Stark Area Regional Transit Authority Transit Development Plan 2020 - 2025

Prepared for the Stark Area Regional Transit Authority

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INTRODUCTION

The Stark Area Regional Transit Authority (SARTA) is a public agency created under the authority of the Ohio Revised Code to provide public transportation service in Stark County. The agency's mission is that "SARTA is committed to enhancing the quality of life for our community by providing efficient, affordable and sustainable mobility options for Stark County." Its stated vision is "to enhance the economic and environmental viability of Stark County by providing mobility access for employment, education, medical care and recreational opportunities." The agency began operating public transportation service throughout Stark County in 1997. SARTA's historical roots extend back into the late nineteenth century when horse-drawn carriage railways operated in the cities of Canton, Massillon, and Alliance. SARTA's current fixed route bus network covers Canton and surrounding Stark County communities, with routes connecting at the main terminal, Cornerstone Transit Center in downtown Canton, and Transit Centers serving Alliance, Massillon, and Belden Village/North Canton. Its demand-response service, Proline, provides mobility for area residents with disabilities or specific medical needs.

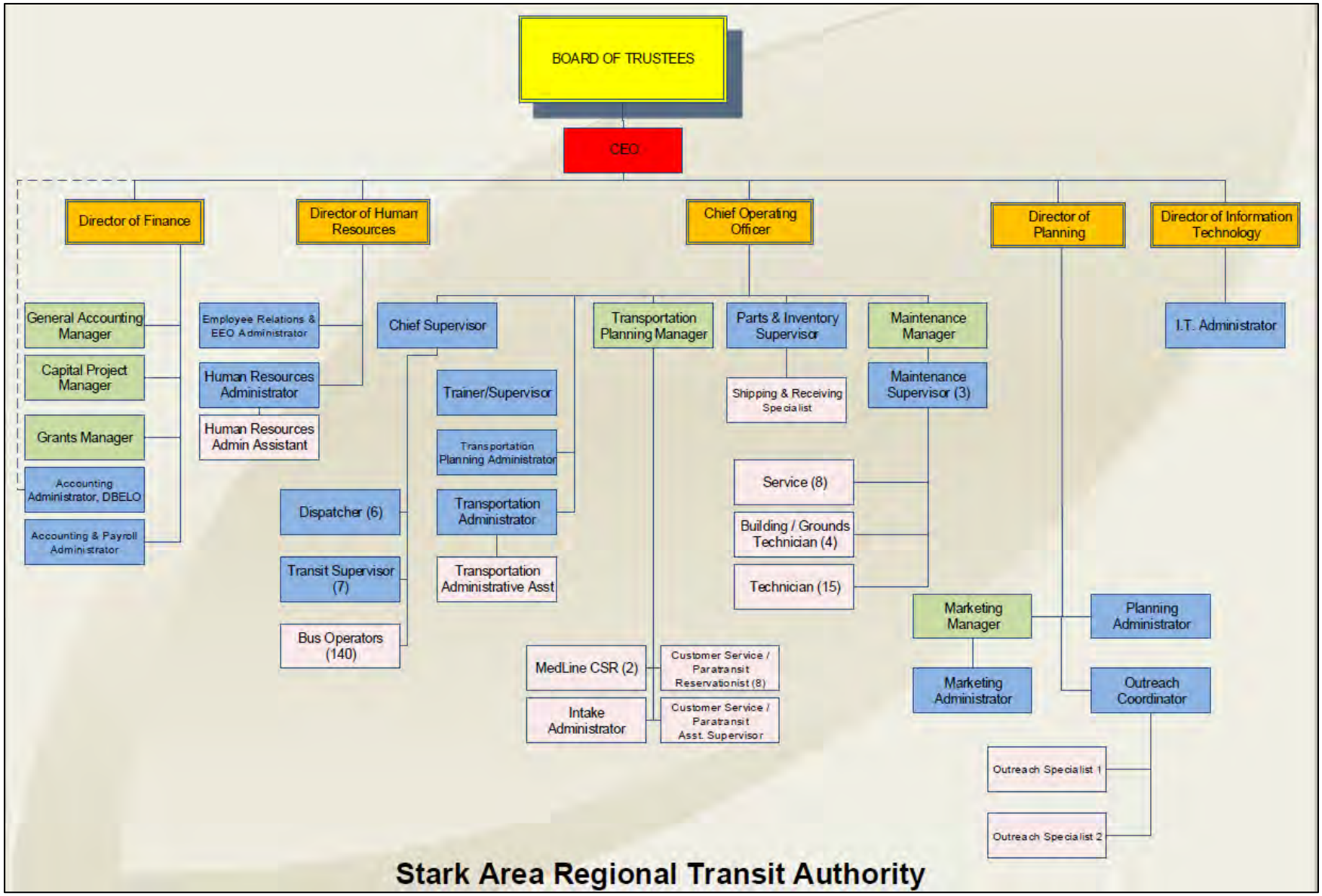
As an organization, SARTA fulfills its mission by working toward five goals:

1. Operating within budget and in a financially responsible manner;
2. Enhancing quality of life through personal independence;
3. Offering mobility options to meet the diverse needs of the public;
4. Creating an environment supporting professional development to ensure a dynamic workforce operating according to the highest ethical standards; and
5. Continuing efforts to utilize alternative energy sources for their fleet and facilities.

As a public agency, SARTA depends on various governmental funding sources for operating support, with passenger fares offsetting a portion of operating expenses. The primary source of SARTA's funding is a 0.25 percent sales tax in Stark County. SARTA also receives various Federal Transit Administration (FTA) grants, State of Ohio General Revenue Fund dollars, and income through contracts with human service agencies, including Medicaid. SARTA is governed by a Board of Trustees with appointments by the Stark County Commissioners, Stark County Council of Governments, and cities of Canton, Alliance, and Massillon. The SARTA Board of Trustees provides oversight and supervision of the Chief Executive Officer, Mr. Kirt Conrad, who has held this position since 2009. Mr. Conrad directs a staff of more than 200 employees. **Exhibit 1** displays the current SARTA organizational structure.

With the assistance of consultants, SARTA has developed a plan to form the basis of the agency's planning efforts for the next five years. This plan, called a Transit Development Plan (TDP), examines trends in the SARTA network and issues a series of recommendations to the existing service to help increase ridership, address unmet transportation needs in the community, and improve system efficiency. This report builds upon the needs analysis and service strategies documented during the 2019 Coordinated Human Service-Public Transportation Plan Update, conducted by SARTA. The final stage of the TDP process was to estimate the costs of the recommendations and lay out a timeline for implementation over the years 2020 through 2025.

Exhibit 1: SARTA Organizational Chart



Source: SARTA

DESCRIPTION OF SARTA FIXED ROUTE AND PROLINE SERVICES

OVERVIEW

SARTA operates fixed route and demand responsive transportation services throughout Stark County. SARTA's geographical service area spans 581 square miles. The 2018 U.S. Census population estimate for the county was 371,574 residents. Fixed route service is concentrated in the most populated areas of the county, though many routes extend into rural areas. SARTA operates demand-response transportation throughout the county for clients based on eligibility criteria related to a disability or participation in a human service program.

SARTA FIXED ROUTES

SARTA operates 34 fixed routes that connect communities throughout Stark County, including Alliance, Canton, Hartville, Jackson Township, Louisville, Massillon, North Canton, and Uniontown. The fixed routes also extend beyond the county line to serve Akron and Cleveland. The fixed routes converge at the Cornerstone Transit Center in downtown Canton as well as the three transfer centers located in Alliance, Belden Village and Massillon. SARTA operates 30 vehicles in maximum service on its fixed routes. These vehicles are typically 30- to 40-foot low-floor buses operated with diesel fuel, compressed natural gas (CNG) or hydrogen fuel cell technology.

