



Technical Memo: Existing Conditions

Berrien County Transit Service Integration Plan

June 2017



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1 INTRODUCTION

Efforts to coordinate Berrien County's disconnected transit environment have been brewing for years. As the creation of a new countywide transit authority appears imminent, the service plan for this new entity should be informed by these previous planning initiatives. In addition, a thorough analysis of existing services as well as the potential markets for public transit must be incorporated into the new service plan.

A number of studies have been completed over the past 10 years that relate to how existing transit service operates and what opportunities for optimization/improvement are possible. The study team identified and reviewed the following documents relevant to consolidating transit service across the county:

- Overview of Transportation Services in Berrien, Cass and Van Buren Counties (2015)
- Berrien County Master Plan (2015)
- Moving Forward: A Plan for Public Transit in Berrien County (2014)
- Niles Dial-a-Ride Transportation Development Plan (2013)
- What Moves You, TwinCATS? 2013 – 2040 Long Range Transportation Plan for the Twin Cities Area Transportation Study (TwinCATS) (2013)
- Pokagon Band of Potawatomi Indians Transit Feasibility Study – Improving Mobility for Tribal Citizens (2012)
- Berrien County Public Transit Study (2009)
- Berrien County Coordinated Public Transit Human Services Transportation Plan (2009)
- Walk & Roll TwinCATS – Official TwinCATS Non-Motorized Plan (2011)

Many of the documents highlighted the same issues and needs for transit service in the county:

- There is a large proportion of older residents and other transit-dependent populations throughout the county reliant on transit for basic transportation.
- The operating hours of existing transit service make using transit for regular work commuting difficult if not impossible.
- The lack of service on the weekends means transit-dependent residents are unable to leave home at all.
- Scarce marketing and outreach makes knowledge about available services difficult to discover.
- Cross-county trips must often use multiple service providers with uncoordinated schedules, fares, and service areas.
- Inter-county connections are limited and cumbersome even though many residents make inter-county trips regularly by modes other than transit (e.g. from Berrien to nearby

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South Bend, IN; from Berrien to Pokagon Tribal services in Dowagiac, MI in nearby Cass County, MI)

Almost all the documents mention the need for increased coordination between county transit systems. In Chapter 3, this memo then explores the existing transit services from the four providers currently in Berrien County – Berrien Bus, Buchanan Dial-A-Ride, Niles Dial-A-Ride, and TCATA. This includes a description of the service provided by each, as well as some information about funding sources. Chapter 4 examines the market for public transit in Berrien County, using data from a variety of sources to evaluate demand. Finally, an overall assessment of the existing conditions is provided in Chapter 5.

2 PREVIOUS PLANNING STUDIES

OVERVIEW OF TRANSPORTATION SERVICES IN BERRIEN, CASS AND VAN BUREN COUNTIES (2015)

Berrien County is one of three counties within the Southwest Michigan Region under the jurisdiction of the Southwest Michigan Planning Commission (SWMPC). The SWMPC put together this Overview in 2015 examining each county and the transportation services available.

Key points about Berrien County:

- 67% of residents reside in urbanized areas, 33% in rural areas.
- Benton Harbor/St. Joseph is the main urban activity center for the county and has the highest population density.
- Southern communities like Niles, Buchanan, and New Buffalo are oriented toward South Bend, IN to the south.
- The four existing transit services in Berrien County are plagued by uncoordinated schedules, different fare systems, and service gaps between service boundaries.
- Berrien Bus, Niles Dial-a-Ride, and Buchanan Dial-a-Ride services have system hours that preclude use by commuters and/or riders who work later shifts.
- Fares for the four transit services can vary for comparable service.
- Internet information on available transit service is limited and confusing.
- Senior centers provide transportation services to older adults but frequency and service areas vary from one center to the next, resulting in vastly different transportation access depending on where a traveler lives.

In addition to reviewing existing conditions of transportation across the three counties, the Overview also surveyed human service agencies, medical facilities, and employment training centers throughout the three-county area in December 2014. The following represent some key points pulled from the survey results.

Figure 1 Survey Results – Agencies Used by Surveyed Organizations

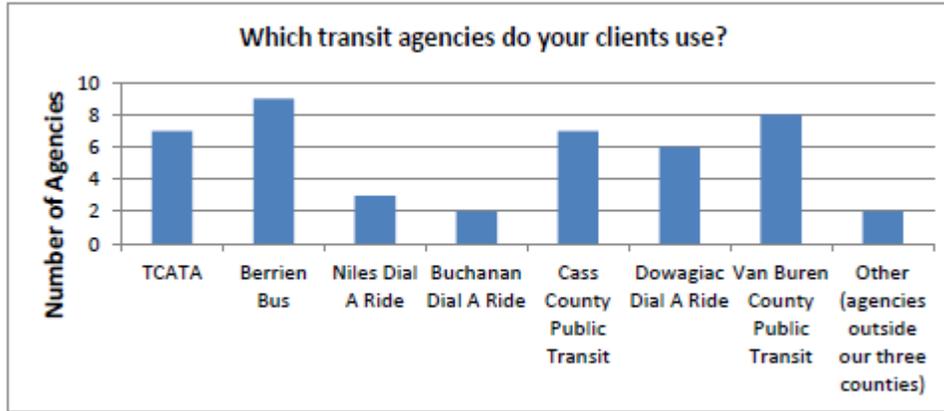
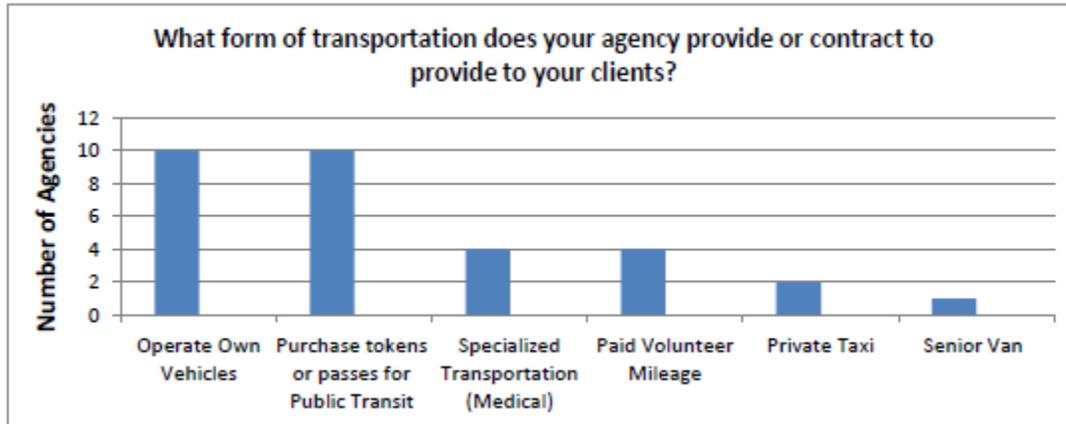


Figure 2 Survey Results – Transportation Provided by Surveyed Organizations



The survey identified key issues related to unmet trips and trip issues for the three-county area:

- *Trips for non-emergency medical purposes are commonly not met throughout our three county region, particularly for those individuals not on Medicaid.*
- *Patients may be able to reach one hospital or clinic in the three counties using public transit or specialized transportation, but they are unable to access other clinics or hospitals in the region they need to get to for additional procedures or tests. This is the case for both patients traveling from one facility to another on the same day, and for those trying to get directly from home to another facility in the same day.*
- *Accessing highly specialized medical services outside of the three county region in places such as Kalamazoo, Grand Rapids, or Ann Arbor in a timely and economical manner is difficult or impossible.*
- *People having to go to the hospital repeatedly over several weeks or months for treatments such as chemotherapy struggle with having to schedule a ride on a daily basis.*
- *Non-emergency medical appointments may take place on a Saturday; if they do and they are outside an urban area, reaching them is usually a problem for patients without cars.*

- *Reaching night shift or early morning employment or medical services is a major problem throughout the three counties.*
- *At the same time, people traveling from rural to urban areas for services might be left waiting outside their destination before the service facility opens due to timing of rides.*

Transportation-related concerns from clients:

- *Long wait times for public transit.*
- *Inability to access services and return home via public transit in the same day. This is a particular issue in Berrien County but also on cross county trips for employment between Van Buren, Allegan, and Kalamazoo Counties.*
- *Clients lack money for either public transit or private transportation.*
- *Missing appointments due to unreliable transit service timing.*
- *Not knowing how long appointments will take and having to spend hours waiting for a ride afterwards.*
- *Lack of accessibility (for wheelchairs or other mobility assistance devices) on many service vehicles.*
- *Cross county trips within the three county region are difficult.*
- *There is a lack of knowledge among clients that there are public transit options available.*

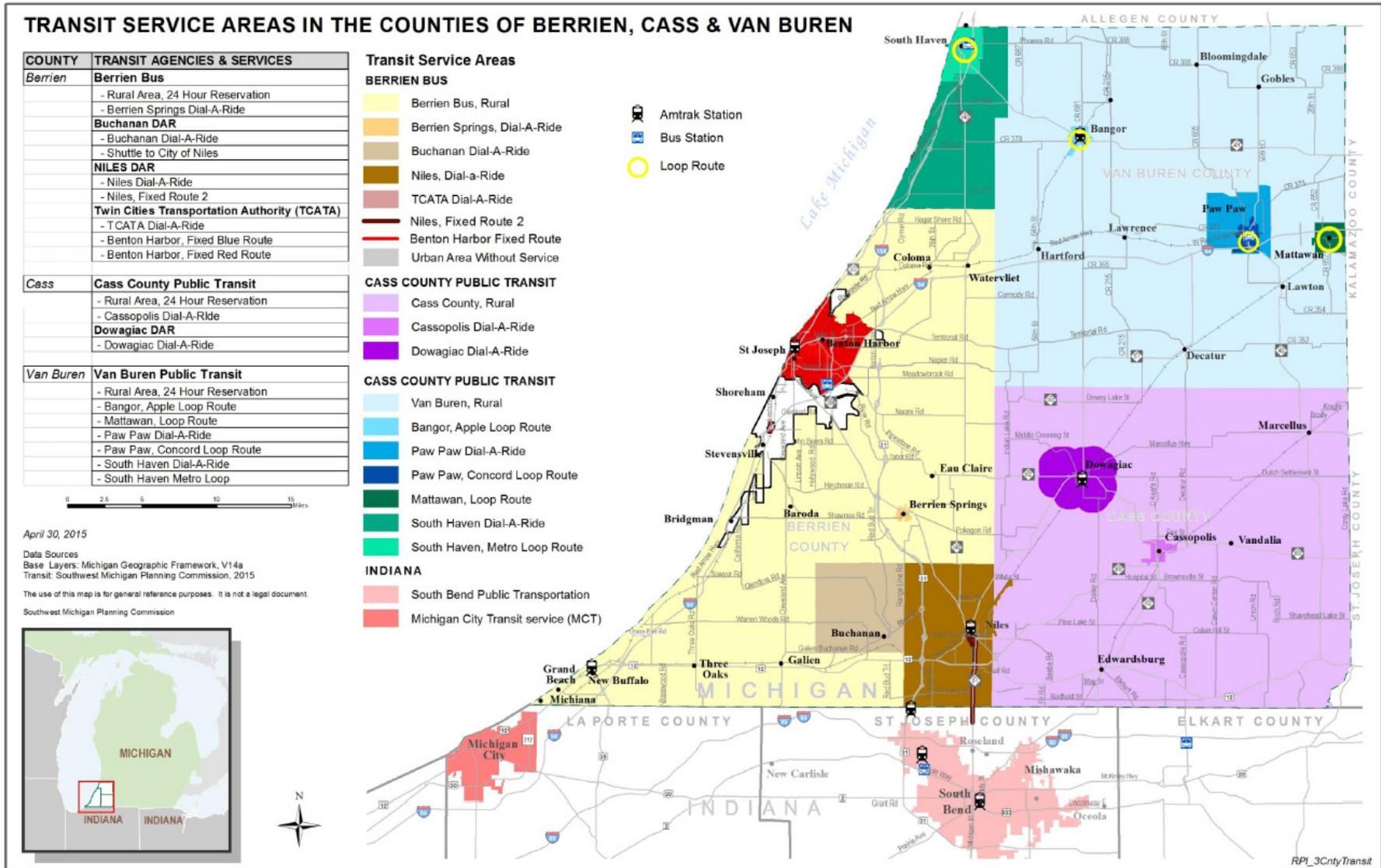
Client-proposed solutions:

- *Extend public transit service hours to evenings, nights, and weekends.*
- *Match public transportation to appointment times.*
- *Having human service agencies be more informed about public transit.*
- *Human service agencies being more easily able to schedule.*
- *More direct routes to service destinations via transit and fixed pickup times.*
- *Consolidation of transit systems in Berrien County and similar consolidation of systems in Cass County.*
- *Cross county services.*

The Overview then ends with a collection of brochures and web-based information clips for the various transit services as an overview of everything that is available information-wise from these services. The map on the following page shows the existing transit services available and their area of service over the three counties.

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Figure 3 Existing service providers in SWMPC area



BERRIEN COUNTY MASTER PLAN (2015)

In 2015, Berrien County updated its 2009 master plan to include new data and activities surrounding countywide land use and planning initiatives and events. The plan examines all aspects of Berrien County related to planning including land use, economic development, and transportation. Overall, the plan notes that Berrien County is home to a decreasing population with a high proportion of elderly residents. Transportation-related projects and initiatives should understand the transit-dependent population in order to best serve the County's residents. The plan lays out several goals and objectives that relate to a consolidated transit service:

Landscapes

Goal: Promote placemaking through an efficient pattern of development that maintains our sense of place, preserves our natural resources and reduces the effects of sprawl.

- **Objective:** Promote higher density infill development and redevelopment

Economic Development

Goal: Create a common vision with strategies to foster coordination among economic and community development agencies and between these groups and governmental units.

- **Objective:** Integrate transportation systems with community development

Transportation

Transit funding is dwindling

Goal: Use transportation investments to advance economic opportunities and equity in Berrien County.

- **Objective:** Improve the economic base of the county by targeting investments that improve efficiency and modal links in core urban areas
- **Objective:** Provide equal access to the transportation system
- **Objective:** Maintain and provide efficiencies in the current system

Infrastructure

Goal: Coordinate development to infill around existing infrastructure capacity and rehabilitate systems prior to establishing new service.

MOVING FORWARD: A PLAN FOR PUBLIC TRANSIT IN BERRIEN COUNTY (2014)

In 2014, *Moving Forward* was prepared for the Berrien County Coordinated Transportation Coalition in order to understand opportunities and costs related to coordinating transit service providers throughout the county. The plan examined three potential scenarios for optimizing service: 1) coordinating service between the existing four agencies while keeping them separate; 2) improving mobility management for all agencies to increase awareness and education of all agencies’ services; and 3) consolidating all transit agencies into one countywide system. The plan examines these three options and indicates that during the process, consolidation into a countywide system, the Berrien County Transit Authority (BCTA) clearly became the preferred option. Consolidation would not only provide a more cohesive and unified service facilitating connections and cross-county trips, but would also save money and reduce operating costs. The plan offers a vision to guide transit consolidation in the future:

The vision for public transit services in Berrien County is a safe, efficient, affordable, and customer friendly system that works to meet the mobility needs of the residents of the County.

The plan reviews the four existing services in Berrien County (Berrien Bus, Buchanan Dial-A-Ride, Niles Dial-A-Ride, Twin Cities Area Transportation Authority) in terms of the service they offer and the structure of their operation. All four services are predominantly demand response services although the largest, Twin Cities Area Transportation Authority (TCATA) operates two fixed routes, and Niles Dial-A-Ride operates a fixed route that connects to South Bend, Indiana. Overall public transit ridership in Berrien County grew about five percent between FY 2011 and FY 2013. Overall ridership on TCATA increased about 10% while ridership on the Berrien Bus, Buchanan Dial-a-Ride, and Niles Dial-a-Ride all decreased during the same period. Figure 4 is a table outlining basic information about Berrien County transit providers.

Figure 4 Existing transit service providers in Berrien County – Overview

	Berrien Bus	Buchanan Dial-A-Ride	Niles Dial-A-Ride	TCATA
Service Overview	Curb-to-curb, advance reservation general public transportation. Rides reserved on first-called/first served basis. Also, provide transportation services under contract for human service agencies.	Same day curb-to-curb service. 24 hour advance scheduling is preferred, but rides can be scheduled up to one hour in advance.	Same day curb-to-curb service. 24 hour advance scheduling is preferred, but rides can be scheduled up to one hour in advance. Also, provide one fixed route.	Immediate response dial-a-ride services and two fixed routes.

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	Berrien Bus	Buchanan Dial-A-Ride	Niles Dial-A-Ride	TCATA
Service Area	Census designated rural areas of Berrien County. Therefore, serves geographically the largest area in the County.	Dial-A-Ride services in City of Buchanan and in Buchanan Township. Curb-to-curb same day shuttle service for Buchanan residents to Niles.	Dial-A-Ride service within the city limits of Niles, Niles Township, and Bertrand Township. Fixed route operates between Niles and South Bend, Indiana.	Dial-A-Ride services in Benton Harbor, Benton Township, Royalton, and St. Joseph, serving ~24K people within the urbanized area; the remaining portion of the urbanized area receives service on a limited basis. Red Route serves Benton Harbor, St. Joseph, St. Joseph Township, and Stevensville. Blue Route serves Benton Harbor and Benton Township (Fairplain) retail area.
Service Days/ Hours	M-F 5 a.m. – 5 p.m.	Dial-A-Ride: M-F 7 a.m. – 5:30 p.m. Sat 9 a.m.- 3 p.m. Shuttle to Niles: M-F 4 round trips Sat 3 round trips	Dial-A-Ride: M-F 7 a.m. – 5 p.m. Sat 10 a.m.- 3 p.m. Fixed route: M-F 10 a.m. – 5 p.m.	Dial-A-Ride: M-F 6 a.m. – 6 p.m. Sat 8 a.m.-4:30 p.m. Fixed Routes: M-F 6 a.m. – 10 p.m. Sat 8 a.m.- 10 p.m.
Eligibility	Open to the general public once all agency contract obligations are met.	Open to the general public.	Open to the general public.	Open to the general public.
Annual Operating Expenses FY2013	\$1,190,587	\$198,478	\$430,494	\$2,255,067
Annual Passenger Trips FY2013	62,477	8,100	31,080	219,167
Fleet Size	26	3	6	25

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	Berrien Bus	Buchanan Dial-A-Ride	Niles Dial-A-Ride	TCATA
Governance/ Administration	The Berrien County Board of Commissioners oversees and sponsors Berrien Bus. Transportation Coordinator provides daily oversight of contractor and completes appropriate reports. Local Advisory Committee (LAC) meets quarterly and provides feedback on services.	Buchanan City Council provides oversight. LAC meets quarterly and provides feedback on services.	Niles City Council provides oversight. Transportation Coordinator monitors services and completes appropriate reports. Operations Manager supervises drivers and dispatch. LAC meets quarterly and provides feedback on services.	Governed by a board, currently appointed by the Emergency Manager for the City of Benton Harbor on Feb. 14, 2012. Management structure consists of a Director and an Operations Manager who oversee drivers, dispatch, and maintenance. LAC provides board with public feedback on services.
Operations	Berrien County contracts with Transportation Management Inc. (TMI) for operations. The TMI Operations Manager supervises services from the Berrien Bus facility in Berrien Springs. The facility also houses the maintenance shop and vehicles.	As of Jan. 1, 2012 Buchanan Dial-A-Ride has consolidated an agreement with Berrien County to contract services through TMI (previously services were contracted from TMI through a separate agreement)	Beginning in 2011 services provided directly. Previously services were contracted out to a private transportation firm, but decision was made to bring operations in house.	Services are provided directly. Full-time employees classified as operations who do not have supervisory responsibilities are members of labor union.
Primary Funding/ Revenue Sources	<ul style="list-style-type: none"> ▪ Federal S. 5311 ▪ State operating assistance ▪ Contracts with human service agencies ▪ Passenger fares 	<ul style="list-style-type: none"> ▪ Federal S. 5311 ▪ State operating assistance ▪ City of Buchanan millage ▪ Passenger fares 	<ul style="list-style-type: none"> ▪ Federal S. 5307 and 5311 ▪ State operating assistance ▪ City of Niles millage ▪ Passenger fares 	<ul style="list-style-type: none"> ▪ Federal S. 5307, 5316 (Job Access and Reverse Commute – JARC), and 5317 (New Freedom) ▪ State operating assistance ▪ City of Benton Harbor millage ▪ Passenger fares

The Plan also mentions key take-aways regarding the individual transit operators including:

Berrien Bus

- Berrien Bus is financially dependent on contracts with human service agencies and as such its services center around accommodating these agencies.
- Most trip origins for Berrien Bus passengers are in low-density areas, mainly small towns or rural single family homes.

Buchanan Dial-A-Ride

- Buchanan Dial-A-Ride operates curb-to-curb shared ride service to the residents of the City of Buchanan and Buchanan Township. It is operated by TMI out of the Berrien Bus offices in Berrien Springs.
- A fixed schedule curb-to-curb shuttle service is also provided for Buchanan residents traveling to and from the City of Niles.
- Primary ridership on Buchanan Dial-A-Ride is senior citizens and the majority of trip origins are single-family households or senior housing developments. Major destinations include doctors' offices, grocery stores, and Walmart.

Niles Dial-A-Ride

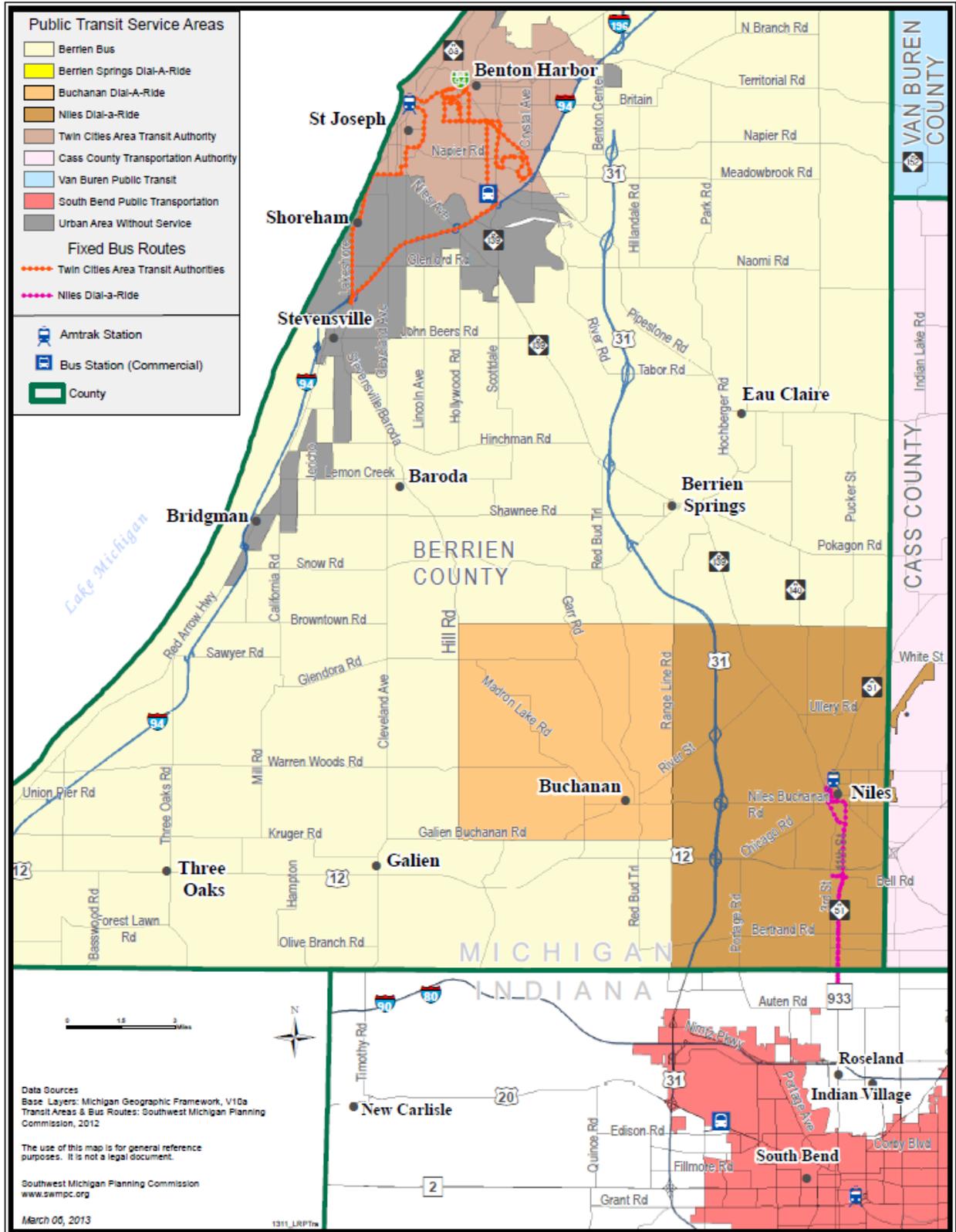
- Niles Dial-a-Ride also operates a fixed route connecting the City of Niles to Indiana, every hour Monday through Friday, which connects to the South Bend transit system and is popular during the school year.

TCATA

- The two TCATA services (demand response and fixed route) overlap in their service areas, effectively allowing them to compete with one another, leading to high demand for demand response service, long wait times, and as a result a high rate of passenger no-shows.
- The majority of origins for TCATA service are housing complexes and neighborhoods, in particular low income and subsidized housing developments in Benton Harbor. Destinations include places of employment, Walmart, Meijer, and the Plaza shopping center.

The following map (Figure 5) shows the service areas of these four transit agencies within Berrien County.

Figure 5 Existing transit service areas in Berrien County



The plan outlines modified and new services that have been discussed as part of individual system planning that should be explored as part of the countywide system consolidation:

- Expanded fixed route service in the current TCATA service area
- Expanded Niles Dial-A-Ride services, frequency, and hours
- A Benton Harbor/St. Joseph – Berrien Springs – Niles Shuttle
- A Watervliet/Coloma – Benton Harbor/St. Joseph Shuttle
- Watervliet – Coloma Dial-A-Ride Service
- Berrien Springs Dial-A-Ride service
- A Benton Harbor/St. Joseph – Bridgman – Sawyer – New Buffalo Shuttle
- Modified Berrien County Demand Response Service

The existing four services operate independent of one another organizationally. The new BCTA would be organized under the State of Michigan Public Transportation Act (Act 196 of 1986) as an independent governmental unit with the ability to levy a millage. In order to represent all of Berrien County, the BCTA would be governed by a board of directors composed of representatives from the current transit systems, the county at large, and the County Board of Commissioners.

Each of the existing transit services has its own staff including management, administrative, maintenance, and vehicle operators significantly increasing costs compared to the proposed countywide authority which would eliminate redundant positions throughout the county. The plan outlines two proposed organizations for the BCTA, one that assumes transit operation will continue to be contracted out (as some existing Berrien County transit services currently do) and one that assumes transit operation will be carried out by the BCTA.

The consolidation of the four transit services into a countywide system would allow the BCTA to continue the funding streams through which the existing services receive local, state, and federal funding. In addition, the BCTA would be able to levy a millage (with the approval of a majority of the registered electors) to fund services. The plan sets out a conceptual budget and financial plan to use as a foundation for the BCTA.

There are 56 vehicles, majority small to medium buses, available for countywide services if the overall fleet of the existing services were consolidated under the BCTA. One to two transit facilities would be sufficient for operating services in a jurisdiction the size of Berrien County. The Niles Dial-A-Ride and TCATA facilities were paid for with transit grant funds, and are located at opposite ends of the County, so it seems logical that they would serve as facilities for a countywide system. The facilities arrangement is complicated by the planned phasing of countywide services, and therefore will be addressed as any future consolidation efforts occur.

There are currently no staff at any of the existing transit services whose focus is primarily service planning. This, in combination with the distribution of transit service over four providers, means that examinations of the transit needs of the county as a whole are rarely, if ever, carried out. The plan identifies components to be investigated through a countywide effort:

- *Consideration of expanded service in the St. Joseph/Benton Harbor urbanized area outside of the Cities of Benton Harbor, Benton Township, and Royalton.*
- *Detailed evaluation of current Dial-A-Ride services to determine increased use of more efficient fixed route or scheduled services, especially in the Benton Harbor area.*

- *Assessment of current fixed route services to ensure that routes are serving both origins and destinations, therefore encouraging customers to use these routes as opposed to Dial-A-Ride services.*
- *Consideration of changes to current TCATA services so as not to allow customers to choose between Dial-A-Ride services and fixed route services, resulting in the two services acting in direct competition with one another.*
- *Evaluation of a dispatching system for the TCATA system whereby additional information (i.e. names and phone numbers) is obtained for Dial-A-Ride trips. This process can help institute a meaningful no-show policy where steps or fees are assessed. The no-shows should also be defined to allow customers to abandon their ride if it is very late. The best way to deal with this is to restructure routes and eliminate most Dial-A-Ride.*
- *Assessment of the Berrien Bus services in and out of the TCATA's service area that is currently complicated for customers. Customers who live in the southern portion of the Benton Harbor/ St. Joseph urbanized area are not served by Berrien Bus due to "turf" issues and the fact that most Berrien Bus operating funds come from the FTA Section 5311 grant program for rural transit service.*
- *Evaluation of improved coordination between providers or improved service planning to provide inter-jurisdictional travel with fewer transfers.*
- *Looking more long-term, the County can undertake a Transit Development Plan (TDP) process through a countywide perspective. The last time a countywide plan in regard to transit services was undertaken was by SWMPC in 2009. The recent City of Niles TDP only addressed the Niles Dial-A-Ride system.*

All four existing transit systems market their services primarily through informational brochures. A countywide transit system would provide the opportunity to increase information access through a dedicated website that incorporated information for services available countywide.

The plan outlines a projected timeline through which each of the four existing transit services are transitioned from independent systems to pieces of the consolidated countywide system.

Stakeholder concerns included the need to connect transit service to other modes of transportation (e.g. bike facilities, parking facilities), to improve accessibility at and to bus stops especially for seniors, and to reduce the local stigma associated with riding public transportation through marketing.

NILES DIAL-A-RIDE TRANSPORTATION DEVELOPMENT PLAN (2013)

In 2013, the Niles Dial-a-Ride Transportation Development Plan was prepared for the City of Niles to understand how to plan for the future of the service with the changing needs of the area. The plan outlines the current operation of Niles Dial-a-Ride (DART) and examines the ways in which local stakeholders could be better served through service and operational changes.

Niles DART operates demand response service on weekdays from 7am to 5pm and Saturdays from 10am to 3pm. It also operates the DART deviated fixed route from 10am to 5pm which travels to South Bend, IN, near the border of Indiana and Michigan. Both the demand response and fixed route services are open to the public but the minimal hours make it difficult to use the service for regular commuting. Two service hour reductions in 2008 and 2009 and a fare increase dropped annual ridership by 50% on the demand response service. Transit-dependent populations, found throughout the Niles service area especially in the city of Niles, were hit the hardest by these cuts.

