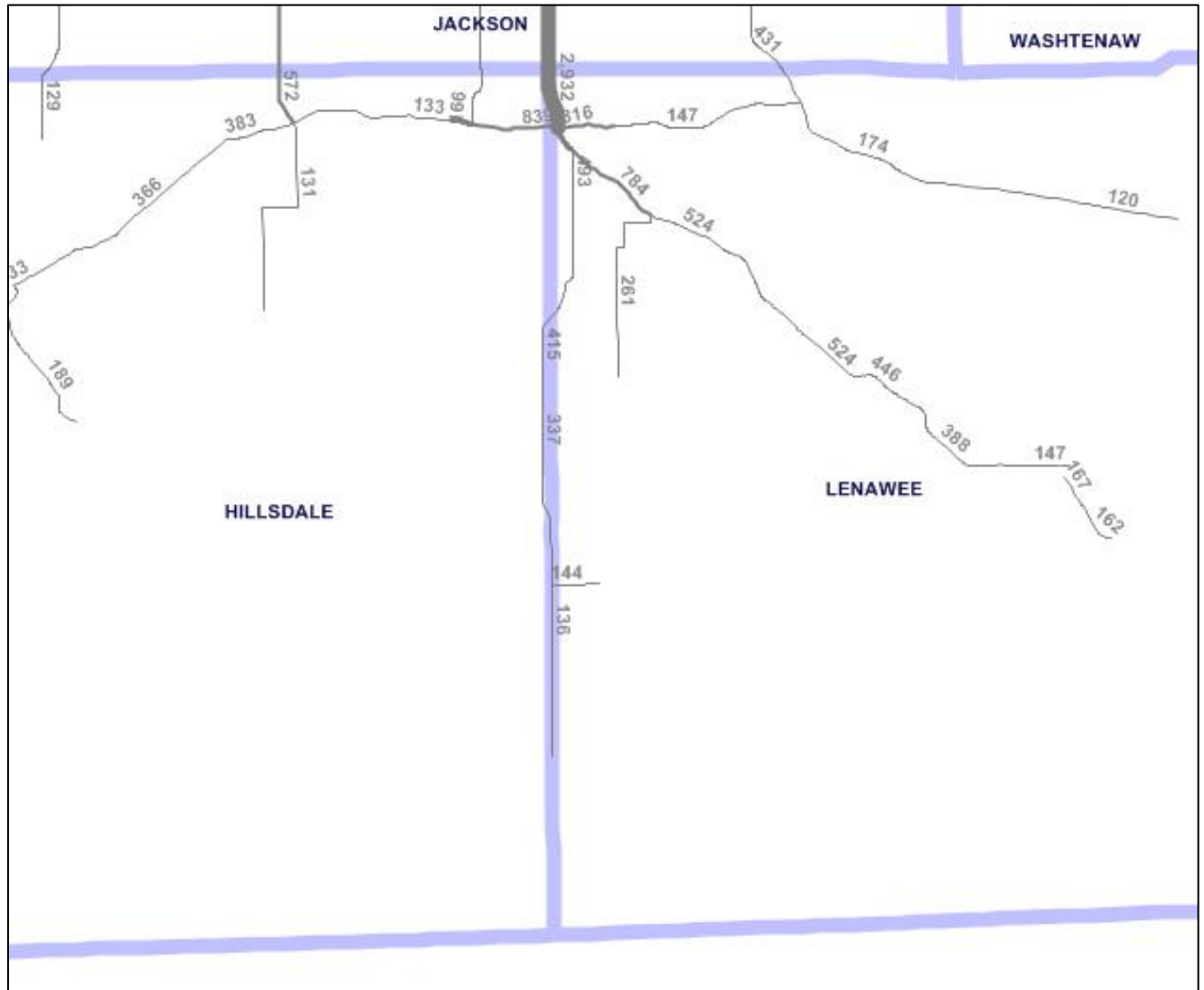
According to datausa.com and private research providers like PayScale.com and point2homes.com, the average salary for a job in Ann Arbor is \$56,221, the number of jobs has declined by 0.17% since 2014 and the overall population has grown by almost 2% in that same timeframe. This indicates that the jobs available are not typical of current JATA riders in the sense that they are significantly higher salaries. Additionally, the growing population but shrinking job market would make it even more competitive to get jobs once available. These signs all indicate that there is not much demand for JATA to consider serving Ann Arbor in anything more than helping to coordinate rideshare options.



Source: MDOT Statewide Travel Model

Lenawee & Hillsdale County

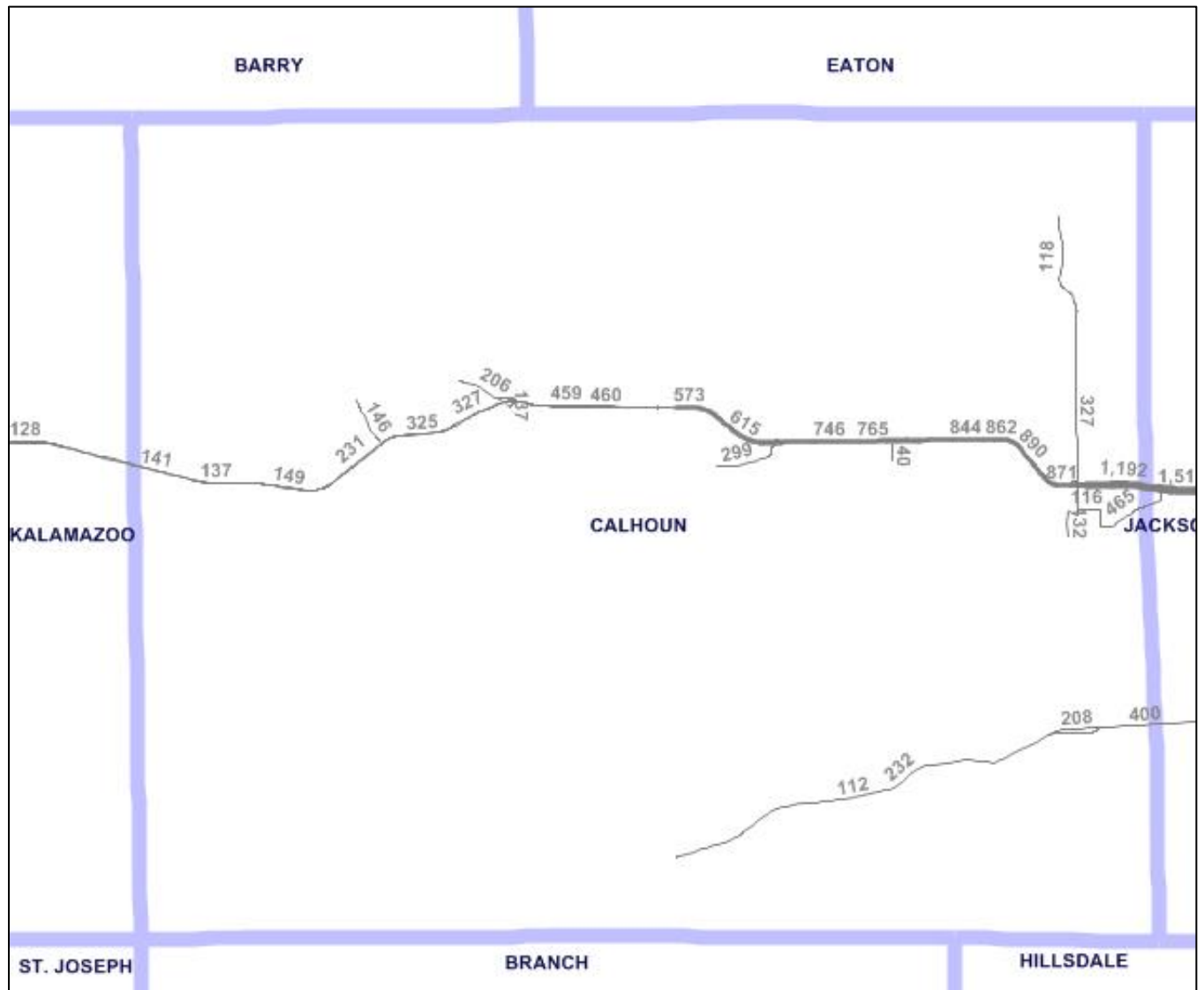
Approximately 2,900 total trips cross into Lenawee County on US-127, with about 400 (14%) of these interacting with Adrian and a similar number interacting with Hillsdale. This is a very small attraction rate for Jackson County. In addition to being a small trip generator the clustered locations, Adrian and Hillsdale, are both over 30 miles away from the furthest southern point that JATA fixed route busses serve (JCC) and almost 25 miles outside of the County limits that JATA reserve-a-ride currently serves. Neither location would be ideal or efficient for JATA to serve in any capacity.



Source: MDOT Statewide Travel Model

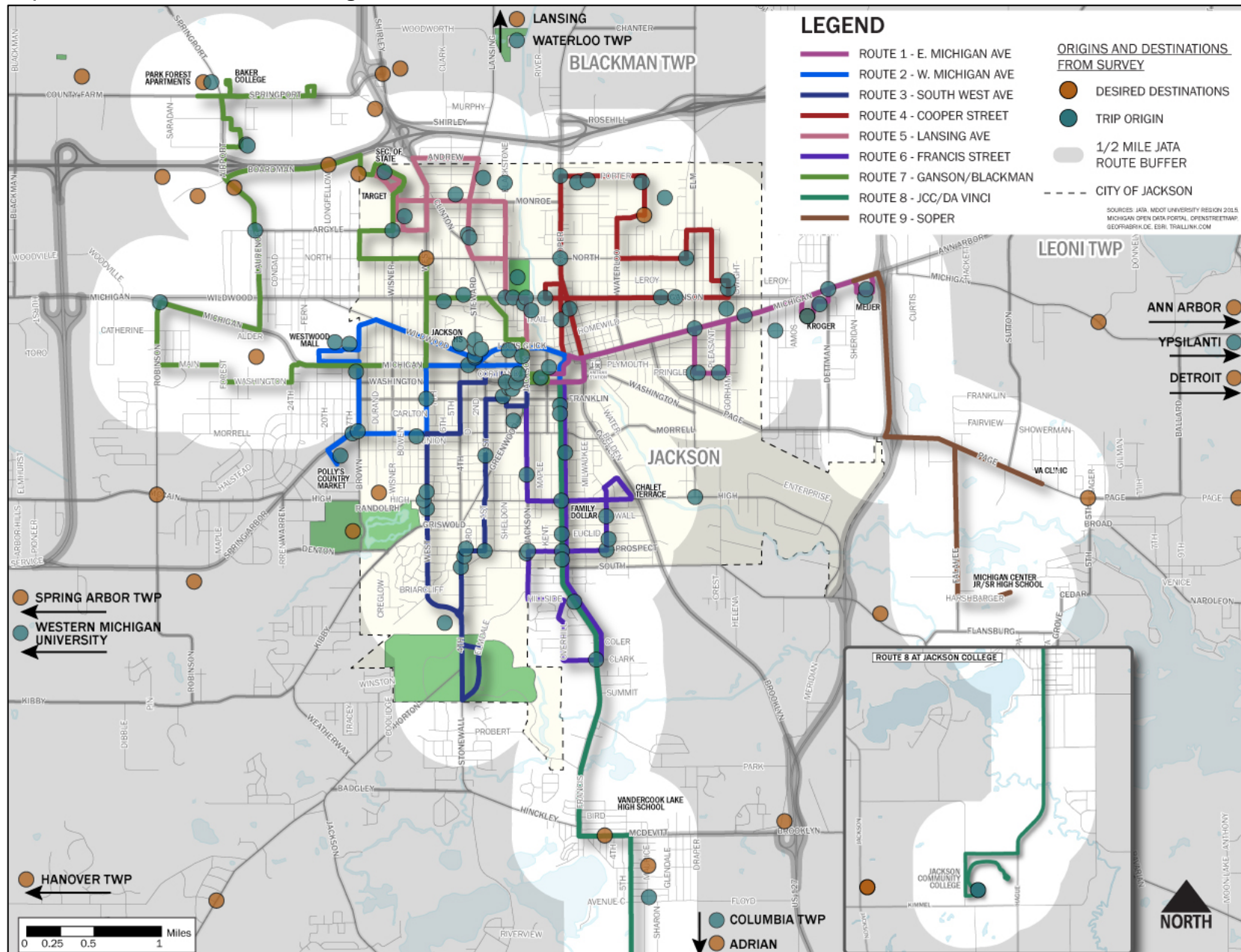
Calhoun County

Approximately 2,400 total home-based work trips associated with Jackson County cross the Calhoun County line on I-94 in both directions, with about 800 (33%) of these interacting with Battle Creek or further west. Additionally, about 280 (12%) of these trips interact with Kalamazoo County. Between the cities of Marshall, Battle Creek, and Kalamazoo, as well as those accessing I-69, these trips are fairly evenly distributed which leaves no major cluster that would indicate a interaction of a size significant enough that JATA should consider any type of service options for this area.