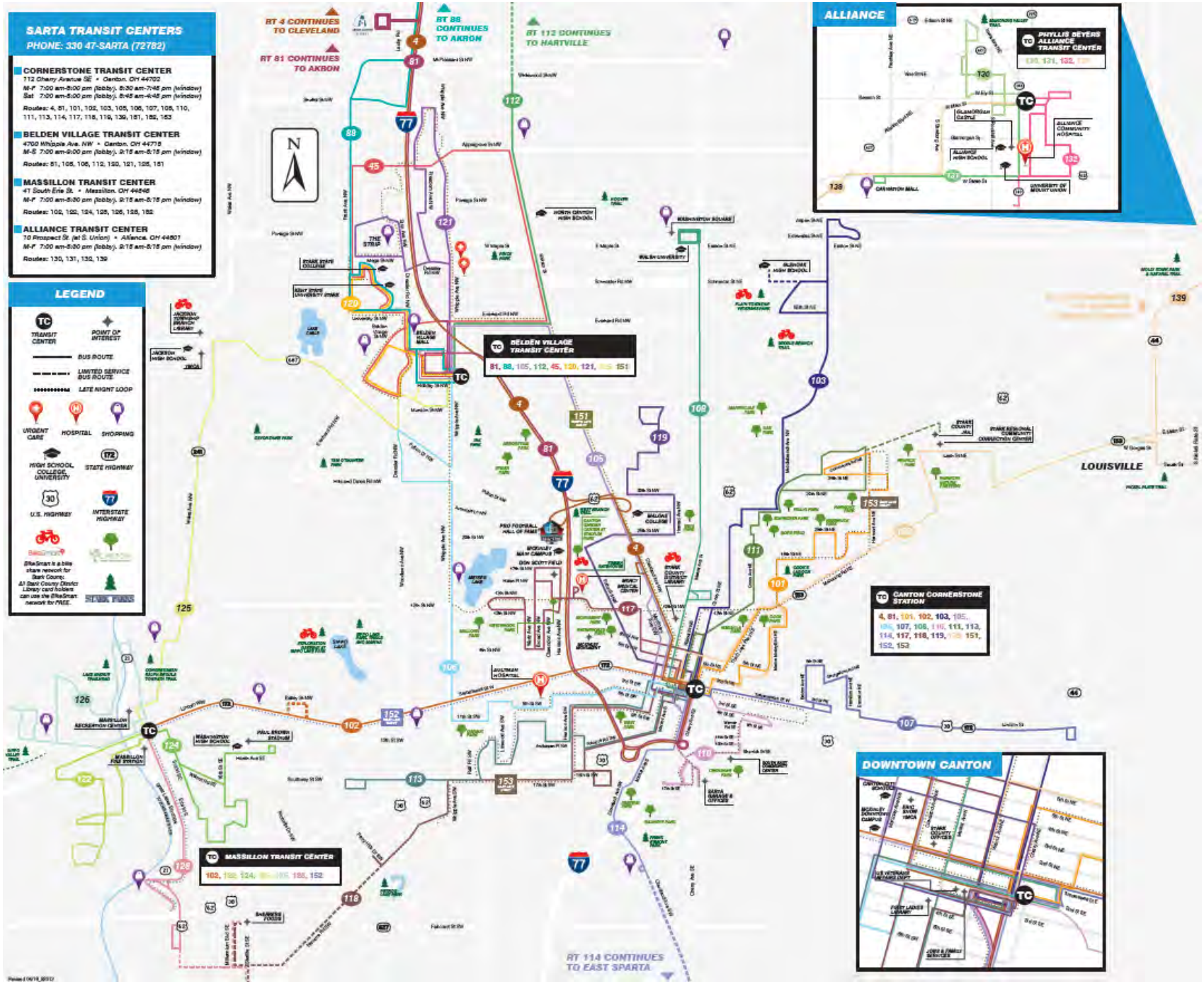
The fixed routes operate between 5:45 AM and 1:45 AM Monday through Saturday. In 2018, SARTA provided 2,257,395 one-way passenger trips on fixed routes. Fixed route vehicles traveled 2,313,760 miles while providing 141,379 hours of revenue service, with an additional 123,060 "deadhead" miles. SARTA's total operating expenses for fixed route service in 2018 were $14,456,931.

The regular fixed route fare, as of September 2019, is $1.50. The fare to ride to Cleveland is $2.50. Persons age 65 or older, or those receiving Social Security & Disability Insurance (SSDI), may purchase tickets for $0.75. An all-day fixed route pass costs $3.00. Multi-ride passes are available in several denominations, including a 31-day fixed route bus pass for unlimited rides for $45.00 at the regular rate, with reduced rates available for senior citizens, students, and passengers with disabilities.

All of SARTA's fixed route buses are wheelchair accessible and are equipped with bicycle racks with the capacity for two bicycles.

Exhibit 2 displays the current SARTA fixed route network.

Exhibit 2: SARTA Fixed Route Network



Source: SARTA

Fixed Route Descriptions

For the purposes of this plan, SARTA's fixed routes have been divided into categories based on ridership levels, service area, and route type. This categorization allows for straightforward analysis of trends in ridership, productivity, cost-efficiency, and other performance measures.

- Urban routes are based in Canton, originating at the Cornerstone Transit Center. These routes include those providing the highest levels of ridership in the SARTA system, due largely to the high propensity for transit use in Census block groups throughout the city. According to Census data, many areas of the city have high population density (greater than 6,639 residents per square mile), high rates of residents in poverty (greater than 41% living below poverty), and high rates of zero-vehicle households (greater than 31% with no vehicle).

  Urban routes are divided into two groups:
  - Routes with greater than 90,000 weekday passenger boardings in 2018 are categorized as high-ridership urban routes. Many of these routes act as longer-distance connectors to places outside of Canton, providing access to employment opportunities and other destinations that are important for Canton residents who depend on SARTA for transportation, as well as transportation for residents of nearby communities into Canton.
  - Medium-ridership urban routes experienced between 40,000 and 90,000 weekday passenger boardings in 2018. These routes provide service with Canton, or, in some cases, provide service from Canton to lower-density areas of Stark County.

- Community Routes serve Alliance, the Belden Village/North Canton area, and Massillon, and originate at the three transfer facilities located in those communities. These routes carry fewer riders but provide important coverage of Stark County's smaller cities. In 2018, these routes each provided between 9,000 and 50,000 weekday passenger boardings.
- Late Night Loops operate between the hours of 9:45 PM and 1:38 AM, providing basic service area coverage after the regular routes' hours of operation, which are typically from 5:45 AM to 9:40 PM.
- Specialized Routes do not fall into any of the above-mentioned categories, and include a route that transports veterans to the Cleveland VA, a Saturday-only route in the Belden Village area, and a commuter route providing one daily round trip to riders who work in a major industrial area that is not accessible on other routes.

Urban Routes – High-Ridership

Many of SARTA's highest-ridership routes originate at the Cornerstone Transit Station and provide service to the neighboring communities of Akron, Alliance, Belden Village/North Canton, and Massillon. These routes radiate out from the station, creating a radial "spoke and hub" pattern that is common among small urban fixed route systems.

Route 81 – Canton/Akron Express			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:20 AM – 9:40 PM	2	60 Minutes

Route 81 originates at Cornerstone, operating local service through Canton, including Belden Village, then runs express service to destinations in Akron. Akron destinations include the Akron Canton Airport, Walmart, and the Akron Metro Transit Center, where passengers can transfer to Akron Metro fixed routes or board Greyhound buses.

Route 101 – Northeast Canton/Maple			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 101 services downtown Canton with stops at the Cornerstone Transit Center, Mahoning Road, and the Walmart at 35th Street and Harmont Avenue. Points of interest along Route 101 include Adventure Landings (NECC), Crenshaw Middle School, Coleman Senior Center, Cook Park, downtown Canton, and Walmart.

Route 102 – Canton/Massillon			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	5:45 AM – 9:40 PM	3	30 Minutes
Saturday	5:45 AM – 9:40 PM	2	60 Minutes

Route 102 provides connecting service between Canton and Massillon on 30-minute headways Monday through Friday and 60-minute headways on Saturdays. Major trip generators include Aultman Hospital, Canton Centre Mall/Walmart, Fishers Foods, McKinley Downtown Campus, and the downtown areas of Canton and Massillon.

Route 106 – Canton Southwest/Belden Village			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 106 provides service between downtown Canton and Belden Village, Monday – Saturday. Points of interest along the route include Cornerstone Transit Center, Aultman Hospital, Canton Centre Mall, Meyers Lake Shopping Center, and Belden Village Transit Center.

Route 108 – Canton/Market/Easton			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 108 services downtown Canton and Washington Square with stops at or near the Cornerstone Transit Center, Market Avenue, 14th Street NE, 15th Street NE, and Easton Street. Points of interest along Route 108 include downtown Canton, the Civic Center, the Cultural Center, Fishers Foods,

North Branch Library, Stark County Library (Main Branch), The Palace Theater, Walsh University, and Washington Square.