The plan highlights stakeholder feedback gathered from surveys and public meetings regarding existing patterns of use and desired improvements:

- Most common reasons cited by riders who do not have a personal automobile for not using public transportation are ‘public transit taking too much time’ and ‘transit not going where they need to go’
- South Bend was the most common destination for all residents and Buchanan ranked second
- The most popular destinations among survey respondents were Walmart and Martin’s (grocery store)
- About 42 percent of surveyed transit riders stated that they ride public transportation to save money
- Niles DART received lower ratings for “time the service ends in the evening” and “response time of vehicles to your call for pick-up”
- The policy for driver assistance should be defined
- Passengers do not know when the vehicle has arrived at their house
- Longer service hours were requested to accommodate employment opportunities
- Transportation is needed to medical, dental, and eye care facilities
- Transportation service should be available to special events like city council meetings

The plan outlines a multi-year plan through which Niles can begin to optimize its services for people in the region. Recommendations include:

Year One:

- Revise the bus stop schedule for route 2
- Implement a route deviation policy
- Implement a connector service with TRANSPO (South Bend)

Year Two:

- Expand hours of operation for demand response service
- Expand the demand response service area into portions of Cass County

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- Implement shuttles to Cassopolis and Southwestern Michigan College, and connections with Berrien Bus

Year Three:

- Implement a regional transit pass
- Add a vehicle to route 2
- Install bus stop signs and benches or shelters

Year Four or Five:

- Expand hours of operation to 7pm on weekdays
- Service consolidation with other Southwest Michigan transportation providers

WHAT MOVES YOU, TWINCATS? 2013-2040 LONG RANGE TRANSPORTATION PLAN FOR THE TWIN CITIES AREA TRANSPORTATION STUDY (2013)

What Moves You, TwinCATS? is the 2013 update to the Twin Cities Area Transportation Study (TwinCATS) Long Range Transportation Plan for the TwinCATS study area, composed primarily of the urbanized area surrounding St. Joseph and Benton Harbor in Berrien County. The plan reviews various types of transportation infrastructure affecting the study area including highways, freight, commuter trains, transit, and roadways. Existing and future needs, funding projections, and recommendations are all included for each mode to better understand their individual effect on Berrien County residents.

The primary transit agency in the TwinCATS area is the Twin Cities Area Transit Authority (TCATA) which primarily serves the urbanized areas surrounding St. Joseph and Benton Harbor. Berrien Bus also serves the TwinCATS study area and the surrounding rural area of the county. The plan lists various upcoming projects due to receive funding in the coming years (2014 – 2017) including five projects to support Berrien Bus operations and capital expenses (replacement buses) and six projects to support TCATA including expanding hours, hiring a Mobility Manager, and replacing buses.

The goals guiding TwinCATS long-range planning:

1. *Enhance economic vitality of southwest Michigan*
2. *Produce a regional transportation system that connects people safely with their destinations*
3. *Provide an environment that promotes livable community and environmental responsibility*
4. *Maintain existing transportation assets*
5. *Produce a safe transportation system*
6. *Ensure the equitability and accessibility of the system*

The plan examines TCATA as the main public transit provider to people within the TwinCATS study area. TCATA serves about 52% of the St. Joseph-Benton Harbor urbanized area. The remaining 48% of the St. Joseph-Benton Harbor urbanized area receives no service from TCATA. Operating costs for TCATA are covered by a combination of federal, state, and local funding as well as passenger fares. A large percentage of the population within the TCATA service area can be considered transit dependent, particularly in the city of Benton Harbor and Benton Charter Township.

The plan recommends multimodal improvements to connect current TCATA routes to other shared use paths and improve the efficiency of the fixed routes. In addition, many bus stops along TCATA fixed routes are not located adjacent to the corridor, but rather require the transit vehicle to pull off the route onto private property to pick up passengers, slowing down service.

The plan outlines strategies to prioritize service improvements in the near term:

- Use current demand-response services more efficiently to expand capacity of current services offered to individuals who need human service and specialized transportation by integrating countywide rural service, small urban dial-a-ride services, and fixed route services.

- The plan states that existing demand is not being met because of capacity constraints and that such demand is only anticipated to grow “tremendously” over time.
- Make fixed routes more accessible, thereby decreasing rider dependence on demand-response service, by creating a pedestrian- and bicycle-friendly infrastructure that will encourage people to walk and bicycle to transit stops.
- Implement “complete streets” policies to provide for the safe and convenient travel of all users of the roadway, including pedestrians, bicyclists, public transit users, motorists, children, seniors, and people with disabilities.

The study concludes that many of the life-sustaining needs of elderly, disabled, and low-income residents in Berrien County are being met, but there are large gaps in services that need to be addressed in the future. In addition, demand is only projected to grow as the proportion of elderly residents increases, making transit a more important mode of transportation. The following maps show current demand for dial-a-ride service in the St. Joseph-Benton Harbor area and the existing/proposed routes overall.

Figure 6 Top pick up locations for Dial-a-Ride service

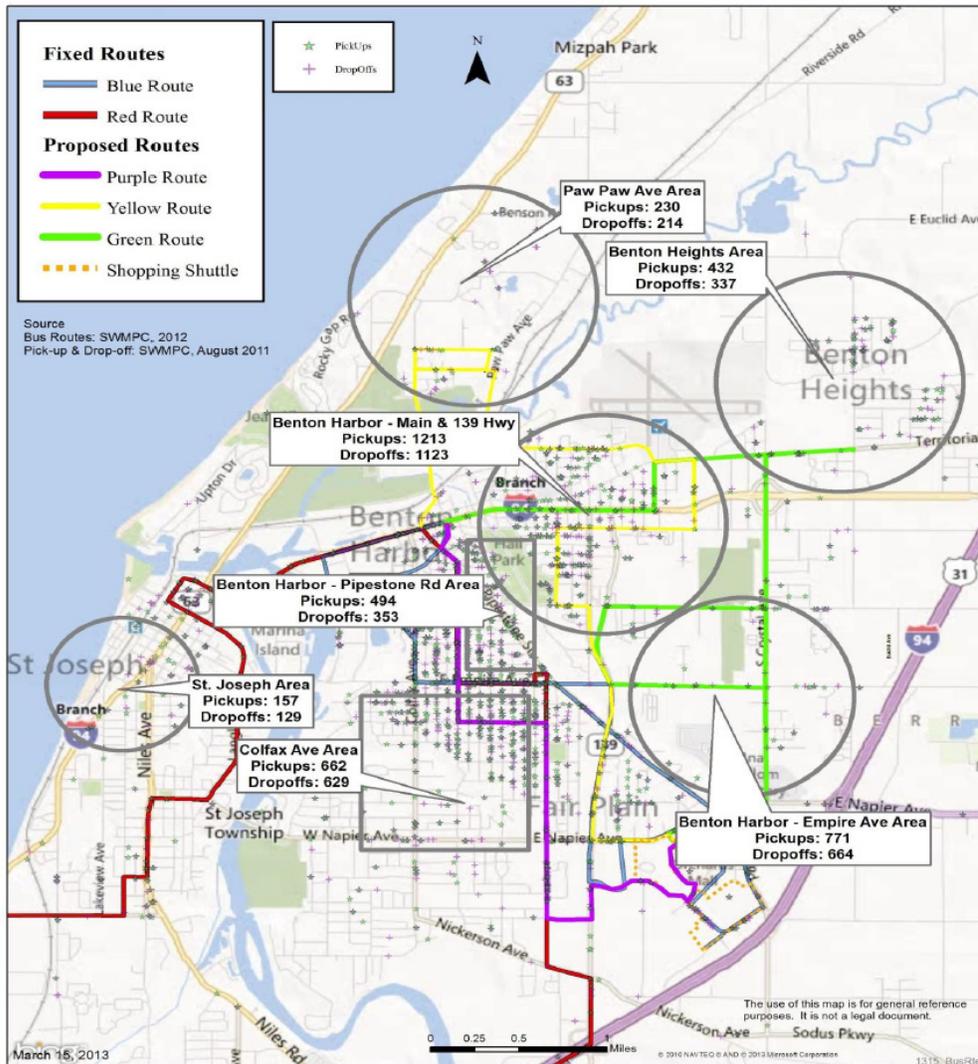


Figure 7 Existing and proposed TCATA routes in Berrien County



POKAGON BAND OF POTAWATOMI INDIANS TRANSIT FEASIBILITY STUDY – IMPROVING MOBILITY FOR TRIBAL CITIZENS (2012)

The approximately 4,400 Indians of the Pokagon Band of the Potawatomi Tribe live across southwestern Michigan and northern Indiana. The Transit Feasibility Study is an effort to understand how transit is and is not serving this population and what can be done to address tribe-specific needs in the area. The majority of tribal services are located around Dowagiac, MI, located outside but just east of Berrien County in Cass County, MI. In Berrien County, the communities of Watervliet, Coloma, Benton Harbor, and Niles have the highest concentrations of Tribal citizens.

The Study examines the transit systems available to the Pokagon Band across the study area including counties in Michigan and Indiana. For Berrien, the Study concludes that the existing disconnection between county transit service providers obviously does little to improve access for inter-county trips that would be relevant for Berrien County Pokagon to reach services in, for example, Cass County. The recent Niles Dial-A-Ride plan showed a strong preference for further coordination with South Bend and Cass County, however, which could benefit the travel needs of the Pokagon.

Existing Amtrak Wolverine and Blue Water Routes have stops in Niles and Dowagiac (among others) which could facilitate travel between counties, however schedule times of Amtrak trains and local Cass and Berrien county transit service means that a successful cross-county trip relying on this coordination would be very unlikely.

The Study also examines available service through senior service agencies and concludes that Berrien County senior agencies have varying levels of service, hours, and little to no coordination making the existing collection of senior service agencies an unreliable option for many residents, Pokagon Tribe members included.

A 2011 survey of canceled appointments showed three primary transportation challenges:

- Owning a vehicle but not being able to afford the gas to make the trip
- Not being able to depend on friends and family to provide a trip
- Facing excessive distance in reaching tribal services

The Study identified several unmet transportation need/ issues relevant to Berrien County:

- Limited accessible transportation services on Saturday, Sundays and evenings especially to serve work-related trips.
- Appropriate travel training in the use of public transit
- Transportation services that allow trip-chaining
- Lack of countywide coordination is a primary barrier
- Lack of transportation to senior services
- Transportation services that cross county and state lines
- Postponing participation in services because they cannot afford cost of transportation
- Friends/family are not a dependable transportation resource for elders, youth, or disabled

- Destinations that require crossing county or state boundaries are logistically hard to navigate and expensive
- Citizens who do own vehicles cannot afford fuel and maintenance for their vehicle.
- Lack of information about transportation options within the Tribe's ten county service area
- Transportation options are very limited on weekends to access tribal events
- Need for trips between the following locations.
 - City of Dowagiac to Tribal Services in Dowagiac Township
 - Hartford to Dowagiac Township
 - Benton Harbor to Dowagiac Township
 - Niles to Dowagiac Township
- There is an issue with grouping transportation trips because of lack of coordinated scheduling
- Because of distance, accessing tribal health care services takes greater time and effort to access compared to non-tribal facilities, both for regular appointments, and for last minute off-hour care.
- Fare structure is based on location of the transit facility not on cost factors. For example, it is a \$4 fare for a four-mile round trip within the city limits of Dowagiac while it is \$11 for a four-mile round trip within Dowagiac Township.

The Study examined three strategies to improve transportation outcomes for Pokagon Tribe members,

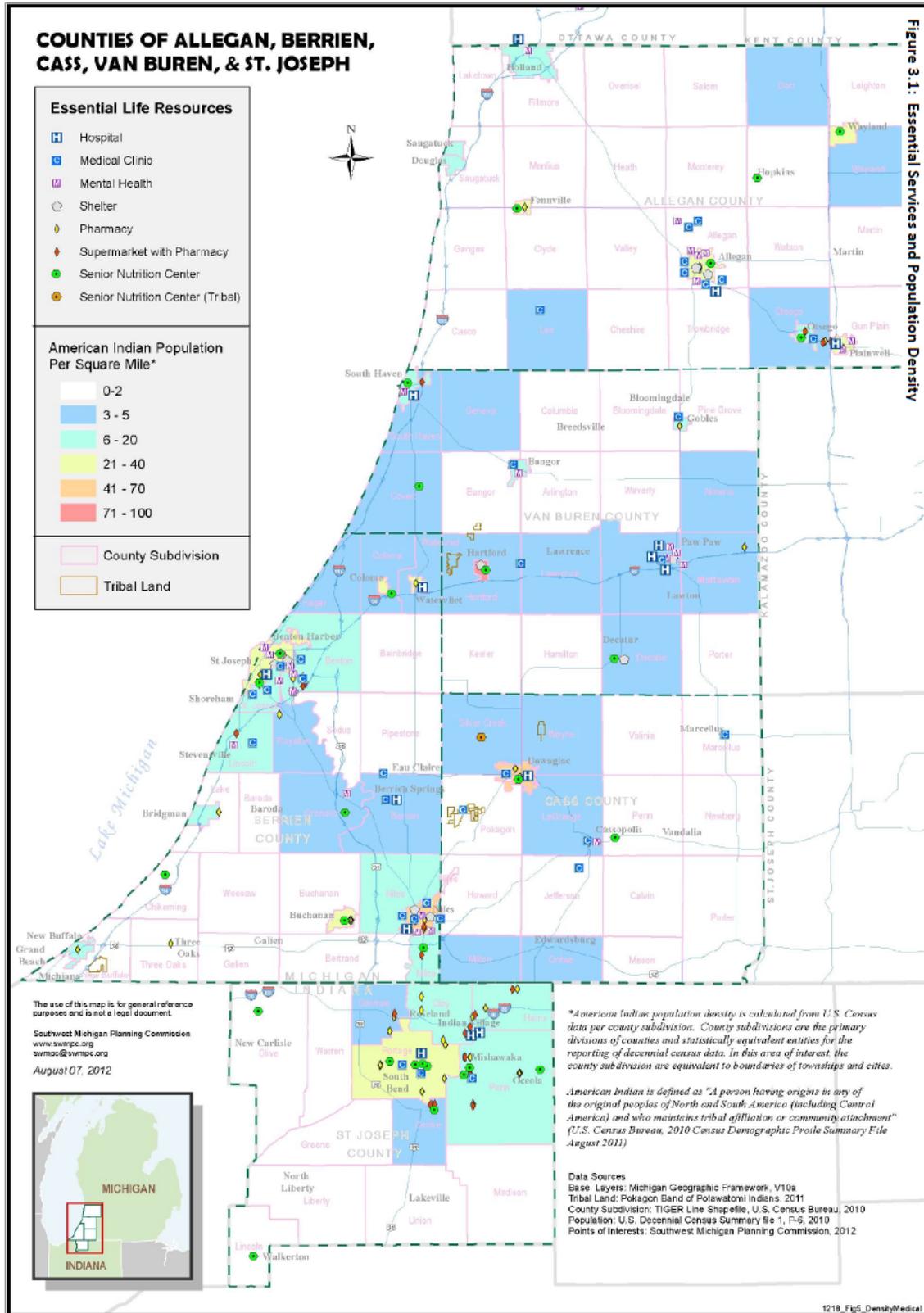
- 1) **Improve coordination** – Coordinate and integrate transportation services with existing Tribal, public, private and human service transportation providers through a newly formed Council on mobility and through the establishment of Purchase of Service agreements with Cass County Public Transit and other local transit providers.
- 2) **Develop tribal transit services** – Expand tribal citizen's access to destinations that require crossing county or state borders through the establishment of four Inter-County Deviated Routes:
 - a. Niles/Dowagiac – serving City of Niles, Niles Township, Dowagiac Township
 - b. Dowagiac/Benton Harbor/ St. Joseph – serving Benton Harbor, Benton Township, City of St. Joseph, St. Joseph Township, Eau Claire, Sodus Township, Dowagiac
 - c. Hartford/Coloma/Watervliet – serving Dowagiac, Hartford, Coloma, Watervliet, Keeler Township, Watervliet Township, Coloma Township
 - d. Dowagiac/South Bend – serving Dowagiac, Niles, Niles Township to South Bend, IN
- 3) **Mobility Management** – Ensure Tribal citizens are aware of and understand how to utilize the available mobility options within the ten-county service area by:
 - a. hiring a tribal mobility manager

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- b. implementing a “one stop” website to inform citizens of their transportation options
- c. establishing a call center to help callers navigate the local transportation options
- d. establishing a travel training program to educate citizens on how to use available transportation options

The map on the following page shows the density of Pokagon populations in and around Berrien County and highlights important destinations relevant to Tribal citizens.

Figure 8 Density of Pokagon Band Indians in and around Berrien County



BERRIEN COUNTY TRANSIT STUDY (2009)

The Southwest Michigan Planning Commission put together the Berrien County Transit Study in 2009 to understand the impacts of public transit on the lives of those living and working in Berrien County. Written before the decision to consolidate transit service, the Study identifies many of the same fragmentation issues that the Moving Forward plan examines for Berrien County transit including the fact that a customer looking to make an inter-system trip across the county is left to her own devices in terms of trip planning and connection.

The study identifies a few key issues related to transit service and Berrien County's specific demographics:

- Transit service hours of operation (largely Mon – Fri, ending at 5pm) means that relying on transit for regular work commuting is difficult, much less second or third shift work.
- Information regarding available service and connections between the systems is sparse. A project website detailing available options was developed to speak to this need at <http://www.mywaythere.org/>
- Berrien County has a higher percentage of elderly, disabled, and people below the poverty line than the state overall, increasing the need for human services-related transit service. The county has several pockets where individuals over 65 years old represent 20-50% of the population. The Benton Harbor St. Joseph Urbanized Area has the highest percentage of people with disabilities in the county. Berrien County has the highest child poverty rate in Michigan and is ranked third in overall poverty rate within the state of Michigan.
- Twenty-eight of Berrien County's thirty municipalities receive some level of public transit service.

The Study outlines various issues with existing transit service from user and human service agency perspectives:

- *Lack of fixed routes in areas with higher population densities*
- *Mismatch of available transit services to employment-related needs including hours, service area*
- *Coordination of services between public transit agencies, human service providers, and private providers of transportation*
- *More efficient means of connecting users with medical services*
- *Job opportunities for transit-dependent population are often available in areas of the county not currently served by a public transit agency. There are 31.5 square miles in the county not currently served by transit.*
- *Need for different types of vehicles to serve users with varying degrees of mobility*
- *Funding and availability for out-of-county travel is confined to Medicaid-eligible clients and for long-distance medical trips*
- *Coordination between public transit systems is minimal*
- *Sufficient marketing is needed to ensure that information is available to users on transportation options*
- *The need for a simplified point of access to “obtain transportation services regardless of the funding agency, transportation provider or type of service.”*

The study provides a review of all of the individual transit services available in the county including Berrien Bus, Buchanan Dial-a-Ride, Niles Dial-a-Ride, Twin Cities Area Transit Authority, Amtrak, and private transportation services (e.g. local cab companies).

Unmet transportation needs/ issues and the people they affect the most are identified in the table below:

Figure 9 Unmet Transportation Needs of Berrien County

Unmet Transportation Need/Issue	Elderly	Disabled	Low Income	County/Service Area Specific
Limited transit/transportation services on Saturday, Sundays and evenings especially to serve work related trips.	X	X	X	Countywide
Appropriate travel training in the use of public transit routes is needed, especially for older adults and people with disabilities unfamiliar with services or unsure in traveling without any knowledge of system.	X	X	X	Countywide
Transportation services that allow trip-chaining, mother needs to stop at a daycare before arriving for work location, or a senior needs to stop to have prescription filled after leaving doctor's office but before arriving home.	X	X	X	Countywide
Lack of countywide coordination is a primary barrier.	X	X	X	Countywide
Need door to door services to be available through public subsidized services.	X	X		Countywide
Transportation services that cross county and state lines are needed in the region to access destinations outside of Berrien County, including medical services in Kalamazoo, South Bend, Indiana and Battle Creek.	X	X	X	Regional
Need for safe transfer points for user groups who live outside of the fixed route service areas or other service provider areas.	X	X	X	Regional
There is no Sunday service from any public transit provider including senior center transportation.	X	X	X	Countywide
Fares are not consistent across the various public transit service providers and thereby are confusing.	X	X	X	Countywide
Job opportunities for transit dependent population is often available in areas of the county not currently served by a public transit agency.	X	X	X	St Joseph/ Benton Harbor UZA
Need for expanded transit service on Saturday, Sundays and evenings especially to serve work related trips.	X	X	X	Countywide
Limited transportation services to access dialysis facilities, current services are not designed to accommodate return trip after treatment.	X	X	X	Countywide
Sufficient marketing is needed to ensure information is available on transportation options.	X	X	X	Countywide
A simplified point of access is needed to obtain transportation services regardless of the funding agency, transportation provider or type of service.	X	X	X	Countywide

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Unmet Transportation Need/Issue	Elderly	Disabled	Low Income	County/Service Area Specific
Berrien County has over a 31.5 square mile area with a population of over 37,000 people that is not served by public transit.	X	X	X	St. Joseph/ Benton Harbor UZA
Lack of fixed routes in areas with higher population densities.	X	X	X	Benton Harbor, Niles, St. Joseph
Infrastructure improvements are needed in areas with high concentrations of no vehicle households to allow for non-motorized transportation (biking/walking)			X	Benton Harbor Niles
Limited options for unplanned transportation needs, especially for trips that require accessible vehicles.	X	X		Countywide

The study concluded with a set of strategies to improve transit within Berrien County moving forward:

1. Establish a structure to build and sustain coordination efforts
2. Raise the visibility and understanding of public transportation services in Berrien County, to support efforts to build both ridership and the local funding base for public transit services.
3. Increase efficiency and accessibility with rural flex-route service
4. Use current demand-response services more efficiently to expand capacity of current services offered to individuals who need human service and specialized transportation by integrating countywide rural service, small urban dial-a-ride services and fixed route services
5. Make fixed routes more accessible, thereby decreasing rider dependence on demand-response service, by creating a pedestrian- and bicycle-friendly infrastructure that will encourage people to walk and bicycle to transit stops.

BERRIEN COUNTY COORDINATED TRANSIT-HUMAN SERVICES TRANSPORTATION PLAN (2009)

Berrien County put together the Coordinated Transit-Human Services Transportation Plan in 2009 to comply with federal regulations related to receiving funding for the Elderly Individual and Individuals with Disabilities, Job Access and Reverse Commute, and New Freedom programs. The plan details the distribution of elderly, low-income, and disabled residents in Berrien County and the existing transit services that serve them. It highlights that the needs of transit-dependent population in Berrien County will only increase in the future, noting that by 2020, adults aged 65 or older are projected to make up 33% of Berrien County's population.

The plan identifies various issues and constraints related to transportation for these transit-dependent populations:

- *There is no public transit service on Sunday*
- *Public transit service hours are not aligned with businesses that have entry level employment opportunities (retail, food, lodging, factory, medical)*
- *Demand response service is at capacity in densely populated areas*
- *There are no eligibility requirements to use demand response service where fixed routes are present*
- *Lack of ridership data from local agencies*
- *Job opportunities for transit dependent population is often available in areas of the county not currently served by a public transit agency*
- *Trip chaining using public transportation is very difficult for families in transporting children to and from childcare before and after work which impacts job readiness*
- *High cost specialized transportation has to be used to access employment because of public transit service area boundaries and the long commute associated with them*

The plan then reviews existing human services transportation providers in the county, shown in the following table:

Figure 10 Existing Berrien County Human Services agencies

Berrien County Human Service Agencies						
Agency	Agency Type	Geographic Area	People Served	Number of People Served Annually	Operate or Purchase Transportation	Hour of Operation
Homebased Non-nursing Care	Private	Berrien, Cass and Van Buren	55 and older		Purchase	24/7
Benton Harbor/Benton Township Senior Services, Inc	Private	Benton Harbor and Benton Township	Residents Ages 60-64		Operate	M-F 8am-4:30pm
Berrien County Veteran's Services	Public	Berrien County	Military-Veterans		Operate	M-F 8:30am-5:00pm
North Berrien Senior Center	Private	Bainbridge, Coloma, Hagar, Watervliet Twp, City of Coloma and Watervliet	60+ years		Operate	M-F 8am-4:30 pm
Emergency Men's Shelter	Private	Southwestern Michigan	18 or older		Unknown	7 days 6pm-8am
Developmental Disabilities, Riverwood Center	Public	Berrien County	Disabled-Mentally ill		Purchase	M-F 8:30am-5:00pm
Gateway Services, Niles	Public	Berrien County	Adults and Adolescents		Purchase	M-F 8am-5pm
Gateway Services, Benton Harbor	Public	Berrien County	Adults and Adolescents		Purchase	M-F 8am-5pm
Catholic Community Center	Private	Berrien County	Low Income-All ages		Purchase	M-R 9am-Noon
Buchanan Senior Services	Private	Bertrand, Buchanan, Howard,	Senior Citizens		Provide Transportation	M-F 8am-4pm
CARES	Private	Berrien County	Illness-AIDS/HIV		Purchase	M-F 8am-5pm
Michigan Rehabilitation Services	Public	Berrien, Cass and Van Buren	SSI recipients-18-64		Purchase	
Department of Human Services	Public	Berrien County	All ages		Purchase	
United Way of Southwest Michigan	Private	Berrien, Cass and Van Buren	All people of all ages	10,000		24/7
Tri County Headstart	Private	Berrien, Cass and Van Buren	Ages 5 + above federal poverty line		Operate	M-R 9am-3pm Sept-May
Michigan Works	Public	Berrien, Cass and Van Buren	ages 16-65, disabled and income apply	3,500		M-F 8am-5pm
Area agency on Aging	Public	Berrien, Cass and Van Buren	Ages 60 and above, disabled and income apply	12,000	Purchase	M-F 8am-5pm

The plan lists various strategies and potential projects to improve transportation for transit-dependent populations in the future:

- Establish structure to build and sustain coordination efforts
- Expand outreach to customers, human service agency staff, employers and others, and provide simplified access to information regarding existing transportation options
- Expand fixed route public transportation services
- Use current demand-responsive services more efficiently to expand capacity of current services offered to individuals who need human service and specialized transportation
- Improve integration between countywide rural service and small urban dial-a-ride services

The plan ends by discussing the potential benefits of a formalized Berrien County Coordinated Transportation Coalition to improve the coordination, efficiency, quality, awareness, and capacity of the existing services aimed at older adults, people with disabilities, and people with lower incomes.

WALK & ROLL TWINCATS – OFFICIAL TWINCATS NON-MOTORIZED PLAN

The Non-Motorized plan for the Twin Cities Area Transportation Study (TwinCATS) seeks to identify areas of improvement and need related to pedestrian and bicycle facilities in the TwinCATS area (primarily the urbanized area surrounding St. Joseph and Benton Harbor). Future improvements to the area should look to the Plan as a guide for how to address pedestrian and bicycling needs as part of new road construction or ongoing maintenance. Pedestrian and bicycling infrastructure represent important connections between the County's transit service providers and play an important role in residents' access to transit stops and destinations.

The Plan primarily identifies 75 road segments for which pedestrian and bicycling improvements should be prioritized and includes survey respondent feedback as to other locations that should be prioritized. Survey respondents identified seven roads as the most relevant specific locations for non-motorized improvements: Red Arrow Highway, Hilltop Road, Cleveland Avenue, Niles Avenue, Glenlord Road, Washington Avenue, and Marquette Woods Road.

The Plan identifies "Barriers to Bus Access" as one of its six local design obstacles to effective transportation via walking and biking. As evidence of the need for intervention, the Plan notes:

- Observed absence of sidewalks, street crossings, shoulders, and other walking and biking facilities connecting to bus stops
- Bus records of heavy reliance on demand response bus service near fixed route stops (resulting in great inefficiencies in transit provision)
- Presence of many potential destinations for and sources of bus riders in a neighborhood without connection to sidewalks or other non-motorized facilities
- Frequent observation of people walking and using wheelchairs within the roadway and on grassy adjacent strips

Specific examples:

- Mall Drive between Harbor Pointe Apartments and retail complexes in Benton Township
- Connections to the InterCare bus stop on M-139 and Empire Ave in Benton Township, the Briarwood Apartments bus stop on Union Ave in Benton Township
- The park and ride lot and Meijer bus stops in Lincoln Township
- The Walgreens/Save-a-Lot/Big Lots stops near the corner of M-139 and Napier Ave. in Benton Township

The Plan then outlines various statistics about walking and biking in general including how many and where crashes have taken place and the distribution of youth, elderly, and those without access to a private vehicle. Lastly, the Plan outlines the existing policy and plan environment related to pedestrian and bicycling infrastructure/planning at the state and local level.

3 EXISTING TRANSIT SERVICES

Berrien County lies on the shores of Lake Michigan in the very southwestern corner of Michigan, and shares its southern border with Indiana, lying just across the lake from Chicago, and just north of South Bend, Indiana. The county has a population of approximately 155,000 spread over 8 cities, 9 villages, and 22 townships. Despite having a modest population, Berrien County is served by four independent transit providers: Berrien Bus, Twin Cities Area Transit Authority (TCATA), Buchanan Dial-A-Ride, and Niles Dial-A-Ride. Among these four providers, Berrien Bus serves the entire rural area of the county, while the other three systems have more limited service areas.

This analysis examines what areas are currently served by each agency, the performance levels of each agency, and where service gaps and opportunities exist. In an effort to show the availability and performance of the various transportation providers in Berrien County, this report will summarize available service in the area, and compare the performance of each agency to one another.

The service summary listed below will discuss a variety of services. The following terms have been provided in order to provide a guide to what these services are:

- **Fixed Route:** Transit services that operate along a prescribed route according to a fixed schedule
- **Flex Route:** A hybrid of conventional fixed-route and demand responsive service. It assimilates fixed route services with fixed stops and schedules but is allowed to provide door to door service to users who either have trip ends located out of service coverage area or require accessible services such as paratransit.
- **Demand Response:** Scheduled transit services, usually by a small bus, that picks up and drop off riders at their origins and destinations. Demand response service may include:
 - **ADA Paratransit:** Transportation services for people with disabilities who are not able to use fixed route services.
 - **Dial a Ride:** Typically same day scheduled door to door pick up and drop off service
 - **Specialized Service:** Transit services that service certain need groups. These services are customarily the result of a partnership between transit agencies and human service organizations.

The service operated by each of these providers are described in more detail in the following sections.

SERVICE CHARACTERISTICS

Service Characteristics

Figure 12 summarizes the characteristics of the transportation services offered by each of the four providers. Similarities and differences are highlighted below.

Service Area

Each of the four transit systems provide demand response services within Berrien County. The entirety of the non-urbanized areas of the county are served by Berrien Bus, while the cities and townships of Buchanan and Niles are served by their respective Dial-A-Rides. Twin Cities Area Transportation Authority (TCATA) provides demand response service in the cities of Benton Harbor, and St. Joseph, as well as Benton, St. Joseph, and Royalton townships. These service areas can be seen in Figure 11 Berrien County Transit Services.

Service Type

All four area providers operate a dial-a-ride service within the entirety of their service areas, which range in size from 33 square miles to over 400 square miles. In addition to the dial-a-ride services, TCATA and Niles also provide fixed and/or flex route service in their respective communities.

Eligibility

Each of the four providers provides rides to the general public, with only TCATA's demand response service having a more narrow focus on people with disabilities, though the service is not limited to these individuals. TCATA also aims to provide dial a ride services to those individuals that live beyond the fixed route service area.