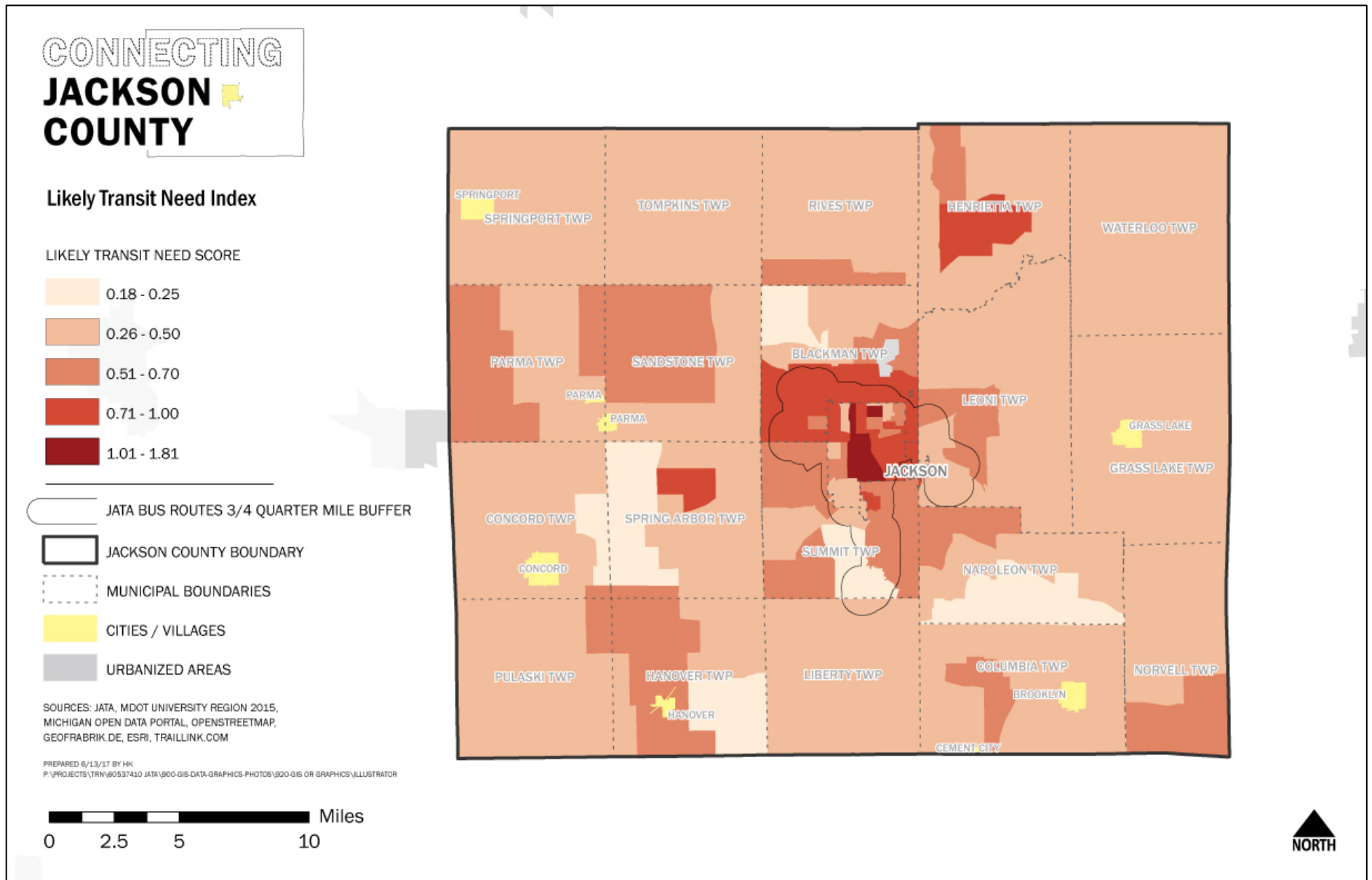


Source: MDOT Statewide Travel Model

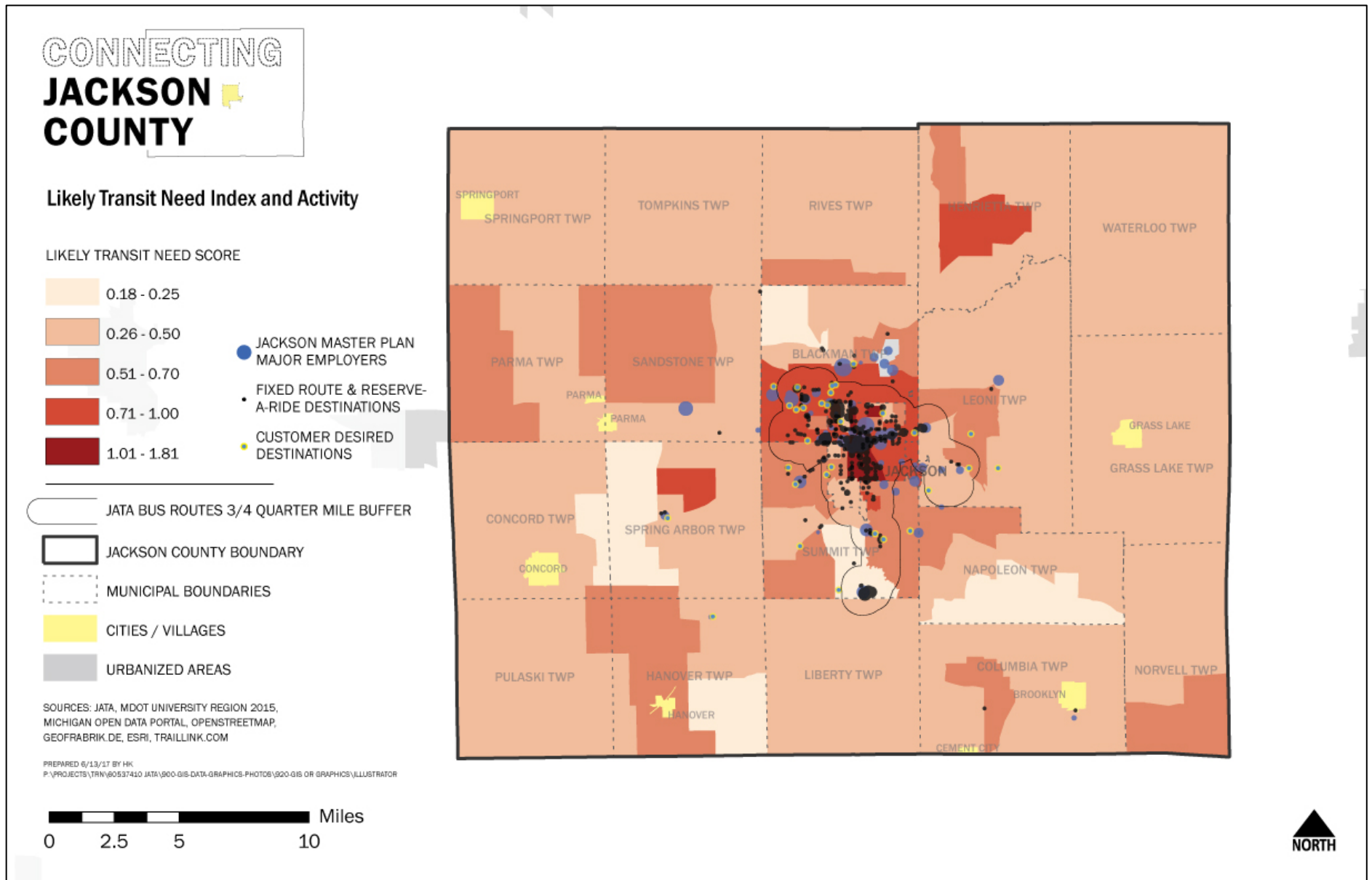
Map 3.2 JATA Fixed Route Customer Origins and Desired Destinations



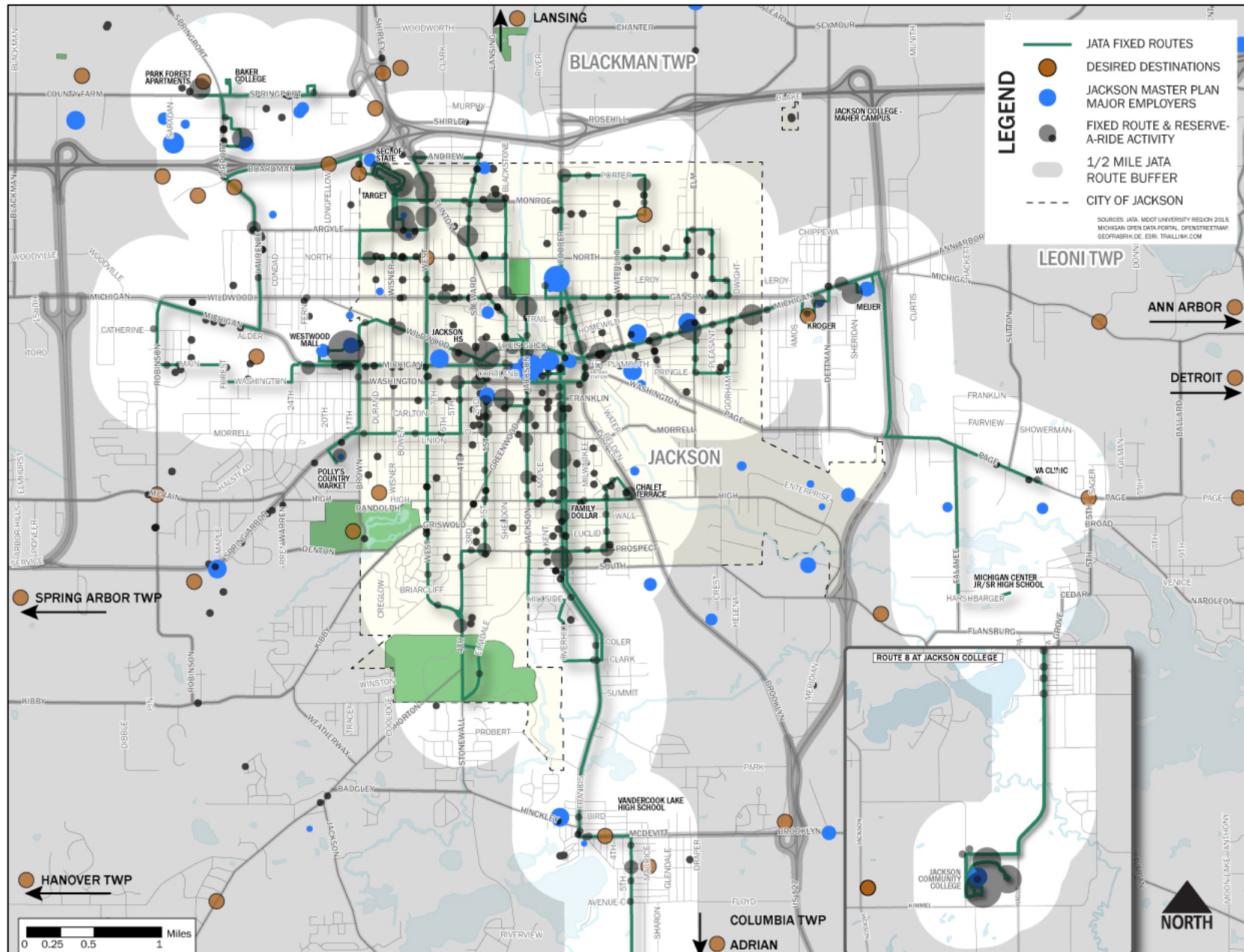
Map 3.3 Likely Transit Need Index



Map 3.4 Likely Transit Need Index and Existing Transit Generators and Activity



Map 3.5 JATA Fixed Route Customer Origins and Desired Destinations



3.3 Infrastructure Gaps and Opportunities

Infrastructure gaps are areas where a lack of physical or technological infrastructure prevents individuals from accessing needed transportation options. Infrastructure gaps can take the form of a major roadway acting as a barrier to accessing daily necessities, a lack of sidewalks adjacent to transit stops, or intersections that do not meet Americans with Disabilities Act (ADA) standards.

Individuals can achieve a greater degree of freedom when they have full access to a variety of transit modes, but this can only be achieved when the pathways to transit – the infrastructure and conditions in the built environment – allow full access to transit stops, stations, and vehicles. Driven by the passage of the ADA in 1990, many transit agencies and governmental jurisdictions have made significant progress in this area. Policy initiatives, incremental enhancements, modifications, and other measures undertaken by transit agencies and their partners have significantly improved access to transit for persons with disabilities, others who rely on public transportation, and individuals who choose to utilize these services.

Amenities and Access

Using ridership data, JATA can identify locations for bus stops based on needs. Yet, there are additional criteria that should be taken into account that support the placement of a shelter including, proximity to medical facilities, proximity to senior housing, and major transfer points. Key locations with high ridership or where two routes intersect should be considered for bus shelters, seating, bus schedule information, and/or signage highlighting the availability of transit. JATA currently has 33 shelters located within its fixed route service area. Key locations with high ridership or where two routes intersect should be considered for bus shelters, seating, bus schedule information, and/or signage highlighting the availability of transit.

Providing defined access to and from the bus stop is important. Sidewalks should be constructed of impervious non-slip material and should be well drained. Access to the bus stop from the intersection or land use should be as direct as possible. To accommodate wheelchairs, sidewalks should be a minimum of 3 feet wide (preferably 4 to 5 feet wide) and equipped with wheelchair ramps at all intersections. Other improvements include defined pedestrian crosswalks and signals at intersections. Pedestrian enhancements, such as sidewalks, should be coordinated with roadway improvements to help improve bus patron comfort and convenience.

Image 3.1 Shelter without Connecting Pathways



Patrons should not have to walk through grass or exposed soil to reach the bus. In such cases, the areas between the sidewalk, bus stop, and curb can become worn and decline to muddy areas during inclement weather. Snow accumulation from road clearings during the winter months can also create additional access problems in the space between the sidewalk and curb. Such is the case for the JATA shelter pictured in Image 3.1, which is located along Daniel Road in front of the Hunt Club.

Pedestrian Network Connectivity

Installation of a discontinuous sidewalk from the intersection to the bus stop is one way to achieve greater patron access to the bus stop in areas with limited or no sidewalk coverage. Although, the sidewalk may not continue toward the next land use or along the roadway, this strategy is the first step toward providing complete access to the bus stop. This ensures that access to the bus stop is not through uneven grass or exposed soil, which can be further impaired by poor drainage and surface changes during inclement weather. People who are elderly or have disabilities may find access to the bus stop difficult as well. This method, however, can often put shelters in a type of “pedestrian island” which can be off-putting to certain individuals. Image 3.2 shows a JATA shelter located on a “pedestrian island” along Airport Road.

Image 3.2 Shelter without Connecting Pathways on Airport Road



Street infrastructure

Fast and efficient transit throughout the city not only improves economic vitality and business opportunity but makes Jackson a more desirable place to live and work. Transit improvements in the JATA service area can relieve congestion in the main corridors and connect major employment centers with residents. Having transit friendly infrastructure designed into the roadways of Jackson will help make the JATA services not only run more efficiently but can also significantly reduce maintenance costs.

On-street parking conflicts

It is essential that bus riders have safe access to their bus stop. Walking on narrow roadway shoulders, through mud or puddles, or through ditches is unacceptable to most bus riders and is often unsafe. Additionally, riders must have safe and efficient access from the stop to the bus. Many transit agencies would say that a bus stop is not considered accessible unless the bus can reach the curb. Bus zones, no parking areas and other parking restrictions are often necessary to assure access. There are a few instances within the JATA network where on-street parking hinders the riders ability to easily access the bus. In some cases, like East Michigan Ave shown below, there is a limit to the parking in terms of time, but it does not stop cars from being parked at a time when a JATA bus arrives. The picture below shows on-street parking immediately in front of a shelter along E. Michigan Avenue.

Image 3.3 On-street Parking Obstructs Transit Boarding and Exiting



Navigating Retail Developments and Promoting Safe Crossings (to reduce route deviations)

Fast and efficient transit throughout the city not only improves economic vitality and business opportunity but makes Jackson a more desirable place to live and work. Transit improvements in the JATA service area can relieve congestion in the main corridors and connect major employment centers with residents. Having transit friendly infrastructure designed into the roadways of Jackson will help make the JATA services not only run more efficiently but can also significantly reduce safety concerns.

Image 3.4 Difficult Crossing Area

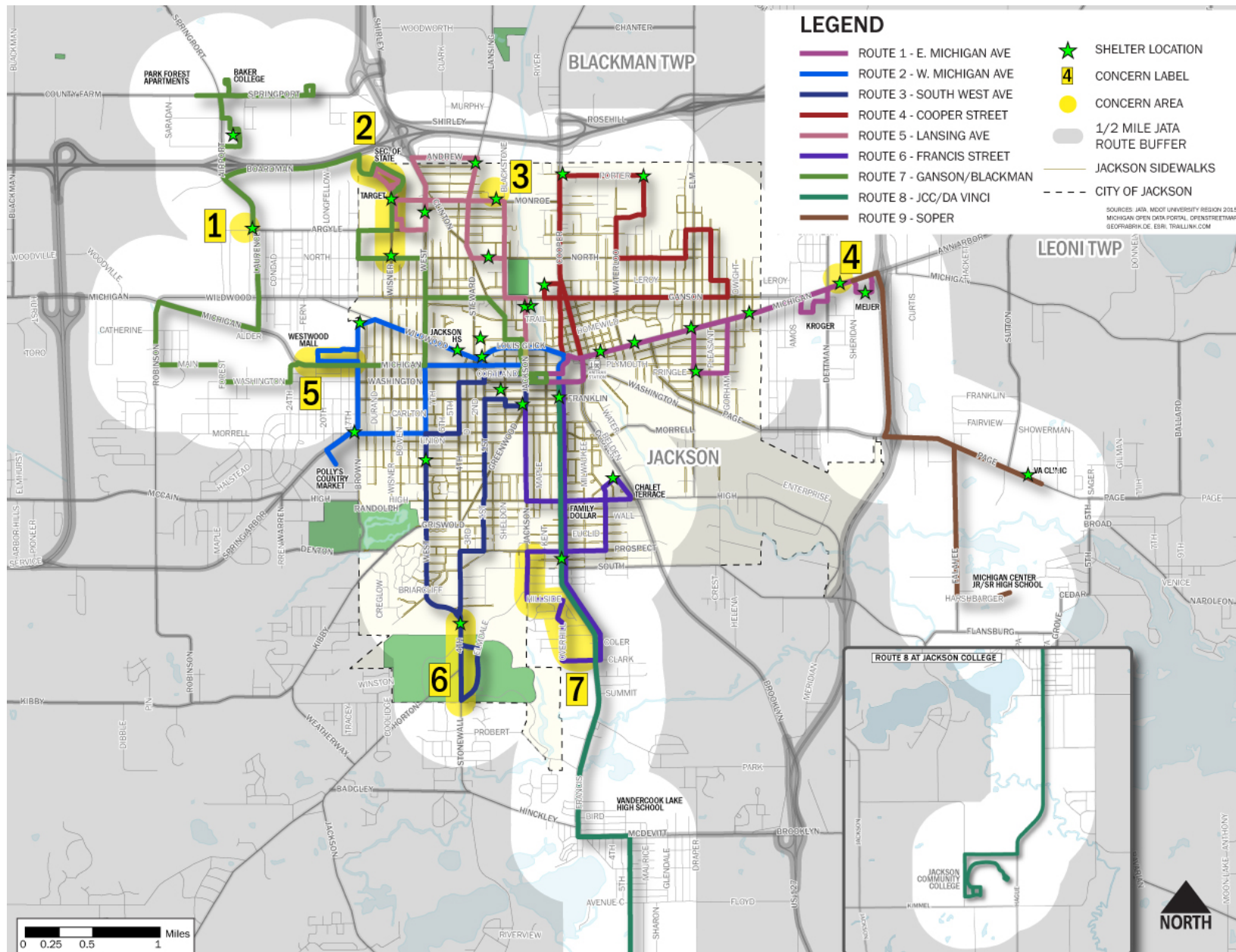


Due to the nature of the study area, many JATA fixed bus routes operate on state highways with high speeds and busy traffic. JATA passengers must often cross these roadways in at least one travel direction. Crosswalks, signals, pedestrian islands, and other enhancements should be considered at key locations such as schools, senior living facilities, and major shopping centers.

Map 3.3 Infrastructure and Access Concerns shows that most areas of concern lay on the periphery of the JATA service area. The descriptions matching the concern labels on Map 3.3 are below.