Route 110 – Cherry/Warner/Sherrick			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	5:45 AM – 9:40 PM	1	30 Minutes
Saturday	5:45 AM – 9:10 PM	1	60 Minutes

Route 110 services downtown Canton and Warner/Sherrick with stops at or near the SARTA Main Offices and Garage, the Cornerstone Transit Center, Alan Page Drive, Gateway Boulevard, Sherrick Road, Warner Road, and Cherry Avenue. Points of interest along Route 110 include Allen School, Canton Urban League, Gateway Homes, Hartford Middle School, SARTA Offices and Garage, Skyline Terrace Apartments, and Queen Ester Village. Note: There is limited service to Queen Ester Village Monday through Friday.

Route 139 – Canton/Louisville/Alliance			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	2	60 Minutes

Route 139 operates between downtown Canton, Louisville, and downtown Alliance, with stops at the Cornerstone Transit Center, the Alliance Transit Center, Mahoning Avenue, Main Street, West State Street, and Sawburg Road. Points of interest along Route 139 include the Carnation Mall, JR Colman Center, Louisville High School & Stadium, Stark Regional County Correctional Center, the William Hunter Center, and Walmart.

Urban Routes – Medium-Ridership

Many of the urban routes with medium ridership operate as local loops, originating at the Cornerstone facility and looping through core neighborhoods. Other medium-ridership routes are hub-and-spoke routes that provide access to destinations in outlying areas of Canton, or rural areas of Stark County.

Route 103 – Gibbs/Plain Township			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 103 services downtown Canton and Plain Township traveling from Cornerstone Transit Center along Gibbs Avenue, Colonial Boulevard, Spangler Road, Middlebranch Road, and Rowland Avenue. Route 103 also stops at GlenOak High School five times throughout the day, beginning before and ending after school hours. Some points of interests along Route 103 include Gervasi Vineyard, Gibbs School, GlenOak High School, Mercy Health Center of Plain, Oakwood Middle School, Oakwood Square, Stark County Library – Plain, and the U.S. Post Office.

Route 105 – Cleveland Avenue/North Canton			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	5:45 AM – 9:40 PM	Peak: 2	Peak: 30 Minutes
		Off-Peak: 1	Off-Peak: 60 Minutes
Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 105 operates between Belden Village and Cornerstone, including stops at Canton City Schools, Canton City Offices, Malone University, the Stark County District Library Main Branch, McKinley Downtown Campus, and the downtown Canton U.S. Post Office. Route 105 runs in peak service from 10:15 AM to 6:10 PM on 30-minute headways. Frequency drops to 60-minute headways during off-peak hours.

Route 107 – East Tuscarawas/East Canton			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	30 Minutes (core route) 120 Minutes (East Canton extension)

Route 107 services downtown Canton and East Canton with stops at or near the Cornerstone Transit Center, Lincoln Street, 8th Street Northeast, Belden Avenue Northeast, and East Tuscarawas Street. Some points of interest along Route 107 include Belden School, Canton Community Clinic, downtown Canton, and East Canton Library. Every two hours, the route provides service to East Canton.

Route 111 – Northeast Canton/Maple/Route 62			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 111 services downtown Canton and Harmont Avenue with stops at or near the Cornerstone Transit Center, Cherry Avenue, Colonial Boulevard, Lesh Road, Maple Avenue, Regent Avenue, Spangler Street, and 30th Street NE. Some points of interest along Route 111 include Aldi, Kmart, the U.S. Post Office – Maple Branch, the Stark County Jail, and Walmart. Route 111 provides limited service to the Stark County Jail, with stops every two hours between 7:05 AM and 7:05 PM.

Route 113 – Southwest Canton/Harrison/Southway			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 113 services downtown Canton and Southway Industrial Park with stops at or near Cornerstone Transit Center, McKinley Avenue, Harrison Avenue, 13th Street, Raff Road, and Southway Street. Some points of interest along Route 113 include the Canton Academy, the Canton

Police Boys Club, the Community Treatment and Correction Center (CTCC), downtown Canton, Goodwill Industries, and the Veteran's Administration Clinic.

Route 114 – South Canton/Southgate/East Sparta			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	5:45 AM – 9:40 PM	1	30 Minutes
Saturday	6:15 AM – 9:40 PM	1	60 Minutes

Route 114 services downtown Canton and Southgate/East Sparta with stops at or near the Cornerstone Transit Center, Cherry Ave., 14th St. SE, Rt. 800, and East Sparta. Some points of interest along Route 114 include Canton South High School, Compton Learning Center, downtown Canton, East Sparta, Higgins Workshop, Sandy Valley Library, and the Southgate Shopping Center. Route 114 extends beyond Southgate Shopping Center to East Sparta once every four hours on weekdays.

Route 117 – Shorb/Meyers Lake/Fairgrounds			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 117 services downtown Canton with stops at or near the Stark County Fairgrounds, McKinley Senior High School, the Cornerstone Transit Center, and Broad Avenue. Some points of interest along Route 117 include Harrison Professional Building, Don Scott Field, McKinley Monument, McKinley Senior High School, Mercy Medical Center, the Pro Football Hall of Fame, and the Stark County Fairgrounds.

Route 118 – Southwest Canton/Perry Township/Massillon			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 118 services downtown Canton and Perry Hills with stops at or near Market Avenue, 17th Street SW, Navarre Road, and the Cornerstone Transit Center. Points of interest along Route 118 include the CTCC, DHL Industries, Perry Hills Colony, Perry Township, Richville, and the VA Clinic. Route 118 provides limited weekday service to Sterilite in Massillon.

Route 119 – Fulton/25th/Harvard/30th			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:45 AM – 9:40 PM	1	60 Minutes

Route 119 services downtown Canton and Frazer with stops at or near Fulton Road, 25th Street NW, Harvard Avenue, 30th Street NW, and the Cornerstone Transit Center. Areas of interest along Route 119 include downtown Canton, Ohio Means Jobs, Frazer School, Glenwood Middle School, Malone University, Timken High School, and the 30th Street Plaza.

Community Routes

Routes in this category experience lower ridership than SARTA's core routes, but provide critical access to residents living in, and destinations located in, communities outside of Canton. These routes include local route networks in Alliance, the Belden Village area including North Canton, and Massillon.

Belden Village/North Canton Routes

Three local routes originating at the Belden Village transfer center provide weekday service in the Belden Village Mall and North Canton area.

Route 112 – North Canton/Uniontown/Hartville			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:30 AM – 5:40 PM	1	90 Minutes

Route 112 provides connecting service between Belden Village and Hartville with stops at Belden Village Transit Center, Applegrove Street, Whitewood Street, and Route 619. Route 619 has limited service, with service only between 8:40 AM and 4:10 PM. Some points of interest along Route 112 include Greentown, Hartville, Hartville Flea Market, Hartville Kitchen, Hartville Plastics, North Canton, and Uniontown.

Route 120 – Belden Village/North Canton Loop			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:45 AM – 9:40 PM	1	30 Minutes

Route 120 provides loop service around Belden Village. Stops along this route include the Belden Village Transit Center, Stark State College/Kent State University Stark, and Munson Street. Points of interest along Route 120 include Belden Village Commons, Belden Village Mall, Kent State University, Kohl's, North Canton, Stark State College, Sunset Hills Burial Park, and Target.

Route 121 – Belden Village/North Canton Industrial Park			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:21 AM – 9:03 PM	1	60 Minutes

Route 121 provides services to Belden Village and the North Canton Industrial Park, with stops at the Belden Village Transit Center, Whipple Avenue, Shuffel Street, and Strip Avenue. Points of interest along Route 121 include Aultman Medical Center North, Belden Village Mall, Mercy Medical Center & Sports Medicine, North Canton Industrial Park, The Strip, and Stark State College.

Massillon Routes

The Massillon Transit Center serves as the hub for a network of four local fixed route loops that serve the Massillon community. A fifth route, Route 125, provides connecting service between Massillon and Belden Village.