Hours of Operation

Nearly all services and service types run Monday to Friday from 7 a.m. to 5 p.m. with some services beginning before or ending after that window. The exception is the Niles fixed service which only runs from 10 a.m. to 5 p.m. More limited Saturday service is provided by all carriers, except Berrien Bus and Niles fixed route service. There is no Sunday service anywhere in the county.

Fares

Fares among the providers vary considerably by provider and service type. The cheapest service is TCATA's fixed route bus, which has a \$1 fare. The most expensive service is Berrien Bus, which charges \$5 for trips that start or finish five miles outside of Berrien Springs. All of the providers offer 50% discounts for older adults and people with disabilities, as mandated by the Federal Transit Administration which provides funding to each provider.

Reservations

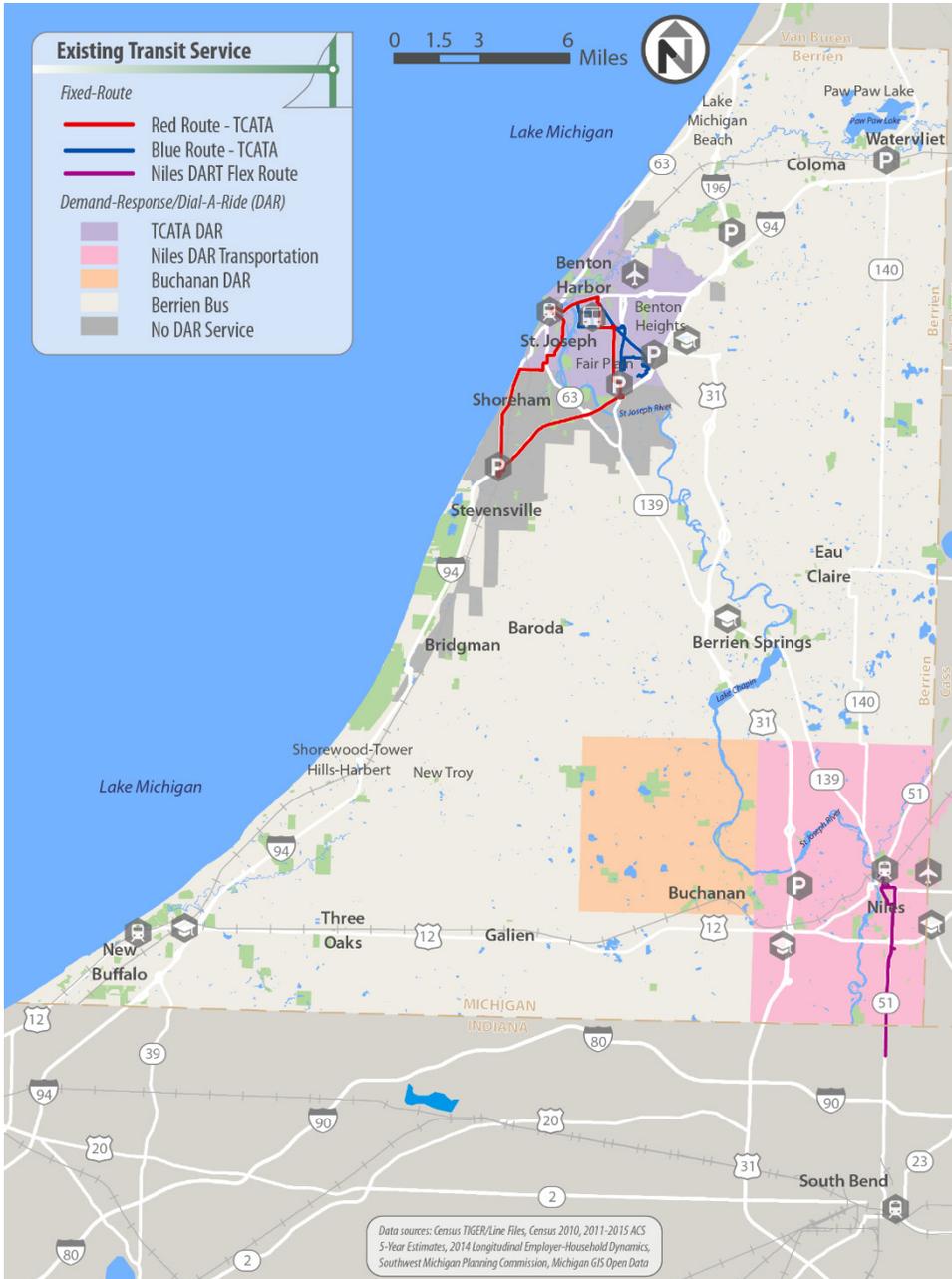
All four dial-a-ride services allow for reservations from 24 hours to 7 days in advance. Though none of the services guarantees same day reservations, each of the dial-a-ride providers accepts

same day trip requests. Flex route pickup requests may be made the day of, but are not guaranteed.

Pick Up Window

Each provider has a 20 minute pick up window with 2-3 minute waiting period. The exception to this is Niles which has a 30 minute pick up window for both its dial-a-ride and flex route service.

Figure 11 Berrien County Transit Services



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Figure 12 Berrien County Transit Services Summary

Agency	Berrien Bus	Buchanan Dial-A-Ride	Niles Dial-A-Ride		Twin Cities Area Transportation Authority	
Type of Service	Demand Response	Demand Response	Demand Response	Fixed Route	Demand Response	Fixed Route
Service Area	Berrien County	City of Buchanan and Buchanan Township	City of Niles and Niles Township	City of Niles with connections to South Bend, IN	Benton Harbor, St. Joseph, Benton Township, and portions of St. Joseph Township and Royalton Township	Benton Harbor, City of St Joseph, Shoreham
Hours of Operation	M-F 5:00 a.m. to 5:00 p.m.	M-F 7:00 a.m. – 5:00 p.m. Saturday 9:00 a.m.-3:00 p.m.	M-F 7:00 a.m. - 5:00 p.m.; Saturday 10:00 a.m. - 3:00 p.m.	M-F 10:00 a.m. - 5:00 p.m.	M-F 6:00 a.m. - 6:00 p.m. Saturday 8:00 a.m. - 4:00 p.m.	M-F 6:00 a.m. - 10:00 p.m. Saturday 8:00 a.m. - 10:00 p.m.
Eligibility	All Berrien residents	City of Buchanan and Buchanan Township residents	General Public	General Public	Riders with disabilities and people who do not have access to fixed route services within the City of Benton Harbor, City of St Joseph, Benton Township, St. Joseph Township 49022 addresses only and Royalton Township.	General Public
Adult Fares	Within a five mile radius of Berrien Springs: \$2.50 To, from, or beyond a 5 miles radius of Berrien Springs: \$5.00 Older Adults / PWDs / Medicare Card holders eligible for 50% discount	Within 1 mile of the City limits: \$1.50 To, from, or beyond one mile the City limits of Buchanan : \$4.00 Older Adults / PWDs / Children under 12 eligible for 50% discount Students eligible for \$1.00 fare	Within City of Niles: \$3.00 Outside of City of Niles: \$4.00 Older Adults / PWDs / Medicare Card holders eligible for 50% discount	\$2:00 \$0.50 for a flex service pick up or drop off Older Adults / PWDs eligible for 50% discount	\$2:00 Older Adults / PWDs eligible for 50% discount	\$1:00 Older Adults / PWDs eligible for 50% discount
Reservation Policy	24 hours to 7 days in advance is requested; same day requests are	24 hours to 7 days in advance is requested; same day requests up	24 hours to 7 days in advance is requested; same	At least one hour in advance for	24 hours to 7 days in advance is requested; same	Not specified for flex service. The flex stop service is only

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Agency	Berrien Bus	Buchanan Dial-A-Ride	Niles Dial-A-Ride		Twin Cities Area Transportation Authority	
	allowed but not guaranteed	to an hour beforehand are allowed but not guaranteed	day requests up to an hour beforehand are allowed but not guaranteed	route deviations	day requests are allowed but not guaranteed	available, time permitting and may not be available during peak service times of the day
Reservation Times	M-F 5:00 a.m. to 5:00 p.m.	M-F 7:00 a.m. – 5:30 p.m. Saturday 9:00 a.m.- 3:00 p.m.	M-F 7:00 a.m. - 5:00 p.m. SAT 10:00 a.m. - 3:00 p.m.	M-F 10:00 a.m. - 5:00 p.m.	M-F 6:00 a.m. - 6:00 p.m. Saturday 8:00 a.m. - 4:00 p.m.	M-F 6:00 a.m. - 10:00 p.m. Saturday 8:00 a.m. - 10:00 p.m.
Pick Up Window	20 minutes with a 2 minute waiting period	20 minutes with a 2 minute waiting period	30 minutes with a 3 minute waiting period	30 minutes with a 3 minute waiting period	20 minutes with a 3 minute waiting period	N/A
Cancellation/No Show Policy	Advanced cancellation 90 minutes early; Late cancellation between 50 and 90 minutes before reservation; No-show if cancelled within 50 minutes of a trip	Advanced cancellation 90 minutes early; Late cancellation between 50 and 90 minutes before reservation; No-show if cancelled within 50 minutes of a trip	Must be cancelled before the scheduled pick up window, or will otherwise be considered a no show		Advanced cancellation 90 minutes early; Late cancellation between 50 and 90 minutes before reservation; No-show if cancelled within 50 minutes of a trip	N/A

BERRIEN BUS

Overview

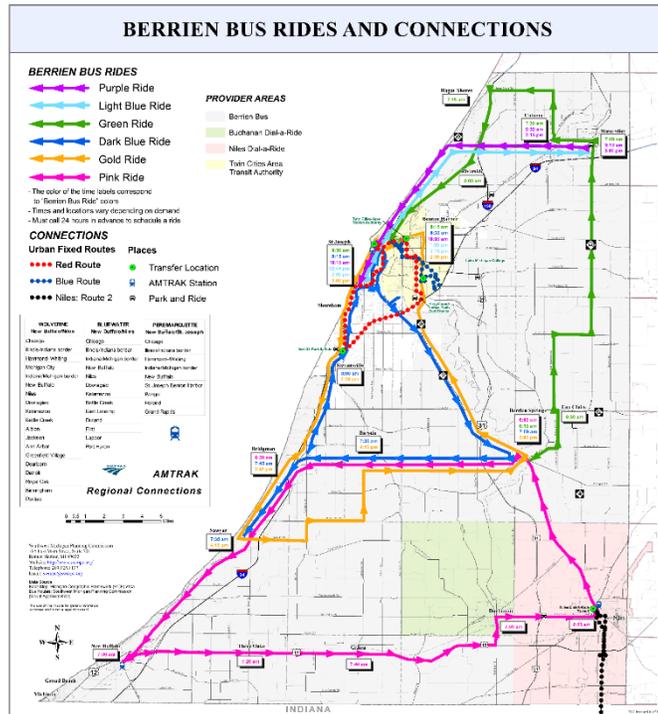
Berrien County Public Transportation, or Berrien Bus, is the second largest of the four public transit providers in Berrien County, offering an advanced shared ride reservation service across all Census-designated rural areas of Berrien County, as well as some of the urban areas along Lake Michigan not served by another agency. The service is available Monday through Friday from 5:00 a.m. to 5:00 p.m.

Berrien Bus operates as a demand response service; however, it also contracts out with several human services transportation agencies in the county to provide subscription trips. These regularly scheduled trips function as flex-service routes, wherein passengers that are not a client or member of the sponsoring agency may request to be picked up along the route. Subscription service examples from 2010 can be viewed in Fig. 12 with the various colored “Rides.”, although some of these have since been discontinued. These flex-routes are based out of Berrien Springs in the east of the county. Most passengers are repeat customers or subscription riders.

The service requires that reservations be made 24 hours in advance, and provides riders a twenty minute pick-up window. Reservations may be made from Monday to Friday between 5:00 a.m. and 5 p.m. Rides may be cancelled up to an hour in advance without incurring a no-show charge or penalty. Rides are not guaranteed and are provided on a first-come basis.

Fares on Berrien Bus are typically \$2.50 within a five-mile radius of Berrien Springs (where the service operates out of) and \$5.00 for rides to, from, or outside the five-mile radius of Berrien Springs. Reduced fares are available for older adults and persons with disabilities, while children under two-years ride for free.

Figure 13 Berrien Bus Service Area with Previous Bus Routes



routes shown in Figure 13 are only an example of how the service previously operated. Berrien Bus no longer uses all of these particular routes. However, Berrien Bus does provide and promote regular daily service to several areas of Berrien County, though not on a specified route. These services are as follows:

- **Between Berrien Springs and Benton Harbor or St Joseph**
 - Berrien Springs to Benton Harbor or St Joseph: five daily trips
 - St Joseph to Berrien Springs: four daily trips
 - Benton Harbor to Berrien Springs: four daily trips
- **Between Berrien Springs and Buchanan**
 - Berrien Springs to Buchanan: three daily trips
 - Buchanan to Berrien Springs: three daily trips
- **Between Buchanan and Benton Harbor/St Joseph**
 - Buchanan to Benton Harbor/St Joseph: two daily trips
 - Benton Harbor to Buchanan: four daily trips
- **Between Niles and Berrien Springs**
 - Berrien Springs to Niles: four daily trips
 - Niles to Berrien Springs: four daily trips
- **Between Niles and Benton Harbor/St Joseph**
 - Niles to Benton Harbor/St Joseph: two daily trips
 - Benton Harbor/St Joseph to Niles: four daily trips
- **Between Coloma/Watervliet and Benton Harbor/St Joseph**
 - From Coloma/Watervliet to Benton Harbor/St Joseph: four daily trips
 - From Benton Harbor/St Joseph to Coloma/Watervliet: three daily trips
- **Between New Buffalo and Berrien Springs**
 - Berrien Springs to New Buffalo: two daily trips
 - New Buffalo to Berrien Springs: two daily trips

As noted, the above routes do not follow a specified alignment between their terminals. Passengers may be picked up along the way, however a majority of riders are from the contracted subscription services.

Berrien Bus has no advertised relationship with any of the other transportation providers in the area, making it difficult for passengers to use the service to access all areas of the county.

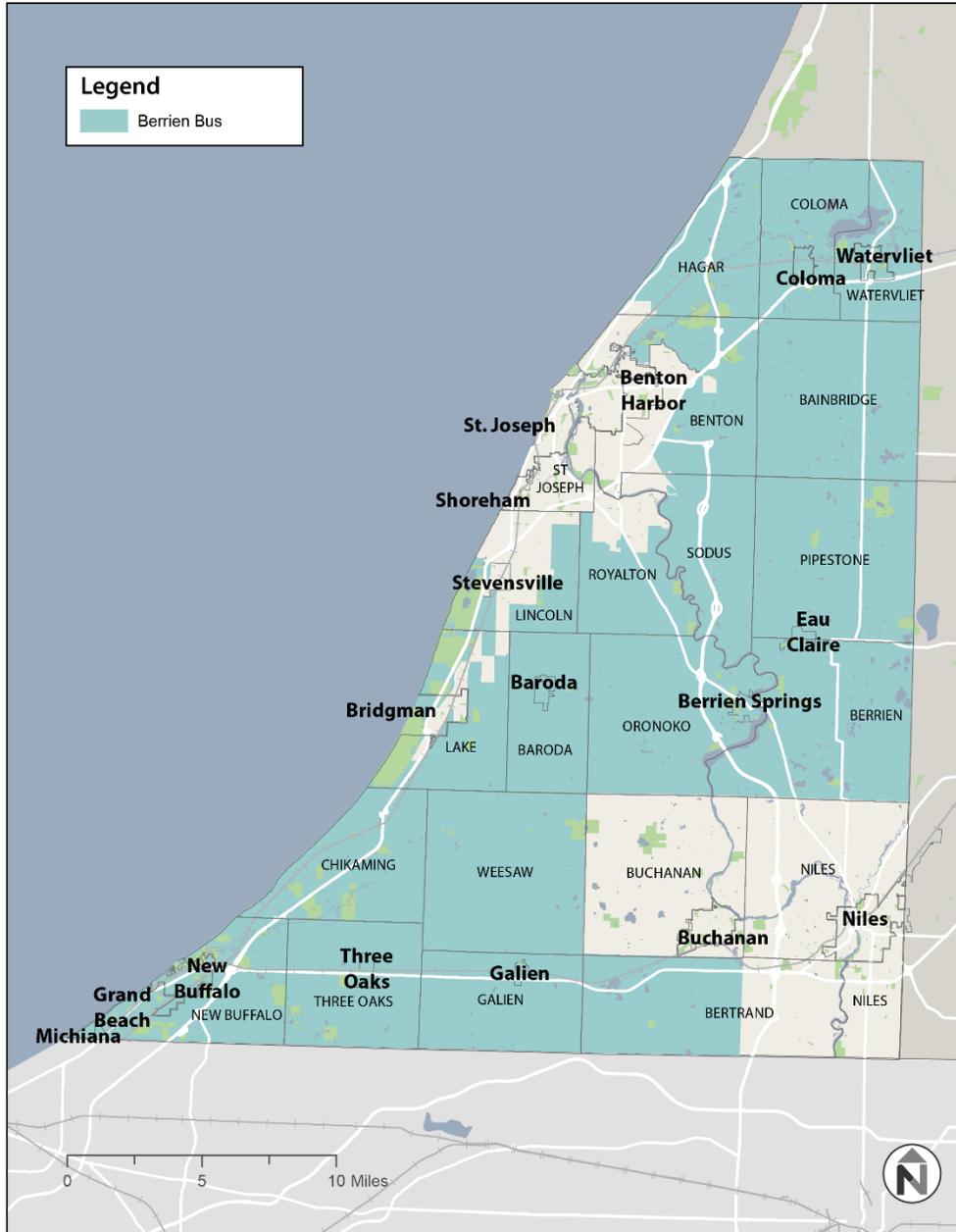
Drivers for Berrien Bus are not allowed to assist passengers to and from their door, or from a common area of a building or a shared living residence, and instead the service requires that another individual help riders that need assistance. Drivers are authorized to assist in the use of wheelchair lifts.

Service Area

As shown in Figure 14, Berrien Bus operates throughout all rural areas of Berrien County, and also provides some service in urban areas if their contracts require it, allowing Berrien Bus to operate in some of the same areas as Buchanan Dial-A-Ride, Niles Dial-A-Ride, and TCATA. With a service area of approximately 440 square miles, and a service population of 70,000, there are on

average 158 people per square mile across the Berrien Bus service area. Berrien Bus has the lowest density service area of any of the public transportation services in Berrien County. The service is supplemented by regularly scheduled subscription trips for human service agencies, and does not solely rely on demand response customers. This makes the service more productive in terms of revenue, in what could otherwise be a difficult to manage service design given the size and population density of the area.

Figure 14 Berrien Bus Service Area



Service Information

Berrien Bus has no website of its own, but does have an information page on the Berrien County website. Nearly all publicly available information for Berrien Bus is on the MyWayThere.org website. While much of the information available on the MyWayThere website is consistent, not all information is up to date, with some pages for Berrien Bus not having been updated since 2014. The website hosts a service map that shows out of date routes for the service. The information is additionally not organized intuitively, and the opening webpage for Berrien Bus links to a PDF brochure that appears to have not been updated in several years. The brochure and the website have conflicting or unclear information, particularly with regard to pick up points and procedures, service area, and normally scheduled routes. The service’s low profile with regard to online details, inconsistent information, and vague service area make it difficult for potential riders to learn about or use the service.

Ridership Characteristics

Ridership for Berrien Bus was reported for the period between October 1, 2015 and September 30, 2016. Over this period, Berrien Bus provided 46,870 one-way passenger trips, with 23,037 trips provided with a set destination. The top eight trip destinations are displayed below in Figure 15, which represent all destinations with more than 1,000 annual trips. Six of these eight destinations either are schools or provide instruction for people with disabilities.

Figure 15 Top Destinations by Berrien Bus

Scheduled Destination	Number of Annual Trips
LADD	2,262
Lake Michigan Catholic Elementary School	2,006
JV Center School	1,878
Holy Maternity (Dowagiac)	1,692
St Joseph Offsite Instruction Center	1,551
Niles Offsite Instruction Center	1,429
Countryside Charter School	1,197
Farm Bureau Oil Co.	1,075

Berrien Bus: October 1, 2015 – September 30, 2016

As shown below in Figure 16, the distribution of Berrien Bus trip destinations shows the largest concentrations of set destinations around the St. Joseph and Benton Harbor area, with additional service concentrations in Coloma and Niles, as well as in Berrien Springs where the service is based and the fares are lower.

In addition to set destinations, Berrien Bus additionally reported district-to-district total trips for the same period. Each district represents one of the towns, villages, or townships in Berrien, Cass, or Van Buren counties. These trips by district were summarized and mapped, as shown in Figure 17. This map displays the relative number of trips between different districts both inside and outside of Berrien County. As shown, the most common connections are between Benton Township and Coloma City, and between St. Joseph City and Dowagiac. The map reveals that

there are relatively few trips in the south portion of the county, with the greatest concentration of trips taking place between only a few different cities and townships.

Figure 16 Berrien Bus Trips per Destination

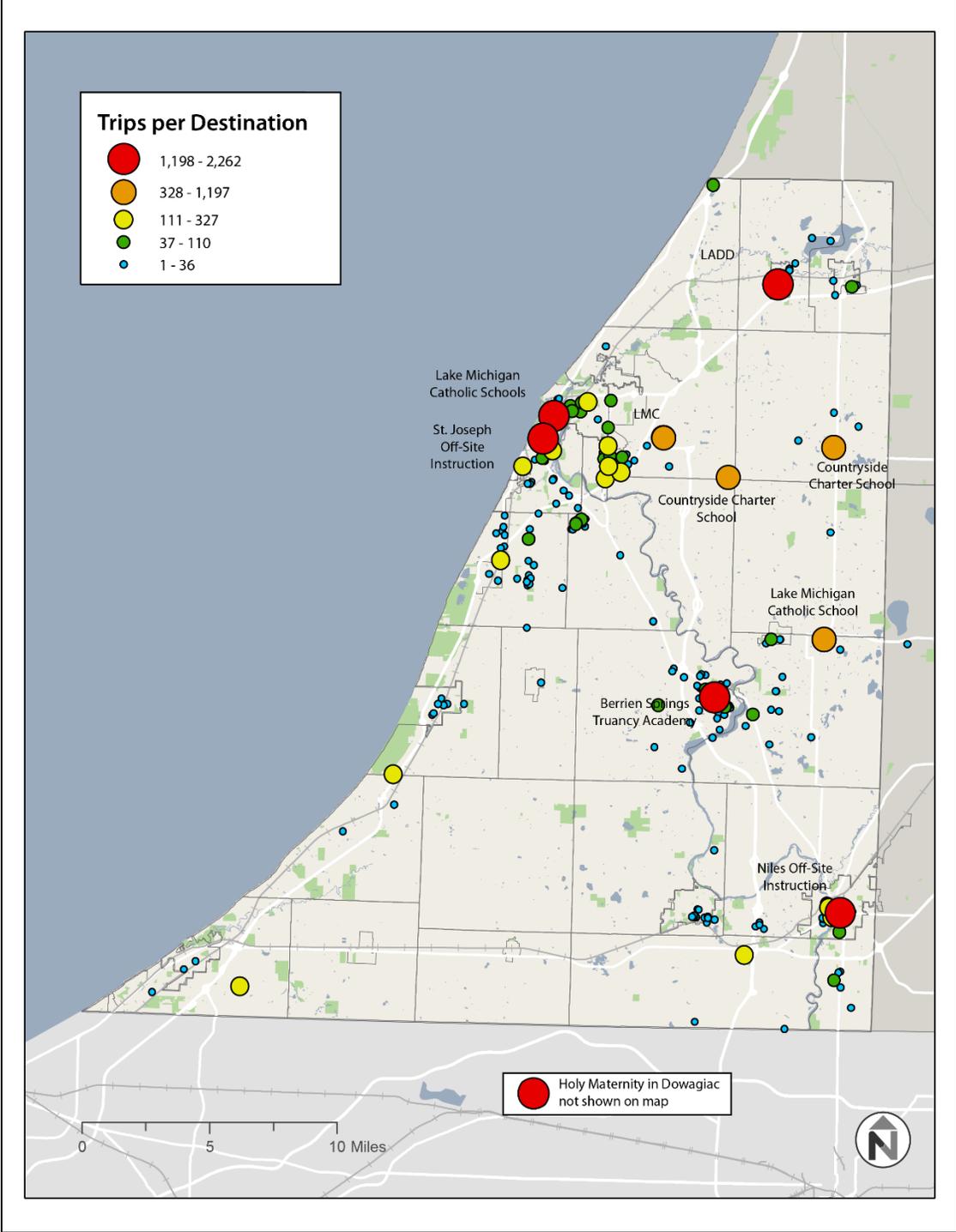
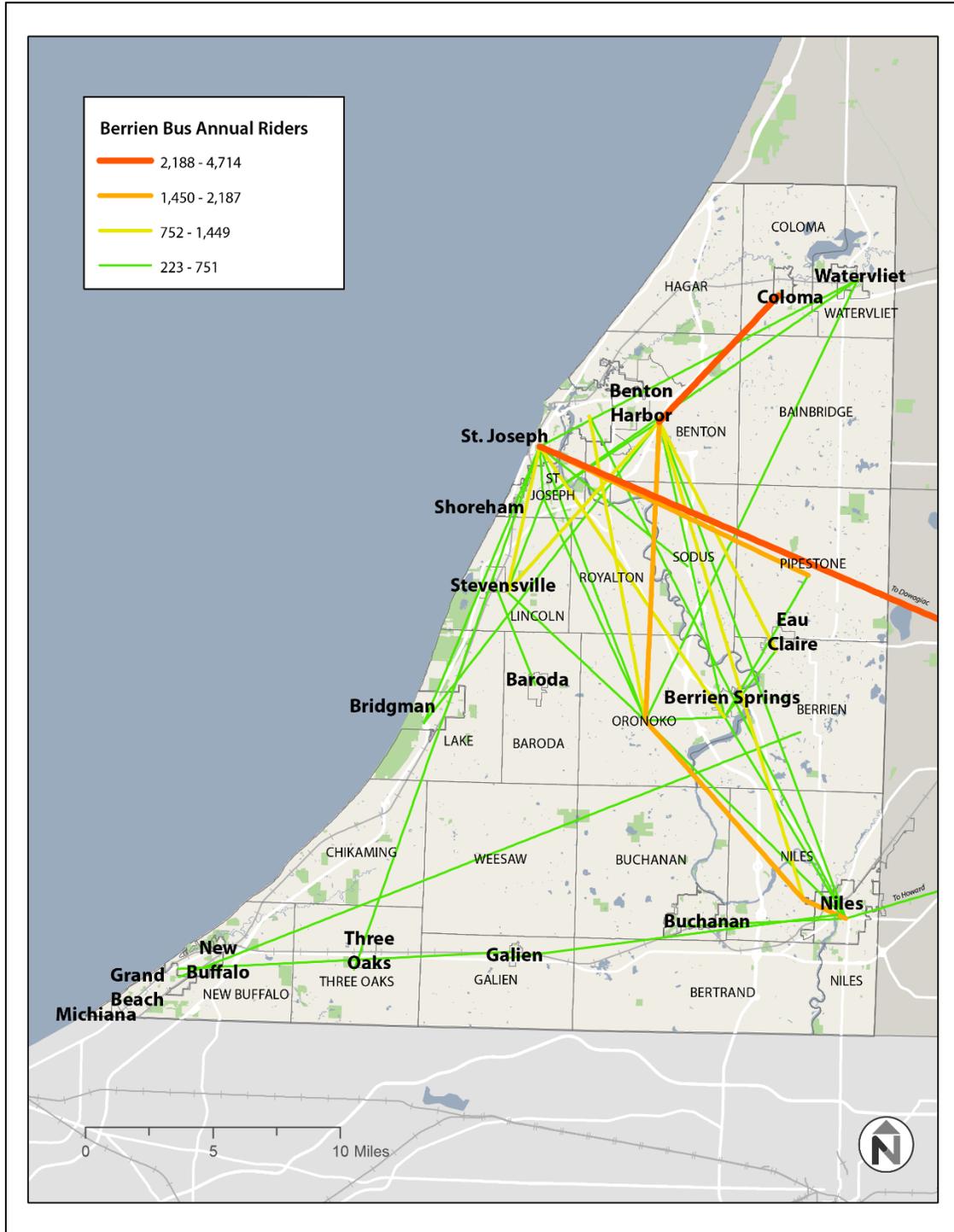


Figure 17 Berrien Bus Riders by Connection



Financial Information

Berrien Bus has seen an overall decline in revenues and operating costs between its peak in 2014 and the recently reported information for 2016 as shown in Figure 18. Total revenues have

declined by 18% between 2014 and 2016, while operating costs have declined by 20%. The decline in revenues has been particularly pronounced for state funding as well as fares, with each revenue source declining by over 15%, though nearly all funding sources declined over the same period. Fares in particular have declined by nearly a quarter between their peak in 2012 and 2016. More troubling however is that Berrien Bus has run a deficit in each of the past five years, with an average difference of \$95,000 between the operating costs and the operating revenues. According to Berrien Bus’s 2016 audit that was submitted to the state’s Department of Treasury, the service has a total net position (the difference between assets and liabilities) of \$332,278. Given recent trends, the service would only be able to operate at similar levels for less than four years.

Figure 18 Berrien Bus Financial Summary

	2012	2013	2014	2015	2016
Total Operating Expenses	\$961,615	\$1,191,160	\$1,281,717	\$1,163,722	\$1,028,234
Operating Revenues					
Federal	\$175,786	\$161,029	\$178,074	\$183,323	\$153,655
State	\$350,416	\$382,438	\$432,456	\$358,366	\$296,296
Local	\$0	\$170,906	\$169,546	\$167,108	\$162,471
Fares	\$373,018	\$344,956	\$350,770	\$319,192	\$287,987
Other	\$22,849	\$37,003	\$12,991	\$17,609	\$40,986
Total Operating Revenues	\$922,069	\$1,096,332	\$1,143,837	\$1,045,598	\$941,395

Source: Michigan Department of Treasury, Audit-Financial Report; note that contract revenues are included in fares

Productivity and Performance

Berrien Bus provided nearly 51,000 one-way transit trips last year, making it the second most utilized bus service in Berrien County. With nearly \$1 million in annual operating costs, Berrien Bus provides service to the area at a cost of \$20 per ride, which is equal to a \$14.52 subsidy per passenger when factoring in the average fare paid (contract revenue is included in fares). Berrien Bus however provides a valuable connection for the rural parts of Berrien County, which comprises a great majority of the area. Despite this, most of Berrien Bus’s riders are using the service under its contracted obligations and not as a public demand response service. Interestingly, Berrien Bus has the highest cost per hour and the lowest cost per mile of any of the four systems in Berrien County, indicating that the service is operating at far greater distances than the other services. Given the large low-density service area for Berrien Bus, this is not surprising.