1. Higher speeds averaging 40 miles per hour; sidewalks are narrower and older; no high visibility crosswalks are present
2. Four lanes of vehicular travel; somewhat high travel speeds at 35 miles per hour; limited to no crosswalks are present; evidence of pedestrian crash at Wisner and Argyle in Google Earth desktop review
3. Speed limit changes from 25 to 35 miles per hour indicating an acceleration zone; disconnected sidewalk network; no crosswalks present
4. 40 mile per hour speed limit; no crosswalks present nearby
5. Five lanes of vehicular travel at 35 miles per hour; no crosswalks present
6. 35 mile per hour speed limit; no crosswalks present; no sidewalks provided
7. No sidewalks provided

Map 3.6 Infrastructure and Access Concerns



Connection to Non-motorized facilities

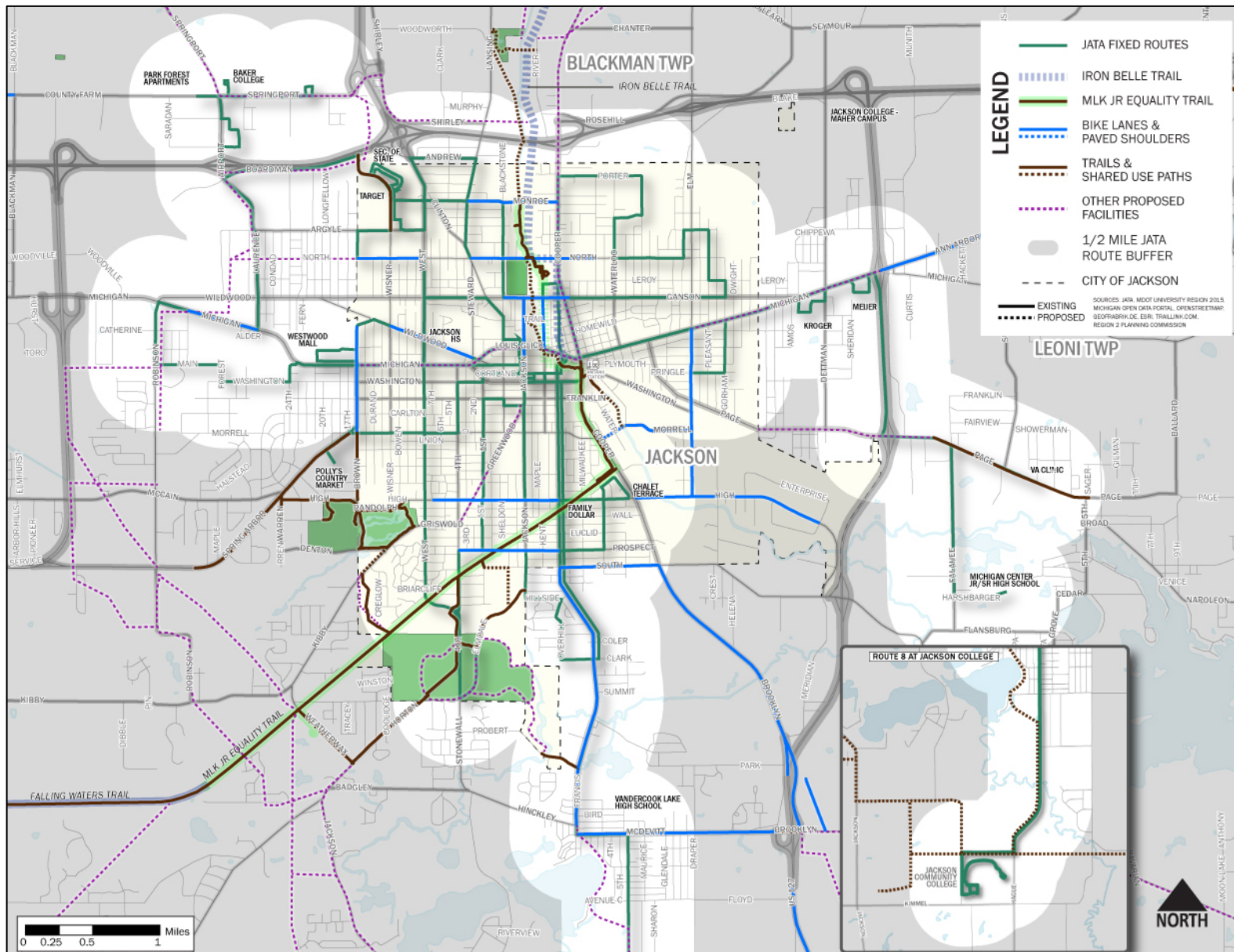
All transit users are pedestrians or bicyclists at the beginning or end of their transit trip. As the walking and bicycling environment to transit facilities is improved, individuals may be encouraged to take non-motorized modes in lieu of driving. For existing transit users who do not own an automobile, accessing transit by a non-motorized mode will become less of an effort and more convenient. As improvements are made, individuals will have greater choice in their transportation options. As a result, more individuals may leave their cars at home and access transit by non-motorized modes resulting in reduced traffic and air quality improvements. Improving the bicycle and pedestrian environment is a desirable method for realizing this goal because it is a relatively inexpensive and an environmentally friendly strategy.

Currently, JATA has three routes that cross the Martin Luther King Jr. Equality Trail. Providing a better multi modal connection at these locations could provide users with alternative transportation options for the first and last mile portions of their trips. The connections should include not only bus stops but also bicycle storage options such as racks and/or lockers. Additionally, locations where there are bus stops adjacent to bike lanes such as along Wildwood Avenue or North Street should also work to provide bicycle storage facilities.

Image 3.5 Crossing Treatment and Connection to the Martin Luther King Jr. Equality Trail



Map 3.7 Regional Non-motorized Network



Infrastructure Projects Review

The Transportation Improvement Program (TIP) is a management tool for structuring transportation-related projects in Jackson County and the Region 2 Planning Commission area. The TIP is an agreed upon list of specific priority projects for Jackson County. The TIP lists all the projects that intend to use federal funds, along with any non-federally funded projects that are considered regionally significant. The list is multi-modal in nature and includes traditional highway and public transit projects (JATA), as well as those relating to bicycles and pedestrians. It is a program and schedule of intended transportation improvements, or continuation of current activities, covering a 4-year period and must be consistent with the JACTS 2040 Long Range Transportation Plan (LRTP). The projects programmed in the TIP are selected from the LRTP based on need, local initiative, and requirements of the FAST Act. The projects in the current TIP that will affect the JATA fixed route service are shown in the table below. It should also be noted that JATA was able to get two extra paratransit busses through the TIP in an amendment process this summer.

Table 3.2 Selection of Upcoming Infrastructure Projects Affecting JATA Routes

Fiscal Year	Lead Agency	Project Name	Limits	Length	Description	Affected Routes
2018	City of Jackson	Fourth St	Audubon to Horton	0.98	Mill and Resurface	Route 3
2018	City of Jackson	Ganson Signal	At Steward	NA	Reconstruct Signal	Route 7
2018	MDOT	M-106	Ganson to Porter	0.92	Mill and Resurface	Route 4
2019	City of Jackson	Francis St	Morell to Mason	0.2	Reconstruct	Route 6, 8
2019	JCDOT	Laurence Ave	RR to Wildwood	0.24	Mill and Resurface	Route 7
2019	JCDOT	Laurence Ave	Wildwood to Argyle	0.51	Mill and Resurface	Route 7

Project Profile: Lakelands Trail Linear State Park Extension

In addition to the Martin Luther King Jr. Equality Trail and other bicycle facilities in the City of Jackson, there are a number of non-motorized facilities in the surrounding area. One new facility that is being built is the Lakelands Trail Linear State Park. The new infrastructure will end near the intersection of Parnall Road and Cooper Street in Blackman Township. This facility will provide an opportunity for Jackson to have a larger regional reach. JATA fixed route services do not currently reach this far north but might consider doing so in the future. A map of the planned extension is shown in Map 3.7.

Project Profile: Jackson County BCycle

As is the case in many places around the Country, bike share has arrived in Jackson. The Jackson County BCycle has just one location so far but could expand. The station located at the Falling Waters Trailhead provides users with a bicycle option that previously may not have existed. JATA does not currently provide fixed route services this far outside of the City.

Image 3.6 Jackson BCycle System

Source: <https://jacksoncounty.bcycle.com>



Infrastructure Profile: One-way Streets

Jackson has a number of one-way streets. These one-way streets can often help traffic flow but can hinder transit services. This is especially evident in the downtown area where one-way streets significantly affect the way JATA busses reach and serve the transfer center. Working with the City to help convert these streets back to two-way roadways will help the efficiency of the JATA services. One roadway, Louis Glick Freeway, is already being reconstructed to handle two-way traffic. See **Image 3.7**.

Image 3.7 Roadways Conversions From One-way to Two-way Can Alter JATA Routes

Source: AECOM



4. Fixed Route Analysis

4.1 Route 1 - E. Michigan Ave

Trends

This route continues to show strong ridership both throughout the duration of the day but also throughout the spectrum of the route. This route showed the highest ridership activity at the end stop at the Meijer store. It was very clear based on the counts and the questionnaires that JATA riders utilize this route to make needed trips to the grocery store. Though the K-Mart location has gone out of business it continues to produce activity as there is a large apartment complex, Lakeside Apartments, behind the location.

There are several times a day when Route 9 stops at the Meijer location on E. Michigan Ave. Route 9 does not connect with the transfer center and thus its ridership largely depends on the reliability and timeliness of Route 1. This connection between routes is not currently happening in an efficient manner. Often Route 1 is scheduled to arrive at the Meijer just a few minutes after the Route 9 is scheduled to leave.

Improvement Opportunities

JATA might consider working with local officials and the land owners to create a pedestrian specific connection between the parcels.

There are a number of segments along this route where JATA might consider consolidating stop locations. The loop around Gorham, Pringle, and Elm Streets specifically has many stop locations with low activity numbers spaced closely together. A standard ridership shed is assumed to be between $\frac{1}{4}$ of a mile and $\frac{1}{2}$ of a mile. Due to the northern climate of Jackson it is likely that the $\frac{1}{4}$ mile shed is more appropriate. Even with this smaller shed area JATA could reduce its stop locations which would improve its on-time performance and reliability.

By finding ways to get Route 1 to the transfer location a few minutes earlier, such as reducing stop locations, will make the network function better and may increase the Route 9 Ridership in the process.

4.2 Route 2 - W Michigan Ave

Trends

The W. Michigan Avenue route also continues to show high ridership activity. However, unlike the other high ridership routes, Route 2 has large segments with low activity. The segments along Brown, Morrell, and West show very low levels of activity, yet they connect to the leg of the route on Spring Arbor Road which shows decent activity levels at the end point which is Polly's Country Market.

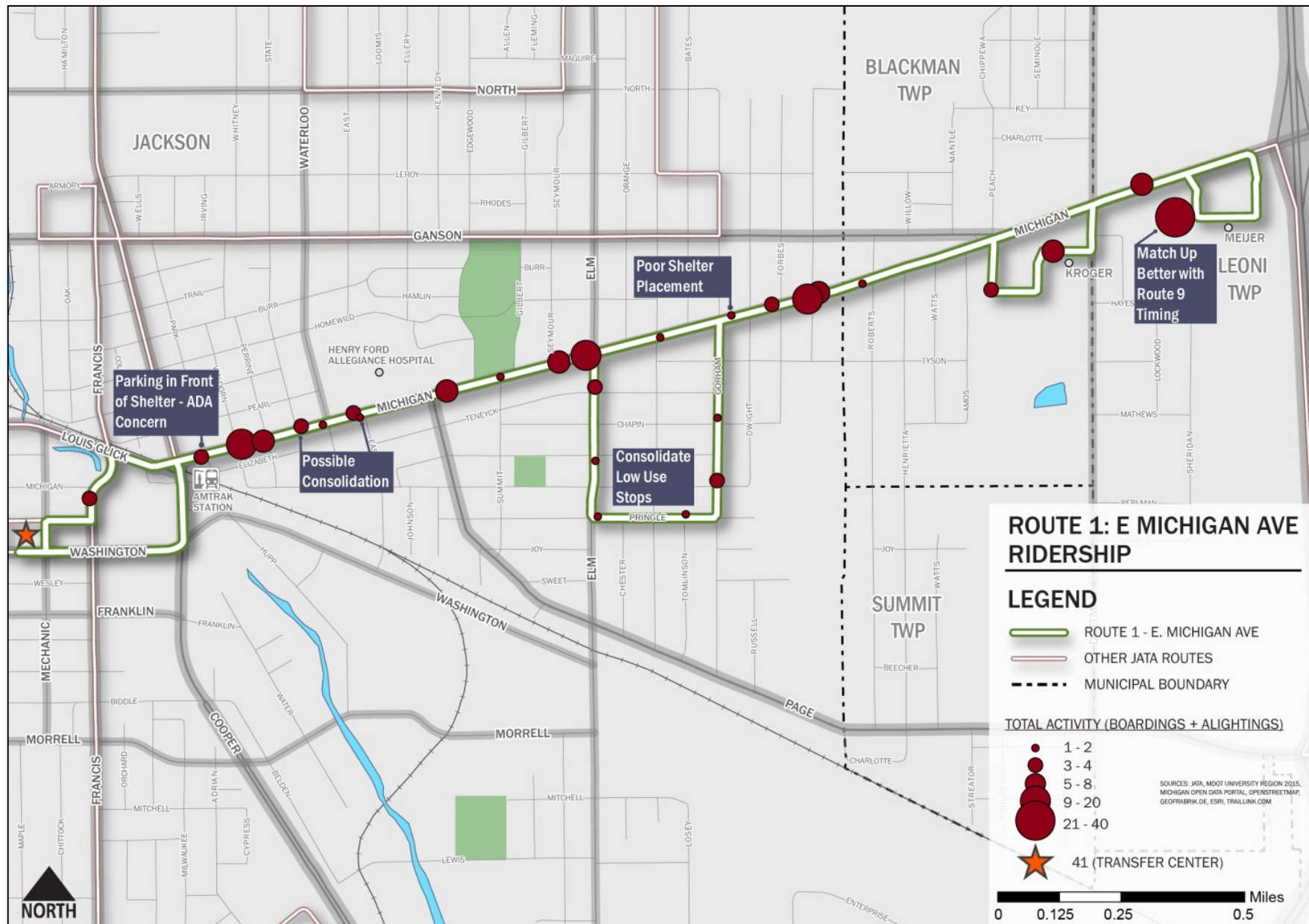
The Westwood Mall is served on the western most portion of this route which shows high ridership activity.

Improvement Opportunities

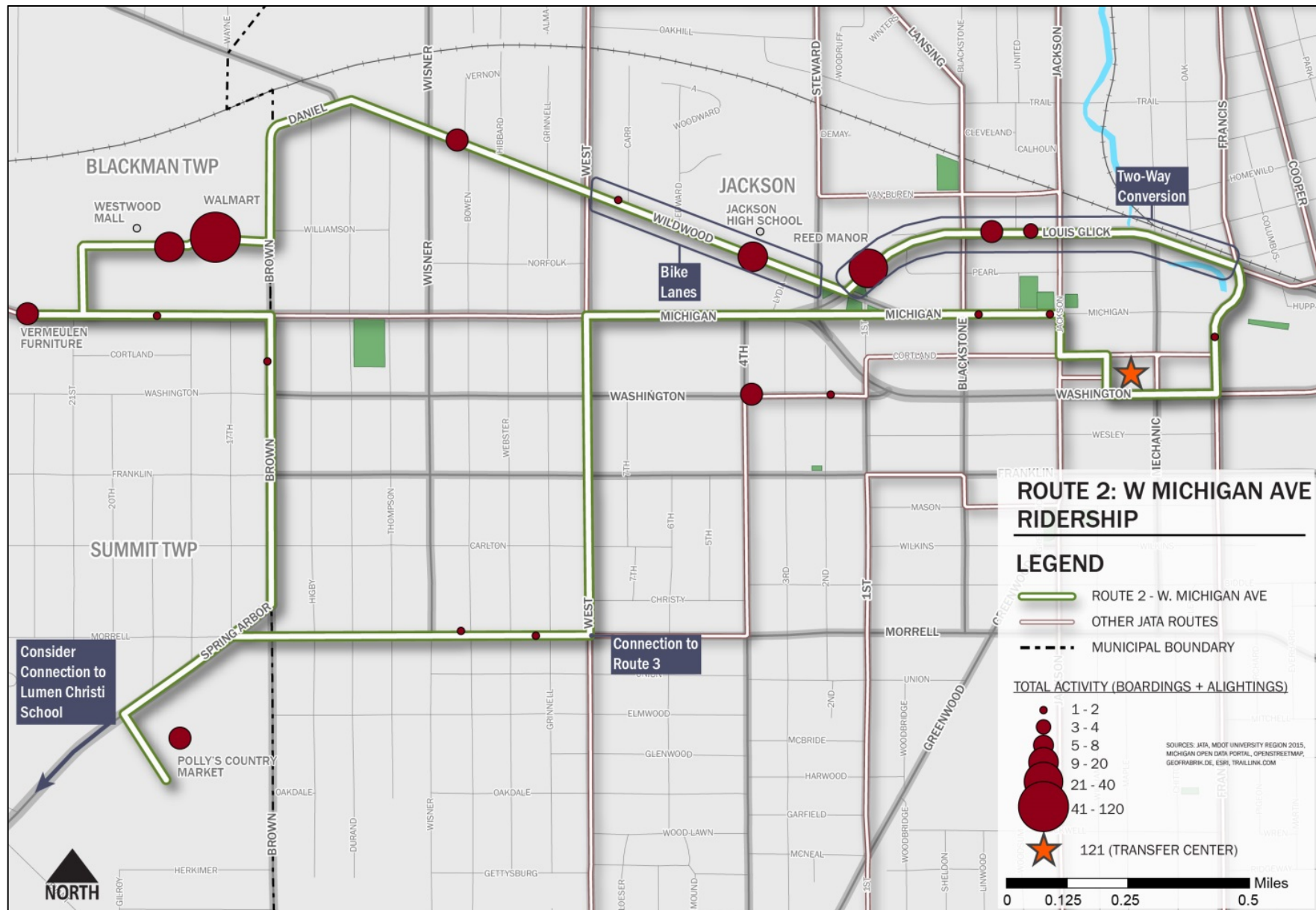
The segment near Polly's Market might be considered for some stop consolidation which could improve the route performance and/or allow the route to travel further or to new areas to serve new markets. Extending beyond Pollys Country Market is one such consideration. Service to Jackson Lumen Christi Schools was identified in the ridership questionnaires as a desire. The Westwood Mall area is also served by the Ganson/Blackman route. This type of service duplication should be reviewed for possible efficiencies.

Productivity is not even throughout the route – a future consideration might be to add service to productive portions, and add flex route service to other areas. Route 2 travels on Louis Glick Highway for a portion of its service. This roadway is currently under construction to redesign the roadway from a one-way to a two-way facility. This may have impacts on the route and should be reviewed upon completion of the construction.

Map 4.1 Route 1 E Michigan Ave



Map 4.2 Route 2 W Michigan Ave



4.3 Route 3 – Southwest Ave

Trends

The Southwest Route, Route 3, was in the middle of the pack of all JATA routes in terms of ridership activity both during our counts and was also identified in a similar manner by those who participated in the on-board questionnaires. The segment between Morrell Street and the stop at Parkside shows low usage with few exceptions.

There are four stop locations near the intersection of 1st Street and Franklin that each show higher daily ridership activity than most stops.

Improvement Opportunities

There are many locations where existing JATA stops are very close together. A consolidation of these stops might improve overall performance. During this route between Morell and Parkside the route crosses the Martin Luther King Jr. Equality Trail in two locations. Providing a better connection between other modes should increase JATA usage. Providing amenities such as shelters and bike parking would be highly recommended.

JATA might consider providing a shelter at one of the stops near 1st and Franklin and consolidate one or more of the others.

The City of Jackson has identified a number of corridors as being significant for the City and its future growth. All of these corridors are already served by JATA except one. The Greenwood-Griswold-Kibby corridor is crossed by Route 3 but not served directly. JATA might consider working to serve this corridor and its many potential transit generators such as the Jackson Arts & Technology Academy, the Allegiance Diagnostic Center, and the Kibby Cobb Deli.