Route 122 – Northwest and Southwest Massillon			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:30 AM – 8:55 PM	1	60 Minutes
Saturday	6:30 AM – 8:55 PM	2	60 Minutes

Route 122 provides service to downtown Massillon with limited service to the Oberlin Industrial Park. The route makes four stops at the industrial park, two in the morning and two in the afternoon. Route 122 also makes stops at the Massillon Transit Center, 17th Street, 9th Street, and Walnut Road. Two points of interest along Route 122 include downtown Massillon and the Massillon Boys and Girls Club.

Route 124 – Southeast Massillon			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:00 AM – 8:25 PM	1	60 Minutes

Route 124 operates in downtown Massillon with stops at the Massillon Transit Center, Walnut Road, Harsh Avenue, and 3rd Street SE. Points of interest along Route 124 include downtown Massillon, Franklin Elementary, Lilian Beane Center, Paul Brown Stadium, Walnut Hills, Washington High School, and the YMCA.

Route 125 – Massillon/Belden Village			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:30 AM – 9:25 PM	1	90 Minutes

Route 125 provides service to downtown Massillon and Belden Village, with stops at the Massillon Transit Center, Wales Road, the Belden Village Transit Center, and Burd Avenue. Points of interest along Route 125 include Affinity Medical Center, Amherst Shopping Center, Brown Mackie College, Fisher Foods, Jackson High School, Jackson Library, Jackson YMCA, and Massillon Recreation Center.

Route 126 – Northwest Massillon			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	5:30 AM – 8:55 PM	1	60 Minutes

Route 126 operates in downtown Massillon with stops at the Massillon Transit Center, 17th Street, Cherry Avenue, 27th Street, and Meadows Avenue. Points of interest along Route 126 include downtown Massillon, Mayflower Park Shopping Center, Quarry Ridge Apartments, and Rolling Hills Village.

Route 128 – Massillon/Southwest Canton			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:00 AM – 9:25 PM	1	60 Minutes
Saturday	6:30 AM – 9:25 PM	1	30 Minutes

Route 128 provides service to downtown Massillon with stops at the Massillon Transit Center, Walmart, Menards, and Sterilite. This route provides limited service to Sterilite, with stops at 6:00 AM, 7:00 AM, and 7:00 PM Monday through Friday.

Alliance Routes

The Phyllis Beyers Alliance Transit Station serves as a hub for a network of three local fixed routes that serve Alliance.

Route 130 – Northwest Alliance			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:45 AM – 9:10 PM	1	60 Minutes

Route 130 operates in downtown Alliance with stops at the Alliance Transit Center, Lincoln Avenue, Klinger Avenue, Broadway Street, and Gaskill Drive. Points of interest along Route 130 include Alliance City Cemetery, Alliance Senior Center, Altercare of Alliance, downtown Alliance, and Roselawn Terrace.

Route 131 – Alliance/South Union/West State Street			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:15 AM – 8:40 PM	1	60 Minutes

Route 130 provides service to downtown Alliance with stops at the Alliance Transit Center, North Union Avenue, West State Street, East Main Street, and Park Avenue. Points of interest along Route 131 include Alliance Community Hospital, Alliance High School, Buckeye Village, Carnation Mall, downtown Alliance, University of Mount Union, and Walmart.

Route 132 – Downtown Alliance - College Plaza			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	6:15 AM – 9:10 PM	1	30 Minutes

Route 132 provides service to downtown Alliance with limited service to Alliance Middle School four times a day during the week. Other stops along the route are the Alliance Transit Center, Mahoning Avenue, College Plaza, Alliance Hospital, and Broadway Street. Points of interest along Route 132 include the Alliance Area Chamber of Commerce, Auld Street Industrial Area, downtown Alliance, Rodman Library, Silver Park, Thompson-Snodgrass Park, and the University of Mount Union.

Late Night Loops and Specialized Routes

SARTA operates three late-night loops that provide service in the late evening hours, beginning at 9:45 PM. These routes provide a basic level of service to the community during hours when ridership would be too low to justify running all regular routes. Additionally, SARTA offers two special routes serving important trip generators. Route 4 provides service from Canton to the Cleveland VA Hospital, and Route 154 provides peak express service to Special Pack, a key employer located near the Akron-Canton Airport.

Route 4 – Cleveland Veterans			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:50 AM – 6:30 PM	1	Every 4 hours

Route 4, launched in 2013, services the Louis Stokes Cleveland VA Medical Center's Wade Park Campus and downtown Cleveland three times per day on weekdays. Veterans can obtain free Route 4 passes through the Stark County Veterans Commission.

Route 45 – Belden Village/Stark State			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Saturday	6:40 AM – 10:10 PM	1	60 Minutes

Route 45 operates on Saturdays only, providing service in the Belden Village area when the weekday-only Routes 112 and 120 are not running. Route 45 is a 60-minute loop that provides access to several shopping areas and the campuses of Stark State College and Kent State University at Stark. Because SARTA began operating this route in 2018, a full year of operating data was not available. Therefore, it is not included in the data analysis in this plan.

Route 151 – North Late Night Loop			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	9:45 PM – 1:35 AM	1	30 Minutes

Route 151 provides late night loop service in North Canton Monday through Saturday. Stops along this route include Cornerstone Transit Center, South Main Street, Freedom Avenue, Belden Village Transit Center, Frank Avenue, and Mercy Medical. Some points of interest along Route 151 include Akron Children's Hospital, Belden Village Mall, Kent State University Stark, Mercy Medical Hospital, North Canton Industrial Park, Tinseltown, The Strip, and Walmart.

Route 152 – West Late Night Loop			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	9:45 PM – 1:25 AM	1	90 Minutes

Route 152 provides late night loop service west of Canton, including Massillon. Major trip generators include Walmart (Massillon), downtown Massillon and Canton, Canton Centre Mall, Walmart, and Aultman Hospital.

Route 153 – Southeast/Northeast/Southwest Late Night Loop			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Saturday	9:45 PM – 1:38 AM	1	60 Minutes

Route 153 provides late night loop service to downtown Canton and its surrounding area, Points of interest along Route 153 include Aultman Hospital, CHIP Townhouses, DHL Industries, downtown Canton, Ellis Dale Apartments, Linwood Acres, Skyline Terrace Apartments, and Walmart.

Route 154 – Downtown Canton to Special Pack			
Days of Operation	**Hours of Operation**	**Vehicles in Service**	**Frequency**
Monday – Friday	6:25 AM – 6:55 AM; 3:30 PM – 4:10 PM	1	N/A

Route 154 provides one round trip from Cornerstone to Special Pack, Inc. on weekdays, to provide a commute option for employees working first shift.

Related Services

SARTA offers several services that are related to fixed route service for the benefit of specific groups of area residents, including residents of area housing complexes, veterans, students, people learning how to use public transportation, and people with out-of-county transportation needs.

Community Shopping Bus

SARTA operates a fixed route Community Shopping Bus service on weekdays for a $0.75 fare or half of the regular fixed route fare. The service picks up passengers at apartment complexes and takes them to shopping centers. Communities throughout Stark County are served by the Community Shopping Bus on a weekly basis. The service picks up riders at more than a dozen housing complexes located in Canton, Alliance, Massillon, Waynesburg, and Magnolia.

Veterans Program

Veterans may ride the Route 4 bus, SARTA's fixed route providing service to the Louis Stokes Cleveland VA Medical Center, without paying a fare by making arrangements with the Stark County Veterans' Service Commission. In addition, veterans seeking employment, or who have recently obtained employment, are eligible for up to 90 days of free bus passes for any fixed route.

Student Program

SARTA fixed route 31-day bus passes are available to college students at a reduced rate of $27.50. Students must present photo identification and a current class schedule to be eligible for the reduced rate. The fixed route system serves all colleges and universities in Stark County.

Travel Training

SARTA employs a team of Outreach Specialists who provide travel training to individuals and organizations that want to learn how to use the fixed route and/or demand-response systems. Outreach Specialists provide a 45-minute presentation on all aspects of using SARTA for transportation, and they are available to conduct one-on-one in-home meetings with individuals who are interested in Proline service.

Fare Integration with Other Public Transit Systems

To enhance customers' mobility beyond the county line, SARTA accepts transfers from the transit systems serving the Akron area, METRO (serving Akron), and PARTA (serving Portage County). The transfer agreement between SARTA, METRO, and PARTA allows passengers who want to travel within the region to pay just one fare each way, rather than pay a fare to each system. Recently, SARTA and a number of other Northeast Ohio transit providers adopted EZfare technology, which allows riders to use a smartphone app to purchase fares on multiple systems rather than purchase separate paper passes or use cash.