Figure 19 Berrien Bus Performance Metrics

	2012	2013	2014	2015	2016
Operating Statistics					
Total Passengers	64,920	62,477	65,882	56,782	50,965
Vehicle Hours	18,528	18,825	20,285	17,090	15,405

Existing Conditions Memo | Berrien County Transit Service Integration Plan
Southwest Michigan Planning Commission

	2012	2013	2014	2015	2016
Vehicle Miles	379,525	408,520	400,456	379,303	341,712
Performance Measures					
Cost Per Hour	\$51.90	\$63.28	\$63.19	\$68.09	\$66.75
Cost Per Mile	\$2.53	\$2.92	\$3.20	\$3.07	\$3.01
Cost Per Passenger	\$14.81	\$19.07	\$19.45	\$20.49	\$20.18
Passengers per Hour	3.50	3.32	3.25	3.32	3.31
Farebox Recovery Ratio	40.5%	31.5%	30.7%	30.5%	30.6%
Average Fare	\$5.75	\$5.52	\$5.32	\$5.62	\$5.65
Subsidy per Passenger	\$9.07	\$13.54	\$14.13	\$14.87	\$14.52

Source: Michigan Department of Treasury, Audit-Financial Report; note that contract revenue is included in fares

Successes

Berrien Bus is the only service that offers service to all areas of Berrien County, providing a valuable link between various different areas of the county. The service’s flexible service model allows for contracting with private agencies to provide service. Additionally, Berrien Bus has a reasonable fare recovery rate and number of passenger trips per revenue hour, particularly in comparison to the overall population density. Berrien Bus has previously been quite successfully providing subscription service over the years, and in turn using those subscription trips to boost overall access to the service. Finally, it is one of the only services to provide early morning transit connections, allowing it to be potentially used for job access.

Opportunities

Despite the successes of Berrien Bus, it has a few different areas wherein it could improve, including its passenger trips per revenue hour, which remain too low to sustain the service. While there are admittedly low densities in rural areas of Berrien County, this low productivity has led to high subsidy rates per passenger. Berrien Bus service is poorly advertised and understood, further complicating the ability for passengers to access the service. This poor information is one of the key issues for Berrien Bus, as it is not well advertised or known, with little online information, and none that is easily accessed. In order to promote Berrien Bus, a variety of marketing tools should be developed to make the service better known to the public and to local agencies as well. The service relies heavily on contracted services, and when combined with high fares, fewer choice riders will be willing to use the service. The service also receives no local funding, making Berrien Bus’s fiscal stability more precarious.

Potential Strategies

Below are a few opportunities for Berrien Bus to improve and promote the service:

Existing Conditions Memo | Berrien County Transit Service Integration Plan
Southwest Michigan Planning Commission

- Work with local employers to provide a consistent service that is usable to employees, with regularly scheduled trips between larger areas such as Benton Harbor, and remote employment locations such as the Cook Nuclear Power Plant
- Coordinate with other transportation services to expand the service area, and increase cooperation among all providers
- Offer negotiated trips for local human services agencies
- Update all available online and print information on Berrien Bus to make sure policies are consistent and understood
- Make certain that policies are also easily understood
- Write all relevant service policies down and provide them in publicly available areas
- Make certain that all materials online are updated and consistent with Berrien Bus
- This includes both the Berrien County website as well as MyWayThere.org
- Create consistent routes, and maps to display these routes, that would allow more members of the public to utilize the service, and understand where it regularly operates
- Coordinate with other county services to identify transfer locations so that passengers can use multiple services

BUCHANAN DIAL-A-RIDE

Overview

Buchanan Dial-A-Ride is a shared ride operator that allows for curb-to-curb transportation within the City of Buchanan and the Township of Buchanan. This service is available Monday through Friday from 7:00 a.m. until 5:00 p.m. and Saturday from 10:00 a.m. until 3:00 p.m. Reservations may be made between one hour and seven days in advance. There is also a fixed schedule, same day curb-to-curb shuttle service for Buchanan residents traveling to and from the City of Niles. The service shuttle offers four runs on weekdays and three runs on Saturdays. Residents must call ahead to schedule a pick up for the Buchanan to Niles shuttle.

Fares range from \$1.50 to \$4.00 based on service type and distance of trip, with a 50% discount for some residents.

Service Design

Buchanan Dial-A-Ride is a same day demand-response service, with the service operating out of Berrien Springs, and the Berrien Bus offices. One or more vehicles travels from Berrien Springs at the beginning of each service day, and remains in the Buchanan area until returning to Berrien Springs at the end of the day. Ride requests may be made up to an hour ahead of pick up, wherein the dispatcher will communicate the trip to a driver for the pick-up. Passengers are then provided a 20-minute pick up window. Buses are allowed to wait for a passenger for up to two minutes. Cancellations may be made up to 90 minutes in advance of the pick-up window without being considered a late cancellation. Cancellations made between 50 and 90 minutes before the pick-up window are considered a late-cancellation, and three of them within 30 days may result in a temporary suspension from the service. Cancellations made within 50 minutes of the pick-up window are considered no-shows and three no-shows within 30 days may also result in a temporary suspension from the service.

Subscription trips may also be scheduled through Buchanan Dial-A-Ride, allowing customers to make one reservation for a trip on the same day and time, and between the same locations each week. Aside from general demand response service, there are four round trips Monday through Friday between Buchanan and Niles, and three round trips on Saturdays, using the Buchanan shuttle. Details for the public on this service are scant, however, including stop information as well as pick up policies.

Service Area

As shown in Figure 20, Buchanan Dial-A-Ride operates in Buchanan Township and the City of Buchanan, which has an area of 33.2 square miles. With an estimated population of approximately 3,500 residents, there are roughly 106 people per square mile in the service area. The service also provides access to the City of Niles, where connections can be made with the Niles Dial-A-Ride.

Figure 20 Buchanan Dial-A-Ride Service Area



Service Information

Buchanan Dial-A-Ride has no website of its own, but does have an information page on the City of Buchanan website. Nearly all publicly available information for Buchanan Dial-A-Ride is on either the City’s website or the MyWayThere.org website. While much of the information available on the MyWayThere website is consistent, not all information is complete, and with some pages for Buchanan Dial-A-Ride (notably the service policy page) not having been updated since 2014. The website has no map for the Buchanan Dial-A-Ride, which is particularly an issue for understanding where the Buchanan to Niles shuttle picks up and drops off. Similarly there is little information on how many stops there are for the shuttle, or if someone can get on or off the shuttle in between the two terminals. The opening webpage for Buchanan Dial-A-Ride links to a PDF brochure that appears to have not been updated in several years, and similarly provides little to no information on how to use the Buchanan-Niles Shuttle. The service’s low profile with regard to online details, inconsistent information, and vague service area make it difficult for potential riders to learn about or use the service.

Ridership Characteristics

In 2015, Buchanan Dial-A-Ride reported the provision of over 7,000 rides. According to the Buchanan Dial-A-Ride 2015 Audited Budget, for the most part trips were evenly split between unclassified trips, trips for older adults, and trips for people with disabilities, as can be seen below in Figure 21. The total number of trips equates to fewer than 30 passenger trips per service day.

Figure 21 Buchanan Dial-A-Ride Statistics

Rider Type	Number of Rides	% of Total
Unclassified Unlinked Trips	2,428	34%
Older Adults	2,611	37%
Persons With Disabilities	2,018	29%
Total	7,057	100%

Source: 2015 Audited Budget for Non-Urban Area

Financial Information

Buchanan Dial-A-Ride has seen consistent funding levels between 2012 and 2016, with less than a 5% variation in operating costs over the period as shown in Figure 22. Similarly, operating revenues have also held relatively constant over the period with a range of less than \$13,000 in the span of operating revenues over that period. There has been a decline of over 10% federal funding between 2012 and 2016, but that has been offset by an increase in state funding, as well as a slight uptick in collected fares. Additionally the service has consistently run at a slight surplus, or close to it over the last five years.

Figure 22 Buchanan Dial-A-Ride Financial Summary

	2012	2013	2014	2015	2016
Total Operating Expenses	\$198,949	\$198,478	\$208,457	\$201,927	\$197,334

	2012	2013	2014	2015	2016
Operating Revenues					
Federal	\$34,974	\$35,898	\$27,578	\$31,469	\$30,384
State	\$69,976	\$77,873	\$78,421	\$71,374	\$79,189
Local	\$85,907	\$81,272	\$81,347	\$80,795	\$86,610
Fares	\$12,637	\$12,134	\$12,750	\$16,754	\$13,062
Other	\$4,616	-\$1,329	\$1,802	\$499	\$3,737
Total Operating Revenues	\$208,110	\$205,848	\$201,898	\$200,891	\$212,982

Source: Michigan Department of Treasury, Audit-Financial Report

Productivity and Performance

Buchanan Dial-A-Ride offers over 8,000 rides a year, making it the least used service in Berrien County, and one that has shown difficulties over the year. While 2015 experienced a 25% increase in ridership from two years earlier, 2016 has the lowest reported ridership of any year over the past five years. Though Buchanan Dial-A-Ride has a small service area, it provided a peak of 2.71 rides per revenue hour, which is the lowest productivity of any of the Berrien County services. With operating costs of nearly \$200,000, Buchanan Dial-A-Ride provides rides at an effective rate of over \$24 per passenger, or \$22.70 per passenger when including passenger fares. The service provides a transit connection in one of the lower density areas of the county. Despite the relatively high costs, the service offers an important connection for many in the area.

Figure 23 Buchanan Dial-A-Ride Performance Metrics

	2012	2013	2014	2015	2016
Operating Statistics					
Total Passengers	8,632	8,100	9,036	10,114	8,118
Vehicle Hours	3,718	3,843	3,756	3,731	3,800
Vehicle Miles	43,384	39,852	42,957	43,425	41,406
Performance Measures					
Cost Per Hour	\$53.51	\$51.65	\$55.50	\$54.12	\$51.93
Cost Per Mile	\$4.59	\$4.98	\$4.85	\$4.65	\$4.77
Cost Per Passenger	\$23.05	\$24.50	\$23.07	\$19.97	\$24.31
Passengers per Hour	2.32	2.11	2.41	2.71	2.14
Farebox Recovery Ratio	6.1%	5.9%	6.3%	8.3%	6.1%
Average Fare	\$1.46	\$1.50	\$1.41	\$1.66	\$1.61

	2012	2013	2014	2015	2016
Subsidy per Passenger	\$21.58	\$23.01	\$21.66	\$18.31	\$22.70

Source: Michigan Department of Treasury, Audit-Financial Report

Successes

Buchanan Dial-A-Ride has been effective at keeping its costs low, while also offering transportation opportunities in a relatively low-density area. Further, Buchanan Dial-A-Ride provides key access to transportation by target groups such as older adults and people with disabilities. Buchanan Dial-A-Ride provides a convenient service delivery model, which offers same day reservations. The service hours offered by Buchanan Dial-A-Ride allow for riders to use it for commuting, while the tiered fare system encourages users to use the system particularly around Buchanan.

Opportunities

While there are considerable successes with Buchanan Dial-A-Ride, the service has its drawbacks as well. To begin, the service requires a heavy subsidy for each ride, creating a low fare recovery ratio. Additionally the service has a small service population relative to its service area, which makes efficient service delivery more difficult. Overall, Buchanan Dial-A-Ride has few riders, with as few as a couple of dozen riders per day on average. Related to this is the fact that Buchanan Dial-A-Ride also has relatively few passenger trips per Vehicle Hour, making it quite expensive on a cost per unit basis. Buchanan Dial-A-Ride also has scant service information available online and little information on how its shuttle service operates, or how to use it.

Potential Strategies

Below are a few opportunities for Buchanan Dial-A-Ride to improve and promote the service:

- Create improved service information to promote the service
- Coordinate with other transportation services to expand the service area, and increase cooperation among all providers, in order to improve service and lower costs
- Create service maps and bus stops to advertise the Buchanan-Niles shuttle, and make it more useable to the general public.
- Update all available online and print information on Buchanan Dial-A-Ride to make sure policies are consistent and understood
- Write all relevant service policies down and provide them in publicly available areas
- Make certain that all materials online are updated and consistent with Buchanan Dial-A-Ride
- This includes both the Buchanan website as well as MyWayThere.org
- Coordinate with other county services to identify transfer locations so that passengers can use multiple services.

NILES DIAL-A-RIDE

Overview

Niles Dial-A-Ride (DART) is a small urban and rural transit provider that offers same day curb-to-curb service to the general public in the City of Niles and Niles Township. Niles Dial-A-Ride also operates a linear fixed route connecting the City of Niles to South Bend, Indiana. The fixed route service leaves Niles on the hour from 10:00 a.m. to 5:00 p.m. Monday through Friday, while the demand response service is available 7:00 a.m. to 5:00 p.m. Monday through Friday and from 10:00 a.m. to 3:00 p.m. on Saturday.

Service Design

Niles DART provides curb-to-curb same day services within the City of Niles and Niles Charter Township. Pick-up times are subject to availability, and Niles DART requests that reservations be made at least 24 hours in advance. While same day requests up to an hour in advance are accepted, they are not guaranteed and are the lowest prioritized. Trips are prioritized on Niles DART according to the chart shown in Figure 25. Reservations are accepted only for trips within the boundaries of the Niles DART service area.

Niles DART also provides deviated fixed route service that is a shared ride, public transportation service that follows a defined route, picking up and dropping off passengers at designated stops. A map of the service is shown in Figure 24. The route runs on the hour between the DART offices and the Walmart on South 11th Street and back. Three times a day at 10:00 a.m., 2:00 p.m. and 4:00 p.m., the route continues south past the Walmart, and past the state line to the intersection of Auten Road and Indiana State Route 933, where passengers can connect to or from South Bend Transpo. The fixed route buses will also 'flex' or deviate off its route. Passengers may call ahead to request a pick up or drop off within 1/2 mile of the service route. Passengers that request a deviated pick up or drop off are charged a \$0.50 route deviation fee.

Niles DART offers riders a 60-minute pick up window. Riders that do not cancel a trip within 20 minutes of the pick-up time are subject to a no-show charge, which is equivalent to a fare of the corresponding service. If a rider incurs 10 no-show charges in a 60-day period, he or she may be suspended. In addition to scheduled trips, riders may also be eligible for subscription trips as well.

Figure 24 Niles DART Service Map

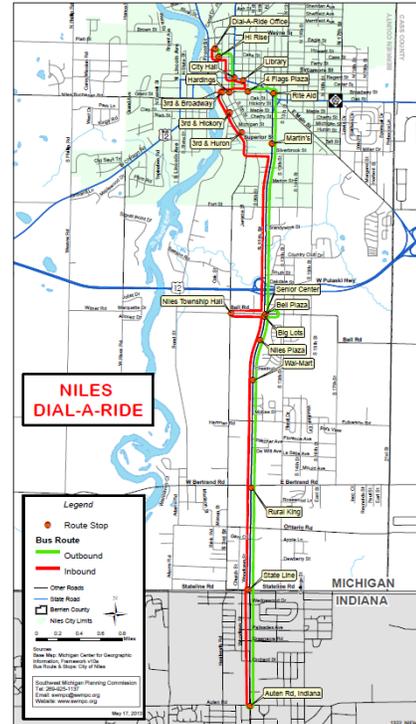


Figure 25 Niles DART Service Priority Chart

Service Priority	Description
Priority 1 - Recurring/ Subscription Trips	Rides reserved for the same passenger, same time, and same origin
Priority 2 - 24-Hour Calls	Rides reserved 24 hours in advance
Priority 3 - 1-Hour Calls	Rides reserved at least one hour in advance
Priority 4 – On-Demand Calls	Rides reserved less than one hour in advance

Service Area

As shown in Figure 26, Niles DART serves the entirety of Niles Township and the City of Niles, an area of 44 square miles. With a population of nearly 26,000 between the township and city, there are an estimated 580 people per square mile in the demand response service area. The fixed route service is approximately 6 miles one way, with a 1/2-mile flex route corridor on either side, and thus provides a service area of 6 square miles. The fixed route service also allows for connections with the South Bend Transpo. The entire area is also served by Berrien Bus that provides rides to and from other areas of the county outside of the Niles Township or City of Niles.

Figure 26 Niles Dial-A-Ride and Fixed Route Service Area



Service Information

Niles DART provides a variety of information on a page contained within the broader City of Niles website. While the service does not have its own website, it does have a useable web link that leads to the City’s website. The website has a broad array of information that is kept up to date and is consistent. It further explains the different fares, policies, and services areas for each of Niles DART’s services, and additionally provides a detailed route service map for the fixed route service. Information on the MyWayThere website is consistent with the Niles DART site, but has less detail and is less clearly organized.

Ridership Characteristics

In 2015, Niles DART provided over 37,000 demand response and fixed route trips as shown in Figure 27. Among these riders, nearly half had a disability, while nearly 40% of all passengers were older adults. A third were unclassified, presumably meaning that they were neither seniors nor persons with disabilities.

Figure 27 Niles DART Ridership Statistics

Rider Type	Number of Rides	% of Total
Unclassified Unlinked Trips	12,327	33%
Older Adults	7,747	21%
Persons With Disabilities	10,393	28%
Older Adults with Disabilities	6,628	18%
Total	37,095	100%

Source: Michigan Department of Treasury, Audit-Financial Report

For the fixed route service in FY 2016, the most common destinations are the Martin’s Super Market, Walmart, Four Flags Plaza, and Niles Housing Commission Hi Rise. Most of the destinations heavily served by the bus route are retail destinations. Among the seven daily trips made each weekday, the 10 a.m. is the most used time period, with an average of 160 riders per month. There is a steady decrease in ridership from 10 a.m. onwards to 4 p.m.

Financial Information

As shown below in Figure 28, Niles DART’s reported operating costs have varied considerably over the past five years, with a total variation of \$120,000 between 2012 and 2014. Similarly, over this period, the reported operating revenues have also varied widely, with a difference of more than 10% in operating revenues between 2012 and 2013, as well as between 2015 and 2016. Over this period state funding has varied widely between a low of \$82,000 in 2014 and a high of \$238,000 in 2012. Federal funding has also had considerable variation; however, it has remained at or above \$220,000 for four consecutive years. Meanwhile local revenues have remained comparatively stable. Collected fares however have also exhibited considerable variation with a more than 30% increase between 2013 and 2015, before dropping off by more than 15% in 2016. Despite this variation, operations costs have typically been covered by operating revenues for each of the years shown below.

Figure 28 Nilés Dial-A-Ride Financial Summary

	2012	2013	2014	2015	2016
Total Operating Expenses	\$406,483	\$433,252	\$527,419	\$508,671	\$503,329
Operating Revenues*					
Federal	\$119,669	\$220,793	\$278,036	\$256,748	\$236,441
State	\$237,941	\$177,746	\$82,487	\$74,919	\$180,208
Local	\$97,177	\$98,888	\$94,150	\$102,640	\$98,719
Fares	\$60,336	\$59,925	\$70,849	\$83,930	\$68,424
Other	\$7,376	\$23,402	\$16,560	\$9,075	\$2,765
Total Revenues	\$522,499	\$580,754	\$542,082	\$527,312	\$586,557

Source: Michigan Department of Treasury, Audit-Financial Report

Productivity and Performance

Niles DART provides both demand response and fixed route service. The operating statistics for the service is summarized below in Figure 29. Overall, Niles DART has seen a 17% increase in ridership between 2012 and 2016, with a peak in ridership occurring in 2015. Despite this increase in ridership, between 2012 and 2016 Niles DART has additionally seen an uptick in cost per hour, cost per mile, cost per passenger, and a slight dip in passengers per hour. Additionally, the farebox recovery rate and average fare have both declined as well. However, Niles DART overall provides service at the lowest cost per passenger of any of the Berrien County services.

Figure 29 Nilés Dial-A-Ride Performance Metrics

	2012	2013	2014	2015	2016
Operating Statistics					
Total Passengers	31,644	31,080	36,731	41,395	37,095
Vehicle Hours	7,746	7,679	8,527	9,667	9,271
Vehicle Miles	105,547	98,615	110,237	129,132	123,706
Performance Measures					
Cost Per Hour	\$52.48	\$56.42	\$61.85	\$52.62	\$54.29
Cost Per Mile	\$3.85	\$4.39	\$4.78	\$3.94	\$4.07
Cost Per Passenger	\$12.85	\$13.94	\$14.36	\$12.29	\$13.57
Passengers per Hour	4.09	4.05	4.31	4.28	4.00
Farebox Recovery Ratio	11.5%	10.3%	13.1%	15.9%	11.7%

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	2012	2013	2014	2015	2016
Average Fare	\$1.91	\$1.93	\$1.93	\$2.03	\$1.84
Subsidy per Passenger	\$10.94	\$12.01	\$12.43	\$10.26	\$11.72

Source: Michigan Department of Treasury, Audit-Financial Report

As shown in Figure 30, nearly 31,000 demand response rides were served by Niles DART in 2015, equal to 3.92 passenger trips per revenue hour, providing the second most productive demand response service in the county (TCATA is slightly higher, although it serves a denser area). This is equal to a cost of \$13.23 per passenger trip, or a \$10.86 subsidy per ride when factoring in the average paid fare.

In addition to the fixed route service provided by Niles DART, the fixed route service provides a further 10,000 passenger trips per year. The fixed route service provides 5.86 rides per hour using one route, making it the most productive service in Berrien County. Given operating costs of \$100,000, each ride is provided at \$9.52 per passenger, or \$7.15 when including the average paid fare for the system.

The demand response service, despite providing service at a comparatively high rate of productivity, provides less efficient service in terms of passenger trips per hour, as well as operating costs per passenger. This may be due in part to the more limited fixed-route service hours, with service beginning at 10 a.m. rather than 7 a.m., and no Saturday service. That said, the comparatively higher demand for fixed-route service in the area might suggest some level of unserved demand in the area, particularly earlier in the morning.

Figure 30 Niles DART 2015 Fixed Route and Demand Response Comparison

Niles Dial-A-Ride		
Service Type	Demand Response	Fixed Route
Operating Data		
Ridership (one-way passenger trips)	30,924	10,471
Total Vehicle Hours	7,879	1,788
Total Vehicle Miles	108,111	21,021
Financial Data		
Total Operating Cost	\$408,971	\$99,700
Farebox Revenue	\$73,263	
Performance Measures		
Passenger Trips / Vehicle Hour	3.92	5.86
Operating Cost / Vehicle Hour	\$51.91	\$55.76
Operating Cost / Passenger	\$13.23	\$9.52
Farebox Recovery Percentage	17.9%	
Average Fare	\$2.37	
Subsidy per Passenger Trip	\$10.86	\$7.15

Source: Michigan Department of Treasury, Audit-Financial Report and NTD 2015

Successes

Niles DART operates with comparatively low operation costs per passenger, and subsidy per passenger trip. Niles DART additionally operates the most productive demand response service in Berrien County, with nearly four passengers served per hour on average. A further success of the service is its tiered fare system allowing passengers to make informed decisions on what type of service to use versus the cost incurred. In addition, Niles DART allows passengers to transfer between the demand response and fixed route services, allowing for greater flexibility of service and usefulness for different riders. Niles DART is the only service in Berrien County that allows for transfers with South Bend Transpo just south of the state line in Indiana.

Opportunities

Some shortcomings of Niles DART are apparent. Despite higher passenger trips per Vehicle Hour on the fixed route system, more trips are taken on the demand response system. Additionally, service hours for fixed route do not allow for connections to South Bend Transpo in the AM peak hours. Additionally, since the fixed route ends service at 5 p.m., there is little opportunity for people to use this service if they have a full-time job.

Potential Strategies

Below are a few strategies for Niles DART to improve and promote the service:

- Promote fixed route service more, as it has lower costs and higher ridership per hour
- Expand fixed route service hours to include typical commuting hours
- Consider eliminating flex-route service area in order to increase the efficiency of the fixed route service
- Work with other area services to better coordinate transfers and overlapping service areas
- In particular better coordination with Buchanan Dial-A-Ride
- Work with South Bend Transpo and the State of Indiana to determine the feasibility of offering more frequent service to South Bend, as well as improved connections to their service
- Include fixed route information in a GTFS feed for Google Maps and other online trip planners to allow local users to plan their ride using the most common platforms to plan a trip

TWIN CITIES AREA TRANSIT AUTHORITY

Overview

Twin Cities Area Transit Authority (TCATA) operates a same day curb-to-curb service open to the general public in Benton Harbor, Benton Township, and Royalton Township. The service runs from 6:00 a.m. to 6:00 p.m. Monday through Friday and 8:00 a.m. to 4:30 p.m. on Saturdays. TCATA provides the highest number of rides per day of any of the four Berrien County transit providers.

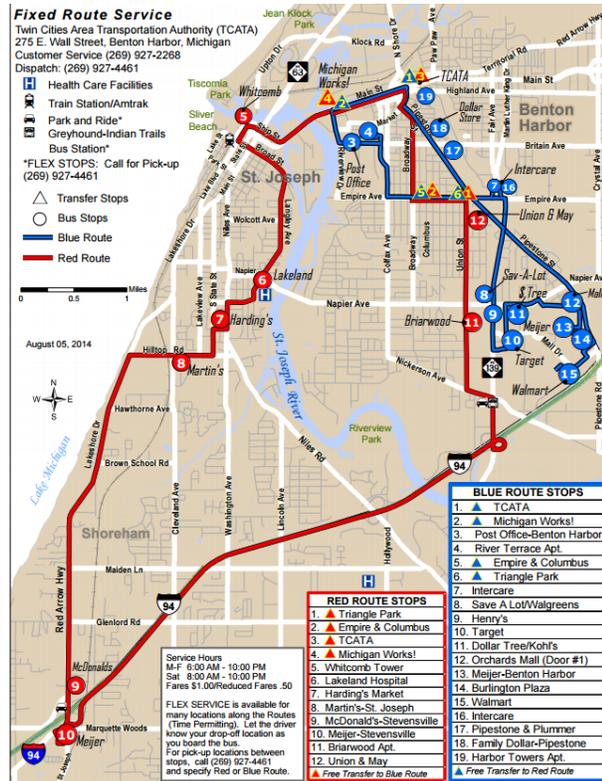
TCATA also operates two fixed routes (Line Haul) in the Benton Harbor and St. Joseph areas that run from 6:00 a.m. to 10:00 p.m. Monday through Friday and 8:00 a.m. to 10:00 p.m. on Saturdays. The Red route is a one-hour long loop connecting Benton Harbor, St. Joseph, St. Joseph Township, and Stevensville. The Blue route is a linear route with small loops on either end serving Benton Harbor and the Benton township retail area.

Service Design

Same day curb-to-curb service is offered for riders with disabilities and people who do not have access to fixed route services within the City of Benton Harbor, City of St Joseph, Benton Township, Royalton Township, and St Joseph Township addresses in the 49022 ZIP code. Rides are provided to people with disabilities on a first-called/first-served, space available basis. Reservation calls are taken Monday through Friday from 6:00 a.m. to 6:00 p.m. and Saturdays from 8:00 a.m. to 4:00 p.m., and rides can be scheduled between 1 and 7 days in advance. Riders are given a 20-minute pick up window, and drivers are required to wait for up to three minutes before declaring the trip a no-show. Similarly, trips cancelled 50 minutes or less in advance of a reservation are considered no shows, with three no-shows in a 30-day period possibly resulting in a suspension.

TCATA also provides fixed route service that follows a defined route, picking up and dropping off passengers at designated stops along two routes. Each of these routes is shown in Figure 31. The Red route is a one-hour long loop connecting Benton Harbor, St. Joseph, St. Joseph Township, and Stevensville. The Blue route is a linear route with small loops on either end serving Benton Harbor and the Benton township retail area, and runs twice an hour. For both of these routes, passengers may be dropped off or picked up at a different point in between the bus stops. The flex stop service is only available, time permitting and may not be available during peak service times of the day. To be picked up using the flex service however, a rider must arrange with the service dispatch in advance of their trip.

Figure 31 TCATA Fixed Route Service Map



Service Area

As shown in Figure 33, TCATA serves the City of Benton Harbor, City of St. Joseph, and Benton Township, as well as portions of Royalton Township, and St. Joseph Township. This area is equal to 21 square miles, with a population of 33,390 people. The service therefore has a population density of 1,590 people per square mile, making it the densest service area of the four providers.

Service Information

TCATA has no website of its own, but does have an information page on the MyWayThere.org website. While the information available on the MyWayThere website is consistent and up to date, it is slightly difficult to navigate. The website however does host a detailed service map for the two fixed routes, but does not have a map for the Dial-A-Ride area. The service's low profile with regard to online details, inconsistent information, and vague service area make it difficult for potential riders to learn about or use the service.

Ridership Characteristics

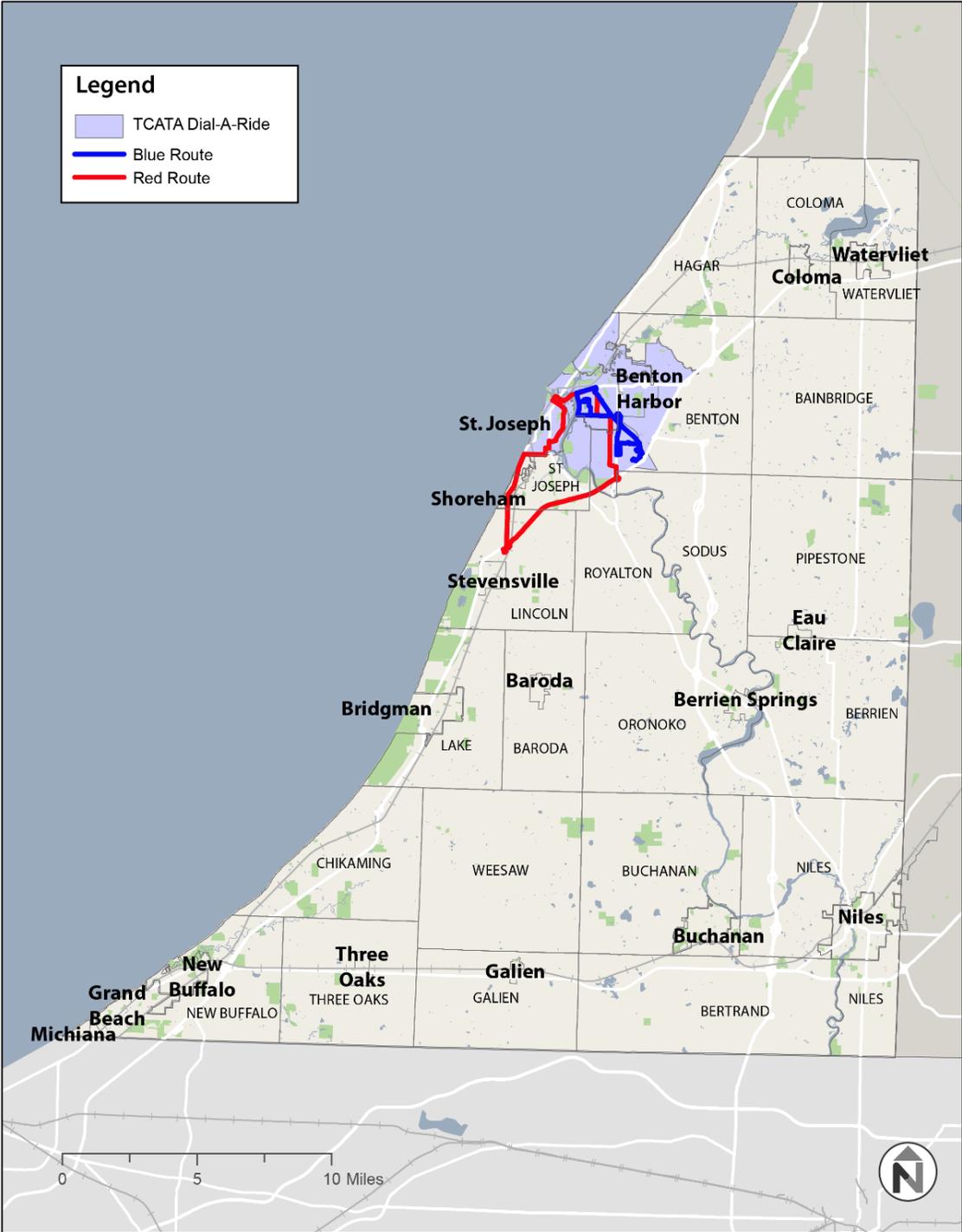
In 2016, TCATA served over 203,000 rides using its Dial-A-Ride and fixed-route service. As shown below in Figure 32, between these two TCATA services, over a quarter of all trips were taken by people with disabilities. Meanwhile less than 20% of all riders were listed as older adults, despite having a relatively high proportion of older adults in the TCATA service area. Overall, more than half of all trips were not classified as serving older adults or people with disabilities. This breakdown means that 45% of all adult TCATA passengers are paying reduced fares.