4.4 Route 4 – Cooper

Trends

The Cooper Street Route, Route 4, showed the lowest usage of all routes during the boarding and alighting counts conducted for this study.

Improvement Opportunities

Several segments of the route should be considered for both stop consolidation as well as service rerouting. One such rerouting opportunity exists along Waterloo Street between Ganson and North Street which has both a place of worship and a school that might provide better ridership. Service along Fleming to serve the Jackson Youth Center and Rise Above should also be reviewed for potential service.

4.5 Route 5 – Lansing Ave

Trends

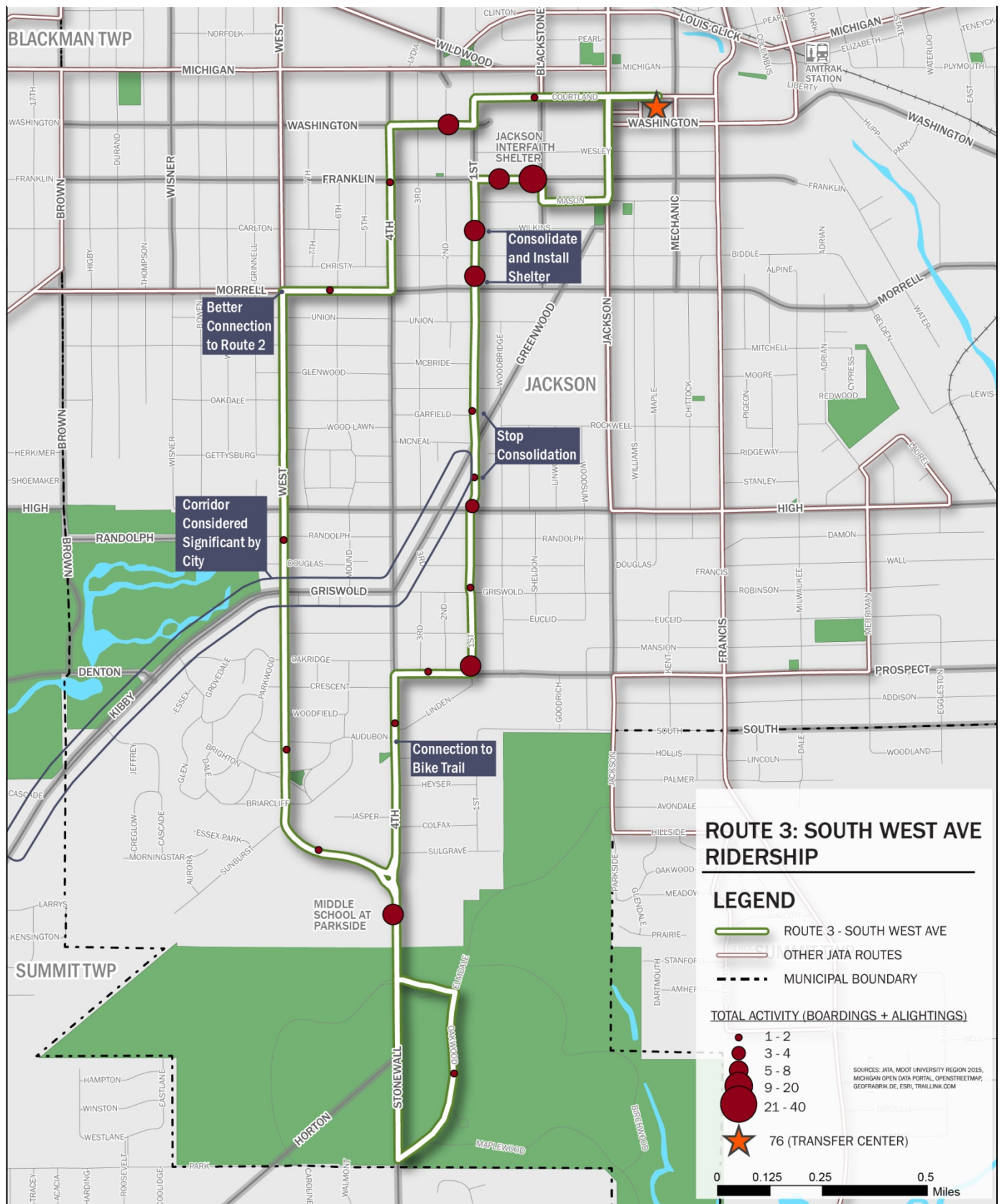
The Lansing Avenue route serves as the primary commercial line for the shopping center located where M-50 intersects with I-94. This area represents a huge portion of the overall activity on Route 5. This route also shows high ridership activity near the Jackson County Fairgrounds. The Lansing Avenue route provides good connections to both Route 7 and Route 2.

Improvement Opportunities

Despite this large number of riders, JATA should still review its service to this area. The West / 4th Street corridor is noticeably less productive than 1st Street. The roadways are very congested and not at all transit friendly in this area. A thorough review of all turning movements should be undertaken to make sure that the path as it currently stands is in fact the most efficient way to serve this area.

In addition to the Jackson Crossing Shopping Complex and its surrounding area, there are a few other locations that should be considered for potential rerouting. The left-hand turn from Blackstone to Ganson is at a very busy intersection that is currently un-signalized. This turning movement can often take several minutes and cause the bus to be late for the pulse connection at the transfer center. As an alternative to route reorganization JATA might work with the City to get a signal at this location or request a gap study along Ganson Street.

Map 4.3 Route 3 Southwest Ave



ROUTE 4: COOPER STREET RIDERSHIP

LEGEND

- ROUTE 4 - COOPER STREET
- OTHER JATA ROUTES
- MUNICIPAL BOUNDARY

TOTAL ACTIVITY (BOARDINGS + ALIGHTINGS)

- 0
- 1 - 2
- 3 - 4
- 5 - 8
- 9 - 20
- 21 - 40
- 47 (TRANSFER CENTER)

Consider Service on Waterloo to Church and School

JACKSON

AMTRAK STATION

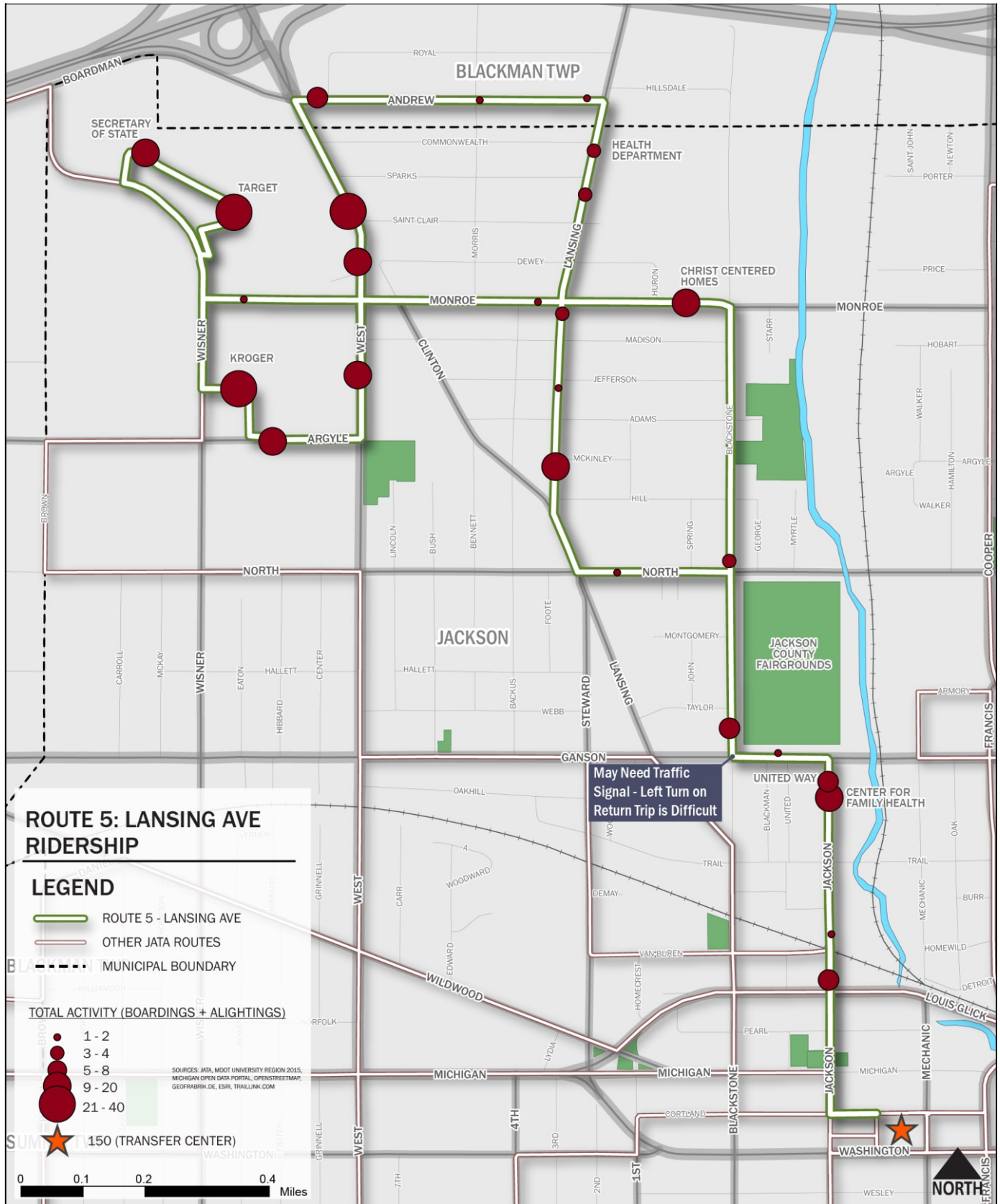
JACKSON COLLEGE - MAHER CAMPUS

Consolidate Stops

0 0.075 0.15 0.3 Miles

SOURCES: JATA, MDT UNIVERSITY REGION 2015, MICHIGAN OPEN DATA PORTAL, OPENSTREETMAP, GEOFRABRIK DE, ESRI, TRAILLINK.COM

Map 4.5 Route 5 Lansing Ave



4.6 Route 6 – Francis St

Trends

The Francis Street Route, Route 6, shows steady ridership in the northern portion of its service area. However, much of the area along Francis Street has duplicated service with the JCC Route. The southern portion of this route shows very low ridership activity.

Improvement Opportunities

Much of the area along Francis Street has duplicated service with the JCC Route, and though the JCC route only operates on a limited time frame each day and throughout the calendar year, JATA might still review for ways to maximize its coverage and efficiency. This same section also crosses the Martin Luther King Jr. Equality Trail yet lacks a stop location at the crossing. Providing a better multi-modal connection will allow Jackson residents more freedom in their mobility. This would also be an ideal location for the Jackson BCycle system to expand to allow a better connection to the southeast side of Jackson which currently has no fixed route coverage.

The southern portion of the Francis Street Route is a candidate for stop consolidation in some areas and route reorganization in others. Much of this service is also in Summit Township and thus outside of the typical JATA service area.

4.7 Route 7 – Ganson/Blackman

Trends

The Ganson/Blackman Route has solid ridership especially in the areas in Blackman Township. Connecting to the Meijer located just north of I-94 on Airport Road has proven to produce large numbers of riders over the past several years and this was also true during the counts for this project. In addition to the Meijer, the Park Forest Apartments also provide high ridership activity. Route 7 also provides some duplicate service to the Westwood Mall area and along W. Michigan Avenue.

The Ganson Blackman Route is the only route that does not operate on the 30 minute pulse that the rest of the system does.

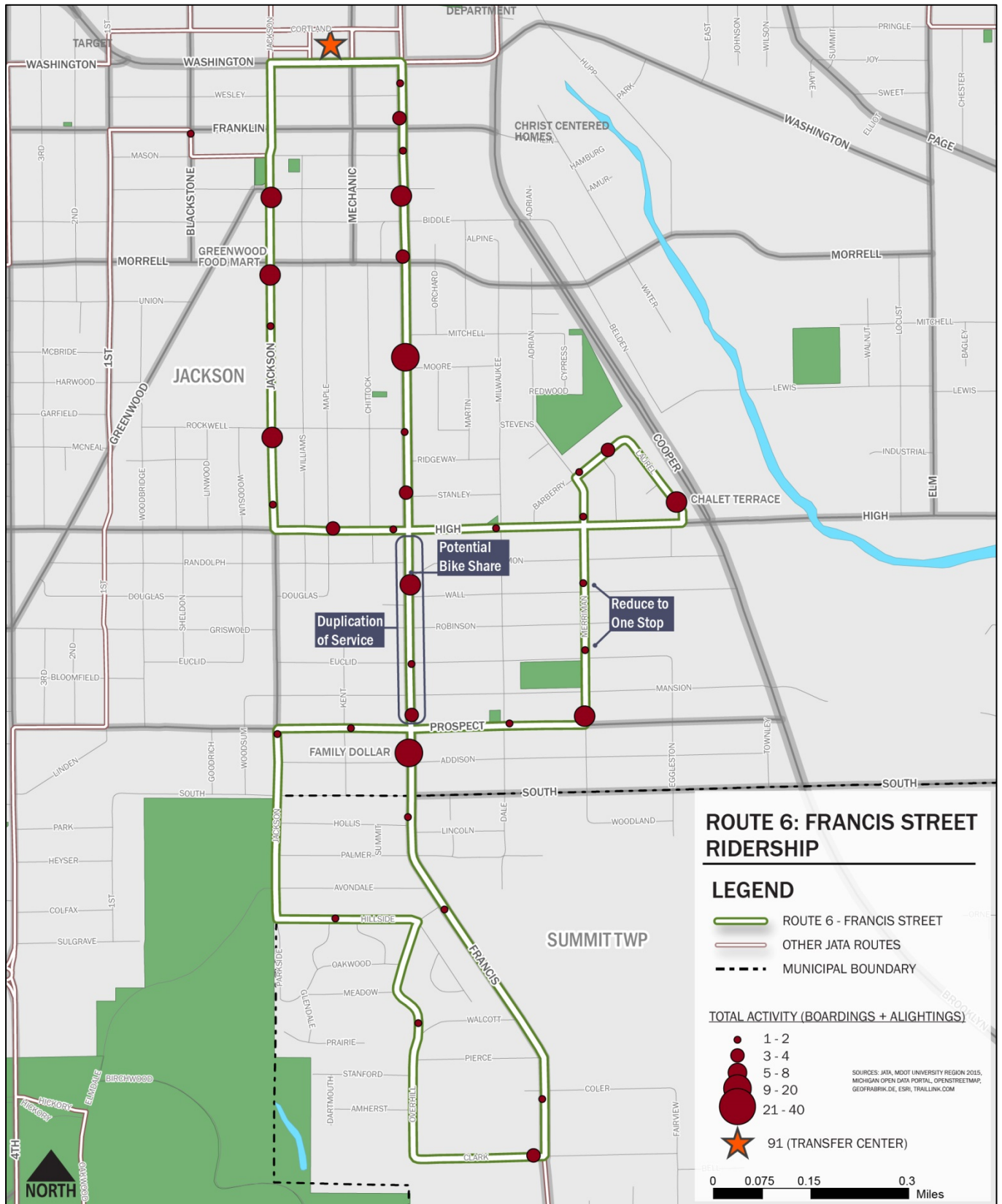
Improvement Opportunities

A shelter should be considered at Park Forest but JATA should work with Blackman Township to cover these costs.

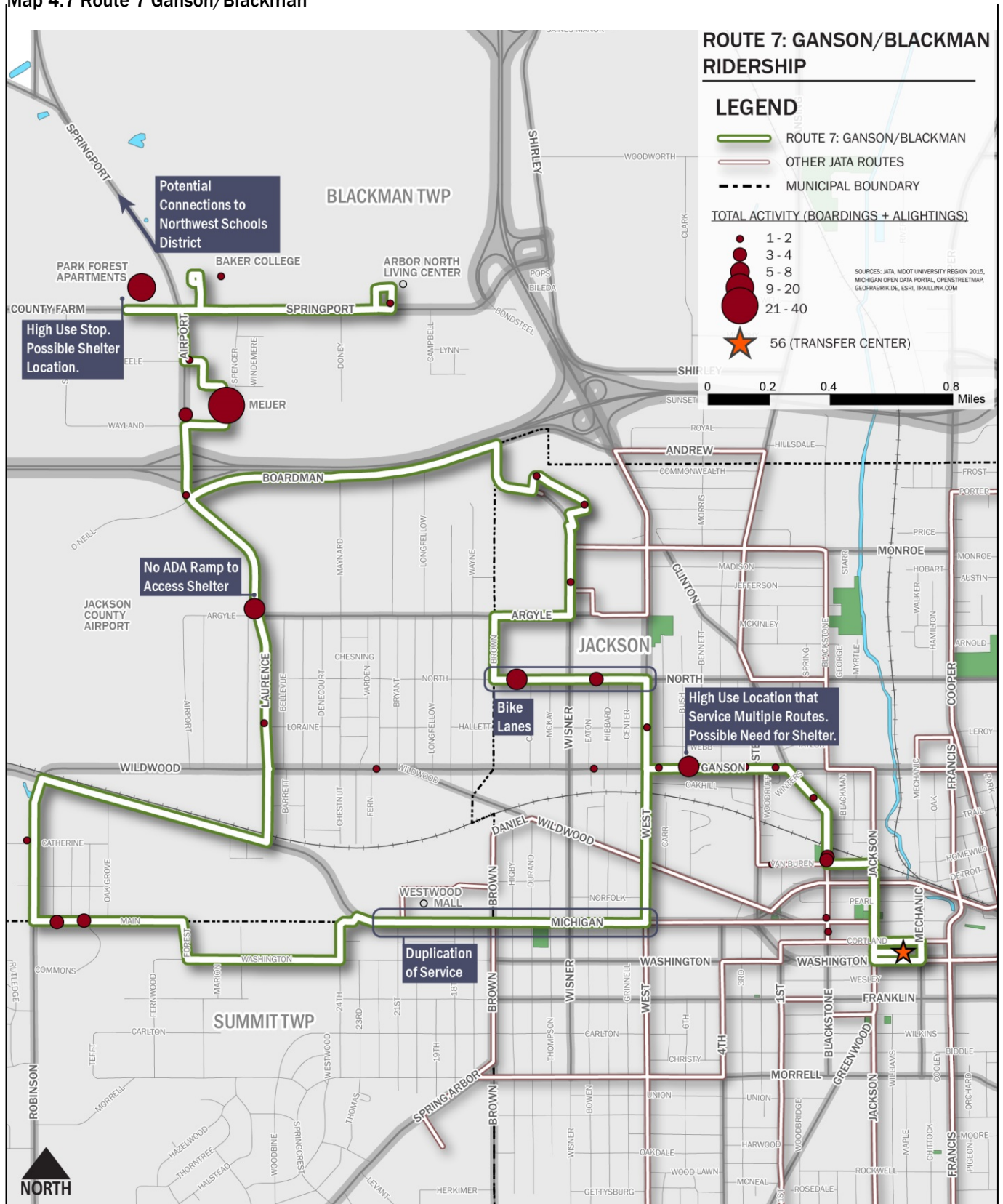
The duplicate service to the Westwood Mall area should be reviewed for potential modification to serve new or expanded markets. JATA might also consider working with the Jackson Northwest School District to provide a shuttle service that would connect from this route to the schools. The school district has engaged in a large recruitment and advertising campaign to help garner new students. JATA could help be a catalyst for this process.