SARTA DEMAND-RESPONSE SERVICES

SARTA operates Proline throughout Stark County, an origin-to-destination service for eligible individuals with disabilities. Proline serves as SARTA's Federally-required ADA complementary paratransit service, which provides transportation to residents who are unable to use the fixed-route bus system due to a disability. Individuals who wish to use Proline are determined to be eligible for the service through an application process.

Proline rides are scheduled through advanced reservations by calling the Proline call center or using GoLine, a web-based trip request tool. Rides may be requested between one and three days in advance. The fare to use Proline is $2.25 per trip. SARTA offers single-ride tickets for $2.25, 10-ride tickets for $22.50 and a monthly pass for unlimited trips for $63.00.

SARTA also offers demand-response services to qualifying area residents through its Non-Emergency Transportation (NET), MedLine, and PASSPORT services. NET rides are offered to qualifying Medicaid recipients through a contract arrangement with Stark County Job and Family Services. Through the MedLine program, SARTA is a non-medical transportation provider for certain Medicaid waivers (I/O and Level 1) through the Stark County Department of Developmental Disabilities. Medicaid waiver clients can use MedLine for transportation to employment sites, adult day support, or vocational training. Finally, SARTA is a PASSPORT provider of transportation for

clients of adult daycare centers using Medicaid funding. The non-Proline fare for demand-response services is $3.50.

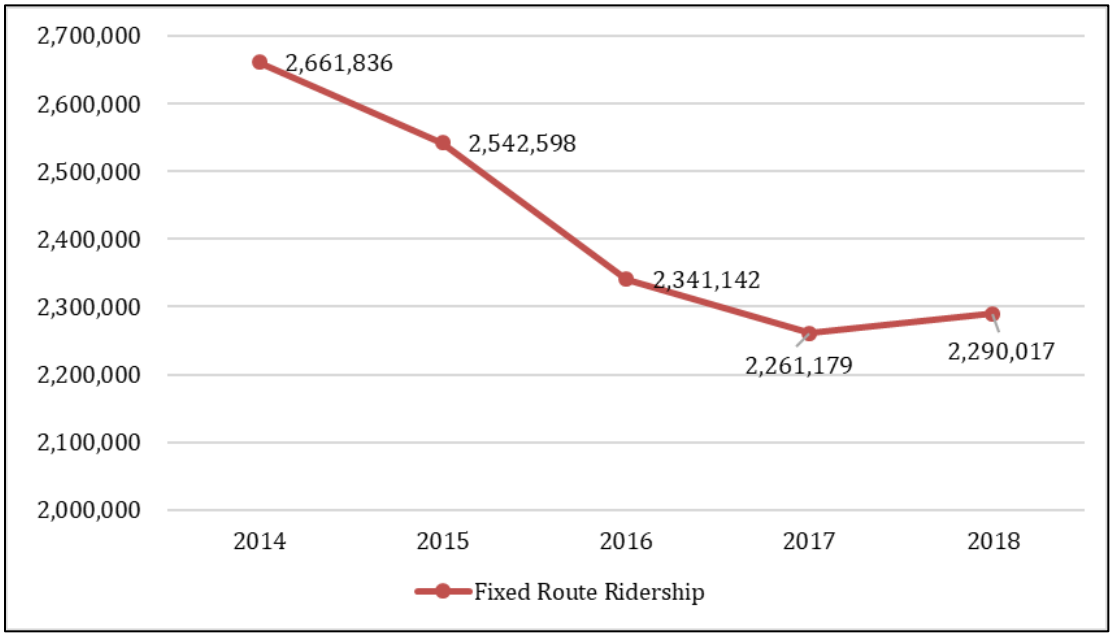
SARTA demand-response services run Monday through Friday from 5:10 AM to 1:45 AM and on Saturdays from 5:10 AM to 1:45 AM.

SYSTEM OPERATING STATISTICS

Fixed Route Ridership

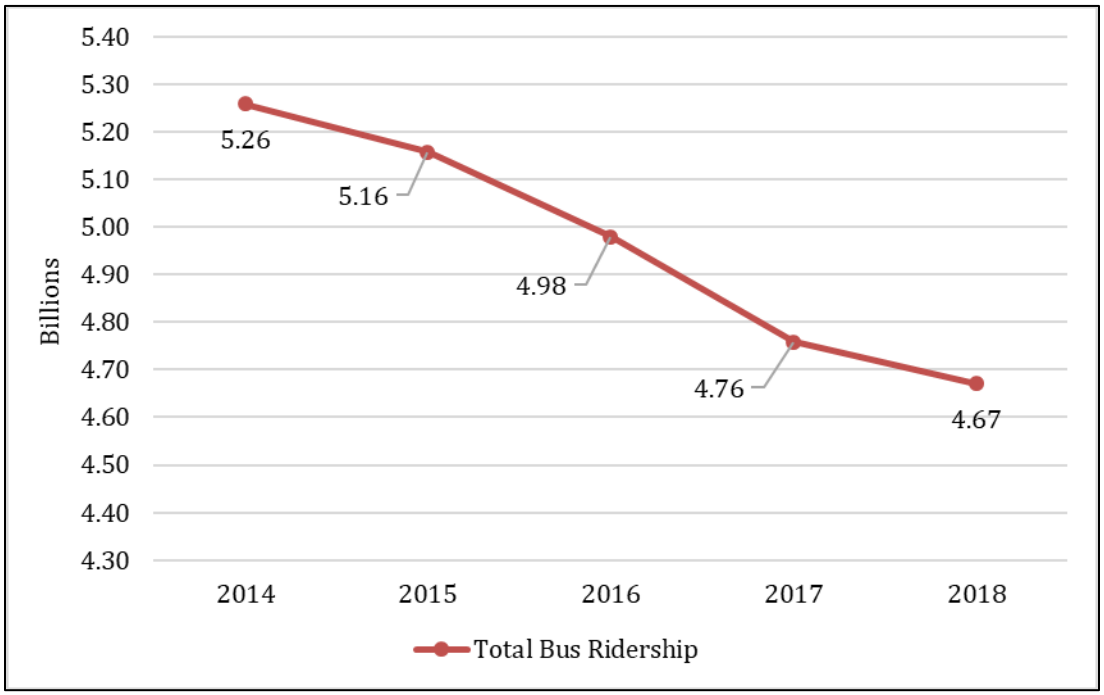
Fixed route ridership, expressed as the number of one-way passenger trips, or boardings, has trended downward over the past five years. This trend reflects a nationwide decline in fixed route bus ridership. SARTA ridership has declined by 14.6 percent from 2014 to 2018, though it increased by 1.03 percent from 2017 to 2018 (**Exhibit 3**). Nationwide, fixed route bus ridership declined by 11.2 percent over the same five-year period (**Exhibit 4**). The reasons for the decline in ridership are debated widely, though it is likely that they include economic gains, resulting in more households acquiring personal vehicles, and the popularity of transportation network companies such as Uber and Lyft. Notably, SARTA's ridership increase in 2018 contradicted the nationwide trend of continuing ridership loss.

Exhibit 3: SARTA Annual Fixed Route Ridership (One-Way Passenger Trips)



Source: SARTA

Exhibit 4: Annual United States Bus Ridership (One-Way Passenger Trips)



Source: American Public Transportation Association

Annual ridership figures for each fixed route are provided in **Table 1.** The exhibits that follow display fixed route ridership trends by route category. Route 45, a Saturday-only route which began operation in 2018, is excluded from these figures. A map displaying ridership levels throughout the fixed route network is included in the Appendix.