Figure 32 TCATA Dial-A-Ride Service Ridership Characteristics

Rider Type	Number of Rides	% of Total
Unclassified Unlinked Trips	112,268	55%
Older Adults	36,260	18%
Persons With Disabilities	54,560	27%
Total	203,088	100%

Source: 2016 Michigan Department of Treasury, Audit-Financial Report

Figure 33 TCATA Dial-A-Ride and Fixed Route Services



Financial Information

As the largest service provider in Berrien County, TCATA has the largest budget. Overall, the budget has remained relatively consistent between 2012 and 2016, with only 5% change over that period. Although the service has maintained consistent operating costs over the period, TCATA has operated at a loss for four out of five years, with a net loss of \$325,000 over that period. While operating revenues have increased by over \$300,000 between 2012 and 2016, the steady improvement of TCATA’s financial performance is partly due to an increase in federal and state funds, as well as keeping costs down. Despite these changes, fares were down by more than 20% between 2012 and 2016. Please note that the net operating costs listed below include capital depreciation, and is not to be considered a comprehensive financial analysis.

Figure 34 TCATA Financial Summary

	2012	2013	2014	2015	2016
Total Operating Expenses	\$2,519,239	\$2,517,477	\$2,613,507	\$2,573,482	\$2,484,031
Operating Revenues					
Federal	\$857,313	\$835,568	\$1,042,203	\$1,023,406	\$972,212
State	\$932,969	\$1,014,366	\$1,128,977	\$1,039,530	\$1,176,728
Local	\$148,986	\$106,323	\$125,222	\$131,732	\$128,242
Fares	\$341,991	\$341,629	\$285,440	\$308,429	\$268,642
Other	\$8,396	\$27,836	\$19,669	\$36,180	\$80,568
Total Operating Revenues	\$2,289,655	\$2,325,722	\$2,601,511	\$2,539,277	\$2,626,392

Source: Michigan Department of Treasury, Audit-Financial Report

Productivity and Performance

Overall ridership listed for TCATA’s service has remained relatively consistent with over 200,000 passengers, though ridership peaked in 2013. . Vehicle hours and vehicle miles disproportionately increased over the same period. Because of this trend, between 2012 and 2016, overall ridership per hour has slipped from a peak of 4.47 passengers per hour to 4.04 passengers per hour. Despite the drop in productivity, the cost of service per hour and mile has declined, although the average fare has also declined over the time period.

Figure 35 TCATA Performance Metrics

	2012	2013	2014	2015	2016
Operating Statistics					
Regular Passengers	204,415	219,167	213,614	213,377	203,088
Total Vehicle Hours	48,401	49,030	49,575	50,985	50,244
Total Vehicle Miles	627,073	645,628	594,762	581,428	610,203

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	2012	2013	2014	2015	2016
Performance Measures					
Cost Per Hour	\$52.05	\$51.35	\$52.72	\$50.48	\$49.44
Cost Per Mile	\$4.02	\$3.90	\$4.39	\$4.43	\$4.07
Cost Per Passenger	\$12.32	\$11.49	\$12.23	\$12.06	\$12.23
Passengers per Hour	4.22	4.47	4.31	4.19	4.04
Farebox Recovery Ratio	14.9%	14.7%	11.0%	12.1%	10.2%
Average Fare	\$1.67	\$1.56	\$1.34	\$1.45	\$1.32
Subsidy per Passenger	\$10.65	\$9.93	\$10.90	\$10.62	\$10.91

Source: Michigan Department of Treasury, Audit-Financial Report

TCATA provides both demand response and fixed route service. Both of these individual services are summarized for 2016 in Figure 36. The demand response service provides over 122,000 rides per year, or 3.8 rides per hour, which is the second highest productivity level for demand response in Berrien County. The demand response service from TCATA provides rides at \$14.77 per passenger, or a subsidy of \$13.07 when including average passenger fares.

The fixed route service provided by TCATA serves over 80,000 annual rides (including Red Route flex route pickups), or 4.48 passenger trips per revenue hour, making it the second most productive service per hour in Berrien County of any type. With an average operating cost per passenger trip of \$7.45, and an average subsidy of \$6.71, TCATA's fixed route service is the most cost effective service in Berrien County.

Figure 36 TCATA 2016 Service Comparison

Twin Cities Area Transit Authority*		
Service Type	Demand Response	Fixed Route
Operating Data		
Ridership (one-way passenger trips)	122,368	80,720
Total Vehicle Hours	32,232	18,012
Total Vehicle Miles	393,630	216,573
Performance Measures		
Passenger Trips / Vehicle Hour	3.80	4.48
Operating Cost / Vehicle Hour	\$56.08	\$11.09
Operating Cost / Passenger	\$14.77	\$7.45
Farebox Recovery Percentage	11.53%	30.11%
Average Fare	\$1.70	\$0.75
Subsidy per Passenger Trip	\$13.07	\$6.71

Source: 2016 Michigan Department of Treasury, Audit-Financial Report; TCATA staff

Successes

TCATA has succeeded in having relatively high numbers of passengers per Vehicle Hour for both Dial-A-Ride and fixed route service. This has helped translate into lower costs per passenger trip, and comparatively low subsidies per passenger trip for fixed route service. These successes are due in part to the concentrated service area within which TCATA operates. Additionally, its emphasis on providing extended fixed-route service hours means that the service may be used for commuting purposes.

Opportunities

Though TCATA provides a relatively cost effective fixed route service, there remains a high subsidy per passenger trip for demand response service of over \$10 per trip. Additionally TCATA provides service in a small coverage area, which does allow for more efficient service, but which considerably limits the value of the service to riders. Finally, the looped routes do not operate as efficiently as other route designs, and make it more difficult to serve the needs of riders.

Potential Strategies

Below are a few opportunities for TCATA to improve and promote the service:

- Promote fixed route service more, as it has lower costs and higher ridership per hour
- Use an alternative service route pattern for the Red Route that does not rely on circular routes. This may require creating an additional route, or the elimination of some of the service area. For example, the route goes between Meijer-Stevensville and Briarwood Apartments using primarily the interstate. These two stops could be used as terminals for a linear route
- Make the Blue Route more user friendly by simplifying the route, and eliminating the looping pattern
- Eliminate flex service in order to increase fixed route efficiency
- Work with other area services to better coordinate transfers and overlapping service areas
- In particular better coordination with Berrien Bus; connections between Benton Harbor and Niles may also be feasible.
- Include fixed route information as a GTFS feed for Google Maps and other online trip planners to allow local users to plan their ride using the most common formats to plan a trip
- Improve online presence and information. Make certain all information is consistent.

EXISTING COMBINED SERVICE SUMMARY

The following elements assess the overall public transportation situation in Berrien County, with the focus on how it would look if the county had one system, with no other changes from existing service.

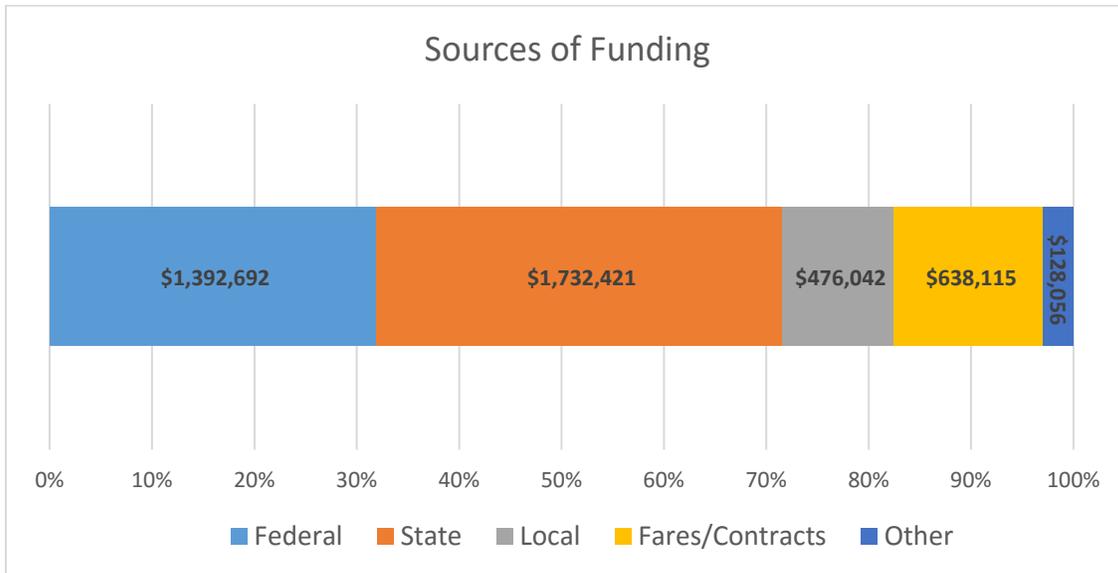
Service Area and Population

The total service area population for Berrien County is estimated at 138,000 residents, spread over 561 square miles. This service area, which does not include areas of Shoreham, Stevensville, Bridgman, and other areas, would have an overall density of 246 people per square mile.

Funding

In total Berrien County transit providers spent \$4.37 million on public transportation in FY 2016. The majority of funding came from state and federal sources, with the former representing over 40% of total funding in the area. Local funding meanwhile only makes up 11% of total funding, with a comparatively high reliance on fares and contract revenue.

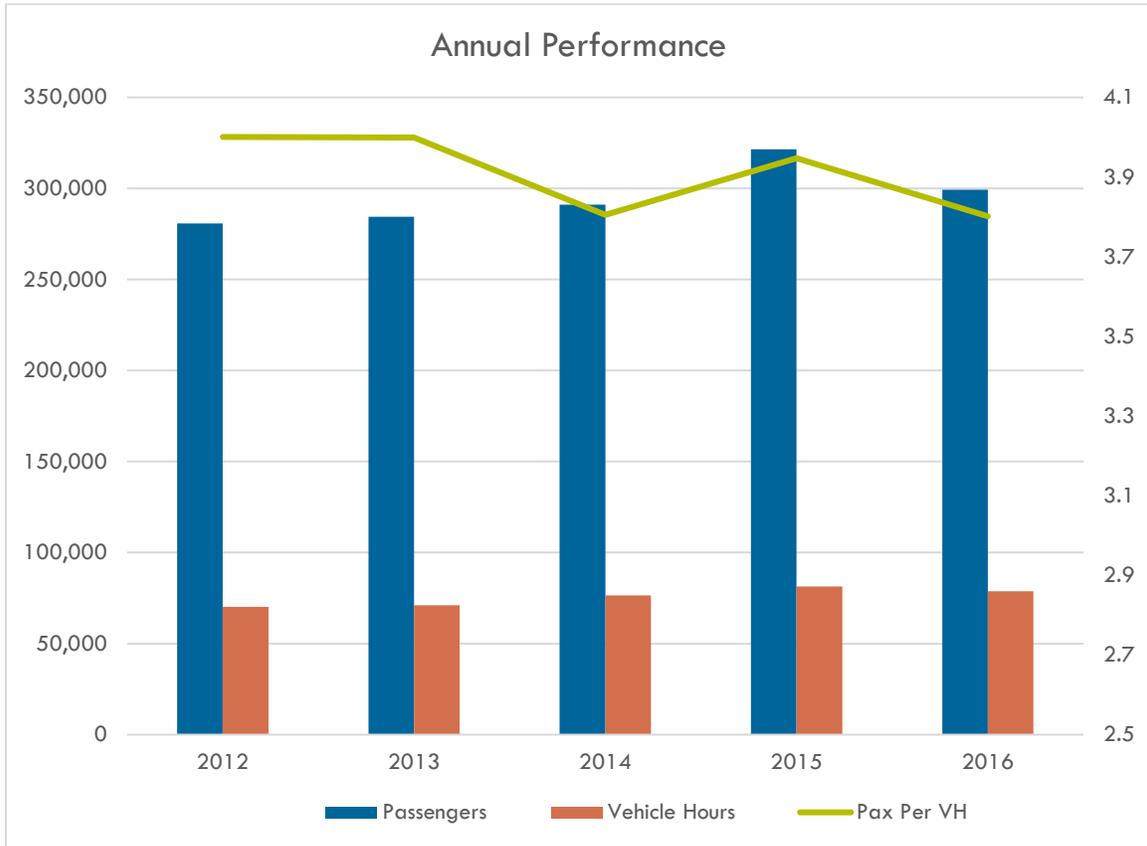
Figure 37 Sources of 2016 Funding for Berrien County Combined Transit



Annual Performance

As shown below in Figure 38, annual ridership, vehicle hours, and passengers per vehicle hour have varied over the past five years with their peak in 2015. While overall ridership remains at 3.8 passengers per revenue hour, the rate has been declining.

Figure 38 Annual Service Productivity for Berrien County Combined Transit



PRELIMINARY ASSESSMENT OF TRANSPORTATION NEEDS

The following elements represent the primary transportation service needs and gaps in Berrien County when using public transportation.

Temporal Gaps

Among all four service providers in Berrien County, only the fixed route service provided by TCATA operates into the evening. While all services in Berrien County begin service at 7 a.m. or earlier, with the exception of the Niles fixed route service, the absence of service in the evenings makes it difficult for the services to be used by commuters. Without a personal vehicle, the entire county is inaccessible outside of the TCATA service area after 5 p.m. Similar limitations are evident on Saturdays, when there is no service in the rural parts of the county and shorter service for most of the municipal providers as well. Finally, there is no service at all on Sundays in Berrien County, requiring residents without a vehicle to find other means of navigating their transportation needs.

Spatial and Service Gaps

Several areas south of St. Joseph such as Stevensville and Shoreham do not have any service at all, as well as several areas adjacent to Benton Harbor. There is no regular service for a number of

the major employers in Berrien County, including the nuclear power plant and the Four Winds Casino. Additionally, aside from the Buchanan-Niles shuttle, there is no regular service that connect any of the major villages and cities in the county to each other. Areas in the southwest and northeast of the county rely on demand response service, but receive very uneven service with potential multi-day response times subject to vehicle availability.

Coordination Gaps

In addition to spatial gaps in the county, the fact that none of the services technically overlap means that there are few opportunities for passengers to connect between providers. Additionally, this lack of coordination between providers means that passengers also cannot transfer to another service without paying an additional fare. Each of these services could be improved by working together, and with other area agencies, to provider a greater service area so that more trips could be made without a transfer and/or additional fare.

Service Information Gaps

Lack of information is one of the greatest impediments to using public transportation in Berrien County. While the MyWayThere.org website provides a largely comprehensive repository of information regarding transportation in southwest Michigan, this website is poorly organized and difficult to navigate. All the information for each service needs to be presented in the same manner, with service area and detailed route maps for all demand response and fixed route providers, and consistently presented information on reservation procedures, hours of operation, fares, and similar types of information. All information for each service needs to be consistently reported in all locations, including other websites and brochures.

In addition to the overall information consistency, an effective strategy to helping passengers to better understand the different services in the county is consistent branding. The look and feel of transit service should be more coherent, including bus stops, websites, and vehicles.

Data Gaps

In order to properly ascertain the effectiveness of any given service, each of these providers needs to begin using GPS and automatic vehicle locators (AVLs). These tools can be used to allow tracking of vehicles to ensure greater efficiency, and can additionally be used to allow customers to track the location of a bus. Currently most data for each of these systems is collected and analyzed by hand, which is labor-intensive. This technology can be used to improve service, provide greater information to customers, and to provide detailed data on any given service.

Additionally, the fixed-route services should maintain a General Transit Feed Specification (GTFS), so that online trip planners such as Google Maps can include the service. GTFS may be extended to demand-response service in the future.

4 MARKET ANALYSIS

Transit service in Berrien County is a patchwork of fixed-route and demand-response services, and the fixed-route service is often limited in span of hours, days of the week, and/or frequency. Two fixed-routes operate in Benton Harbor and St. Joseph, and one fixed-route flex service operates in Niles. Demand-response service is notionally available throughout the rural parts of the county, but constraints in operating funds and other factors mean that demand-response service is mostly available to those who happen to be located in an area where the county bus provides contract service. The urban areas of Benton Harbor, St. Joseph, Niles, and Buchanan have demand-response service, but a large portion of the urban area south of St. Joseph, including Shoreham, Stevensville, and Bridgman, has no transit service. See Figure 39 for a map of the existing transit service in the county. To determine the potential for improved and more integrated transit service in Berrien County, this market analysis presents the underlying conditions as they relate to the demand for transit service, including:

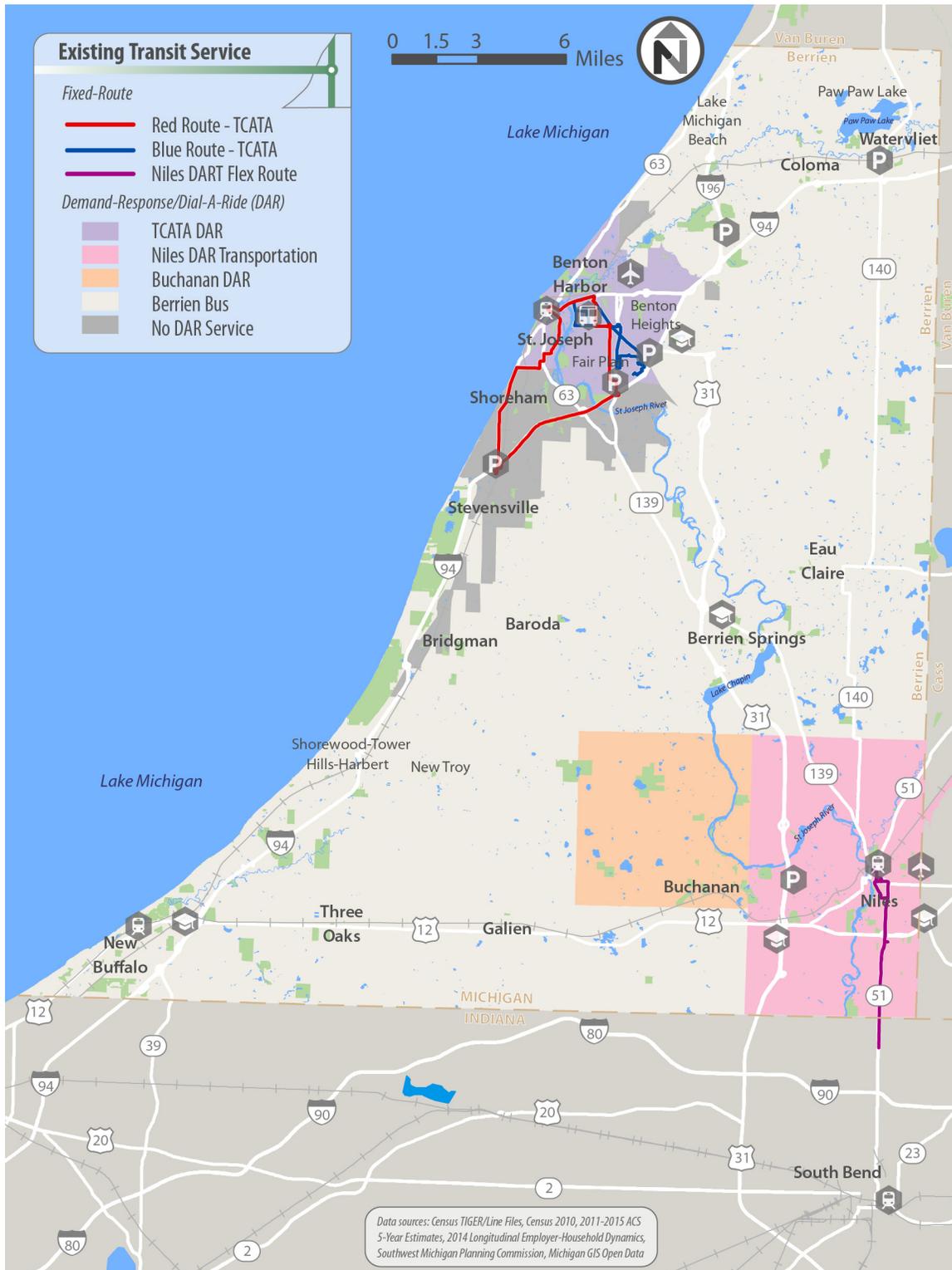
- **Population and Employment Densities:** In all areas, there is an extremely strong correlation between development patterns and transit ridership. In areas with denser development, where larger numbers of people live and/or work in close proximity, transit can become very convenient, and thus attractive and well used. In most cases, these “external” factors outweigh those directly controlled by the service provider.
- **Socio-Economic Characteristics:** Demographic characteristics such as age, income, minority status, and disability status provide indications of demand among populations that have a high propensity toward transit use.
- **Existing and Projected Travel Flows:** Travel flows provide information on the trips that people make between transportation zones, as well as the purpose of that trip, allowing for broad conclusions of where people need to travel inside and outside a county.

These factors are the primary drivers of transit demand and, as such, provide strong indications of underlying transit demand. However, it should also be noted that other factors also influence transit demand, including:

- **Urban Form/Land Use:** While directly related to the population and employment densities of an area, the urban form or land use in an area should ideally go beyond providing density. Providing a diversity of uses at street-level, good connectivity of the multimodal network, major destinations along reasonably direct corridors, and comfortable and safe spaces for people all can influence transit demand.
- **Pedestrian Environment:** Nearly all transit riders are also pedestrians, and, thus, walking environments strongly impact ridership. A common rule of thumb is that transit riders will walk one-quarter of a mile to access transit. However, in comfortable pedestrian environments, many transit riders will walk longer distances; in uncomfortable environments, many will not walk even one-quarter of a mile.

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Figure 39 Existing Fixed-Route and Demand-Response Transit Service in Berrien County



- **Service Design:** Slow, circuitous routes that take people closer to their destinations are preferred by some riders, such as many older adults and individuals with disabilities, but are viewed as very inconvenient by most others. Therefore, no matter the inherent demand for transit, service must be designed appropriately to appeal to local markets.
- **Travel Times Relative to Other Options, Primarily Driving:** Most people accept that trips by transit take longer than trips by car, and the time differences can be offset by other differences. However, when the differences are smaller, ridership will be higher, and when the differences are larger, ridership will be lower.
- **Costs:** The cost of using transit is almost always lower than the cost of driving. Similar to travel time differences, when the costs of driving are higher (for example, due to high gasoline prices, tolls, or parking costs), transit ridership will be higher; when they are lower, transit ridership will be lower.

This market analysis examines the primary factors described above, and subsequent work on the Berrien County Transit Service Integration Plan will address the secondary factors. The analysis broadly identifies neighborhoods, activity centers, and corridors that may be supportive of transit service. However, the analysis is not intended to provide enough detail or precision to lead to service recommendations on its own. Local knowledge and guidance, along with fieldwork, will provide context and detail that data and maps cannot. All information sources will be considered together, and recommendations and final decisions will reflect a holistic view of the transit landscape throughout Berrien County.

To assess the demand for an integrated transit system in Berrien County, this Market Analysis must focus on both the urban and rural areas of the county. Incorporated municipalities or areas designated by the Census as a concentration of people cover only about 9% of the county land area. The remaining area is unincorporated or encompasses low-density development. However, about 43% of the population in Berrien County resides within the incorporated areas and Census-designated places. This fact, combined with the fact that transit is often most successful in dense, more “urban” locations, necessitates a closer look at some of the cities and towns within Berrien County. Every attempt has been made to balance the analysis of urban and rural areas so that readers gain a comprehensive understanding of the demand and need for transit throughout Berrien County.

TRANSIT POTENTIAL

Population and Employment

For scheduled transit to be successful, it must be available when people need it, frequent, direct, and easy to access. More than any other factors, population and employment density determines whether this is possible:

- Transit needs to serve sufficiently high volumes of travelers to be cost-effective, and the density of development determines the overall size of the travel market. The reach of transit is generally limited to within one-quarter to one-half mile of the transit line or station; thus, the size of the travel market is directly related to the density of development in that area.
- Transit service frequencies, in turn, are closely related to market size. Bigger markets support more frequent service, while smaller markets can support only less frequent service.
- To attract travelers who have other options, such as automobiles, transit must be relatively frequent—at least every 30 minutes. Below that, transit can be expected to serve only those who do not or cannot drive.

Population and employment levels and densities also provide an indication of the types of riders that transit will serve. In general terms, there are two types of transit riders:

- **Riders with Many Choices**, who have sufficient resources and the ability to operate private vehicles but choose to use transit for some or all trips. These riders may choose transit to avoid congestion, long commutes, or high parking costs, among other reasons.
- **Riders with Limited Choices**, who are also often referred to as “transit dependent riders,” use transit services because they do not have an automobile available for their trip or are unable to operate a private vehicle. Because they have fewer choices for travel, they rely more on transit than riders with many choices. Riders with fewer choices are also more likely to use transit to get to appointments, shop, and visit friends or family.

Transit dependent riders often live in densely populated areas, and the combination of discretionary and transit-dependent riders produces demand for even more frequent service that increases the attractiveness of transit for discretionary riders. However, in less densely developed areas, because there are fewer people, the overall demand is lower, and consequently service levels are lower. As a result, transit dependent riders often comprise the majority of riders in less developed areas.

Emerging research suggests that the dichotomy of “transit dependent” versus “transit choice” riders can be somewhat overcome with well-designed, useful service and technology advancements that have developed in the last decade.¹ While most of this research has been conducted in larger metropolitan areas, the lessons are applicable in a range of areas when local conditions are considered and incorporated into the planning process.

Population and Employment Distribution

As of 2010, Berrien County’s population is most concentrated in Benton Harbor, St. Joseph, Shoreham, Stevensville, Berrien Springs, Buchanan, and Niles. Many other small pockets also exist, including Bridgman, Baroda, Eau Claire, New Buffalo, Three Oaks, Galien, Coloma, and Watervliet (see Figure 40). Of these communities, only Benton Harbor and parts of St. Joseph and Niles are served by fixed-route transit that run hourly. The large majority of the county is covered by demand-response services, though not all areas of the county have easy access to these services. In total, fixed-route transit services are available within a quarter-mile (approximately) of only about 15.7% of Berrien County’s population.

As of 2014, jobs in Berrien County are most heavily clustered along the lakeshore and I-94 between Bridgman and Benton Harbor (see Figure 41). Other significant employment clusters are in Niles, Buchanan, New Buffalo, Berrien Springs, Coloma, and Watervliet. There is either no service or very limited transit service to employment along most major corridors, either fixed-route or demand-response. About 37% of Berrien County jobs are accessible by fixed-route transit, though service is often limited.