JATA might consider adding busses to this route to operate in 30 minute headways, or possibly split the route into two 30 minute segments.

Map 4.6 Route 6 Francis Street



Map 4.7 Route 7 Ganson/Blackthorn



4.8 Route 8 – JCC

Trends

The JCC/Da Vinci Route, Route 8, is not like the other JATA fixed routes in that it only operates a few times a day and they do not align with the pulse of the majority of the other routes. The route is primarily to serve Jackson Community College south of Jackson and has a run time of about 40 minutes for round trip. This route also differs in that it does not allow for transfers to other JATA routes unless a new ticket is purchased. The primary corridor that it serves is Francis Street which is already served by Route 6.

The route has high ridership activity at the College as well as near Prospect Street where it crosses Francis Street. There also seems to be a fair amount of activity in the Vandercook Lake area, though it is dispersed through a number of stop locations.

Improvement Opportunities

The duplication of service along Francis Street should be reviewed to find efficiencies. Consolidating the many stop locations near Vandercook Lake might make the route more efficient and allow it to operate on the 30 minute pulse with the rest of the JATA system. Additionally, JATA may seek to work with Vandercook Lake and Summit Township to provide a shelter in this stop area.

As Jackson Community College continues to grow and develop, the actual routing should be reviewed for timing efficiency.

4.9 Route 9 – Soper

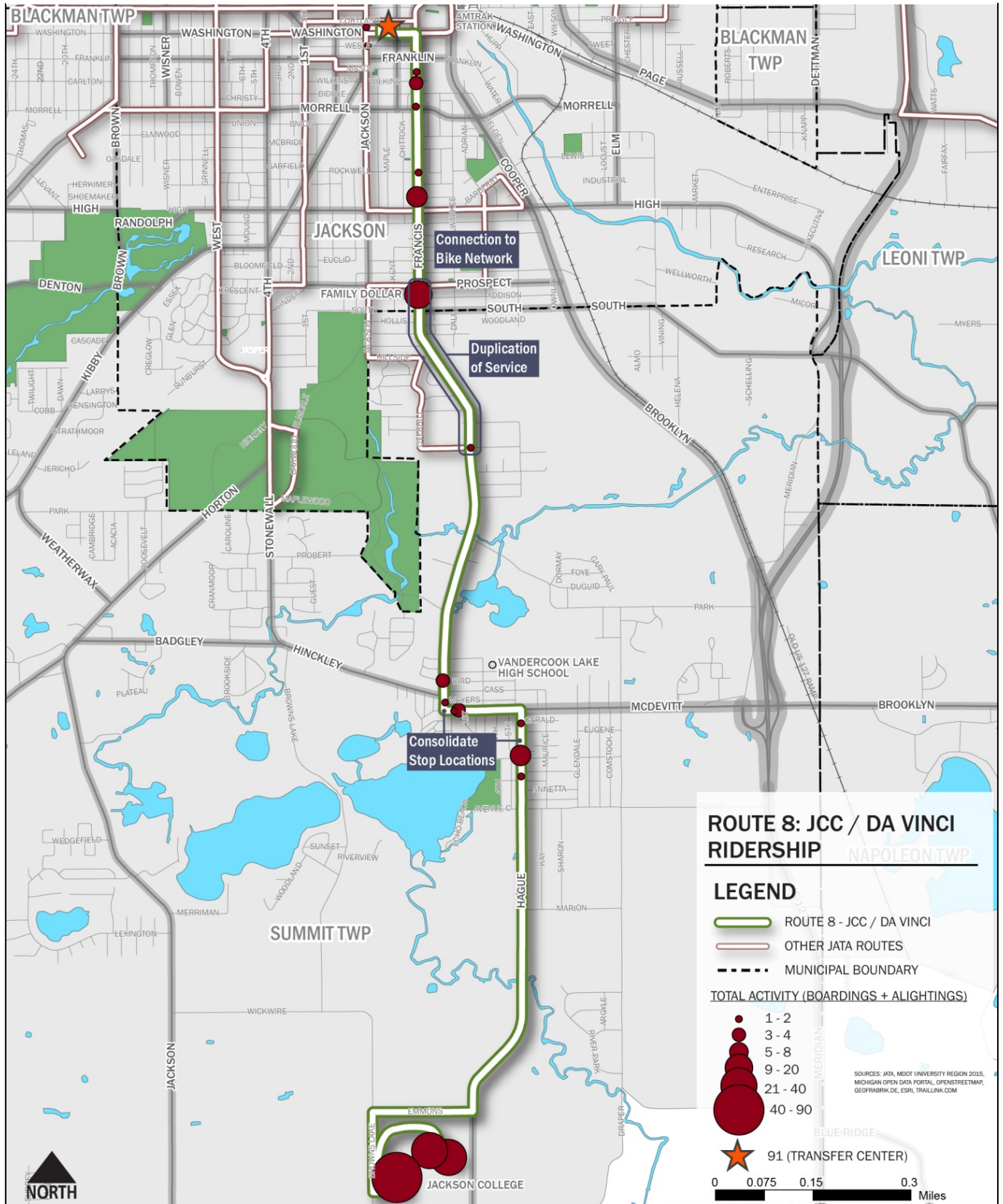
Trends

The Soper Route, Route 9, is the only JATA fixed route that does not connect directly with the transfer center. The only connection is with Route 1 at the E. Michigan Avenue Meijer. This is likely one of the main causes for it being the least successful route in the JATA system in terms of ridership.

Improvement Opportunities

The timing of this route should be reviewed for efficiency. There are a few instances during the typical day where the route 9 bus leaves the connection point just minutes before the Route 1 arrives. If there is a specific reason that route 9 leaves when it does it isn't very clear. In addition to the connection timing, there are very few riders using the system to connect to Michigan Center High School. It is possible that the timing could be adjusted so as to arrive at the school at a time that would be useful to students and faculty.

Map 4.8 Route 8 JCC / Da Vinci



Map 4.9 Route 9 Soper



5. Reserve-A-Ride Analysis

5.1 Service and Ridership Trends – Reserve-A-Ride

Reserve-A-Ride ADA complementary paratransit service is operated during the same span of service and within three quarters of a mile of JATA's fixed routes in the City of Jackson. Technically both origins and destinations should be within this distance; however, JATA may make exceptions if there aren't other options within three quarters of a mile. For example, the closest dialysis center in the Jackson area is beyond three quarters of a mile of fixed routes. Additional service elsewhere in Jackson County is operated on Mondays, Wednesdays, and Fridays covering a wider service area than the fixed route and ADA complementary paratransit service.

For the two week period between August 28th and September 8th, 2017, Reserve-A-Ride ridership information was collected from the JATA scheduling software, including origins and destinations of trips. During this period, which spanned nine weekdays (no service was operated on Labor Day, September 4th), two Saturdays, and two Sundays, 946 trips were recorded. Maps of origins and destinations by frequency of trip for weekdays, Saturdays, and Sundays are presented below.

Table 4.1, below, demonstrates the percentage of Reserve-A-Ride trip origins and destinations relative to JATA fixed route service. For the period data was collected:

- 83% of the origins for weekday trips were within a quarter mile distance of a JATA fixed route, and 88% were within one mile
- 73% of the destinations for weekday trips were within a quarter mile distance of a JATA fixed route, and 81% were within one mile
- 91% of all Saturday and 70% of Sunday destinations were within a quarter mile of a JATA fixed route

Table 5.1 Reserve-A-Ride Trip Origins and Destinations Relative to JATA Fixed Route Service

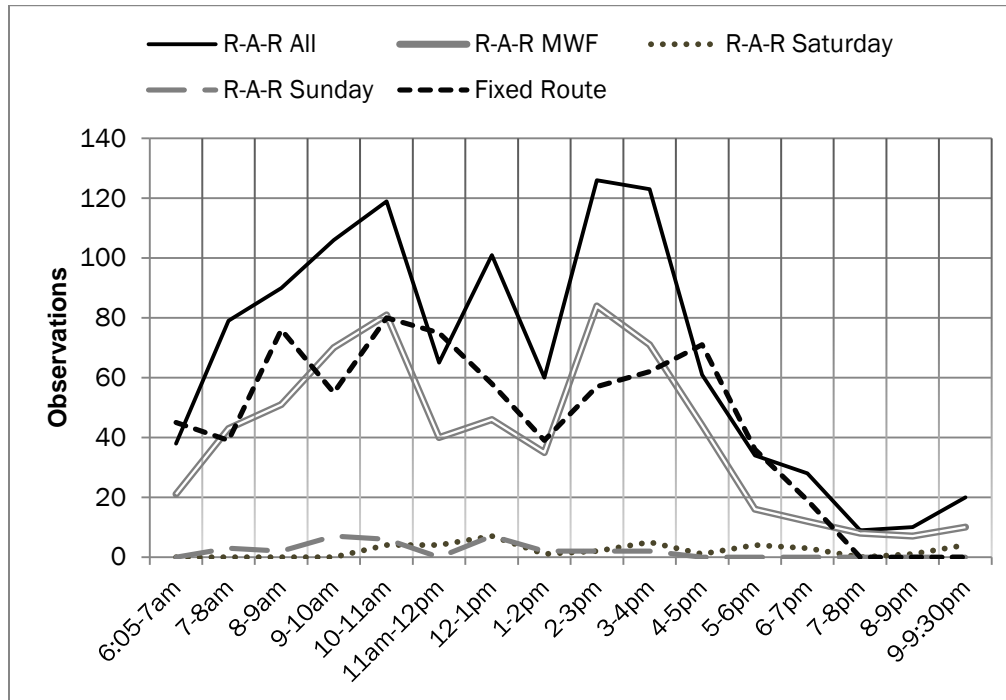
		Distance from JATA Fixed Routes			
		.25 mile	.5 mile	.75 mile	1 mile
Reserve-A-Ride Destinations	Weekday	73%	74%	77%	81%
	Saturday	91%	100%	100%	100%
	Sunday	70%	80%	80%	80%
Reserve-A-Ride Origins	Weekday	83%	85%	85%	88%
	Saturday	100%	100%	100%	100%
	Sunday	100%	100%	100%	100%

Weekday Reserve-A-Ride data indicates that less than 25% of Reserve-A-Ride trips are to destinations greater than a half mile from JATA fixed route bus services, and even fewer – 15% - are being requested from areas greater than three quarters of a mile from these fixed routes. This data suggests that the majority of Reserve-A-Ride trips are not requested because of geographic isolation or distance from fixed route services, but rather because there are factors inherent to accessing or utilizing JATA services which are inconvenient to these customers. Factors could include customer-specific access or ability limitations (mobility, disability status etc.) but could also include service-specific limitations (span of service, days of week that service is offered etc.).

Looking further, Sunday trips made up close to 3% of all Reserve-A-Ride trips, and trips after 6pm (when JATA fixed routes are not available) made up approximately 7% of all Reserve-A-Ride trips in the time period for which data was collected.

While fixed route service appears to peak from 8-9am, 10-11am and 4-5pm, JATA Reserve-A-Ride service peaks occur during the following time frames 10-11am, 12-1pm and 2-4pm (see Figure 4.1).

Figure 5.1 Ridership Trends By Time of Day for Reserve-A-Ride and Fixed Route Service

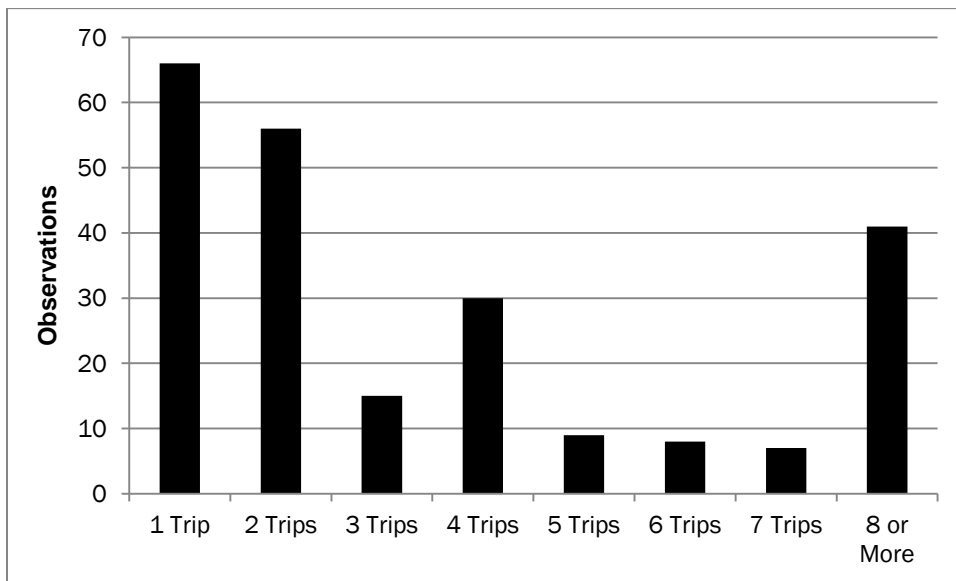


The most popular destinations for Reserve-A-Ride passengers are:

- Davita (234 W Louis Glick Hwy)
- SE Jackson Dialysis (200 S East Ave)
- Fresenius Kidney Care Jackson Oaks (128 N Elm Ave)
- Jackson County Medical Care Facility (524 Lansing Ave)
- Commonwealth Commerce Center (209 E Washington Ave)
- Henry Ford Allegiance Health (1100 E Michigan Ave)
- Consumers Energy (1955 W Parnall Rd)

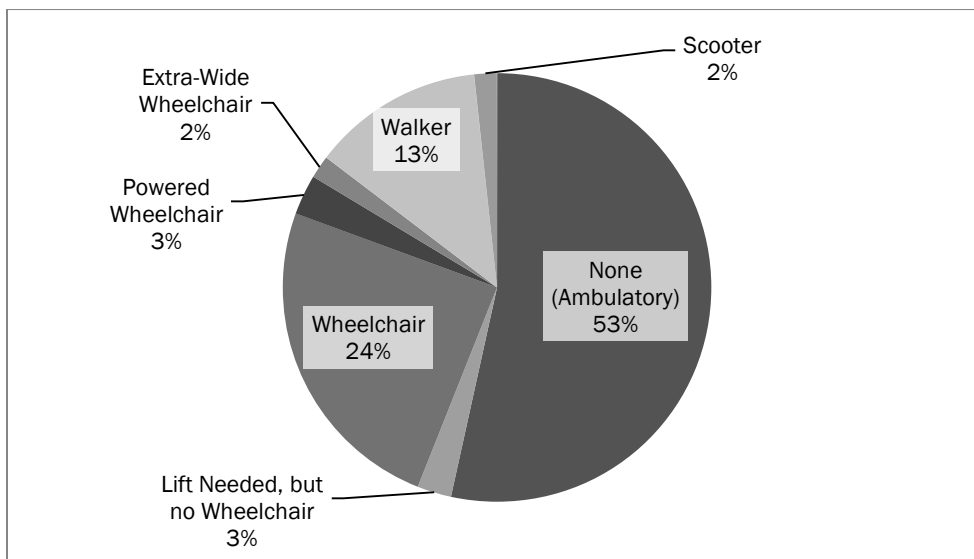
Over the course of the two week study period, the 946 trips were taken by 232 different customers. The highest number of trips taken by one customer was 29 trips. Another customer took 20 trips during the period, and 3 more customers took 15 or more trips each. Figure 4.2 below summarizes trip frequency by customer. More than half of the riders used the service for one or two trips during the study period (53%); the next largest percentage was very frequent riders, representing 18% of trips.