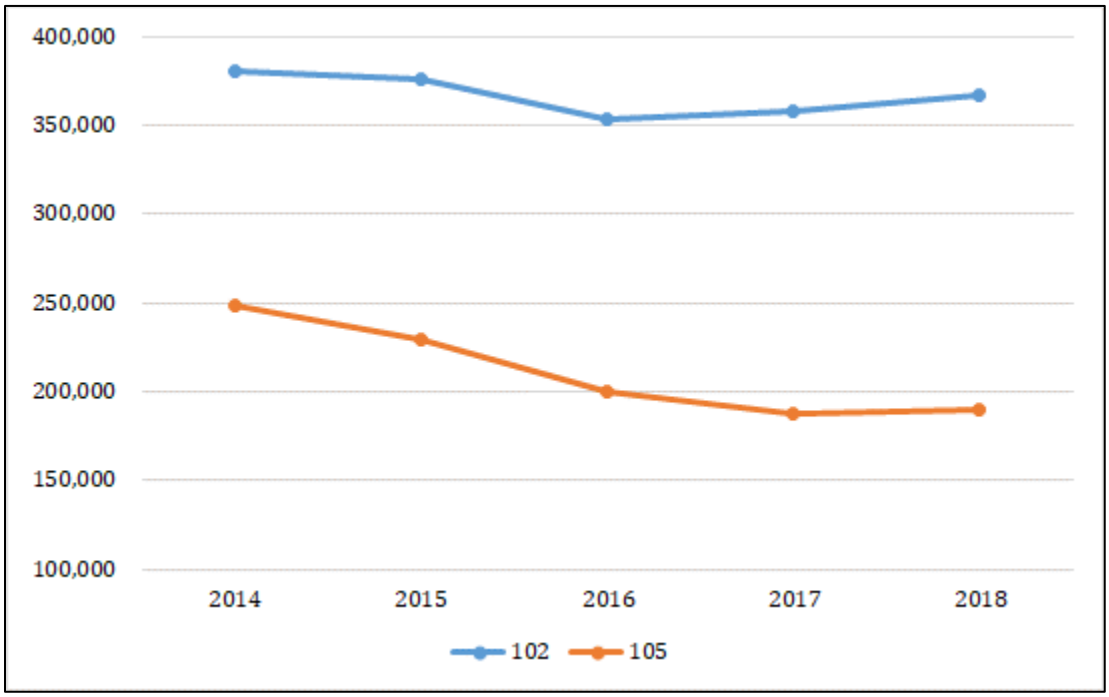
Table 1: Ridership by Route, 2014 – 2018					
Route	**2014**	**2015**	**2016**	**2017**	**2018**
Urban Routes (High-Ridership)					
81	160,445	150,175	128,748	118,764	123,725
101	119,164	114,808	107,929	101,499	105,298
102	380,761	375,866	353,727	358,300	366,954
105	247,871	228,856	199,437	187,150	189,192
106	88,895	98,832	122,391	125,667	110,922
108	162,324	154,957	148,706	134,678	125,907
110	159,506	149,735	134,033	117,357	113,774
139	155,360	152,905	150,892	148,380	143,539
Urban Routes (Medium-Ridership)					
103	79,483	72,360	73,664	69,466	79,844
107	87,278	82,189	70,032	71,299	72,576
111	70,755	74,044	66,443	61,830	66,151
113	68,723	64,000	54,597	53,274	52,842

Table 1: Ridership by Route, 2014 – 2018					
114	55,114	46,502	43,088	46,827	53,080
117	110,712	102,068	90,435	81,151	83,976
118	58,329	54,397	51,394	49,917	47,825
119	122,757	117,352	104,552	102,019	97,964
Community Routes					
112	10,206	11,266	10,225	8,409	9,706
120	92,612	70,268	60,318	50,855	46,606
121	68,948	58,888	33,281	30,389	41,591
122	16,553	15,217	15,118	17,698	16,535
124	28,696	27,829	26,782	26,480	26,041
125	63,462	61,650	56,240	54,353	54,120
126	18,699	17,329	15,577	15,239	12,878
128	36,576	32,614	32,358	34,588	35,479
130	11,356	11,438	12,212	13,354	13,080
131	37,501	36,162	36,729	39,937	41,957
132	40,608	40,068	36,221	34,883	37,567
Late Night Loops and Specialized Routes					
4	12,625	9,763	9,426	8,938	9,655
151	10,870	10,793	8,952	9,688	9,193
152	10,582	10,177	10,452	11,898	12,038
153	10,395	10,890	10,089	10,658	11,252
154	6,589	10,309	7,497	4,275	9,650

Source: SARTA

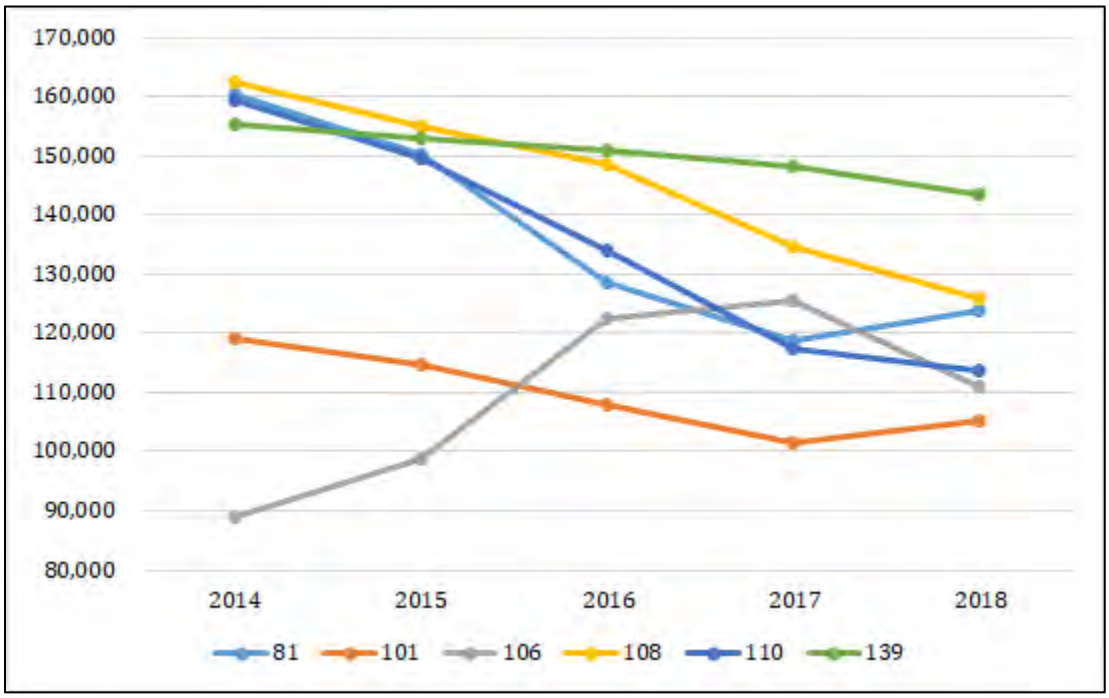
Exhibit 5 and **Exhibit 6** display the five-year ridership trends for the Urban High-Ridership routes. Routes 102 and 105 are presented in a separate exhibit due to these routes' especially high ridership. These two routes demonstrated ridership gains from 2017 to 2018. Routes 81 and 101 also gained ridership from 2017 to 2018. The routes that lost the most ridership over the five-year period were Routes 108 and 110. As a group, Urban High-Ridership Routes experienced a ridership decline of 0.97 percent from 2017 to 2018.

Exhibit 5: Ridership, 2014-2018, Routes 102 and 105



Source: SARTA

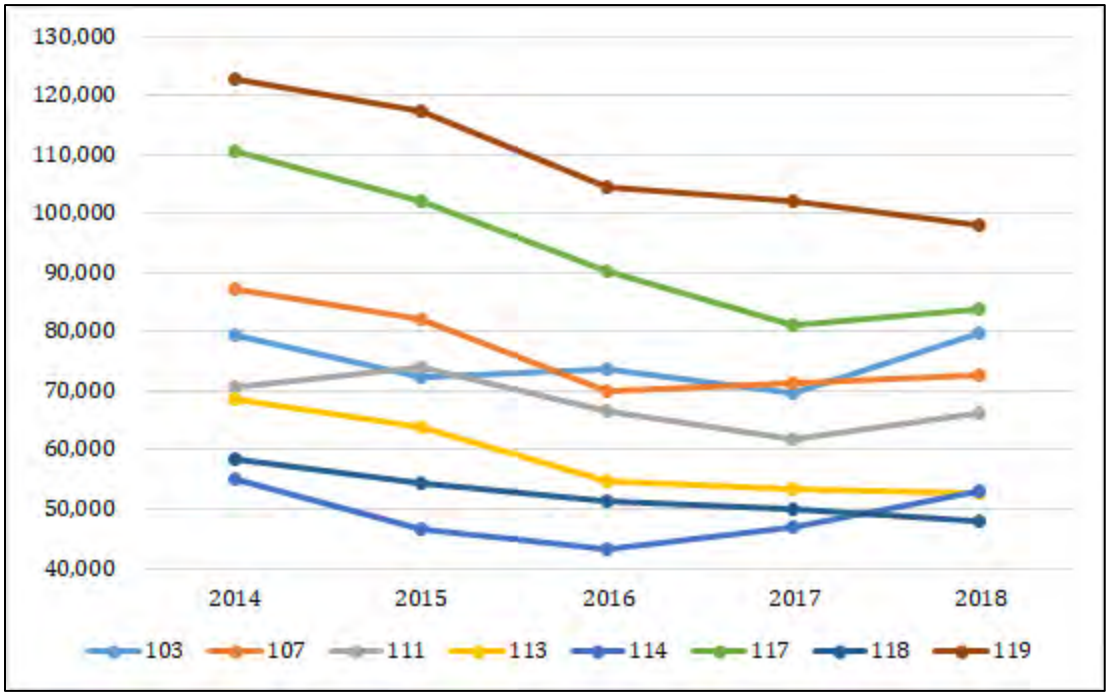
Exhibit 6: Ridership, 2014-2018, Other Urban Routes – High-Ridership