¹ “Who’s On Board 2016.” TransitCenter. <http://transitcenter.org/publications/whos-on-board-2016/>

Figure 40 Population Distribution in Berrien County

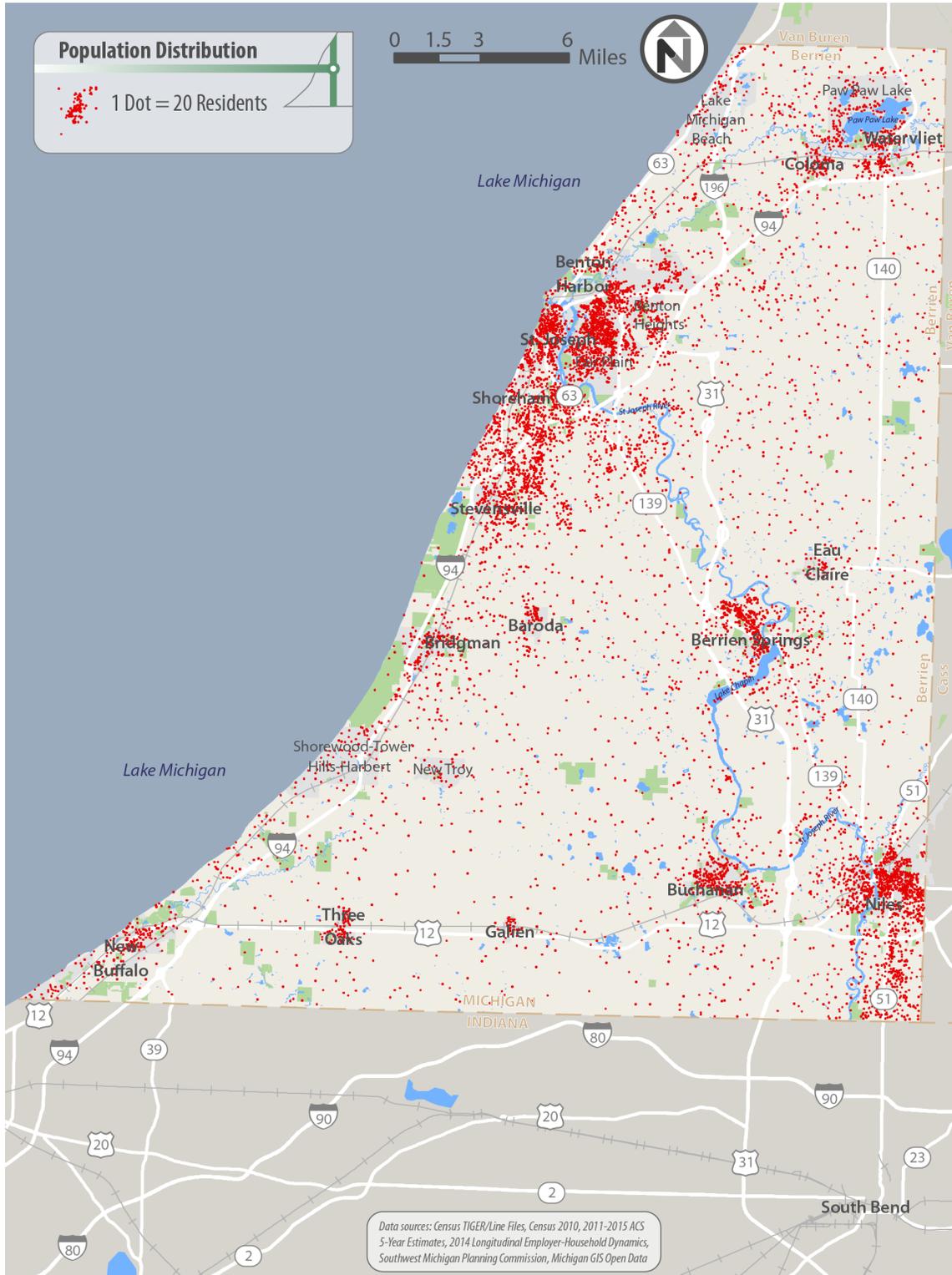
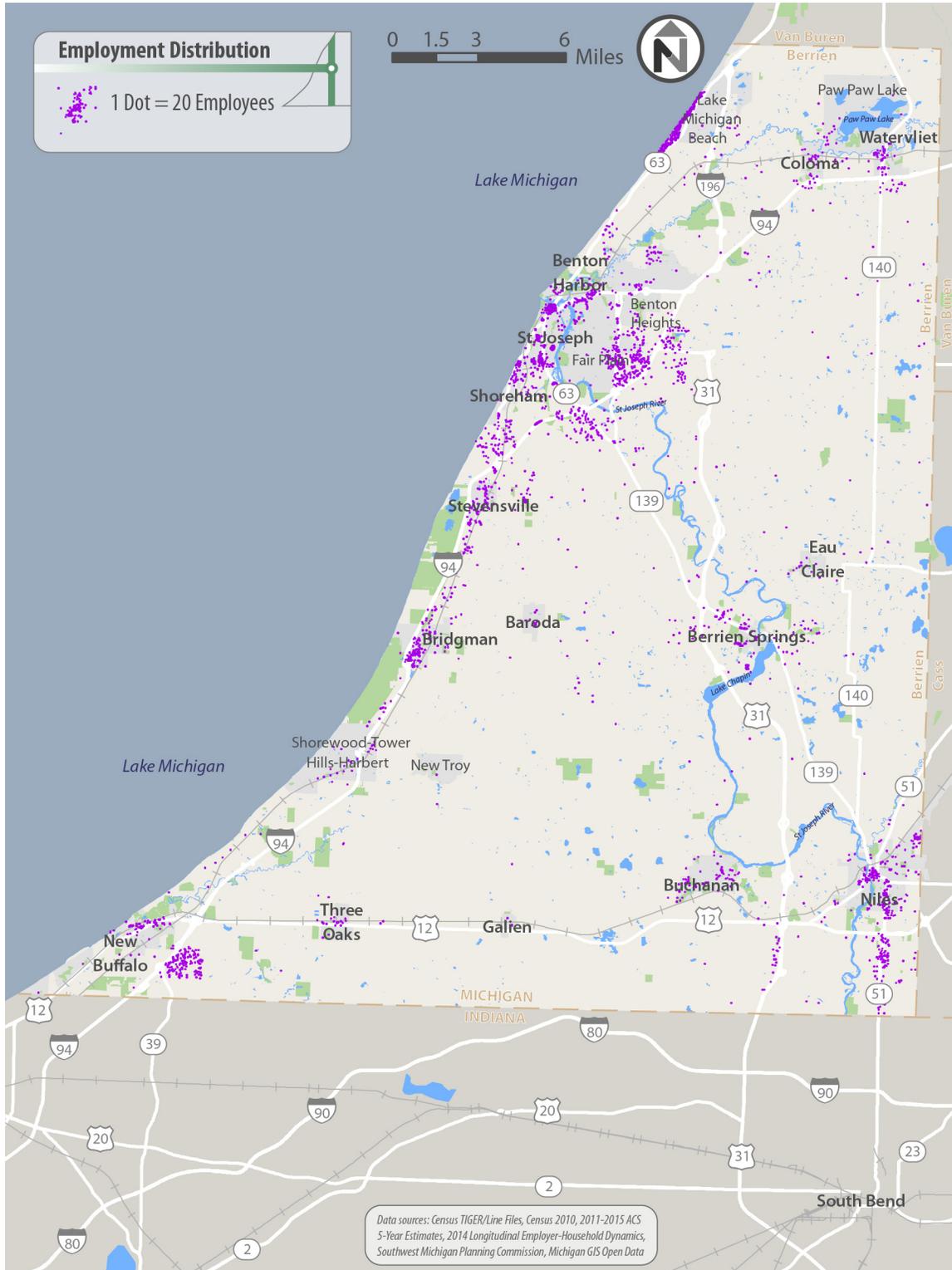


Figure 41 Employment Distribution in Berrien County



Population Density

As described above, population and employment densities are two of the strongest indicators of where the demand for transit will be highest and where transit will work best. As such, population densities provide an indication of the underlying population-based demand for transit in terms of the type and frequency of service that would be most appropriate.

There must be eight to 16 residents per acre to produce demand for hourly service, which is the lowest level of service that is generally considered to be acceptable, as shown in Figure 42. As densities grow, the demands for transit grow, particularly with respect to more frequent service. Population densities higher than 31 residents per acre generate demand for frequent services (every 15 minutes or less) and premium services.

Figure 43 shows the relative population density that is needed to support fixed-route transit in a given area, focusing on the urban areas. Increased densities can support more frequent service options. Outside of the urban areas, no areas show enough density to support fixed-route transit, with the exception of a few blocks in Bridgman, Baroda, Three Oaks, and Galien. A different type of transit, such as modernized demand-response or flex bus services are most appropriate for low-density areas. Key findings from the population density analysis include:

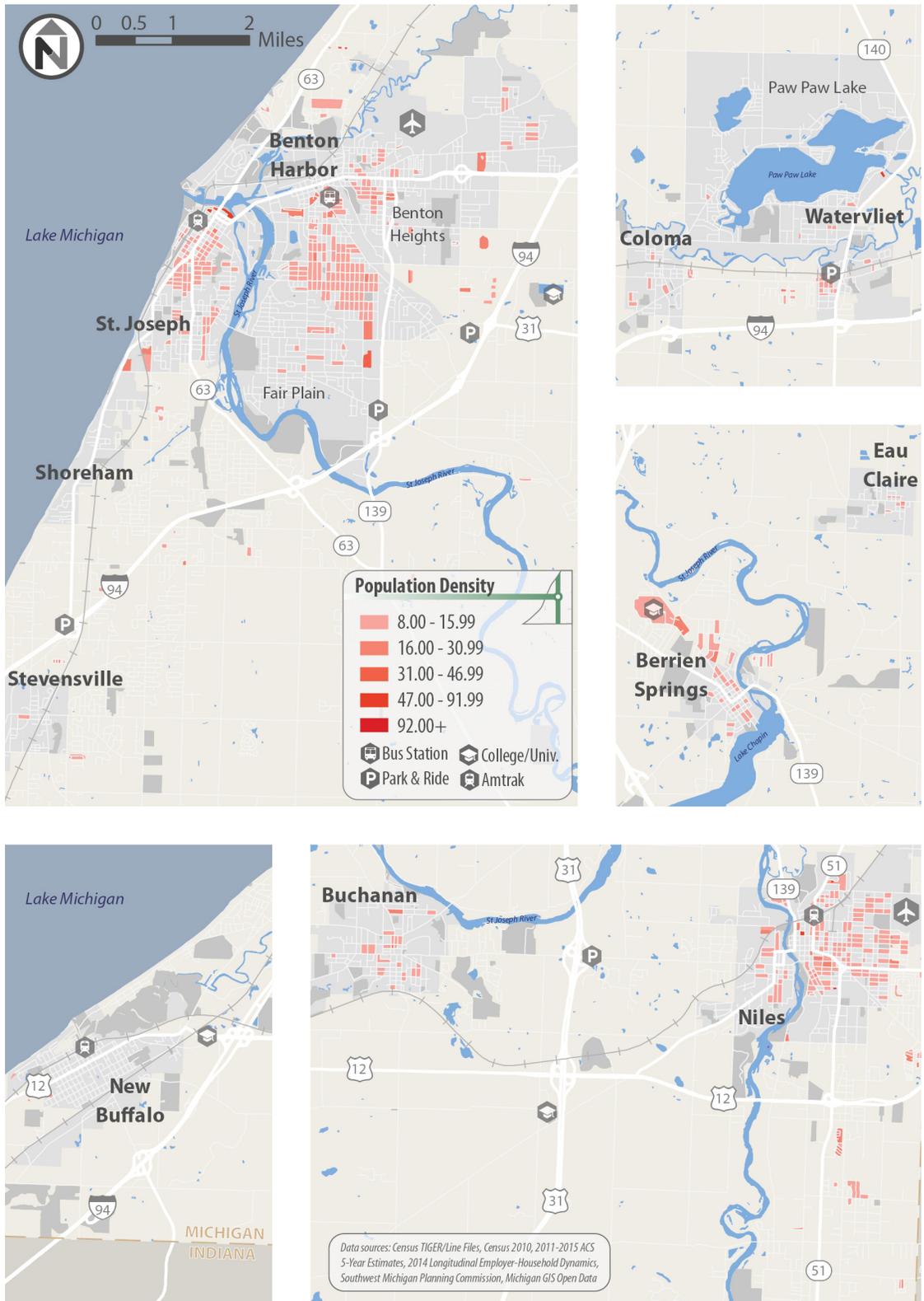
- About 18.5% of the total county population lives in an area with sufficient population to support fixed-route transit that runs at least every 60 minutes, covering about 0.7% of Berrien County’s land area.
- Over three-fourths of the county’s population (75.3%) lives in an area with sufficient density to support flex bus type service, representing 13.6% of the total area of the county. The remaining 25% of the county population lives in areas that will likely be better served by demand-response service, covering over 86% of the county’s area.
- The cities of Benton Harbor, Berrien Springs, Buchanan, Niles, and St. Joseph are the primary areas of higher population density (eight or more people per acre), with considerably lower density areas in the east, south, and southwest areas of the county.
- The highest concentration of dense areas are located primarily in Benton Harbor, near May Street and Ogden Avenue, and in Niles near Broadway and 7th Street. These two areas currently have some fixed-route or flex bus transit.

Figure 42 Transit Supportive Population Densities

Transit Mode/ Service Frequencies	Residents/ Acre
Flex Bus/Community Circulator	0.5-8
Local Bus	
60 minutes	8-16
30 minutes	16-31
15 minutes	31-47
10 minutes	47-92
≤ 5 minutes	>92
Bus Rapid Transit	26-52

Source: Nelson\Nygaard assembled from various sources.

Figure 43 Population Density in Berrien County Urban Areas



Employment Density

The location and density of jobs is another strong indicator of transit demand. In most markets, traveling to and from work is the single largest segment of transit trips. Commute trips are typically repetitive and predictable, often attracting riders who would otherwise not use transit. As shown in Figure 44, four to eight jobs per acre typically produces demand for hourly bus service. As densities grow, the demand for transit grows, as well as the demand for more frequent service. Employment densities higher than around 16 jobs per acre produce demand for frequent services (every 15 minutes or less) and premium services.

Figure 45 shows the relative employment densities needed in an area to support fixed-route transportation. Outside of the urban areas, no areas show enough density to support fixed-route transit, with the exception of a few blocks in Bridgman and Three Oaks. Rural employer shuttles or other demand-response type services may still be feasible outside of the urban areas. Key findings from the employment density analysis include:

- The highest concentrations of employment in Berrien County are located in downtown Benton Harbor, Niles, and St. Joseph. However, a number of small areas with higher employment densities can be found along the highway and railroad alignments.
- Several retail complexes are major employment centers, including the areas near and around the Walmart in Benton Harbor and Niles; the commercial and retail locations in St. Joseph along Niles Avenue and State Street; and the area in Fair Plain with a variety of uses bound by Napier Avenue, Pipestone Road, Scottsdale Road, and I-94.
- Nearly 60% of all jobs in Berrien County, or some 36,000 jobs, are located in places that can support fixed-route transit with at least 60-minute frequency. This area covers about 0.9% of the county. Of these jobs, over 25,500 are in places that could support frequencies of half hour or more.

Figure 44 Transit Supportive Employment Densities

Transit Mode/ Service Frequencies	Jobs/ Acre
Local Bus	
60 minutes	4-8
30 minutes	8-16
15 minutes	16-24
10 minutes	24-48
≤ 5 minutes	>48
Bus Rapid Transit	>13

Source: Nelson\Nygaard assembled from various sources.

Figure 45 Employment Density in Berrien County Urban Areas



Underlying Transit Potential

The previous sections presented population- and employment-based demand separately. However, particularly in mixed-use areas where there are both large numbers of residents and jobs, transit demand will be higher than indicated by the individual measures. When viewing the two measures together, the areas with the strongest underlying potential for transit emerge (see Figure 46):

- Fixed-route transit potential in Berrien County is relatively high within the downtowns of St. Joseph, Benton Harbor, and Niles, as well as around the commercial areas in south St. Joseph and south Niles.
- Other areas with moderate transit potential in Berrien County include the retail and commercial areas in southeast Benton Harbor (Fair Plain area), downtown Berrien Springs, and the residential areas of Benton Harbor and Niles.
- More distant areas that may be able to support some fixed-route transit include Berrien Springs, Buchanan, and Watervliet.
- Few areas west of Buchanan or south of Stevensville have sufficient population or jobs to support fixed-route transit service, and the ones that do exist are small pockets such as Four Winds Casino or an employment area in Bridgman. Most of the area in Berrien County north and east of Benton Harbor, and east of the St. Joseph River/Berrien Springs north of Niles cannot effectively support fixed-route transit.

When considering the existing alignments of fixed-route transit service in the county, the routes match relatively well with the greatest transit potential in many locations (see Figure 47). However, opportunities exist to improve fixed-route service in certain areas, particularly Niles and downtown St. Joseph. Additional analysis is also necessary to determine whether the existing routes provide convenient, useful service in terms of directness, travel time, frequency, and span of hours, among others.

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Figure 46 Potential for Fixed-route Transit in Berrien County Urban Areas

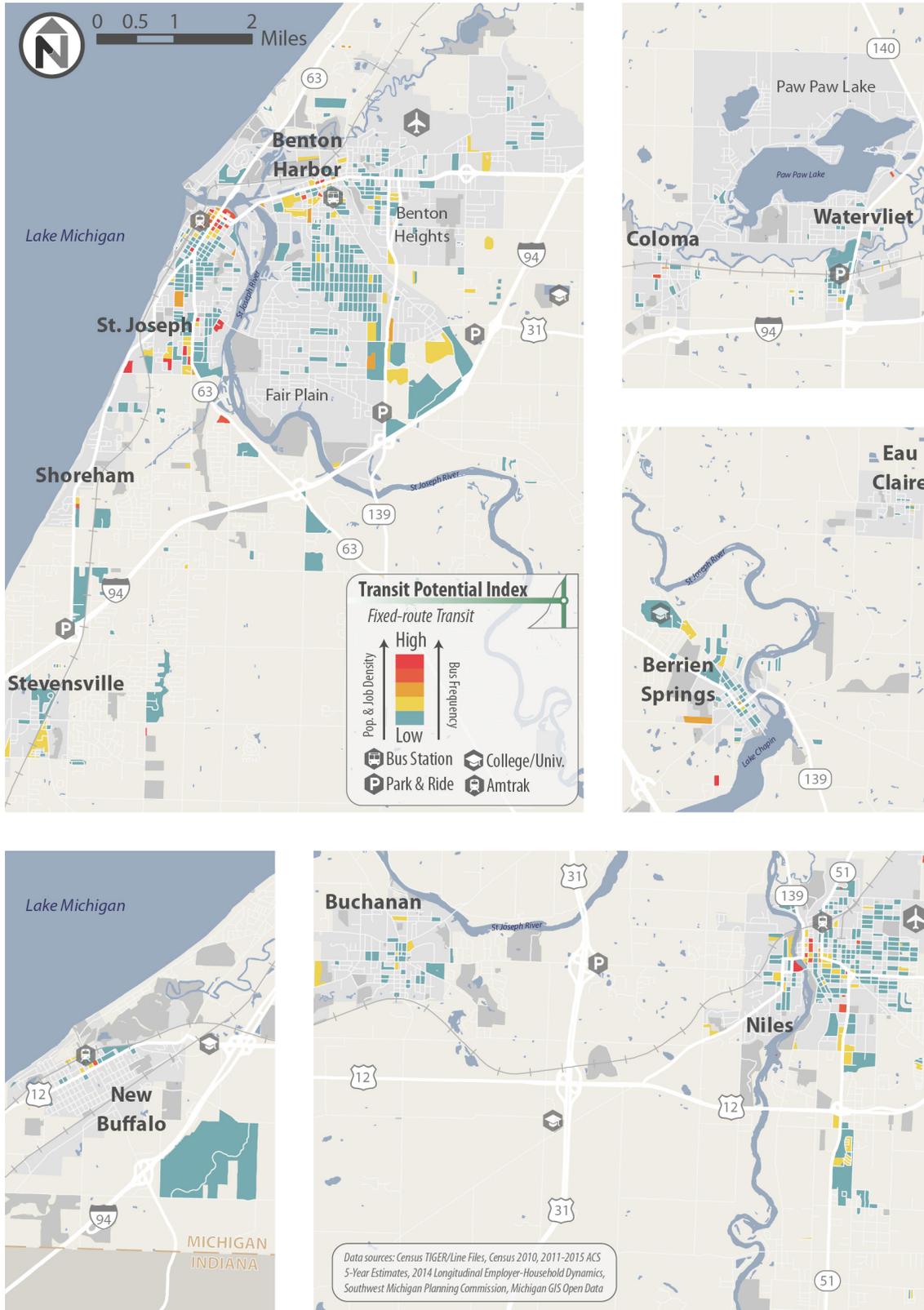
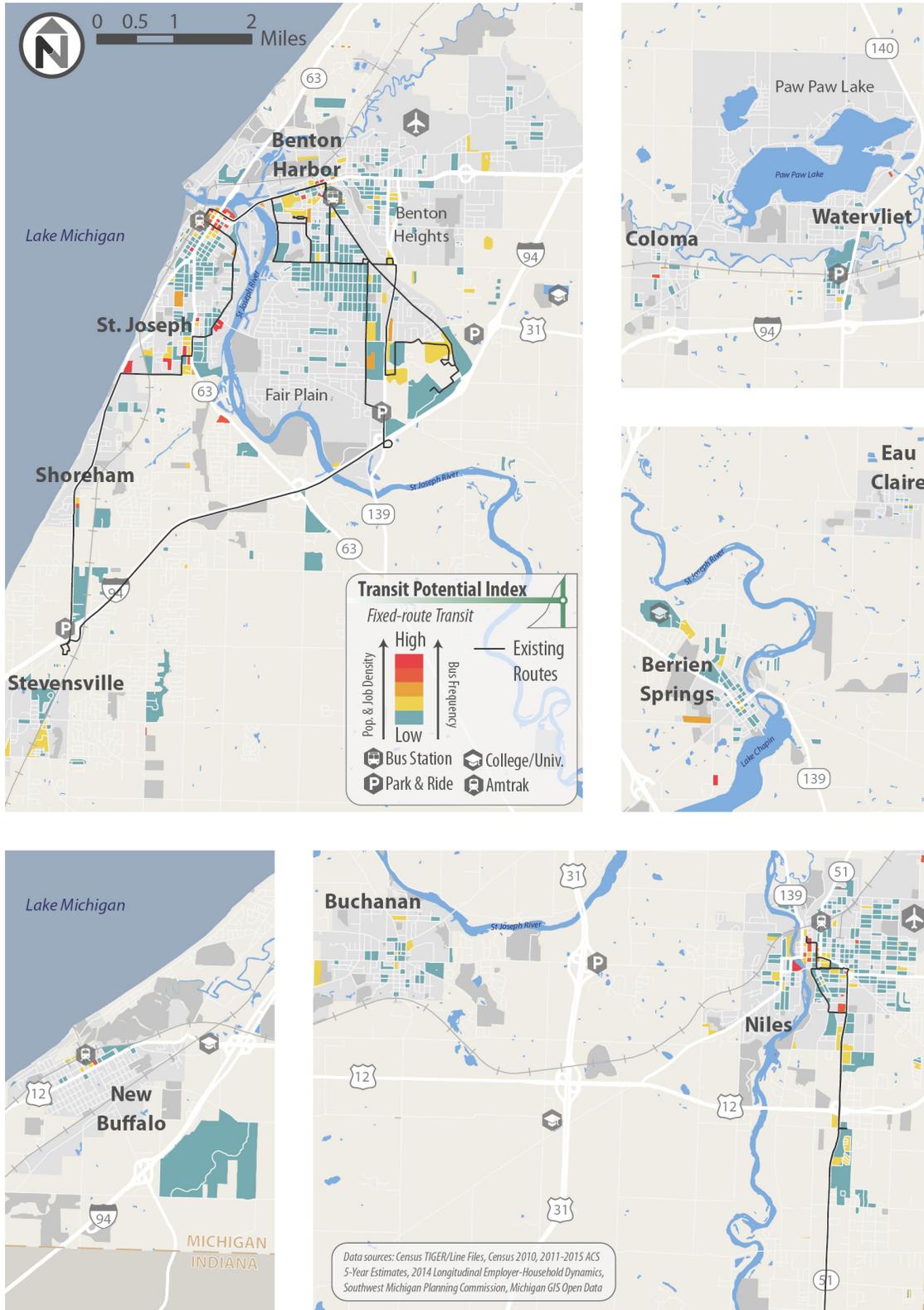


Figure 47 Existing Transit Routes and the Potential for Fixed-route Transit in Berrien County Urban Areas



Major Employers

Work trips often make up a significant percentage of all transit trips. An [APTA review in 2007](#) of 150 on-board surveys found that upwards of 60 percent of riders were traveling to or from work. Thus, detailed information on major employers in Berrien County is essential for understanding travel flows and origins and destinations within the city. Even in areas that may not otherwise support transit services, individual major employers can be significant drivers of transit demand. These employers are often located in buildings or on campuses with extremely high workforce concentrations. Workers in these facilities may also work similar hours, allowing for shift-specific transit services. Some major employers may be willing to subsidize service to their facilities, opening up new opportunities for workplace shuttles and other unconventional transit modes.

The largest employers in Berrien County vary in their type as shown below in Figure 48, and represent manufacturers, healthcare, and educational opportunities among others. Whirlpool, which employs about 4,000 staff, and has its headquarters in Benton Harbor, is the largest employer in the county. The Lakeland Regional Health System further employs over 3,800 people in Berrien County, followed by the 2,100 employees at Andrews University in Berrien Springs.

Figure 48 Top Employers in Berrien County in 2014 (500+ Employees)

Employers	Employees	Location
Whirlpool Corporation	4,000	St. Joseph, Benton Harbor
Lakeland Regional Health System	3,826	Various (hospitals in St. Joseph, Niles, and Watervliet)
Andrews University	2,104	Berrien Springs
Four Winds Casino	1,800	New Buffalo
American Electric Power / Cook Nuclear Power Plant	1,200	Stevensville
Leco Corporation	650	St. Joseph
Berrien County Government	635	Various
Lake Michigan College	500	Benton Harbor, Niles

Source: Berrien County Community Development

Leading employers are primarily clustered in a few locations along or near the Lake Michigan shoreline, or near various cities and towns, including St. Joseph, Benton Harbor, Berrien Springs, Watervliet, Niles, and New Buffalo. Several large employers, including Whirlpool, Leco, and Lakeland Hospital are located in Benton Harbor and St. Joseph. Both of these commercial areas are served by TCATA.

In addition to large individual employers, Berrien has several major retail districts with significant concentrations of small employers. This includes downtown St. Joseph, the area around The Orchards Malls on Pipestone Road, and the various commercial areas along Scottsdale Road and Niles Avenue. These retail districts are also served by TCATA.

Figure 49 Major Employers in Berrien County

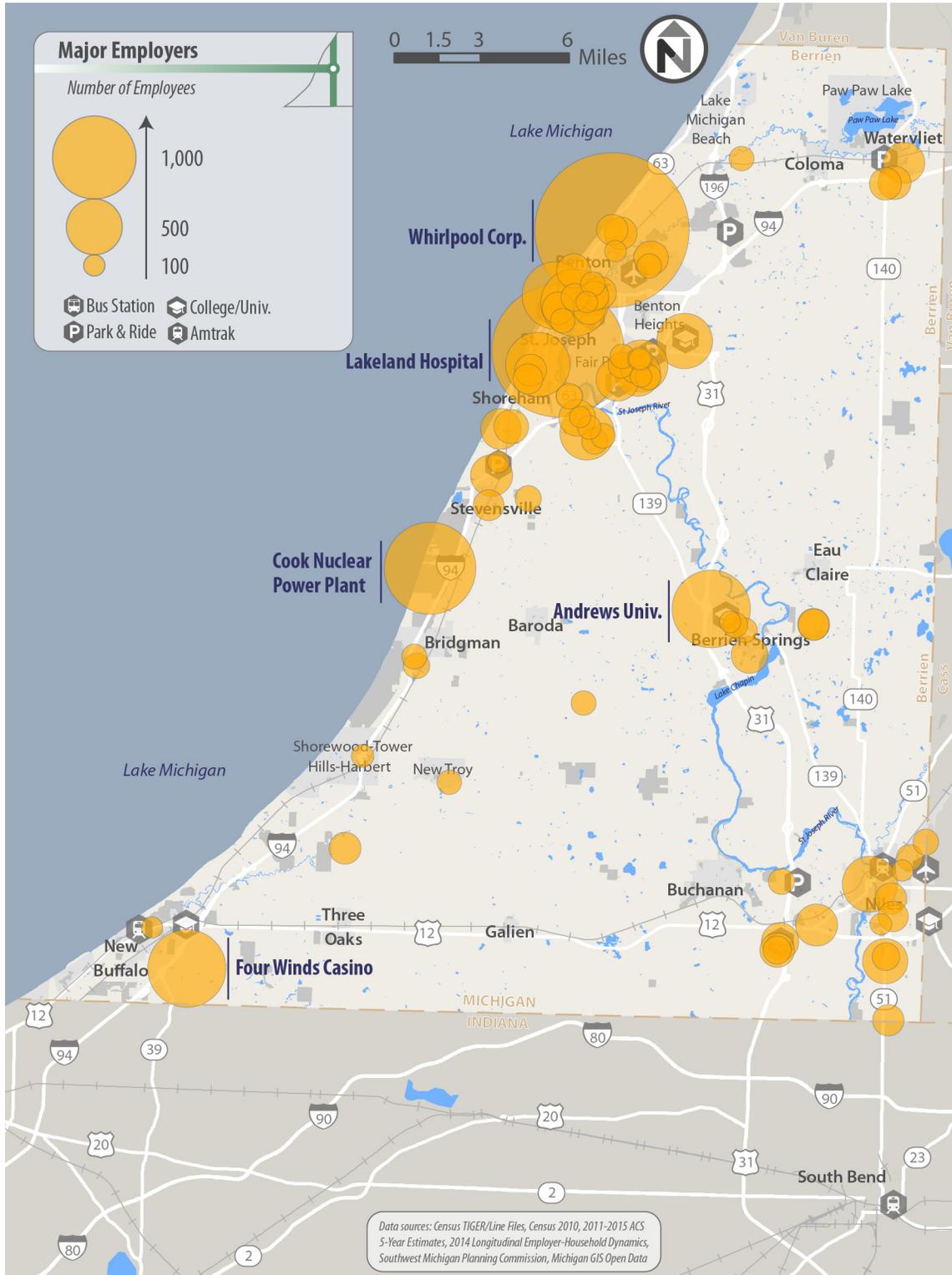
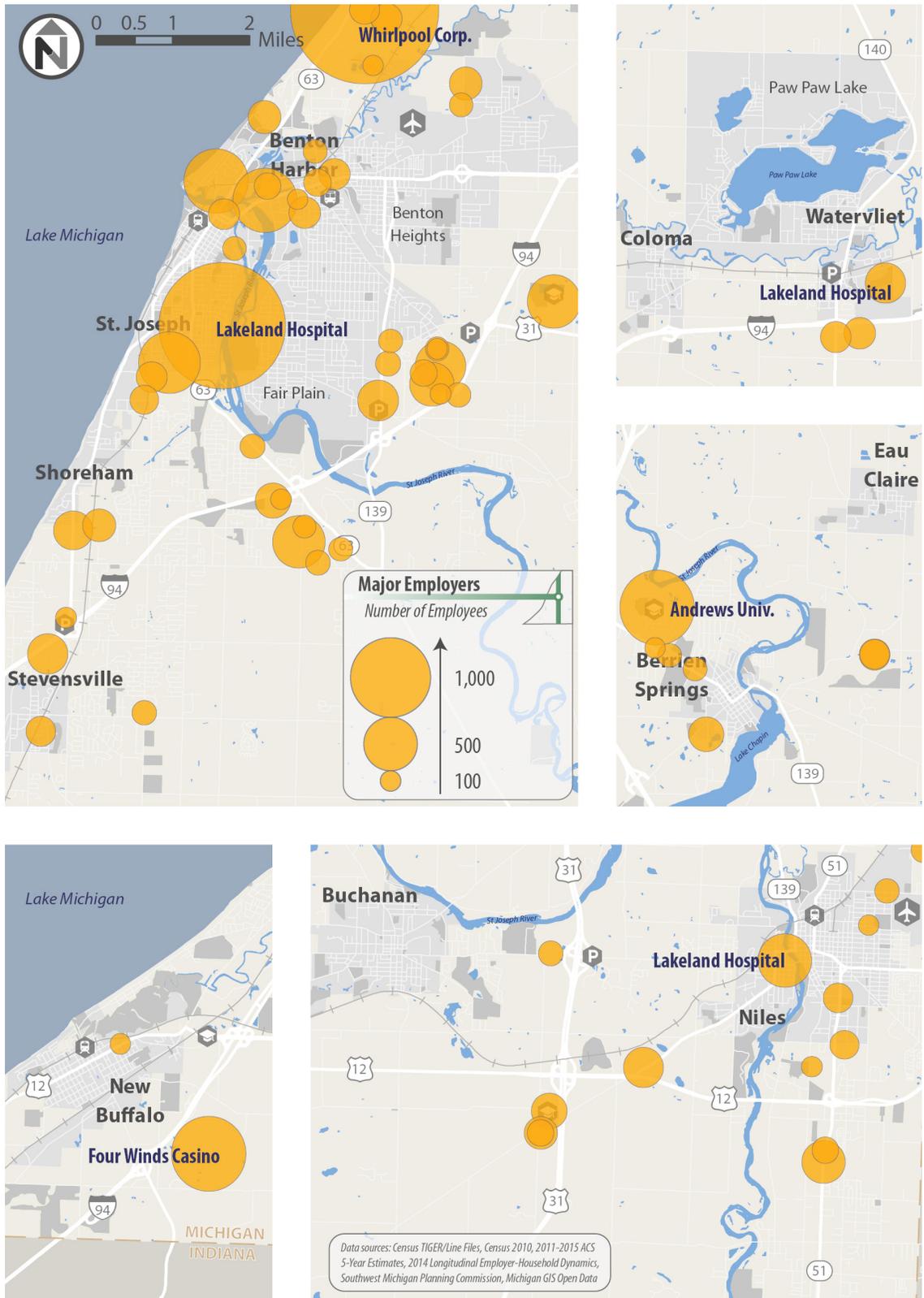


Figure 50 Major Employers in Berrien County Urban Areas



POPULATIONS WITH A HIGH PROPENSITY FOR TRANSIT USE

In addition to population and employment density, socioeconomic characteristics influence an individual's propensity toward transit use. National research shows that many population groups have a higher propensity for transit use than the overall population. The most influential ones include:

- **Older Adults (age 65 and over)**, who as they age often become less comfortable or less able to operate a vehicle. Transit offers older adults the ability to remain active and independent, as well as the freedom to “age in place” by staying in their homes as they transition away from their vehicle.
- **Young Adults (18-34 years old)**, who in general have a significantly higher interest in using many transportation options such as transit, walking, and biking and a lower interest in driving. In many cases, the availability of good transit is an important factor in where they choose to live.
- **Low-Income Individuals**, who tend to use transit to a greater extent than those with higher incomes because transit provides significant cost savings over automobile ownership and use. For the purposes of this study, low-income individuals are defined as those whose income is at or below 150% of the federal poverty line.
- **Zero-Vehicle Households**, which have limited transportation options other than transit. In small cities and other areas that are oriented toward automobile travel and where transit options are much more limited, people without automobiles largely consist of those with lower incomes or those who do not drive.
- **People with Disabilities**, many of whom cannot drive or have difficulty driving. Public transportation, including regular fixed-route bus service as well as specialized paratransit services, is an essential resource to ensure people with disabilities are able to remain active, productive, and part of the community.
- **Minorities (non-white, Hispanic or non-Hispanic)**, use transit more often than non-minorities because they tend to have more limited resources for transportation and live in denser neighborhoods closer to the urban core. This means that there is a large amount of overlap between minority populations, low-income individuals, and zero-vehicle households; however, the presence of high numbers of minority residents still provides an additional strong indicator of transit demand. The provision of effective transit service to minority populations is also particularly important to the Federal Transit Administration and is a requirement under Title VI of the Civil Rights Act of 1964.