Figure 5.2 Reserve-A-Ride Customer Trip Taking Frequency

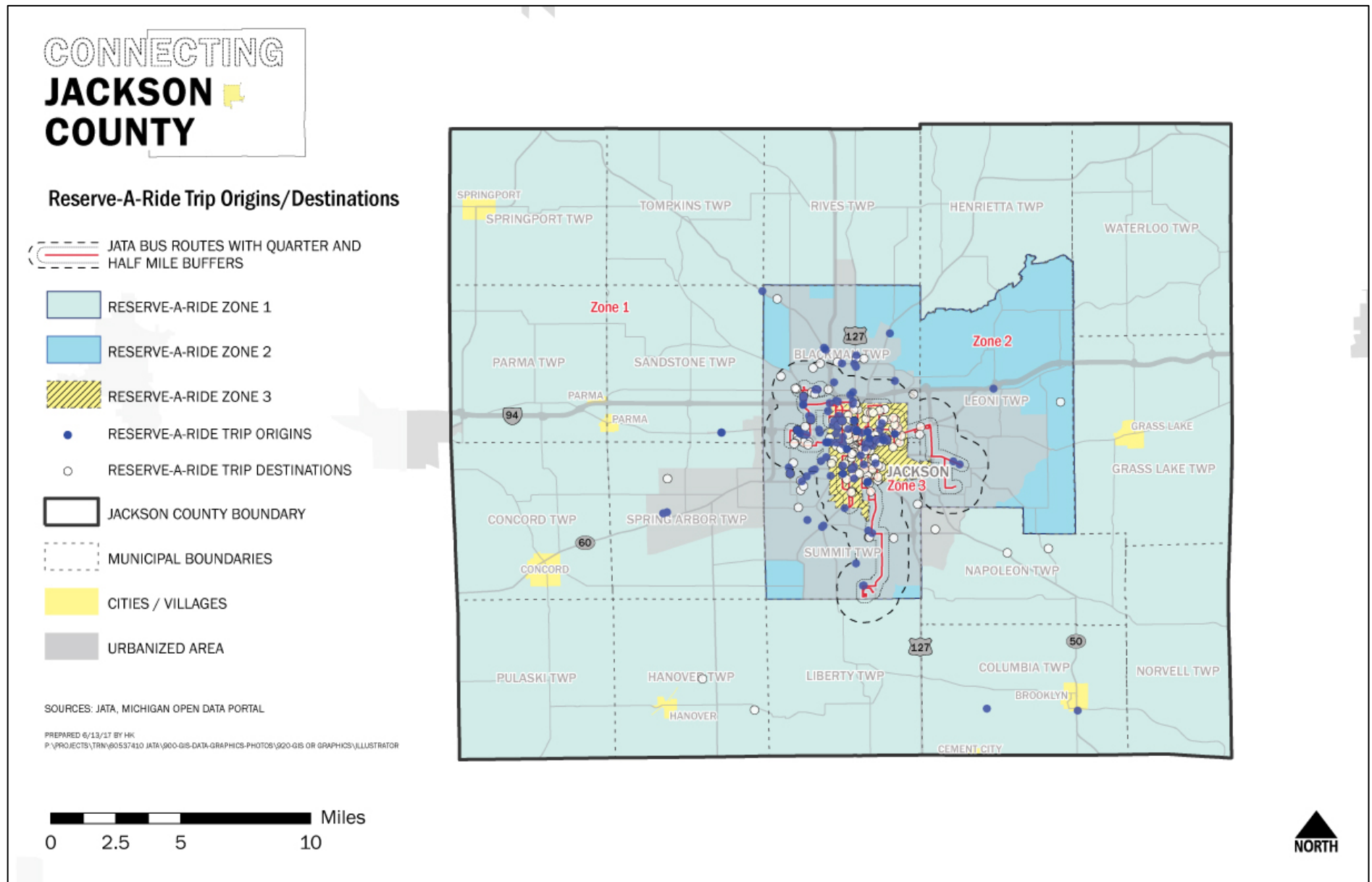


Of the 232 customers who traveled using Reserve-A-Ride during the two week study period, more than half do not use a mobility device. See Figure 5.3 below for a more detailed breakdown of mobility device use.

Figure 5.3 Reserve-A-Ride Customer Mobility Device Use



Map 5.1 Reserve-A-Ride Trip Origins / Destinations



6. County Service Analysis

County Reserve-A-Ride Service is operated on Mondays, Wednesdays, and Fridays covering a wider service area than the fixed route and ADA complementary paratransit service. Service to and from anywhere in Jackson County beyond the three quarter mile buffer area of fixed routes is provided with the County Program. See the map below that defines the zones defined for Reserve-A-Ride service. Generally the ADA paratransit is confined to Zones 1 and 2 and the County service extends to Zone 3. However, there are areas within all zones/communities, including the City of Jackson, that are outside of the fixed route and $\frac{3}{4}$ mile ADA service area and therefore are limited to the 3 days of transit service per week.

In the 2016 Jackson Master Plan, *Ready for What's Next*, the wards of the City were mapped including an indicator of proximity to transit stops, among several other neighborhood indicators, and there are swaths in southeast and southwest Jackson that have no access to transit stops. In the recommendations from this plan, a renewed emphasis on transportation options is described as being important to neighborhood vitality city-wide.

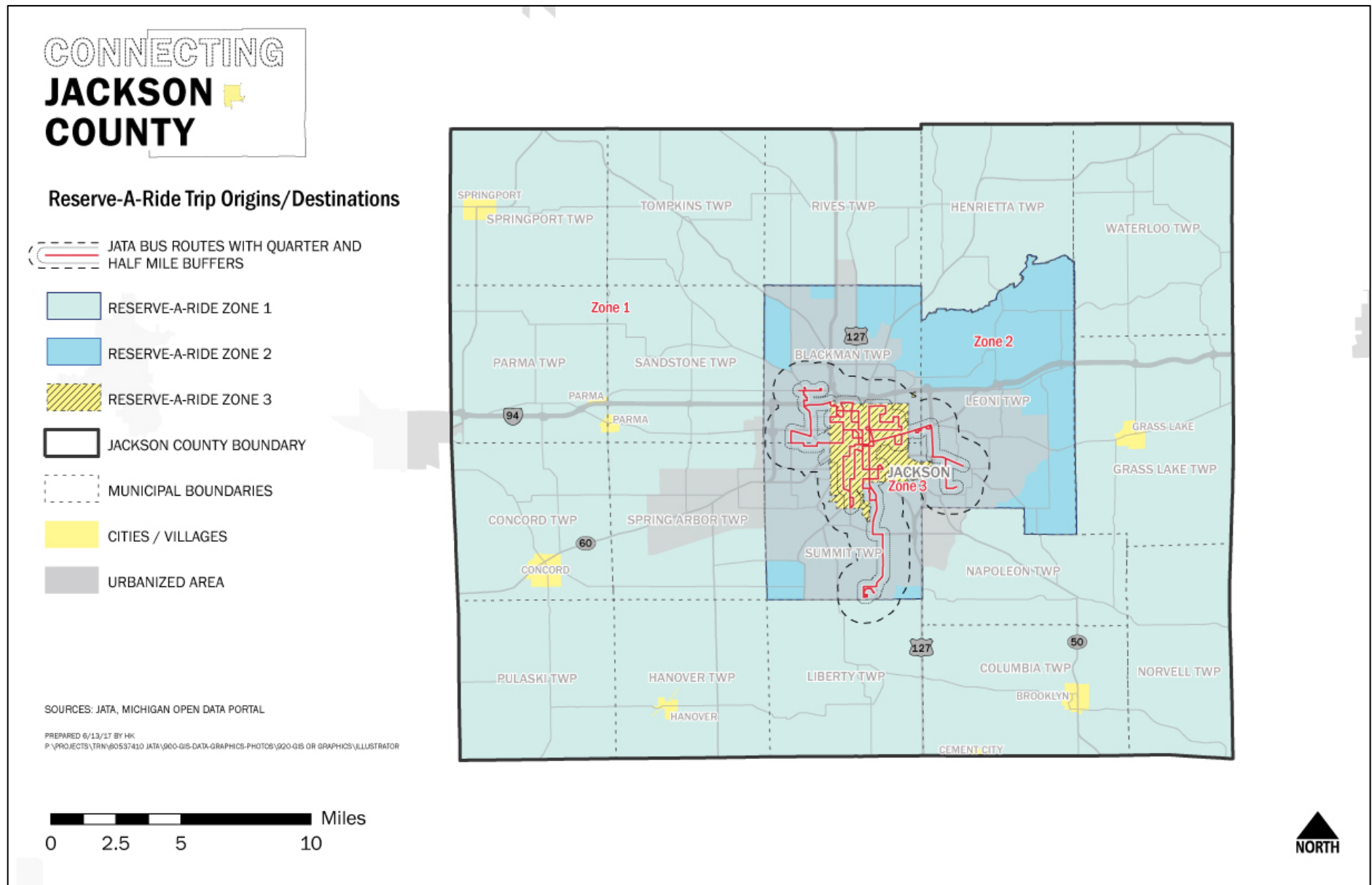
For the two week period between August 28 and September 8, 2017, Reserve-A-Ride ridership information was collected from the JATA scheduling software, including origins and destinations of trips. During this period, which included 5 Mondays, Wednesdays or Fridays (no service was operated on Labor Day, September 4th), 572 trips were recorded. Overall, 99% of origins and 98% of destinations were in the City of Jackson. As was shown in Map 5.1, most trips are occurring within the more urbanized areas of Jackson, Summit, Blackman, and Leoni. Popular destinations in Zone 3 include:

- Napoleon Café (6816 Brooklyn Road, Napoleon)
- Faith Haven Senior Care Center (6531 W Michigan Ave, Jackson)
- Arbor Manor Rehabilitation and Nursing Center (151 2nd St, Spring Arbor)
- Country Market (11301 Brooklyn Rd, Brooklyn)

As the County service is operated only on Mondays, Wednesdays, and Fridays, there is no service on the weekends and people who need frequent transportation, for example to work every day, cannot view the Reserve-A-Ride service as a potential transportation option. That being said, with currently lower levels of awareness of the service and lower usage compared to JATA's urban services, the demand for everyday service has not yet been demonstrated. With increased marketing and awareness of the service available through Reserve-A-Ride and coordination with local employers, healthcare centers, schools, and communities, however, may result in the need for daily service. Higher levels of transit service outside the City of Jackson have been mentioned through questionnaires, stakeholder interaction and other planning processes in the region.

In the 2015 countywide survey completed by JATA, priorities identified included expanding JATA service throughout Jackson County and more specifically expanding JATA service into rural areas.

Map 6.1 Reserve-A-Ride Fare Zones



7. Intercity Travel Service Gaps

7.1 Amtrak

Amtrak provides train service nationally by connecting thousands of points throughout the 21,000 miles traveled by the company's many routes. While Amtrak long distance services pass through most of the contiguous 50 states, Michigan is served by state-supported regional routes only. One of these services, the Wolverine route, is among the premier higher-speed passenger rail services in the Midwest, traveling at speeds up to 110 MPH along much of its corridor between Pontiac, Detroit and Chicago, including a Jackson station. The Jackson station is located at 501 East Michigan Avenue, roughly one-half mile east of the Greyhound station and JATA transfer station. While the station is directly accessible only by Routes 1 and 4, this station is within a 10-minute walk distance of the Greyhound and JATA transfer station. Therefore, although slightly less accessible due to the added walk, like the Greyhound station, the Amtrak station is also accessible by JATA's local Routes 1-8 and those traveling on Route 9 can connect to Route 1 for station access. All intercity passenger modes would generally benefit from a co-located station, providing passengers with multiple travel options from a single location.

Three Amtrak train lines run through Michigan: the Pere Marquette, the Blue Water, and the Wolverine, with only the Wolverine serving Jackson. The Wolverine departs from Jackson for eastbound travel at 12:18 P.M., 5:33 P.M., and 10:37 P.M., and stops in Jackson for westbound travel at 8:06 A.M., 12:56 P.M., and 7:59 P.M. During the week, riders would be able to access the two earlier eastbound trains, as well as the two earlier westbound trains. In addition, riders could access the evening westbound train only from Route 8, Monday-Thursday. Recent federal and state investments in the Wolverine corridor, amounting to more than \$400 million, have paved the way for enhanced service and future service expansion. MDOT and the Federal Railroad Administration recently completed a Tier 1 environmental impact statement (EIS) for up to 10 daily round trips in the corridor. Subsequent service enhancements are currently unfunded.



Amtrak Michigan Services Schedule brochure

Source: Amtrak October 2016

The Pere Marquette connects Chicago and Grand Rapids, MI, providing service to the northwest portion of Michigan. The Blue Water train passes through Kalamazoo, Battle Creek, East Lansing, finishes in the east at Port Huron, providing service to and from the west side of the state to the northeast portion of Michigan. If the Blue Water train were to take a detour to Jackson, before traveling north to East Lansing the current journey would be extended just under an hour along the Wolverine line and would allow Jackson inter-city connections farther north than are currently available. Additional rail connections would likely be required to provide this service to Jackson.



Amtrak Midwest Train Routes

Source: amtrak.com

7.2 Greyhound

Greyhound's inter-city bus service comes right into the center of Jackson, providing options for stops and transfers at the JATA transfer station. This station is located at 127 W Courtland, and is at the center of JATA's transit service throughout the city. Eight of the nine local bus routes pass through, or are within walking distance of this transfer station (Routes 1-8), allowing transit riders to access Greyhound's services as easily as a transfer through the local bus network. Additionally, Route 9 connects to Route 1, to provide riders of Route 9 access to the transit transfer station.



Greyhound United States Route Map,
Clipped to the Northern-Midwest Region
Source: greyhound.com/

[/media/greyhound/pdf/discovergreyhound/routemap-pdf.pdf](http://media/greyhound/pdf/discovergreyhound/routemap-pdf.pdf)

Although the map above only indicates east and westbound service, Greyhound buses are available for travel to the west, east, and north from Jackson. For eastbound travel, a bus departs at 9:35 A.M. each day of the week, and connects riders to Ann Arbor, Southfield, Detroit, and connections to Pontiac. In addition, there is an 11:30 P.M. bus traveling the same direction which provides service to both Ann Arbor and Detroit. Northbound travel from Jackson includes a Greyhound bus departure from the Jackson terminal at 2:10 P.M. daily. This bus provides access to East Lansing, connections throughout Lansing, Grand Rapids, and Muskegon. Westbound travel is also available all week through Greyhound, with a bus departing from the Jackson terminal at 3:40 P.M. daily. Among many other destinations, this bus goes through Albion, has a connection in Battle Creek, Kalamazoo, Benton Harbor, and Chicago.

While the terminal location is accessible by most of JATA's bus routes, some of Greyhound's departure times extend beyond JATA's service hours. JATA does not run on Sundays, and makes Greyhound inter-city trips inaccessible for transit riders on Sundays. In addition, the evening eastbound Greyhound service, leaving the terminal at 11:30 P.M., is inaccessible by local bus. Although riders could technically access this Greyhound bus, a JATA rider would need to arrive to the transfer station early, before local transit service stops for the day (which is typically around 6:00 P.M., aside from Route 8, which runs until 9:30 P.M. Monday-Thursday). The 9:30 A.M. eastbound bus is also inaccessible on the weekend, as service does not begin until 10:00 A.M. on the weekend. Both the westbound and northbound Greyhound buses are available by bus throughout the week, but may require some coordination on Saturday, as the buses stop running from around 2:00-3:00 P.M.

7.3 Indian Trails / Michigan Flyer (AirRide)

Indian Trails

Founded in 1910, Indian Trails hosts bus lines throughout most of the state of Michigan. The company began with service around Shiawassee County, MI, and soon expanded to Flint and Saginaw, and has expanded throughout Michigan to provide options for riders to connect nationally. Although the map below indicates that Indian Trails does not currently service Jackson in the 1930s the company accounted for this lack of connection by coordinating with Greyhound bus services. In the 1930s Indian Trails began offering a cooperative fare and schedule option, which allowed their customers to connect to other cities without overlapping the service already provided by Greyhound buses. In addition, there are many points at which customers can connect to various Amtrak services.

To access the Indian Trails bus service from Jackson travelers can take:

- Amtrak west to Battle Creek or Kalamazoo
- Greyhound west to Kalamazoo
- Greyhound north to Lansing
- Amtrak north to East Lansing
- Greyhound east to Detroit
- Amtrak east to Pontiac

These connections to Jackson allow travelers and visitors the opportunity to travel to other parts of Michigan, Chicago, and Milwaukee via Indian Trails. Travel throughout the United States is also available, but only through the Amtrak and Greyhound connections which are noted on the map above. For Indian Trails to begin serving Jackson, they would likely need to extend east from Battle Creek to Jackson, before then traveling north to Lansing and East Lansing. This extension, would require approximately 30 additional miles, and would allow Jackson to be better connected by Indian Trails to cities in the north and the west. The closest current Indian Trails destination found in the east is in Southfield, MI, which would require an additional 70 miles of bus travel. In total, to connect Jackson to the inter-city Indian Trails bus lines, approximately 120 additional miles would need to be added from Southfield to Battle Creek.



Indian Trails Michigan Route Map Source: indiantrails.com/maps-and-schedules

Michigan Flyer (AirRide)

A dozen Michigan Flyer motor coaches a day operate, shuttling about 550 passengers from East Lansing and Ann Arbor to and from Detroit Metropolitan Airport. Of Michigan Flyer's 220,000 passengers a year, roughly 190,000 a year are going back and forth to the airport according to company president Chad Cushman. (Source: LivingstonDaily.com) The others who commute to East Lansing and Ann Arbor are mostly tied to the universities, students and faculty. Ride fares range from \$12 to \$32 for one way and \$22 to \$54 for round trip depending upon your starting location and destination.

East Lansing → Ann Arbor → Detroit Metro Airport

EASTBOUND	East Lansing Marriott	Blake Transit Center	DTW McNamara Terminal ⁴	DTW McNamara Terminal alternative stop ⁵	DTW North Terminal ⁴	DTW North Terminal alternative stop ⁵
Daily Runs	333 Albert St., East Lansing	328 S. Fifth Ave., Ann Arbor	South end of Ground transportation garage	Departures Level - AirFrance door	Stall #1 Ground transportation	Stall #5 Ground transportation
8000	2:45 am	3:55 am	4:45 am ¹	4:50 am	4:30 am	4:35 am ¹
8002	4:00 am	5:10 am	5:45 am	5:50 am	6:00 am	6:05 am
8004	5:00 am	6:10 am	6:45 am	6:50 am	7:00 am	7:05 am
8006	6:15 am	7:30 am	8:10 am	8:15 am	8:25 am	8:30 am
8008	7:45 am	9:05 am	9:45 am	9:50 am	10:00 am	10:05 am
8010	9:00 am	10:15 am	10:50 am	10:55 am	11:05 am	11:10 am
8012	10:00 am	11:15 am	11:50 am	11:55 am	12:05 pm	12:10 pm
8014	11:15 am	12:30 pm	1:05 pm	1:10 pm	1:20 pm	1:25 pm
8016	12:15 pm	1:30 pm	2:05 pm	2:10 pm	2:20 pm	2:25 pm
8018 ³		2:25 pm	3:00 pm	3:05 pm	3:15 pm	3:20 pm
8020	2:00 pm	3:15 pm	3:50 pm	3:55 pm	4:05 pm	4:10 pm
8022	3:30 pm	4:45 pm	5:35 pm	5:40 pm	5:47 pm	5:50 pm
8024 ⁶	5:20 pm	6:35 pm	7:10 pm	7:15 pm	7:25 pm	7:30 pm

¹ Arrives North Terminal and then McNamara Terminal.