Source: SARTA

Exhibit 7 displays the five-year ridership trends for the Urban Medium-Ridership routes. Ridership has increased on the majority of these routes in the past one to two years. Increases have occurred on Routes 103, 107, 111, 114, and 117. As a group, the Urban Medium-Ridership routes' ridership grew by 3.45 percent from 2017 to 2018.

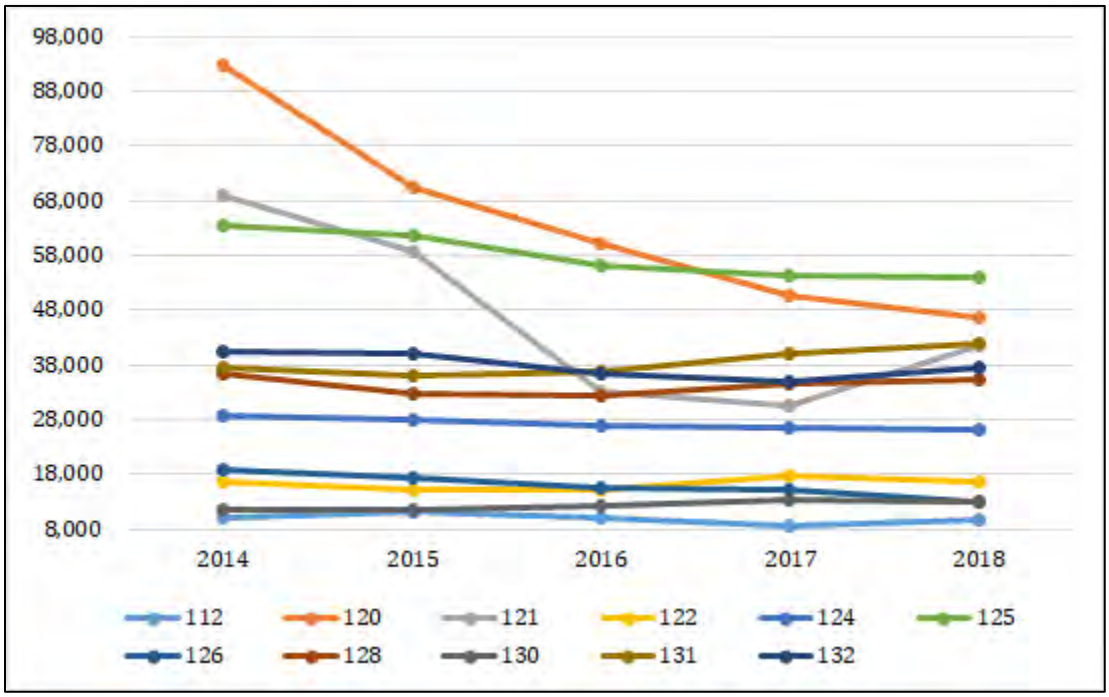
Exhibit 7: Ridership, 2014-2018, Urban Medium-Ridership Routes



Source: SARTA

Community route ridership is displayed in **Exhibit 8**. Community routes, serving Alliance, Belden Village/North Canton, and Massillon, experienced average growth in ridership of 2.87 percent from 2017 to 2018. Over the five-year period, ridership declined significantly on Routes 120 and 121, which serve the Belden Village area. However, Route 121 experienced a large gain in ridership from 2017 to 2018.

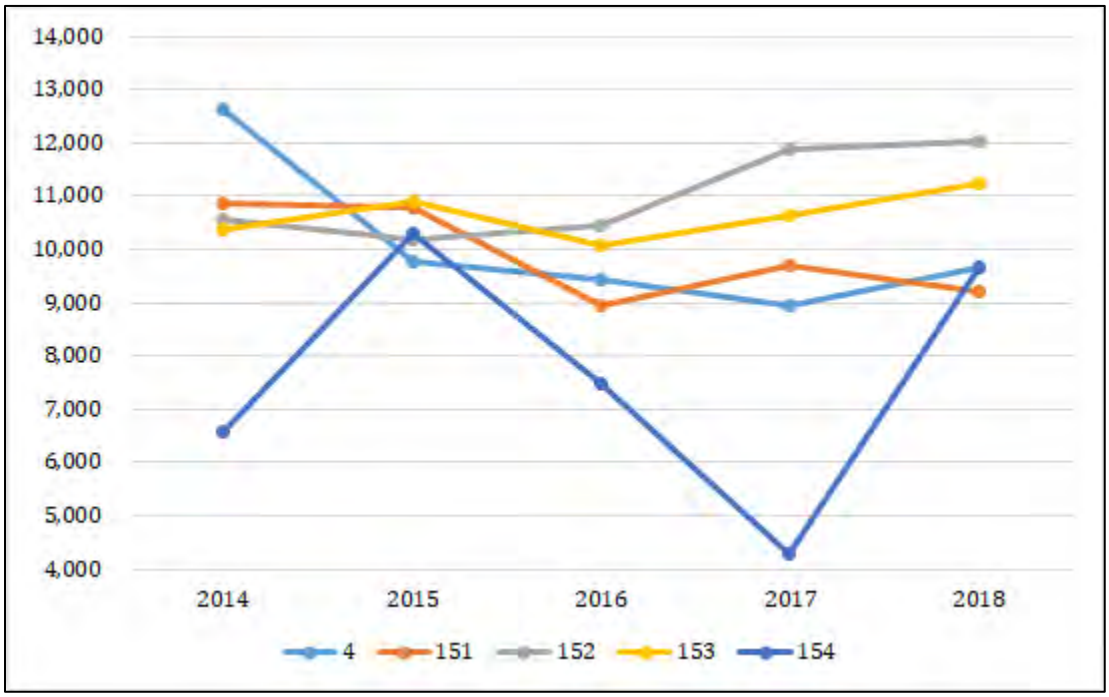
Exhibit 8: Ridership, 2014-2018, Community Routes



Source: SARTA

Exhibit 9 displays Late Night Loop/Specialized Route ridership. Excluding Route 154, the Special Pack commuter route, ridership increased by 2.32 percent from 2017 to 2018 on these routes. The Special Pack route's ridership has fluctuated significantly due to changes in workforce needs.

Exhibit 9: Ridership, 2014-2018, Late Night Loops/Specialized Routes



Source: SARTA

Fixed Route Miles/Hours of Service

In public transit, "revenue service" is all service that is provided while the vehicle is available to the general public and there is an expectation of carrying passengers. Revenue service is measured in distance (miles) and time (hours). Service that is provided during times when the vehicle is not available to the public is non-revenue service, also known as deadhead service. The most common non-revenue service is the time the vehicle travels back to the transit administration or maintenance facility after it has completed a route. To increase efficiency, transit systems attempt to operate a low ratio of non-revenue to revenue service.

The following tables provide total, revenue, and non-revenue fixed route miles over the past five years.

Table 2 provides this data for weekday service, while **Table 3** provides Saturday service data. **Exhibit 10** displays annual miles for weekday and Saturday service, showing a slight upward trend in all categories for weekday and Saturday service. Over the five-year period, weekday revenue miles of service increased by 1.2 percent. Saturday revenue miles increased at a rate of 10.6 percent.