When significant numbers of these individuals cluster together, they can influence the underlying demand for transit to an extent that is not captured when only considering total population or employment. Demand can be higher or lower than the population or employment densities indicate depending on the underlying socio-economic characteristics of a population. High transit propensity (sometimes referred to as “transit need”) also does not necessarily mean that traditional fixed-route services will work in a given area. Some locations have a high transit need but low population or employment density. The influence of socio-economic characteristics can be hard to capture graphically, however, because determining the precise overlap between the groups is difficult with the data available. In this analysis, we will therefore look at overall patterns and clusters of these groups, and factor those results into our subsequent work. Ultimately, each community must set their own priorities for balancing service to transit-need and transit-supportive areas.

Overall, densities of transit need groups in Berrien County are low, with relatively few areas of more than one person per acre in any given group. Typically, these groups are found within Benton Harbor, St. Joseph, Berrien Springs, Buchanan, and Niles. Key trends and findings from the transit propensity analysis include:

- Higher densities of older adults are found scattered throughout the county, with the most notable concentrations of older adults found in St. Joseph, Benton Harbor, and Niles.
- Younger adults have notable concentrations near downtown Niles, in central Benton Harbor, near downtown St. Joseph, and particularly in Berrien Springs near Andrews University.
- In general, Berrien County has low concentrations of low-income individuals, zero-vehicle households, and people with disabilities. The more urban areas of the county, particularly the Benton Harbor area and Niles, show the greatest number and concentrations of these groups, but densities still rarely exceed five people per acre within any of these groups.
- No areas outside of Benton Harbor, Benton Heights, Berrien Springs, or Niles demonstrate prominent numbers of non-white minorities. The largest number of non-white minorities are particularly found in Benton Harbor and nearby areas to the north or east of the St. Joseph River. These same areas show the highest concentrations of low-income individuals and zero-vehicle households, suggesting a high amount of overlap between these groups.

Older Adults

Few Census blocks in Berrien County feature densities of older adults greater than five people per acre, and none of these blocks are located adjacent to one another. Several small areas in Berrien County have low densities of older adults (one to five per acre), however. St. Joseph, particularly between Lakeshore Drive and Niles Avenue, and residential areas within Benton Harbor show the greatest density of older adults. Additionally, Niles has some density of older adults, particularly east Niles, as well as between 3rd and 11th Street and south of Main Street. Low densities of older adults also exist south of Niles along South 11th Street where Niles' lone fixed-route service operates. Other areas with low densities of older adults are in Berrien Springs and Buchanan, as well as the unincorporated areas east of Stevensville.

Young Adults

The highest density of young adults (more than five people per acre) is located at and near the Andrews University campus in Berrien Springs. While there are other isolated pockets with relatively high density of young adults in Niles, St. Joseph, and Benton Harbor, none of these areas of higher density are adjacent to one another, and instead are scattered within each respective community. In addition, low-density pockets of young adults (one to five people per acre) exist throughout the aforementioned communities, as well as in Buchanan. Within Benton Harbor, most of the concentration of young adults is found to the south and west of Pipestone Street and north of Napier Avenue, whereas most of the young adult concentrations in St. Joseph are found in and near the downtown area. Low-density pockets of young adults in Niles are found throughout the area, particularly north of Broadway and east of 3rd street.

Low-Income Individuals

There are relatively few areas that have densities of low-income people. The area with the highest concentration of people with low-incomes (more than five people per acre) is found in Benton Harbor. Most of Benton Harbor, as well as Benton Heights and much of Niles, have low densities of people with low-incomes (between one and five people per acre). These areas are found along Pipestone Road in Benton Harbor, and along Main Street in Benton Heights. Similar areas occur in Niles to the north of Main Street and east of 11th Street, as well as south of the Pulaski Highway and east of 11th Street. Additionally, there are areas with a low density of people with low-incomes in Buchanan, Berrien Springs, and New Buffalo.

Zero-Vehicle Households

The majority of Berrien County residents have access to a personal vehicle. The only large areas that have low densities of people living in zero-vehicle households can be found in Benton Harbor between Napier Avenue and Main Street around Colfax Avenue and Pipestone Street, and in the area of Niles bound by the river to the west, the railroad to the north, 9th Street to the east, and Broadway to the south. A small area within Benton Harbor between Main Street, Britain Avenue, Crystal Avenue, and M-139 also has a low-density of people in zero-vehicle households. All other areas of Berrien County have less than one person per acre living in a zero-vehicle household.

People with Disabilities

The area featuring the highest density of people with disabilities is in Benton Harbor south of Empire Avenue, north of Cross Street, and between Colfax Avenue and Marion Avenue, just south of Benton Harbor High School. Large portions of Benton Harbor, St Joseph, Niles, Berrien Springs, New Buffalo, Buchanan, and Watervliet have low densities of people with disabilities (between one and five people per acre). There are additionally large unincorporated areas between Stevensville and Benton Harbor that have low densities of people with disabilities. Some of the neighborhoods in Benton Harbor and St. Joseph are served by fixed-route transit, while nearly all areas with low densities of people with disabilities have access to demand-response transportation.

Minorities

The area with the highest concentration of minority population is Benton Harbor, with nearly all of Benton Harbor having at least low densities of minority residents (between one and five people per acre). Much of central Benton Harbor has mid (between 5 and 15 people per acre) to high densities (between 16 and 35 people per acre) of minority residents. Benton Heights and Fair Plain also show low to moderate densities of minorities. Outside of the Twin Cities, minorities are concentrated in Berrien Springs, particularly north of M-139; Niles, particularly to the east of the St. Joseph River; and small areas of Buchanan. The density of minority populations in these areas falls within the low- to mid-range.

TRENDS IN COMMUNITY CHARACTERISTICS

An analysis of demographic and socio-economic characteristics in 2010 and 2015 reveals that Berrien County has a higher percentage of older adults and lower percentage of young adults when compared to the entire state of Michigan (see Figure 51 and Figure 52). The median age in Michigan in 2015 was around 39.5 years while the median age in Berrien County was around 41.4 years. Berrien County also has a higher percentage of low-income individuals on average compared to the state, and the difference grew from being 2.5 percentage points higher in 2010 to 3.4 percentage points higher in 2015. Most other characteristics remain comparable between Berrien County and Michigan in 2010 and 2015. Within Berrien County in those same years, the employment rate fell from 56.2% to 55.0%, and the median age increased slightly from 41.0 to 41.4. Overall, individuals and households grew worse off with a higher percentage of people living with low-incomes and no vehicles.

The cities, villages, and other designated places within Berrien County naturally showed much more variation when compared to the whole county and state. Based on 2010 data, the highest need for transit from an access to jobs, low-incomes, and zero-vehicle households standpoint remains Benton Harbor, Benton Heights, Niles, and Buchanan. Berrien Springs, though it had a high employment rate, was a young community in 2010 and had a relatively high proportion of households without a vehicle. Many communities in Berrien County were also older than average when compared to the state and/or county,

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including Bridgman, New Buffalo, Shoreham, Stevensville, and the rural areas of the county. Though other indicators suggest a low need for transit in these communities in 2010, transit access may become increasingly important as they age. St. Joseph had a higher proportion of both older adults and young adults compared to the county and state, which can be a common pattern in urban areas and suggests that St. Joseph could be a successful market for transit. Urban areas tend to offer greater access to activities, retail, etc. but can be more expensive and have more constraints on space for families with children.

Figure 51 2010 Demographic and Socio-economic Characteristics in Berrien County

Geography	Population	Employment Rate	Older Adults	Young Adults	Low-Income Individuals	Zero-Vehicle Households	People with Disabilities	Minorities
	Total	Percentage (%)						
Michigan	9,883,640	55.8	13.8	21.6	23.4	7.2	-	21.1
Berrien County	156,813	56.2	16.3	19.5	25.9	7.2	-	21.7
Baroda (village)	873	61.3	14.0	22.0	22.7	2.4	-	4.4
Benton Harbor (city)	10,038	36.3	7.7	23.5	65.7	28.3	-	93.0
Benton Heights (CDP)	4,084	44.6	12.3	22.0	65.9	21.5	-	70.8
Berrien Springs (village)	1,800	63.0	13.7	28.0	27.0	10.9	-	27.3
Bridgman (city)	2,291	58.4	20.5	17.0	21.8	3.9	-	4.7
Buchanan (city)	4,456	53.0	14.3	22.1	33.0	14.4	-	13.4
Coloma (city)	1,483	65.4	14.5	20.7	20.8	5.6	-	6.5
Fair Plain (CDP)	7,631	60.9	14.2	20.8	26.3	8.8	-	56.5
New Buffalo (city)	1,883	55.2	21.3	16.1	21.5	8.3	-	6.6
Niles (city)	11,600	57.6	14.4	23.0	36.9	10.0	-	19.7
St. Joseph (city)	8,365	58.3	18.6	25.4	11.1	6.3	-	11.9
Shoreham (village)	862	62.1	22.5	15.8	7.6	1.6	-	10.4
Stevensville (village)	1,142	59.2	20.5	17.5	18.5	5.2	-	5.4
Three Oaks (village)	1,622	62.4	13.4	20.2	25.7	7.9	-	6.8
Watervliet (city)	1,735	57.9	11.6	21.0	30.4	8.0	-	5.7
Rural Areas	96,948	-	17.6	17.7	19.9	4.0	-	12.8

Source: Census 2010 (population, older adults, young adults, and minorities), ACS 2010 5-Year Estimates (employment rate, low-income individuals, zero-vehicle households, and people with disabilities); Note: Information on disabilities is unavailable due to changes to the disability question in 2008.

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The patterns shown in 2010 remained largely the same five years later in 2015, though the overall need for transit based on demographic and socio-economic characteristics has grown in Berrien County. Despite a relatively small decline in the employment rate, the percentage of individuals considered low-income grew from 25.9% to 29.3% between 2010 and 2015. Smaller communities, such as Fair Plain, Three Oaks, New Buffalo, Berrien Springs, and Watervliet, were hardest hit. Berrien Springs perhaps changed the most between 2010 and 2015, with the community showing a higher percentage of older adults, a lower percentage of young adults, and fairly drastic changes to many of its socio-economic characteristics. Berrien Springs also lost the most population between 2010 and 2015 of any community in the county.

Figure 52 2015 Demographic and Socio-economic Characteristics in Berrien County

Geography	Population	Employment Rate	Older Adults	Young Adults	Low-Income Individuals	Zero-Vehicle Households	People with Disabilities	Minorities
	Total	Percentage (%)						
Michigan	9,900,571	55.2	15.0	22.1	25.9	8.0	14.1	21.0
Berrien County	155,565	55.0	17.3	19.9	29.3	8.7	14.0	21.9
Baroda (village)	871	61.8	13.7	22.8	27.3	2.6	11.6	4.6
Benton Harbor (city)	10,014	43.0	8.5	23.2	68.9	31.2	19.5	92.5
Benton Heights (CDP)	4,235	45.1	9.9	24.0	70.4	21.6	15.9	75.7
Berrien Springs (village)	1,318	52.0	17.8	23.7	35.5	10.2	15.8	27.1
Bridgman (city)	1,997	52.4	25.6	18.3	23.8	8.4	12.5	3.7
Buchanan (city)	4,401	59.2	16.6	19.5	25.3	17.1	13.8	16.3
Coloma (city)	1,600	57.0	14.1	22.8	26.3	5.9	14.1	6.4
Fair Plain (CDP)	7,706	54.5	15.2	20.3	42.7	9.7	15.0	45.4
New Buffalo (city)	1,893	56.5	19.5	15.8	30.4	5.8	14.1	12.2
Niles (city)	11,450	51.6	16.2	22.1	42.5	16.2	17.0	14.8
St. Joseph (city)	8,311	64.3	18.3	25.7	17.1	7.0	11.6	10.3
Shoreham (village)	888	60.6	20.7	13.6	14.3	1.1	10.5	18.4
Stevensville (village)	1,282	59.5	23.4	12.4	10.7	3.2	14.6	6.6
Three Oaks (village)	1,598	64.1	13.8	22.1	36.4	3.2	13.5	10.5
Watervliet (city)	1,773	52.0	14.3	20.1	38.1	5.6	20.2	10.2
Rural Areas	96,228	-	18.7	18.7	21.9	5.1	13.1	14.0

Source: ACS 2015 5-Year Estimates

TRAVEL FLOWS

Travel flows, which show the places that people travel between both within and outside of Berrien County, are one resource to determine where direct or relatively easy connections should be made with an area. Typically, transit riders need to travel to the same areas as those who drive or use another means of transportation but must accomplish the same trip in a very different manner.

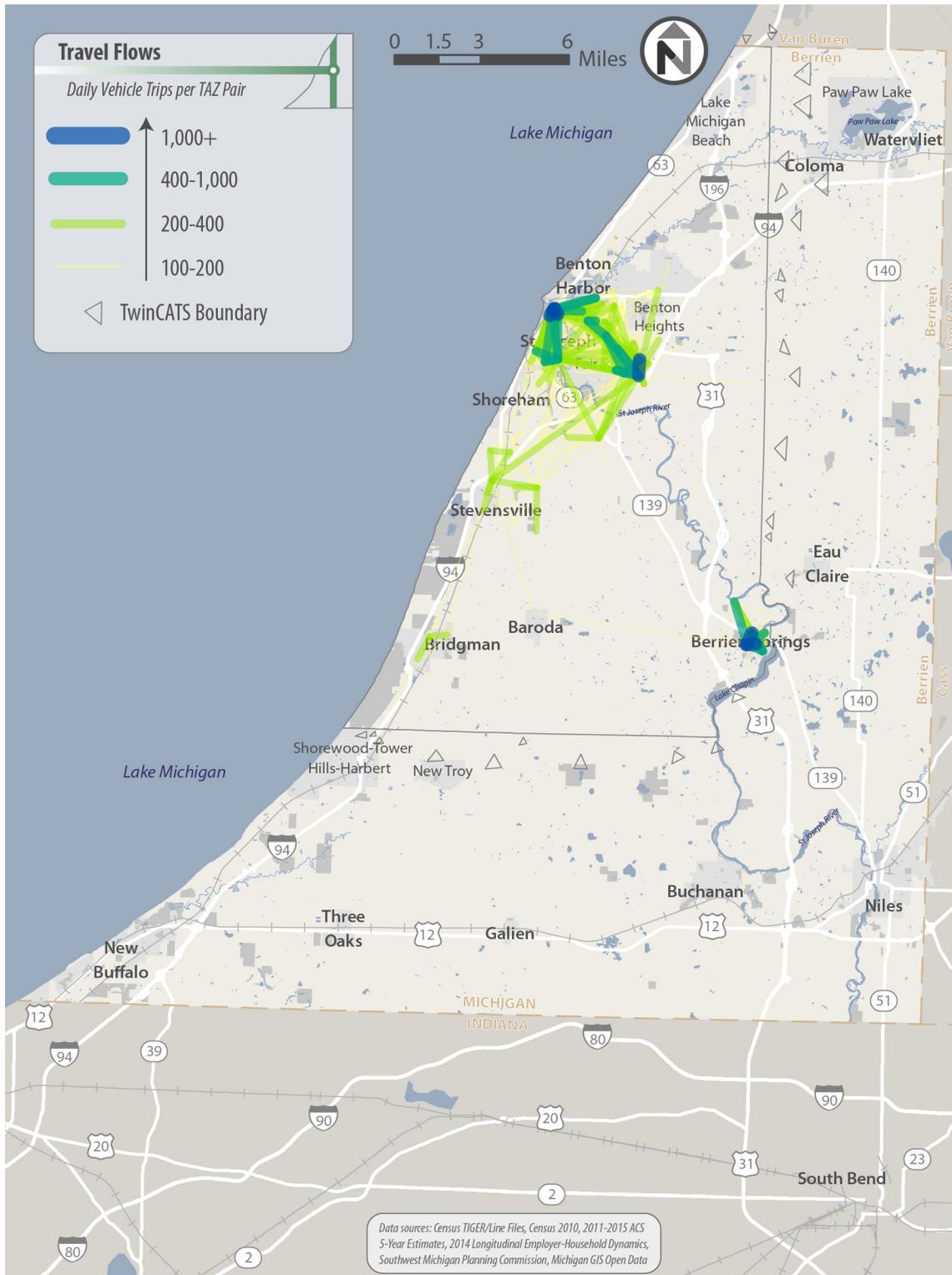
Two data sources were used to show the travel flow within and outside of Berrien County. The first is a traditional travel demand model within the Twin Cities Area Transportation Study (TwinCATS) boundary. TwinCATS is the designated Metropolitan Planning Organization (MPO) for the Benton Harbor-St. Joseph urbanized area. TwinCATS' boundary extends to Lake Michigan on the west, the county boundary at Van Road to the north, Browntown Road/Freehling Road to the south, and the St. Joseph River and Kirk Road/Fairview Road/Clymer Road to the east. The Michigan Department of Transportation (MDOT) provides the transportation model data for TwinCATS for the base year of 2010 and future year 2040. The second source was from StreetLight Data, Inc., which is data collected from GPS-enabled devices (cell phones, connected cars, etc.) when navigating on a road network. For this, Berrien County was divided into 42 travel zones based on land use, the existing road network, neighborhoods, and boundaries used in existing model data. Eight additional zones focused on larger urban areas outside of Berrien County were created to determine regional flow. StreetLight Data captures travel activity from only a certain segment of the population, those with GPS-enabled devices, a bias that the company tries to reduce by processing and calibrating the raw data they receive.

TwinCATS Travel Flows – 2010 and 2040

The predominant flows of travel for all trips within Berrien County are oriented between zones in St. Joseph, Benton Harbor, and the areas to the east of the Twin Cities; along I-94 between Stevensville and Fair Plain; and within Berrien Springs. The heaviest travel flows are currently within Berrien Springs, between downtown St. Joseph and downtown Benton Harbor, and between zones in Fair Plain (see Figure 53). These same areas have the highest travel within the same zone, with some additional activity in Stevensville and Bridgman (see Figure 54). Few trips occur between the small communities within the TwinCATS boundary according to the travel demand model developed by the state.

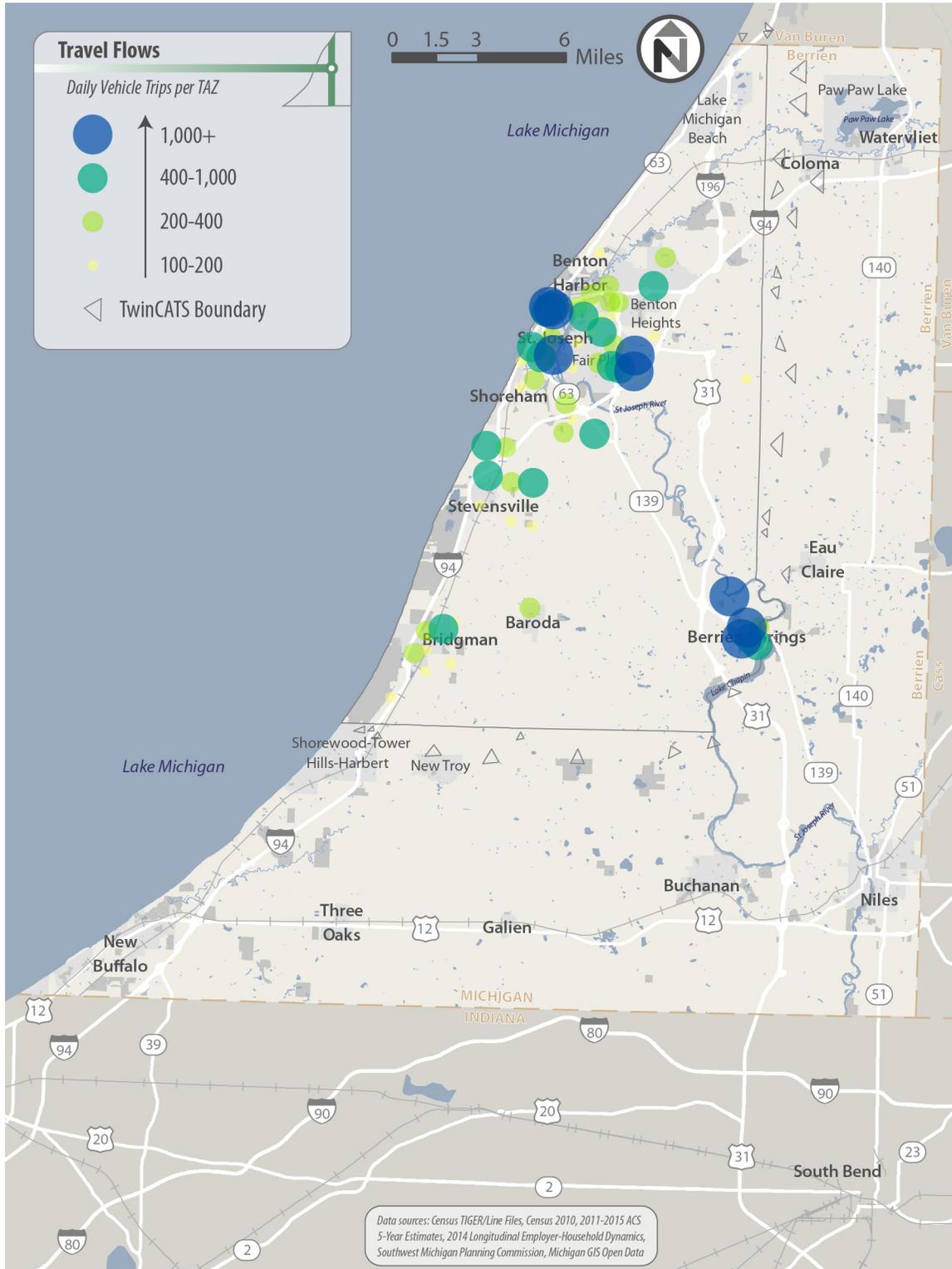
The travel flows within Berrien County in 2040 are very similar as 2010, though trips south of St. Joseph towards Stevensville are more pronounced (see Figure 55). Travel that stays within the same analysis zone is also very similar in 2040. The most significant differences include fewer trips overall in Bridgman and around the Fair Plain area, and more trips within some zones in Stevensville (see Figure 56).

Figure 53 TwinCATS Travel Flows in 2010 between Internal Zones



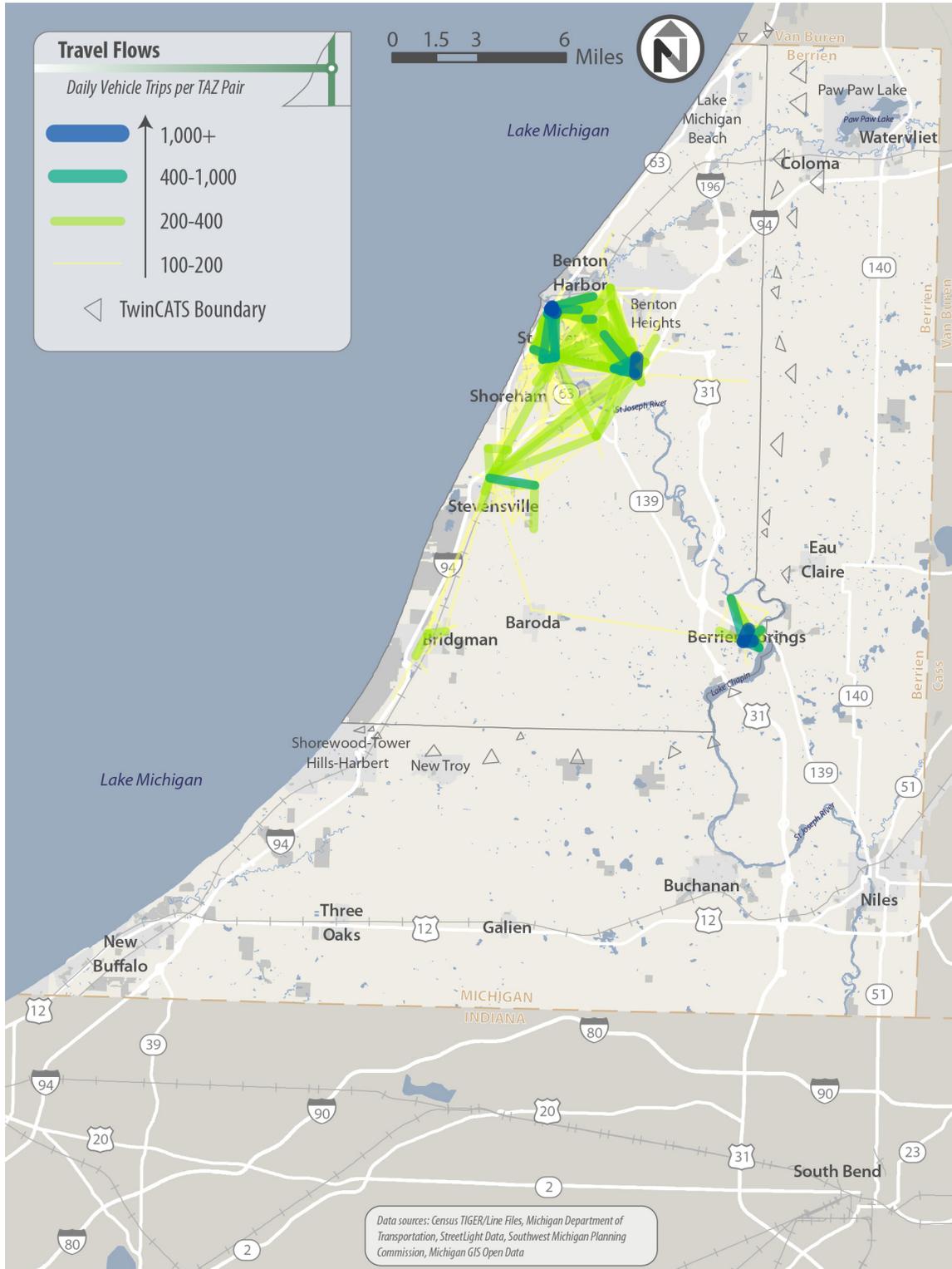
Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

Figure 54 TwinCATS Travel Flows in 2010 within Individual Zones



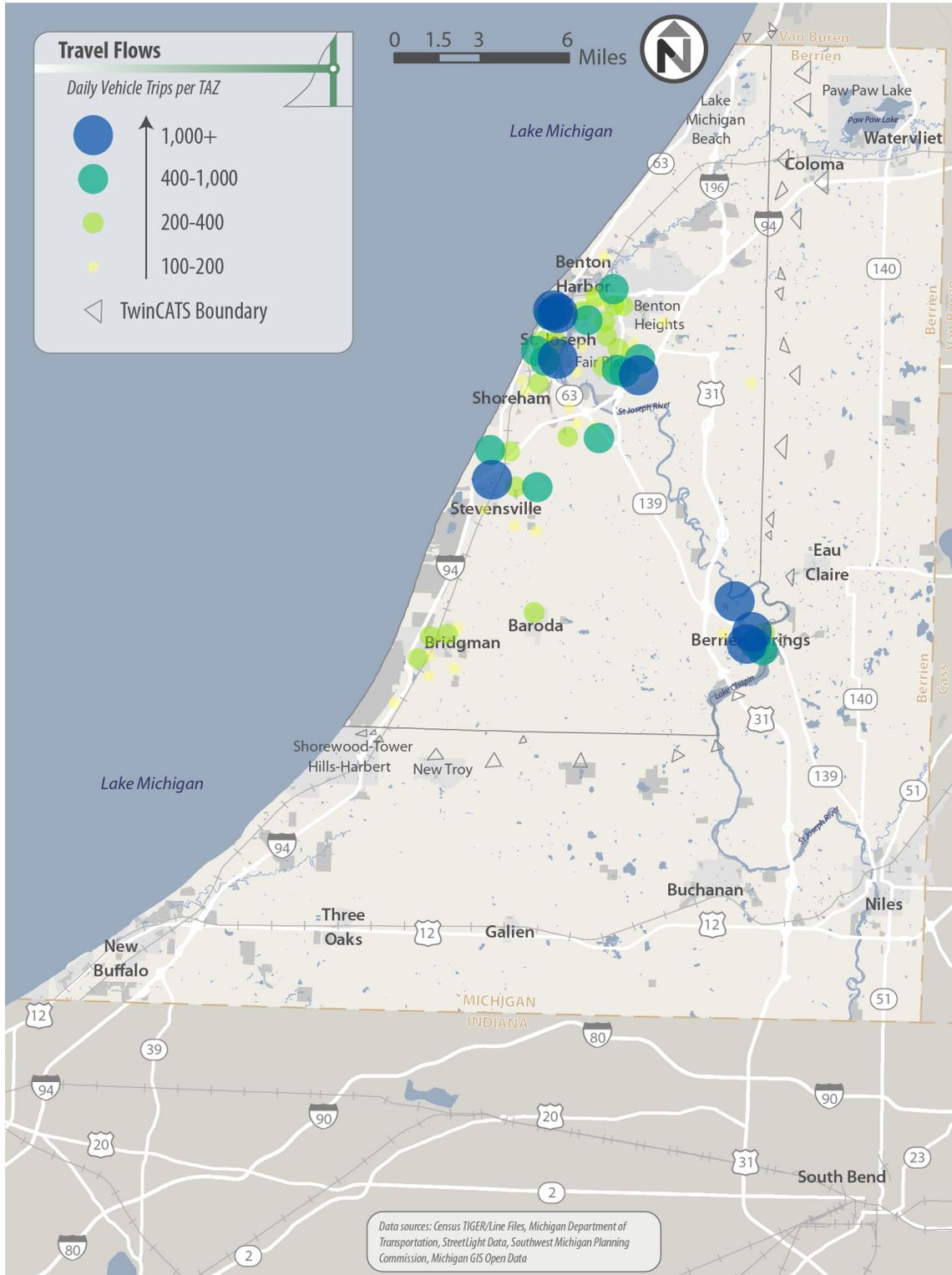
Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

Figure 55 TwinCATS Travel Flows in 2040 between Internal Zones



Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

Figure 56 TwinCATS Travel Flows in 2040 within Individual Zones



Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

Trip Purposes

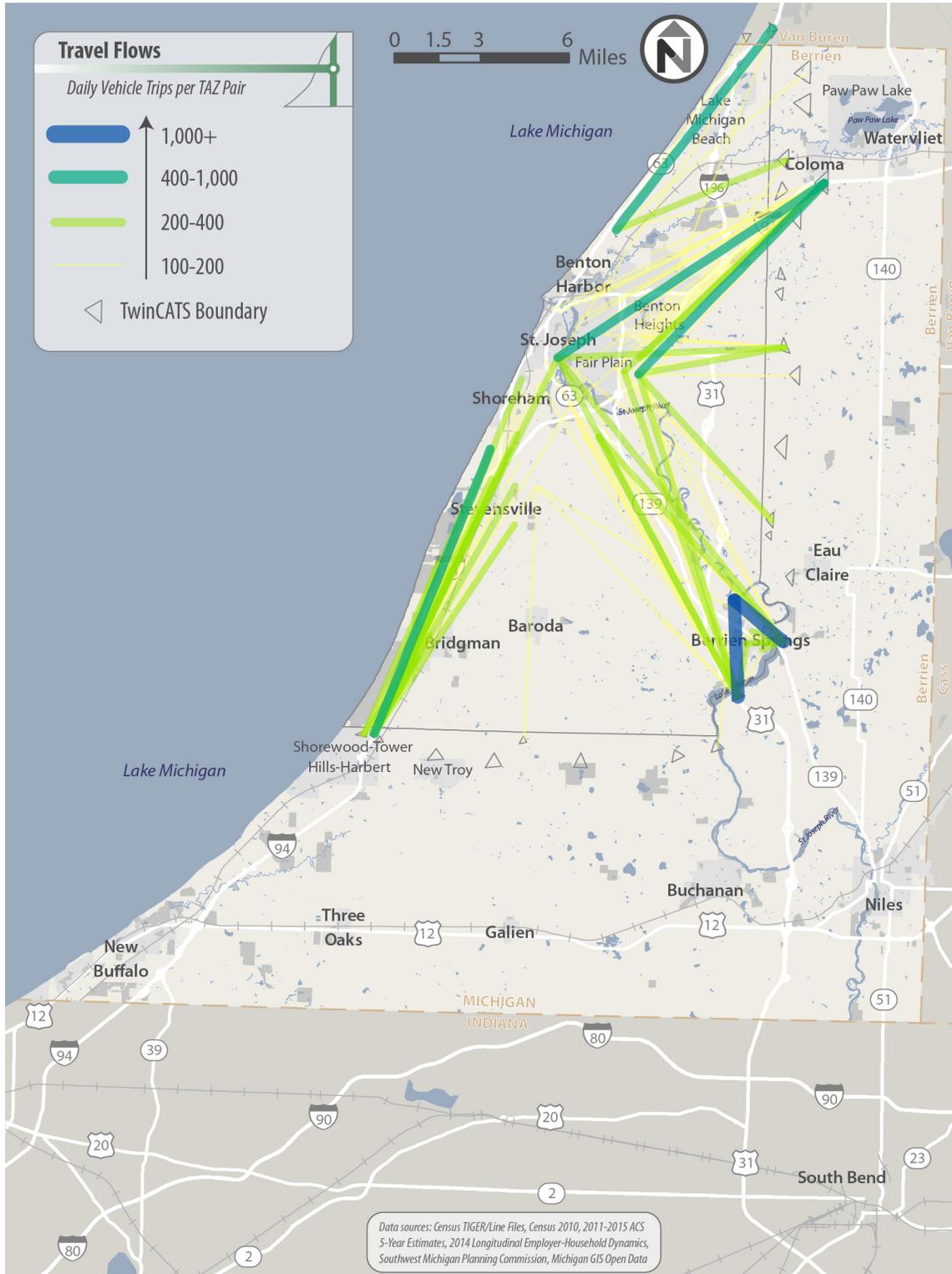
When breaking trips out by purpose, the same patterns emerge. Looking at home-based work trips, only four zone pairs within Berrien County had a flow of greater than 100 daily trips in 2010 and 2040, and these are within St. Joseph and Benton Harbor. Flows for other trip purposes, including retail, school, non-home-based, and miscellaneous trips, show the same patterns as for all trip purposes because these other trips account for a majority of all daily trips in Berrien County.