³ This coach does **not** stop in East Lansing.

⁴ Schedule changes occur from time to time due to weather, traffic or other conditions. In such cases, for example, we might reverse the order of drop off or pick up at the two Detroit Metro airline terminals.

⁵ Alternative stops by request only. It's best to submit your request when you buy your ticket online. On the Passenger Information page where you enter your name, just write "Alternative Stop" in the Special Needs request box. Or, you can make your request when you call or visit our office, or by telling either your driver or one of our customer service representatives at the airport.

⁶ This run **not** available on Saturday as of 9/9/2017.

Detroit Metro Airport → Ann Arbor → East Lansing

WESTBOUND	DTW North Terminal ⁴	DTW North Terminal alternative stop ⁵	DTW McNamara Terminal alternative stop ⁵	DTW McNamara Terminal ⁴	Blake Transit Center ²	East Lansing Marriott
Daily Runs	Stall #1 Ground transportation	Stall #5 Ground transportation	Door 402 Ground transportation waiting area	South end of Ground transportation garage	328 S Fifth Ave., Ann Arbor	333 Albert St., East Lansing
8001	6:15 am	6:17 am	6:22 am	6:25 am	7:00 am	8:15 am
8003	7:15 am	7:17 am	7:22 am	7:25 am	8:10 am	9:25 am
8005	9:10 am	9:12 am	9:17 am	9:25 am	10:05 am	11:20 am
8007	10:45 am	10:47 am	10:52 am	11:00 am	11:40 am	1:00 pm
8009	12:15 pm	12:17 pm	12:22 pm	12:30 pm	1:10 pm	2:30 pm
8011 ³	1:10 pm	1:12 pm	1:17 pm	1:25 pm	2:00pm	
8013	2:10 pm	2:12 pm	2:17 pm	2:25 pm	3:05 pm	4:25 pm
8015	3:30 pm	3:32 pm	3:37 pm	3:45 pm	4:25 pm	5:45 pm
8017	5:00 pm	5:02 pm	5:07 pm	5:15 pm	6:00 pm	7:15 pm
8019	6:00 pm	6:02 pm	6:07 pm	6:15 pm	6:55 pm	8:15 pm
8021	7:30 pm	7:32 pm	7:37 pm	7:45 pm	8:20 pm	9:45 pm
8023 ⁶	8:30 pm	8:32 pm	8:37 pm	8:45 pm	9:20 pm	10:45 pm
8025 ⁶	10:15 pm	10:17 pm	10:22 pm	10:30 pm	11:05 pm	12:30 am

² Westbound Ann Arbor departures to East Lansing require advance reservations.

³ This coach does **not** stop in East Lansing.

⁴ Schedule changes occur from time to time due to weather, traffic or other conditions. In such cases, for example, we might reverse the order of drop off or pick up at the two Detroit Metro airline terminals.

⁵ Alternative stops by request only. It's best to submit your request when you buy your ticket online. On the Passenger Information page where you enter your name, just write "Alternative Stop" in the Special Needs request box. Or, you can make your request when you call or visit our office, or by telling either your driver or one of our customer service representatives at the airport.

⁶ This run **not** available on Saturday as of 9/9/2017.

Michigan Flyer is headquartered at the East Lansing Marriott hotel, and coaches pick up passengers along Albert Street. Passengers park for \$2.50 a day in a city parking ramp when they prepay for parking. The company also partners with the Ann Arbor Area Transportation Authority, using the Blake Transit Center. Parking in the Ann Arbor Downtown Development Authority's parking ramp at William and Fourth streets costs passengers \$2 a day. This service offers users significant savings because parking at the Detroit Metropolitan Airport costs between \$11 and \$40 a day.

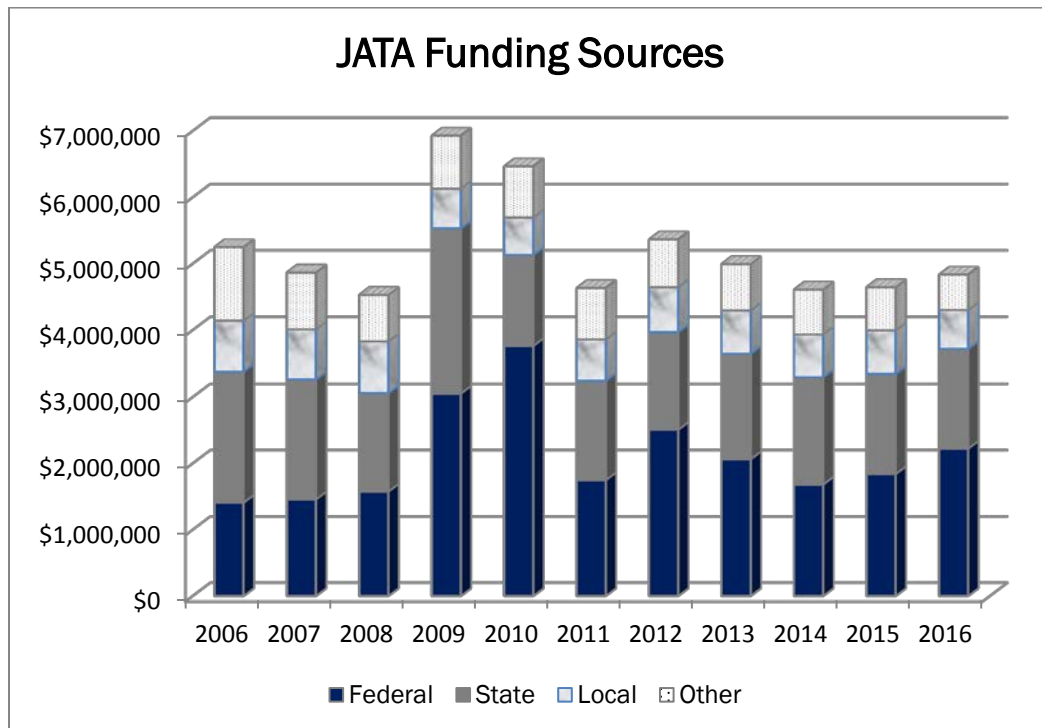
Michigan Flyer-AirRide motorcoaches are wheelchair accessible. However, 24-hour advance reservations are recommended. Please call our office, or fill out the ADA form when making reservations online.



The Michigan Flyer Program used to have a stop in Jackson but that was discontinued on April 1st, 2012 as the service was rebranded as AirRide and the route was changed from US-127 to US-23. The service had served Jackson since 2006 and provided 8 daily trips stopping in Jackson at the Baymont Hotel, which is located just west of US-127 and just north on I-94. The justification of this service change was that by re-routing the service could expand from 8 daily trips to 12, as well as that ridership in Jackson was not sufficient enough to justify the current route. The official press release from February 12th, 2012 announcing the service change did however indicate that “We’re working hard to find a way to reinstate the service through Jackson, hopefully yet this year.” As of November 2017 the service has not yet been reinstated.

The ridership in 2012 was roughly 90,000 passenger trips and in 2016 it has grown to over 220,000 passenger trips. This indicates that the re-routed service is in fact more efficient and productive. In early November of 2017 the Michigan Flyer (AirRide) also indicated that it is working with Livingston Essential Transportation Service (LETS) to potentially serve one or more park-and-ride locations along the existing route. Park and Ride lots at Spencer Road and I-96 or Lee Road and U.S. 23 could be options (Source: LivingstonDaily.com)

areas of the system. Implementing standards for bus route performance helps to ensure that transit systems do not continue to run highly unprofitable service.



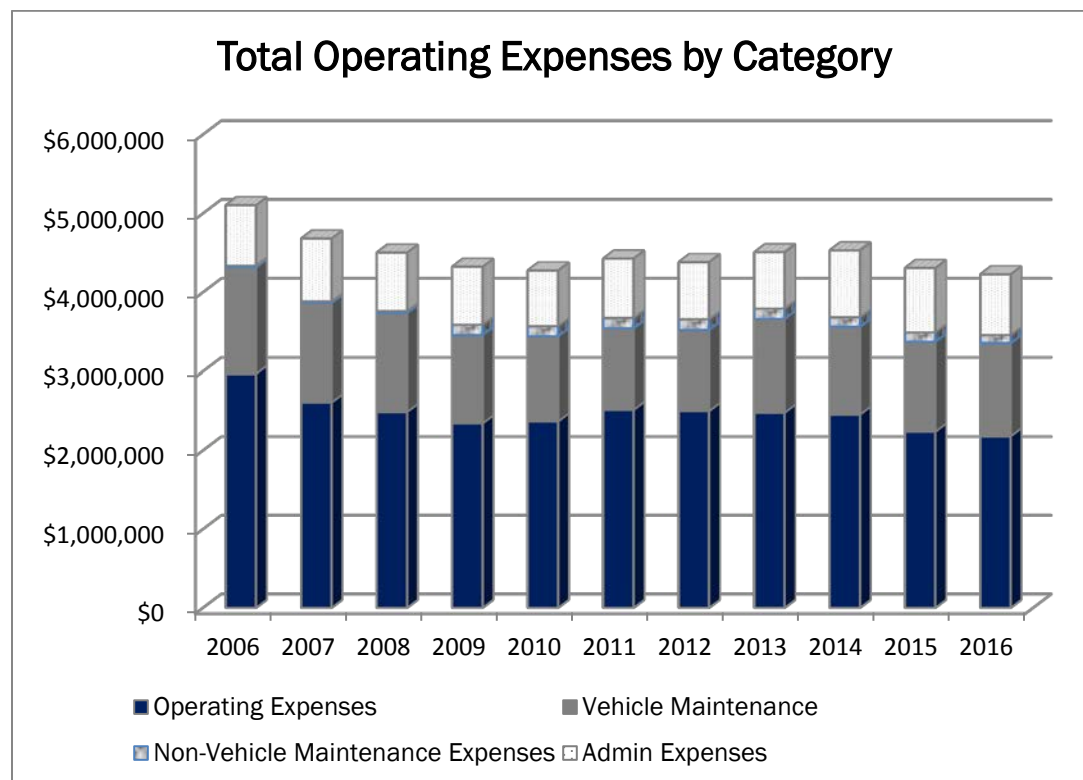
8.2 Current Conditions

JATA currently receives funding from federal, state, and local sources in addition to traditional farebox revenue. Funding is provided by various Federal Transit Administration (FTA) programs, State programs and the State Transportation Improvement Program (STIP), and local sources such as local property tax.

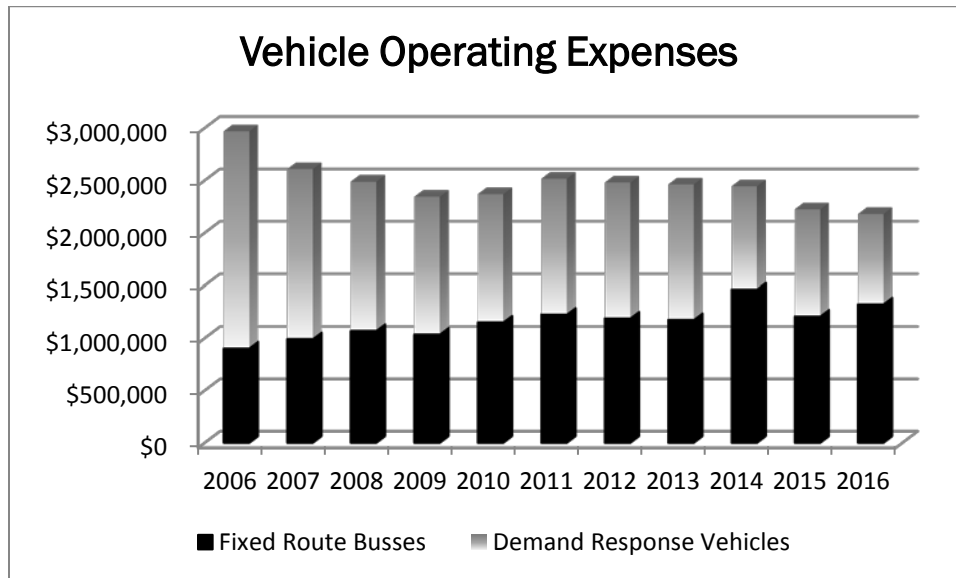
The majority of State and local funding comes from gasoline and sales taxes within the State of Michigan, which are not reliable in economic downturns. Similar to other funding sources used to for JATA service development and operation, these funds can be shifted to other State departments in times of crisis.

Currently, roughly 14% of JATA operating costs are covered by fare revenue (not including ADA paratransit). While JATA fares are fairly standard, this cost recovery rate is low compared to other peers in the industry. Several JATA routes return under 10% of costs in fare revenue. These routes may need to be evaluated to improve cost recovery.

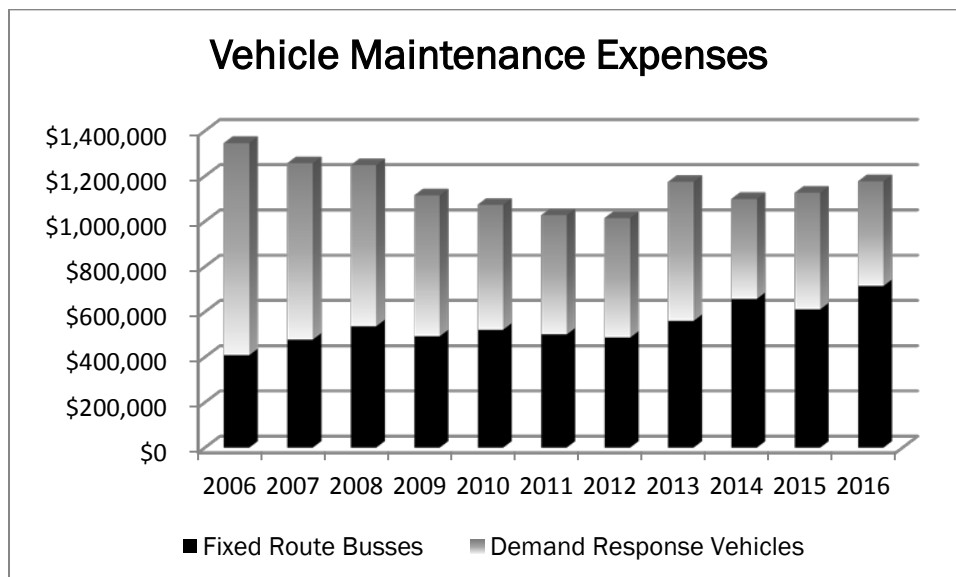
JATA is likely to be increasing funding shortages in the coming years as local and State revenues are reduced or eliminated. Along with improving unproductive service, JATA requires a sustainable source of funding to ensure a viable, attractive transit network. This is especially true for the Reserve-A-Ride program.



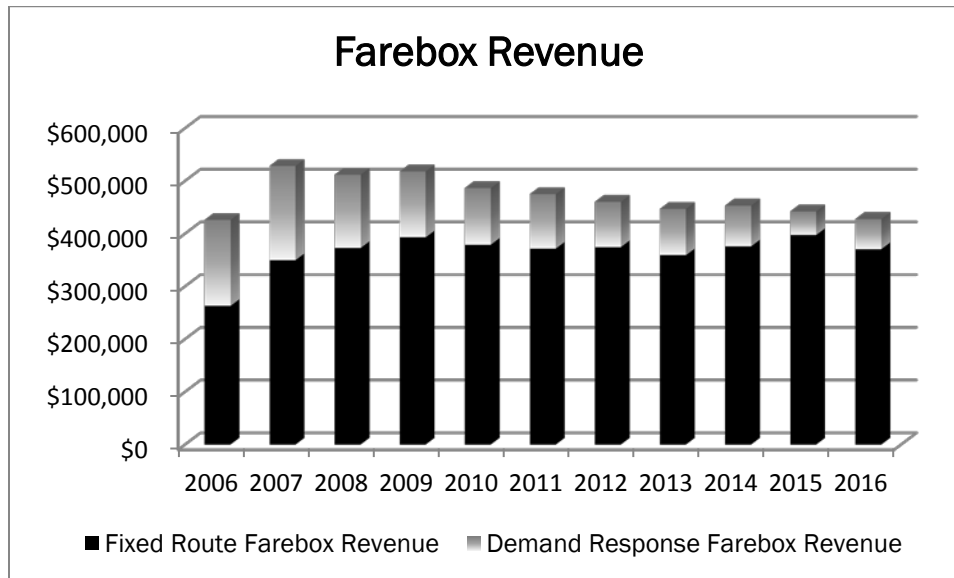
Operating expenses for JATA have stayed roughly the same since 2011, and are down nearly \$1 Million per year from 2006. Since 2006, Admin Expenses and Vehicle Maintenance have remained constant, but non-vehicle maintenance expenses have risen slightly. The major differentiator in total operating costs has been the reduction of operating expenses, which is likely due to reductions in service since 2006.