External Trips

Trips that travel between a zone within the TwinCATS boundary and outside the boundary remain focused on one end in St. Joseph, Benton Harbor, and Berrien Springs in 2010. However, the other end of the trip varies, with trips dispersed among the major highways headed through Berrien County (see Figure 57). The heaviest trips are to or from Berrien Springs along US-31 or M-139. A significant number of trips are concentrated around the I-94 corridor, both headed east towards Coloma/Watervliet and south towards New Buffalo, and along the shoreline north of Benton Harbor along M-63. While it is difficult to say the location of the external end of these trips, the strength of the external trips suggests that strong demand exists for more regional travel within and outside of Berrien County.

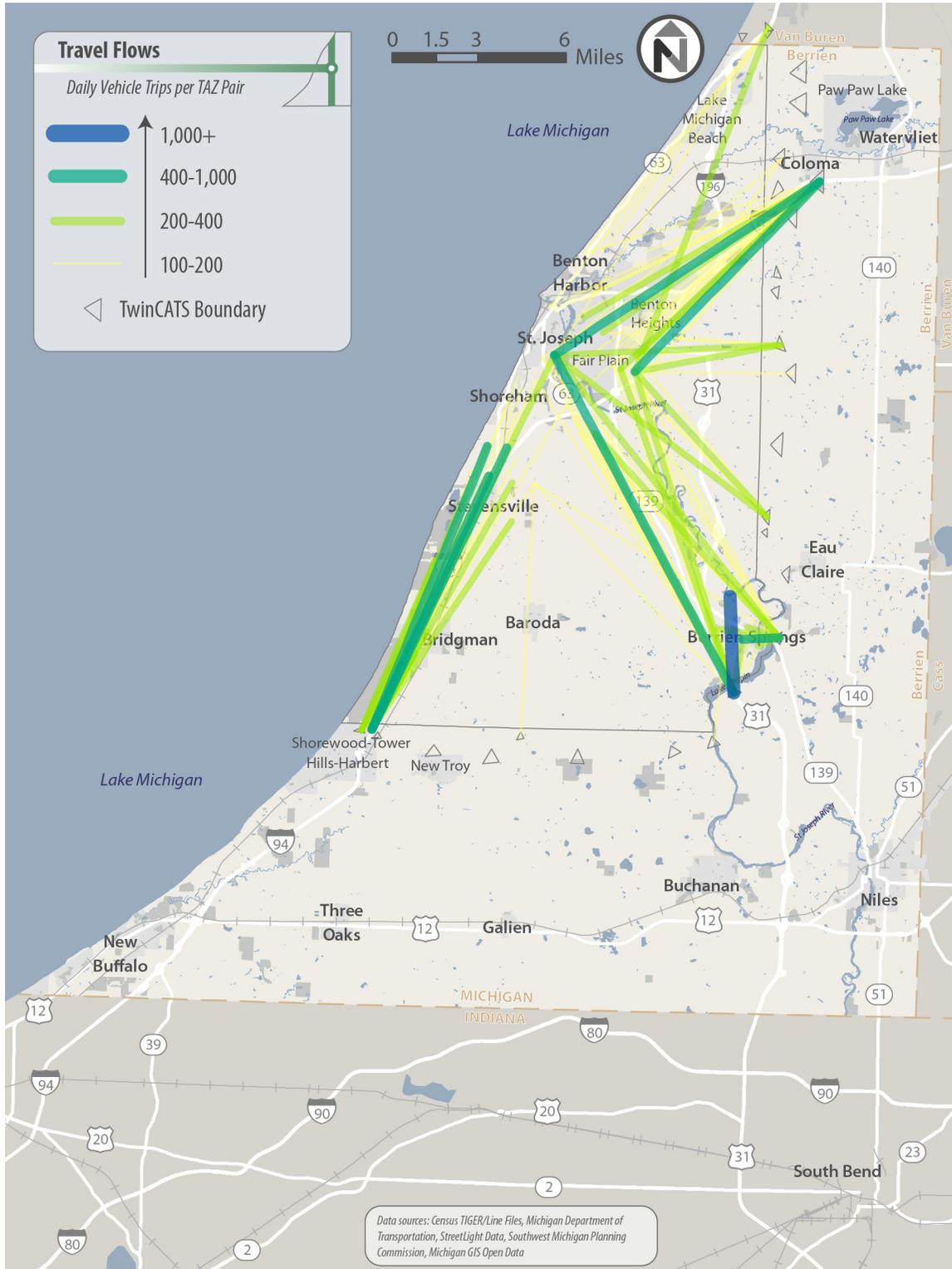
In 2040, trips between internal and external zones of the travel demand model shift somewhat east and south of the Twin Cities, enhancing the prominence of I-94 as the primary travel corridor in Berrien County. More trips begin or end around Stevensville, and travel along US-31 from St. Joseph increases between 2010 and 2040. However, trips along M-63 north of Benton Harbor and trips from Berrien Springs decrease overall (see Figure 58).

Figure 57 TwinCATS Travel Flows in 2010 between Internal and External Zones



Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

Figure 58 TwinCATS Travel Flows in 2040 between Internal and External Zones



Note: TAZ = Traffic Analysis Zone, which is used as a unit of geography in transportation demand planning models

County and Regional Travel Flows – 2016

StreetLight Data, Inc. provides data based on a set of zones provided by the user, which allows for analysis on a larger geographic scale. In addition to the 42 internal Berrien County zones, flows to and from these larger urban areas were captured:

- Chicago, IL
- Dowagiac, MI
- Gary, IN
- Grand Rapids, MI
- Holland, MI
- Michigan City, IN
- Kalamazoo, MI
- South Bend, IN

When users download the data, it is indexed so that monthly and seasonal variations are more accurately captured; therefore, the data represents trip activity but does not indicate the actual number of trips or vehicles. We can stratify the data in many different ways, including by season, month, time of day, weekday or weekend, and vehicle type, among others. In this report, we look at four stratifications using 2016 data, but as the study team learns more information about Berrien County and the region, the need for additional analysis may become apparent. Different or deeper analyses are possible with this data.

As one might expect, travel flows in Berrien County are heaviest around the Twin Cities and the immediate surrounding area, including Shoreham and Stevensville. However, the Twin City travel activity tends to start and end within the area rather than coming to and from the smaller cities and towns in Berrien County. In fact, the predominant Twin City travel activity to and from other urban areas is focused on South Bend. In addition, the location of Berrien County in the very southwest part of the state means that travel to and from Niles and Buchanan is focused on South Bend, and travel to and from New Buffalo is focused on Michigan City and Chicago rather than internal to Berrien County. Improvements to transit connections within the Twin Cities and surrounding areas, and connections to some of the larger urban areas outside of Berrien County, may therefore be most successful.

In looking specifically at regional weekday AM peak flows, the general patterns hold true, with an even greater emphasis on trips between South Bend and urban areas in Berrien County (see Figure 59). Besides these patterns, trips between the Twin Cities and Coloma, an area east of Benton Harbor, and south towards Bridgman are the most active. Removing the regional flows and focusing only on Berrien County strengthens these same patterns. As shown in the travel demand model above, the highest demand travel corridor within the county is I-94, predominantly between Stevensville and Benton Harbor but as far north as Coloma/Watervliet and as far south as New Buffalo (see Figure 60). M-139 and US-31 are also strong corridors but less so than shown in the travel demand model from MDOT. This suggests that the demand between Niles and the Twin Cities, while still vitally important, may not support frequent and/or all day transit service. Additionally, the StreetLight data does not show nearly as much travel to and from Berrien Springs as the travel demand model, a possible reflection of the population, demographic, and socio-economic changes Berrien Springs experienced between 2010 and 2015.

Travel during the midday remains similar to the AM peak flows, though activity is higher overall, possibly due to the longer time span (see Figure 61). Trips to and from Michigan City, Chicago, and South Bend, and even some additional regional flows to and from Kalamazoo and Grand Rapids become more pronounced. Daily flows on the weekends are a little more scattered, with a reduced focus on the Twin Cities area (see Figure 62). Travel to and from some of the metropolitan areas remains strong, however, especially Chicago and Michigan City.

Figure 60 County Weekday AM Peak Flows in 2016

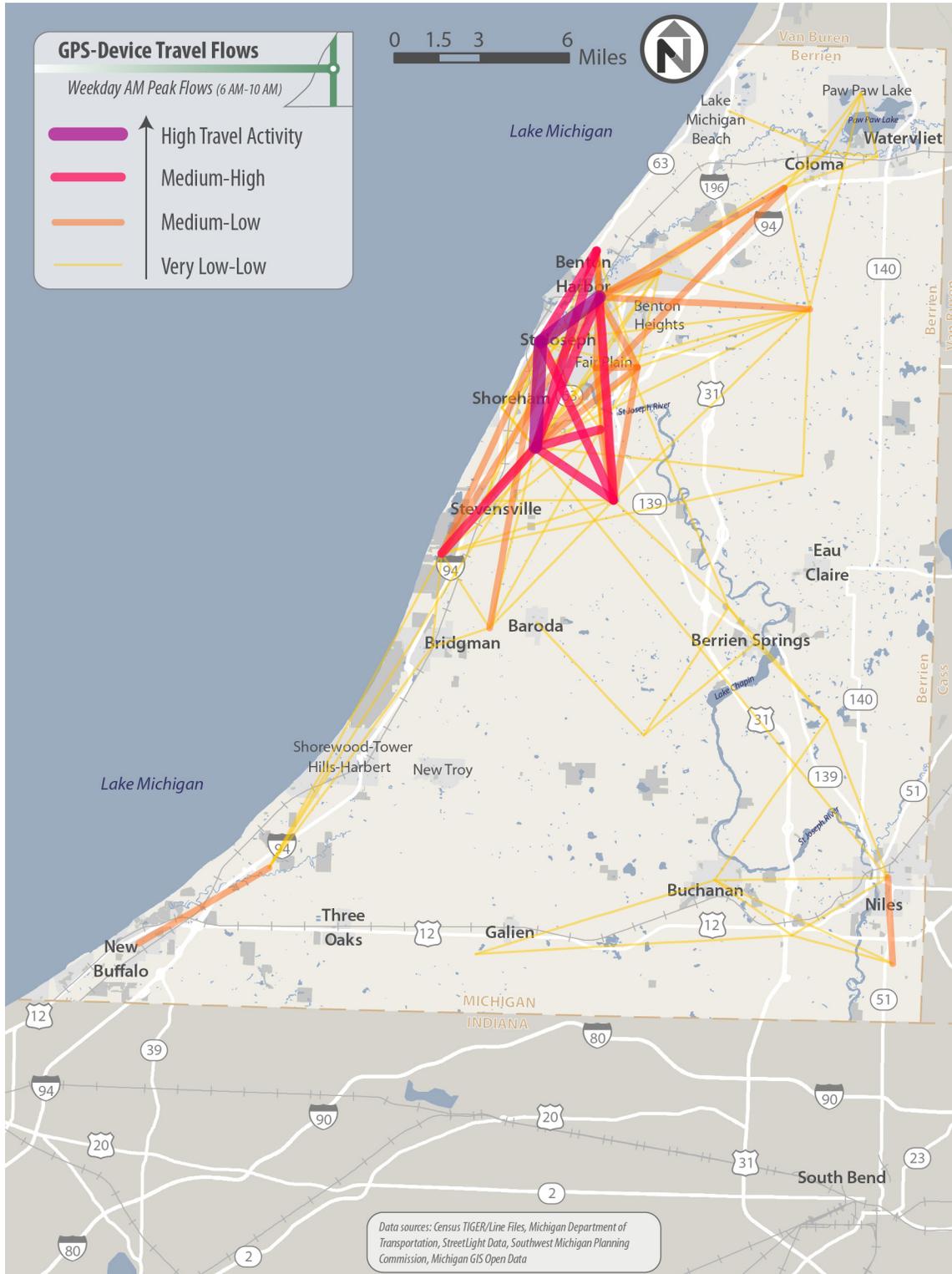
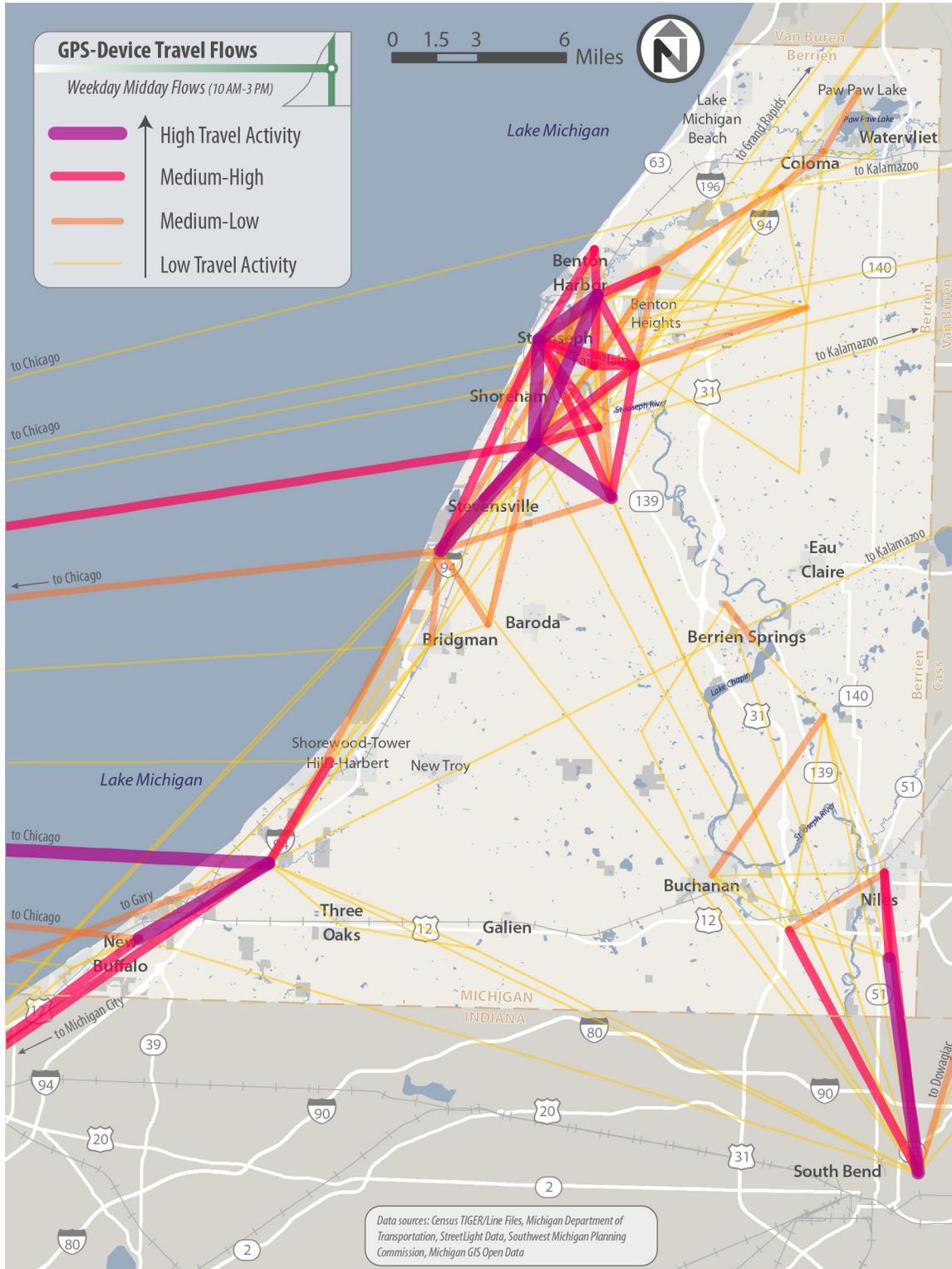


Figure 61 Regional Weekday Midday Flows in 2016



MARKET ANALYSIS SUMMARY

Berrien County has underlying transit potential in many of the small urban communities of the county, but challenges remain to offering efficient and effective fixed-route transit service. Less than 20% of the county's population lives within an area that can support fixed-route transit service at a frequency of every 60 minutes, though nearly 60% of the employment base works where 60-minute fixed-route transit is possible. The current transit service offered misses opportunities to serve some of these areas and so growth and improvement are possible. In many communities, however, transit potential is low – too low for fixed-route transit to be both effective and productive. Modernized demand-response services, flex bus service, employer shuttles, and other alternate forms of transit may be most effective in these areas. In general, major employers are located where a majority of the county population resides. Still, several large employers and residents alike would benefit from better county-wide transit service to enable a greater diversity of applicants and job opportunities.

Based on land use, demographics, socio-economic characteristics, and travel flows, the area around and including St. Joseph and Benton Harbor (including Fair Plain, Berrien Heights, Shoreham, Stevensville, and some rural areas), remains the most transit supportive and the most in need of transit. However, it is clear that regional travel is critically important. Berrien Springs, Niles, and pockets of many other areas within Berrien County showcase major employers and/or a high propensity among their populations to use transit. Berrien County has a much higher low-income population and older adult population than the state average, both strong indicators of transit use. The county is also highly oriented outward because of its location in the southwest corner of Michigan. Travel to and from Michigan City and South Bend, and even Chicago for those who live near New Buffalo, remains a significant segment of daily trips that begin or end in Berrien County. The I-94, M-139, and US-31 corridors connect most of the major employment and shopping destinations, and have a significant portion of the county population situated along them.

Looking forward, transit providers in Berrien County will need to adapt to provide viable service to county residents trying to reach jobs and important services. Societal changes, such as preferences among Millennials to use transit and the desire by Baby Boomers to remain independent, may also shift transit demand. The current services offered primarily provide lifeline service, but opportunities exist to create a more cohesive and better service throughout the county that attracts more users. Much of that will likely remain some type of demand-response or very flexible service, but a modern county-wide demand-response service that works in combination with convenient and useful fixed-route services, shuttles, and other scheduled service will greatly improve the transportation options available for Berrien County visitors and residents.

In summary, recommendations from this market analysis include:

- **If fixed-route transit will continue in the Twin Cities and the surrounding area, and in Niles, then conduct further analysis to determine the need for new routes and to ensure that current service is convenient, direct, and well designed. Consider replacing some or all fixed route service with demand response.**
- **Offer an integrated and modern county-wide demand-response service to improve existing services and add service to the urban area around Shoreham and Stevensville, where transit service is critically needed but currently missing.**
- **Extend service past county borders where possible, or offer easy connections and transfers to other transit operators, especially in South Bend and Michigan City.**
- **Perform additional information gathering and analyses to learn where employment shuttles or other alternate forms of scheduled transit might be successful. Based on**

land use, demographics and socio-economic characteristics, and travel flows, start this research on destinations located along 1) M-139 (M-51 south of Niles) and 2) I-94.

5 ASSESSMENT OF EXISTING CONDITIONS

The review of previous studies and existing services, as well as the market analysis, illustrate that public transit in Berrien County is in need of improvement. While the current providers are doing what they can with limited resources, the existing fragmented transit service spread among multiple agencies is not serving county residents and businesses well. As it stands, the existing transit services are difficult to use, and difficult to understand. Meanwhile, some operations are duplicated among multiple providers which reduces the efficiency and the service that can be offered. In addition, the current transit service does not match the demand for transit very well. Some specific themes from the existing conditions analysis are shown below, and these will be incorporated as the service plan for the new Berrien County Transit Authority is developed.

MAKE FARES AFFORDABLE AND SIMPLE

In order to encourage people to use transit, and to use it frequently for most travel needs, fares should be kept to a reasonable level. One of the advantages of Berrien County is a relatively low cost of living, but this also means that wages in the county are lower as well. The TCATA regular adult fares of \$1.00 for fixed route and \$2.00 for Dial-A-Ride are a good example to follow, although more feasible for their smaller, denser service area. Some longer trips will need to be priced higher. However, currently some trips requiring a transfer cost \$9.00 or more within Berrien County, and this should be reduced.

The combination of multiple providers and fares being influenced by local millages mean that fares do not correlate with distance in many cases. The new countywide transit system should aim for a fare structure that keeps fares as low as possible, minimizes the number of fare categories and zones, and is consistent throughout the county. Making fares affordable and easy to understand can eliminate a significant barrier to using transit.

FARE PAYMENT SHOULD BE MODERNIZED

For demand response service, one of the advantages of advance reservations is that payment can also be handled through the account used for booking rides. This eliminates cash handling which improves revenue control, and also increases convenience for most customers who no longer need to carry cash, often in exact amounts for each trip.

Fixed-route service also has emerging options for fare payment, many of which take advantage of smartphones. Tickets can be purchased online and inspected visually by the bus operator when the passenger boards. This can speed up boarding, reduce cash handling, and improve customer convenience.

SERVICE POLICIES SHOULD BE CONSISTENT

As the county moves to a single transit provider, the policies regarding pickup and dropoff, payment, cancellation of rides, reservations, response time and other similar topics need to be standardized. Currently, these policies are somewhat inconsistent across providers, and are unclear in some cases. Demand response service and flex-route service inherently require additional policies due to the need for advance reservations. However, fixed-route service also needs some consistent policies, such as a customer code of conduct.

SERVICE INFORMATION SHOULD BE EASY TO FIND AND USE

Making transit service information widely available and easy to understand can not only attract transit riders currently in the area, but also have a positive impact on people's choices about where to live, work, and visit. This information should include routes and schedules, fares, and relevant policies. A consistent format for all service in Berrien County will promote increased transit usage as well as a more seamless experience for customers. The information should be disseminated to employers, churches, social service organizations, medical facilities, educational institutions, and other partners who can help raise awareness about transit options. In many cases, directing people to a website is appropriate, as long as the website is easy to use and kept up-to-date.

Having this information become easier to access will also reduce some of the arbitrary conditions which exist today. Currently, long-time users of the existing transit providers, or those with access to appropriate contacts for information and service requests, can obtain a higher level of service. This is not intended, and is due to the small existing providers building relationships with their customers. However, the uneven service being provided is also due to the fact that many Berrien County residents don't know much about the transit options. Making the rules clear for everyone and raising awareness will help ensure that transit service is provided equitably to the public as designed.

SERVICE HOURS ARE TOO LIMITED

One of the biggest barriers to using the existing transit services is the limited span of service. Much of the county has service which ends at 5PM on weekdays, with limited Saturday service and no service at all on Sundays in the county. In order to provide enough flexibility for people to use transit frequently, it is recommended that service be provided until at least 8PM on weekdays, with all-day service on Saturdays and Sundays also. Having evening and weekend service is becoming more important as activity increasingly occurs during these hours, including employment, shopping, and medical appointments. The increased span of service is especially applicable to Berrien County due to the existence of weekend resort activities and second homes.

SERVICE DOES NOT MATCH DEMAND

The limited resources currently provided, along with the uncoordinated multi-provider system, means that the supply of transit service is not well aligned with the demand. In particular, the following markets should be considered for additional service:

- Unserved urban area near Shoreham/Stevensville/Bridgman, one of the densest county regions
- Connecting urban centers to each other, especially Niles and Benton Harbor/St. Joseph
- Connections to transit in South Bend and Michigan City
- Targeted service for major employers and/or multiple clustered employers

- Targeted service for medical facilities
- School and/or college transportation
- Seasonal and/or special event service for resort areas
- Possible circulator service in smaller urban centers like Coloma/Watervliet, Berrien Springs, or New Buffalo
- Extending existing fixed-route service to more sections in or near St. Joseph, Benton Harbor, and Niles

IMPROVE COORDINATION

Currently, many transit trips within Berrien County require multiple providers. These transfers can be cumbersome to arrange, and often require extended waiting and travel time. As mentioned, the transfers also result in higher fares, since no provider grants free transfer privileges to any other provider. Finally, the need to transfer increases the uncertainty of travel, which can discourage the use of transit.

A single countywide transit system should improve the situation. Ideally, more trips could be made without a transfer, or perhaps with scheduled service and timed transfers. Additionally, there is significant demand for trips to and from destinations outside Berrien County, including Michigan City, South Bend, and Cass County. Finally, transportation will continue to be offered by other entities, including employers and social service agencies. A new countywide authority will be in a better position to partner with other transportation providers both inside and outside of Berrien County for better coordination.

MODERNIZE DEMAND RESPONSE SERVICE

For much of Berrien County, the low density will mean that demand response will continue to be the only viable option for transit service. However, emerging technology options for customers and providers mean that this demand response service can be significantly upgraded. Through better allocation of resources and scheduling of trips, response times can be reduced for more immediate or near-immediate service. Tracking of vehicles with GPS will allow customers to have more information about when their vehicle will arrive. As mentioned previously, fare payment can also be streamlined.

Some of these improvements might be achieved by contracting with private providers who offer immediate demand response service, such as Uber and Lyft. This will likely require a subsidy arrangement, since many trips will be longer than in larger cities. Alternatively, some transit agencies are experimenting with providing similar types of service in-house. In particular, some demand response service can be linked to fixed-route service, in order to provide seamless connections which extend the reach of the fixed-route system for frequent use.

SERVE TRANSIT-DEPENDENT INDIVIDUALS

As compared to the state as a whole, Berrien County has a larger proportion of older adults and low-income individuals. These groups are typically dependent on public transit to a greater degree than the general population. While the low densities in many parts of Berrien County make effective public transit challenging, the need for transit must be taken into account. The allocation of vehicles and services to corridors and markets with expected higher ridership must also be balanced with providing lifeline service to people without other feasible travel options. This includes providing travel for employment, education, shopping, and healthcare. As mentioned above, it is important to also coordinate the service to be

provided by the new countywide transit authority with service provided by social service agencies, employers, and others.

TRANSIT SERVICE IS TOO UNEVEN

While the level of service throughout Berrien County should vary with local circumstances in each area, currently the differences between areas are somewhat arbitrary and driven by factors other than good service planning. This uneven service did not come about by design but is a result of multiple decisions made over time by local jurisdictions regarding funding and participation in area transit agencies. For example, much of the territory in the southwest and northeast parts of the county have longer response times due to being further from bus facilities and contracted routes. This leads to disproportionately low usage of transit in these areas.

The new countywide system should aim to allocate resources based on defined goals, such as meeting transit demand and providing lifeline service where needed. This will result in higher levels of service, including faster response times, for some parts of the county. However, at least the parameters of service will be clearer to everyone and based on decisions intended to provide the maximum possible benefits. Ongoing service planning and standards will also help to ensure that adjustments are made as circumstances change.

DOING NOTHING IS NOT AN OPTION

Berrien Bus, in particular, is on an unsustainable financial path. For the last few years, expenses have been greater than revenues, and Berrien Bus has needed to draw down reserves which had been built up years ago. Within about 3 years, Berrien Bus would exhaust those reserves if nothing is done, and this would force drastic changes to service or perhaps the end of Berrien Bus operations.

TCATA is also vulnerable financially, since they currently rely on FTA Section 5307 funding for the entire St. Joseph/Benton Harbor urbanized area, but only serve about ½ of the area. No transit service is provided in the remainder of the urbanized area, so TCATA is eligible for the entire amount of funding. However, the unserved area contains some of the densest portions of Berrien County, and is in need of transit service. If another entity begins providing transit service to the currently unserved areas, then some of the FTA funding would shift away from TCATA and would be a significant disruption to TCATA's budget.

Overall, improved transit service as part of one countywide transit authority will avert these looming financial problems, as well as better meet the needs of Berrien County's residents and businesses.