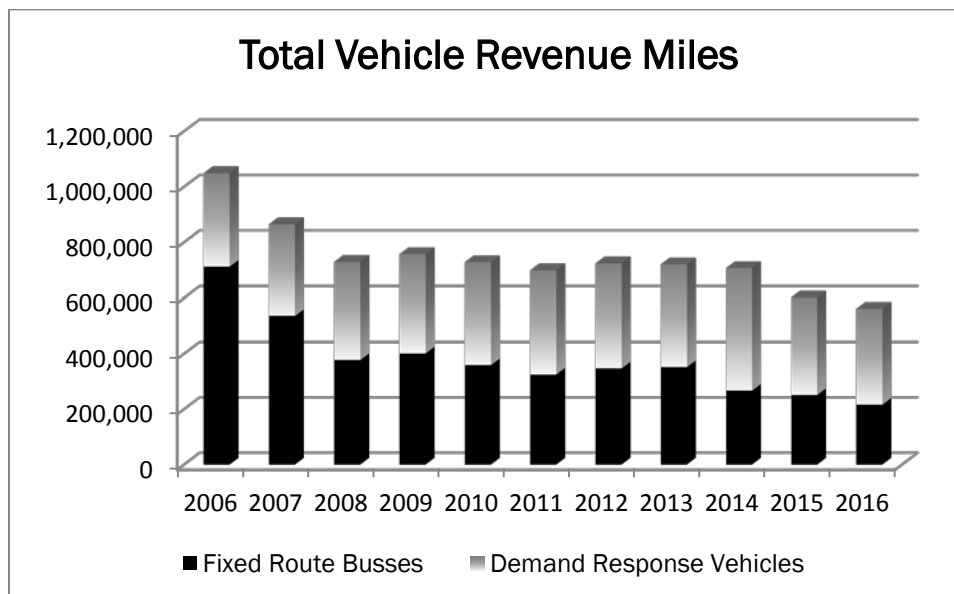
Vehicle operating expenses follow the same trend as the overall system operating expenses. Costs were nearly \$1 million more in 2006 than in 2016. The cost of operating fixed route buses has steadily increased from under \$1 million per year in 2006 to about \$1.25 million per year now. However, the main reduction in costs has come from the reduction in Demand Response operations.



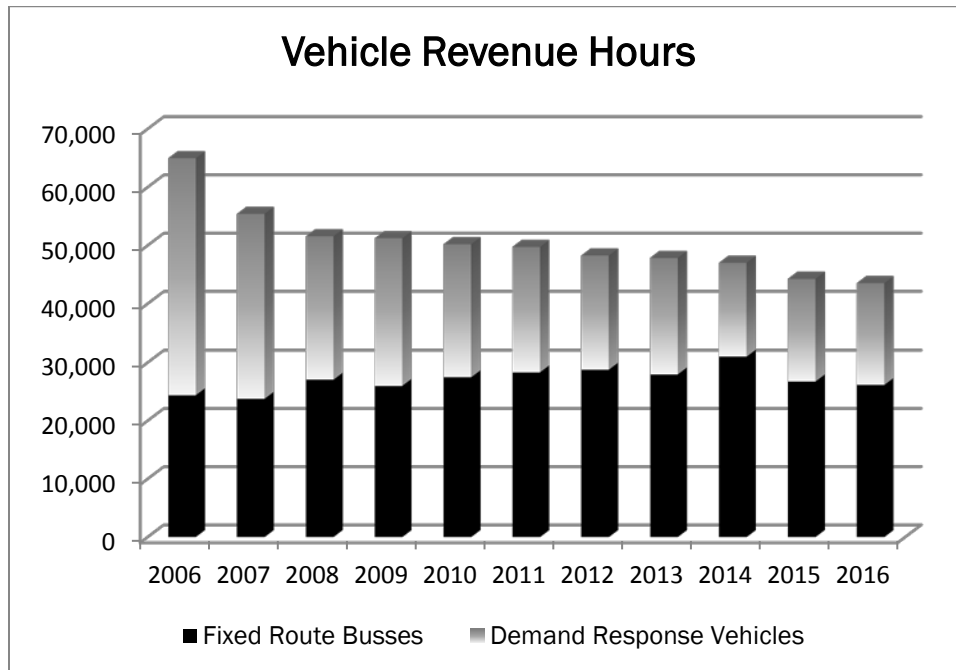
Since 2006, Vehicle Maintenance costs have reduced, but have increased from the low point in 2012. Fixed route buses have seen an increase in maintenance costs of nearly \$300,000 since 2006, but demand response vehicles have seen a large reduction in the same time period. Demand response maintenance costs went from nearly \$1 million per year in 2006 to about \$500,000 in 2011, where they have stayed constant since.



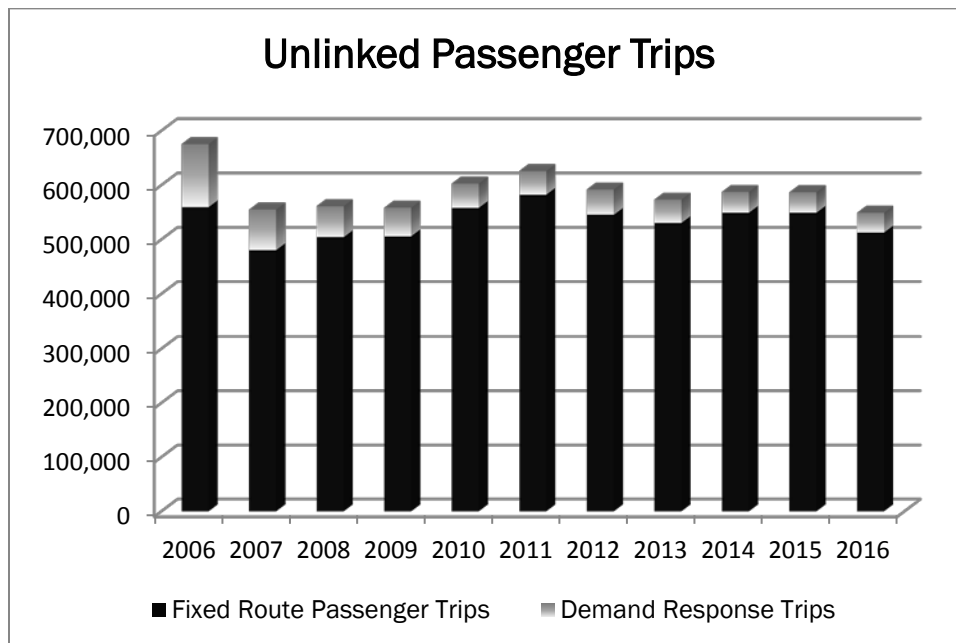
JATA's farebox revenue has remained relatively constant over the past 10 years. Despite a nearly, \$100,000 jump in revenue from 2006 to 2007, the overall trend puts farebox revenue at about \$410,000 per year. Fixed route revenue has increased by about \$100,000 since 2006, but demand response fares have dropped from nearly \$150,000 per year to about \$30,000 per year.



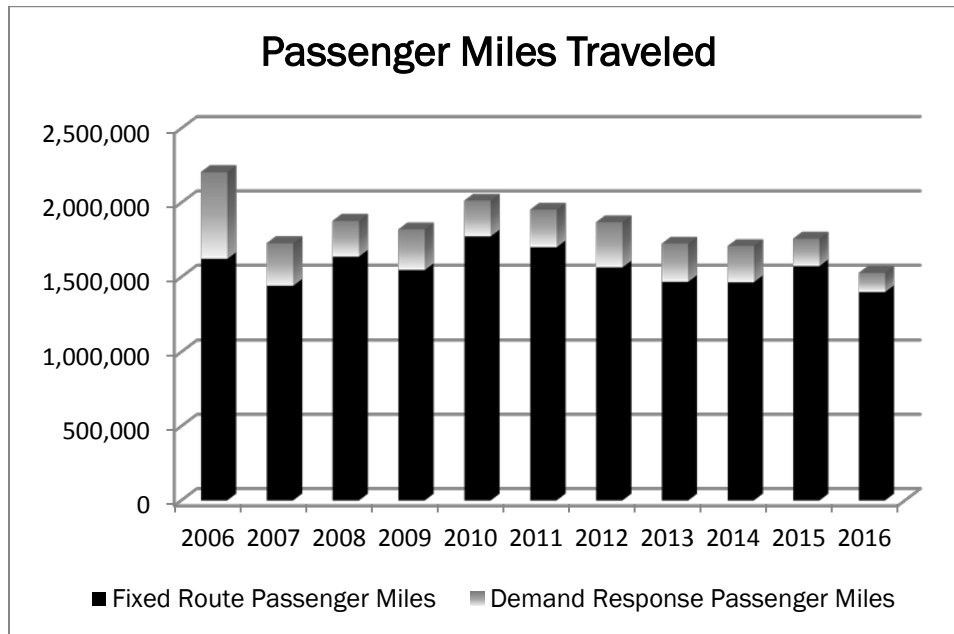
Vehicle revenue miles for JATA have decreased substantially over the last 10 years, from over 1 million per year in 2006 to fewer than 600,000 in 2016. Much of the decline is due to reduction in vehicle revenue miles for fixed route buses. The fixed route service traveled nearly 500,000 more revenue miles in 2006 than in 2016. Vehicle revenue miles for demand response vehicles has stayed relatively stable since 2006.



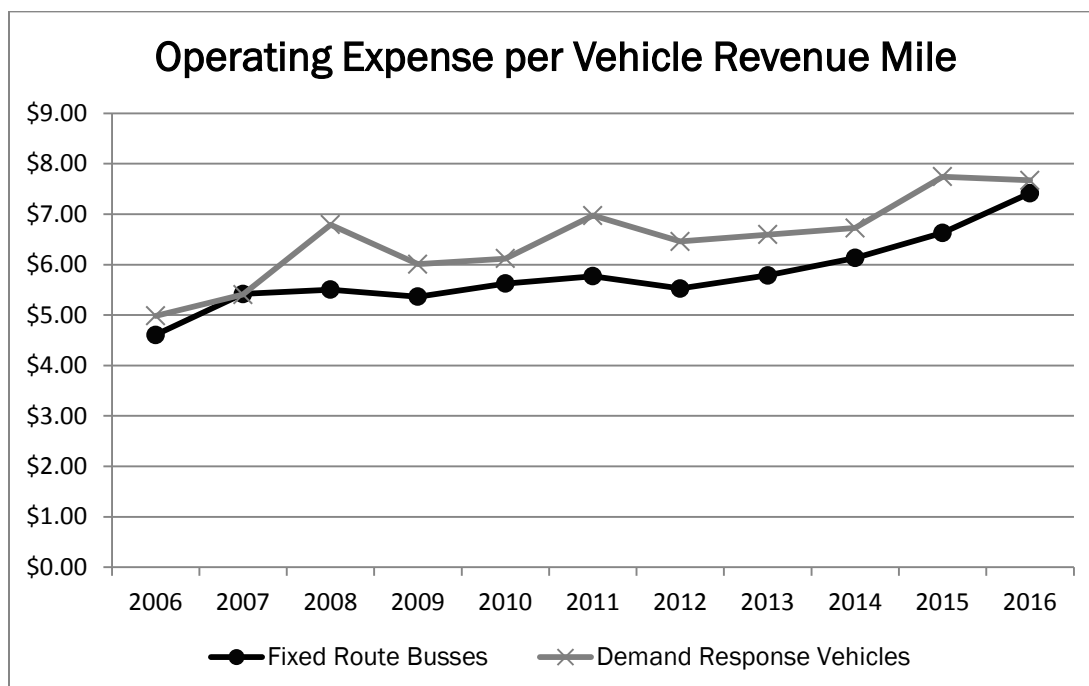
Overall, the total vehicle revenue hours for JATA have decreased by about 20,000 hours per year since 2006. The majority of these came from the reduction in demand response revenue hours. Fixed route revenue hours have fluctuated between 22,000 and 30,000 hours per year between 2006 and 2016. 2015 and 2016 represent a drop in service hours from 2014 after eight years of growth.



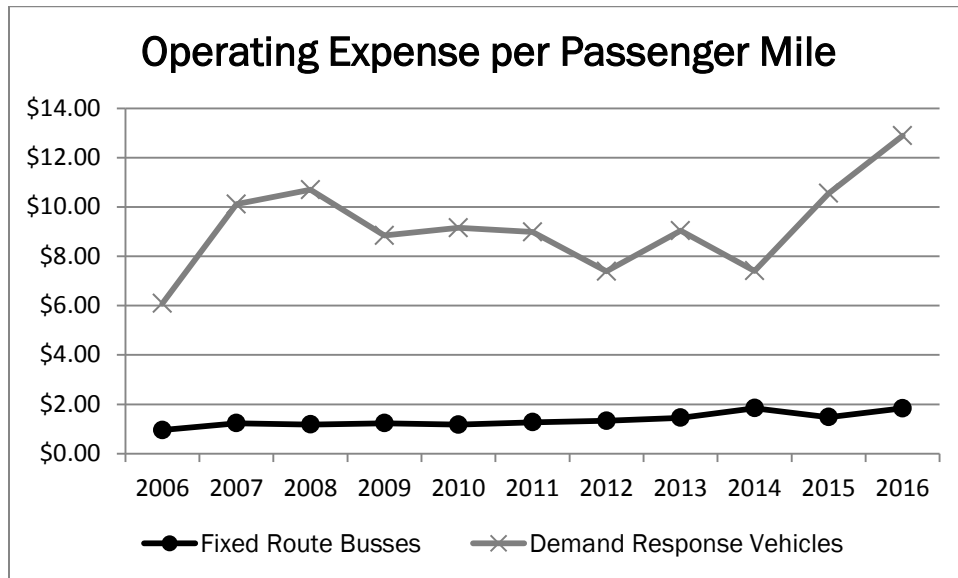
Total passenger trips for JATA have fluctuated around 550,000 trips per year since 2007. Between 2006 and 2007, JATA lost nearly 100,000 rides and has never quite recovered. Much of the drop in ridership was on demand response service, but fixed route service was affected too. The fixed route service has fluctuated above 500,000 rides per year since 2010, while demand response service has stayed relatively stable at about 50,000 rides per year since 2008.



System-wide passenger miles traveled are as low as they have been since 2006, at about 1.5 million miles traveled. This represents a decrease of almost 750,000 miles over the past decade. The reduction of total passenger miles is mostly due to the drop in demand response passenger miles from about 950,000 miles to 130,000 miles. Fixed route passenger miles traveled has fluctuated since 2006 between 1.4 and 1.7 million miles traveled.



Operating expenses per vehicle revenue mile for JATA fixed route and demand response vehicles has increased gradually over the past decade. The operating expenses for fixed route service have risen more gradually, with a stable period between 2007 and 2013. Expenses since 2013 have increased nearly \$2.00 per vehicle revenue mile for fixed route buses. Demand response operating expenses per revenue mile have also increased, but less gradually. Spikes in 2007, 2010 and 2015 have pushed the cost per revenue mile up over the years.



Operating expense per passenger mile looks much different between fixed route and demand response vehicles. Fixed route cost per passenger mile has increased gradually since 2006 from about \$1.00 per passenger mile to just under \$2.00 per passenger mile in 2016. Operating expense per passenger mile for demand response vehicles tends to jump around, but has generally increased over the past decade from \$6.00 per passenger mile to about \$13.00 per passenger mile, with some spikes and dips in between.

9. Conclusion

In previous tasks, data was collected regarding information on existing transit services, existing plans for governmental agencies in Jackson County, and a review of a survey conducted in 2015 about perceptions of transit in Jackson County. Presentations were made at a number of board meetings for JATA and R2PC as well as a meeting with the walkable community's coalition in Jackson to collect information about existing conditions and perceived unmet transportation needs in the county.

Once all of this data was reviewed a new survey was conducted and boarding/alighting counts were taken to show us better ridership data at the stop level rather than the route level which was all that was available previously. In addition to this information, National Transit Database statistics for JATA were analyzed. This is the same data that the FTA uses to assess transit providers around the Country. The NTD data used in the review included daily and monthly farebox reports by fare type, all operational data including vehicle miles traveled and passenger miles, and lastly maintenance data which was separated into fixed route busses and reserve-a-ride vehicles.

This Gaps and Opportunities report includes the results of this review and analysis of all the information collected to date. The report is intended to be the next step in the development of an improvement plan which will be completed in the next phase of this process. The conclusions reached by the project team, including JATA and R2PC staff, along with the AECOM Team, indicate general areas of need and/or concern. The items identified in the following section will serve as the base for the improvement plan, which will allow for more specific recommendations. As a start to that process we have categorized our conclusions into logical groups for ease of potential implementation.

Service

- **Span of Service**
One of the main requests/complaints from the customer questionnaire was that JATA fixed route services should be extended to later evening hours, and on weekdays. 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; however it was unclear if any or all drivers notate this in their RouteMatch tablet. Once the APC 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. We are aware that JATA recently made a TIP amendment to purchase two new buses, which could help lower these costs. Some vehicles may show to be operating efficiently beyond a useful expectancy, while others may not. The expanded reserve-a-ride service area also add 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. An improved trip coordination effort is needed to assist with decreasing

JATA's trip denial rate. There are far 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. The timing of route 9 should be reviewed for efficiency. There are a few instances during the typical day where the route 9 bus leaves the connection point just minutes before the Route 1 arrives. If there is a specific reason that route 9 leaves when it does it isn't very clear. The Ganson/Blackman route also crosses a few other routes and since it is not on the 30 minute pulse system that routes one through six are a connection at the crossing points could save riders time if they occur at optimal times for each route.

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, printed schedules, bus stop information displays, internet information and information from social service agencies which would make the services easier to understand and access. This is especially the case for the rural parts of Jackson County. The limited understanding of such 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 busses 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 both 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 extremely 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 these patients and with other service providers to maximize the service levels could make trip denials
- **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, R2PC, 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 drivers. 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 still 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 $\frac{3}{4}$ 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 utilize their services to access destinations county-wide, then they are obligated to offer residents county-wide to request service as well. 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. In order 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 JCC. A route in this direction might also benefit Jackson Lumen Christi Schools. 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.