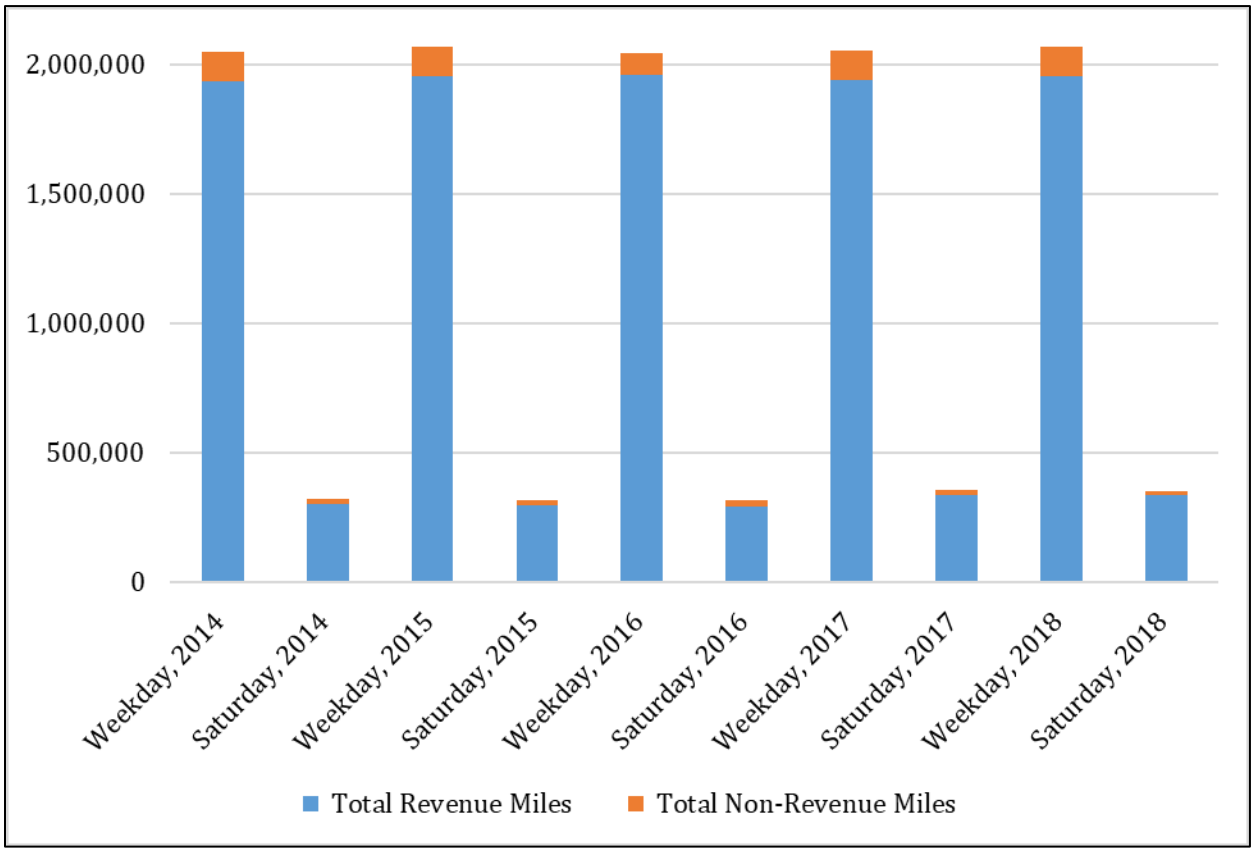
Table 2: Total, Revenue, and Non-Revenue Miles – Fixed Route: Weekdays					
	2014	2015	2016	2017	2018
Total Miles	2,045,696	2,065,528	2,044,928	2,051,374	2,069,358
Revenue Miles	1,935,872	1,951,482	1,959,936	1,937,009	1,955,705
Non-Revenue Miles	109,824	114,046	84,992	114,365	113,654

Source: SARTA

Table 3: Total, Revenue, and Non-Revenue Miles – Fixed Route: Saturdays					
	2014	2015	2016	2017	2018
Total Miles	320,892	314,502	314,979	355,062	350,677
Revenue Miles	301,496	296,323	289,698	333,744	333,344
Non-Revenue Miles	19,396	18,179	25,281	21,318	17,333

Source: SARTA

Exhibit 10: Total Miles, 2014-2018, Weekday and Saturday Fixed Route Service



Source: SARTA

The following tables provide total, revenue, and non-revenue fixed route vehicle hours of service over the past five years. **Table 4** provides this data for weekday service, while **Table 5** provides Saturday service data. **Exhibit 11** displays annual hours for weekday and Saturday service, showing

an essentially flat trend for both weekday and Saturday service. Over the five-year period, weekday revenue hours declined by 4.6 percent. Saturday revenue hours increased by 51.0 percent.

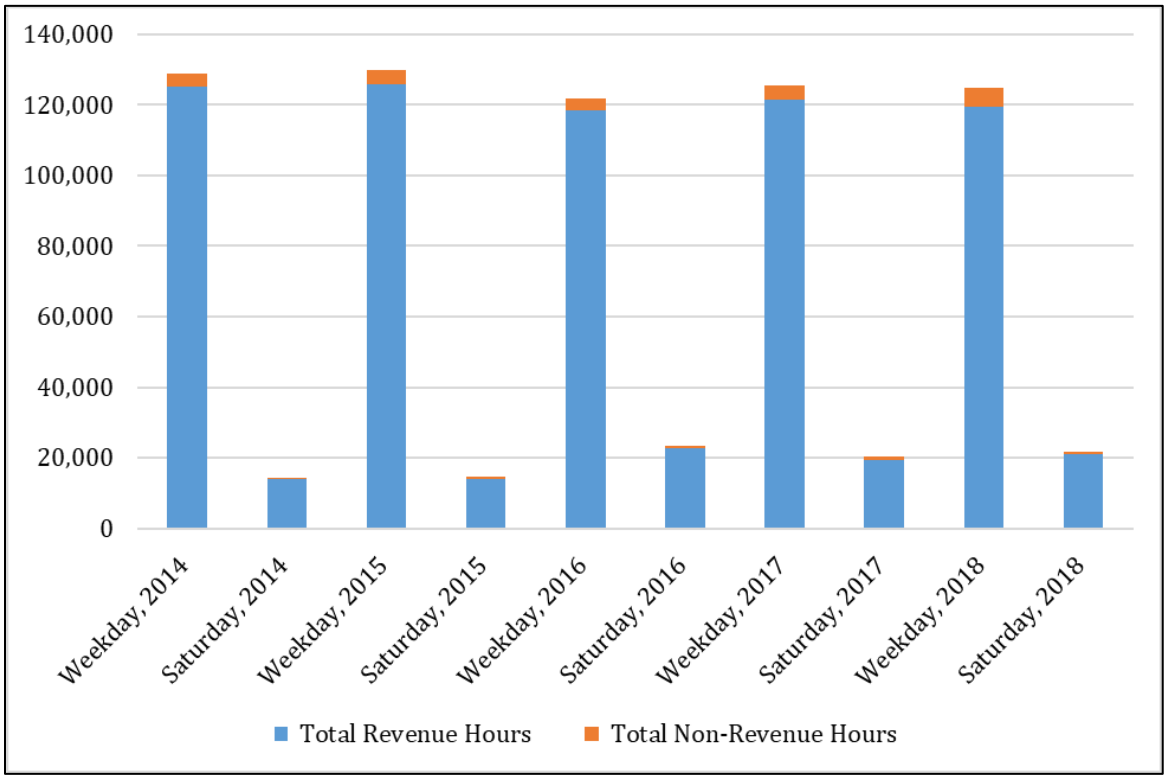
Table 4: Total, Revenue, and Non-Revenue Hours – Fixed Route: Weekdays					
	2014	2015	2016	2017	2018
Total Hours	128,896	129,794	121,856	125,416	124,981
Revenue Hours	125,312	125,984	118,528	121,304	119,590
Non-Revenue Hours	3,584	3,810	3,328	4,112	5,391

Source: SARTA

Table 5: Total, Revenue, and Non-Revenue Hours – Fixed Route: Saturdays					
	2014	2015	2016	2017	2018
Total Hours	14,300	14,575	23,373	20,451	21,571
Revenue Hours	13,936	14,045	22,684	19,482	21,043
Non-Revenue Hours	364	530	689	969	528

Source: SARTA

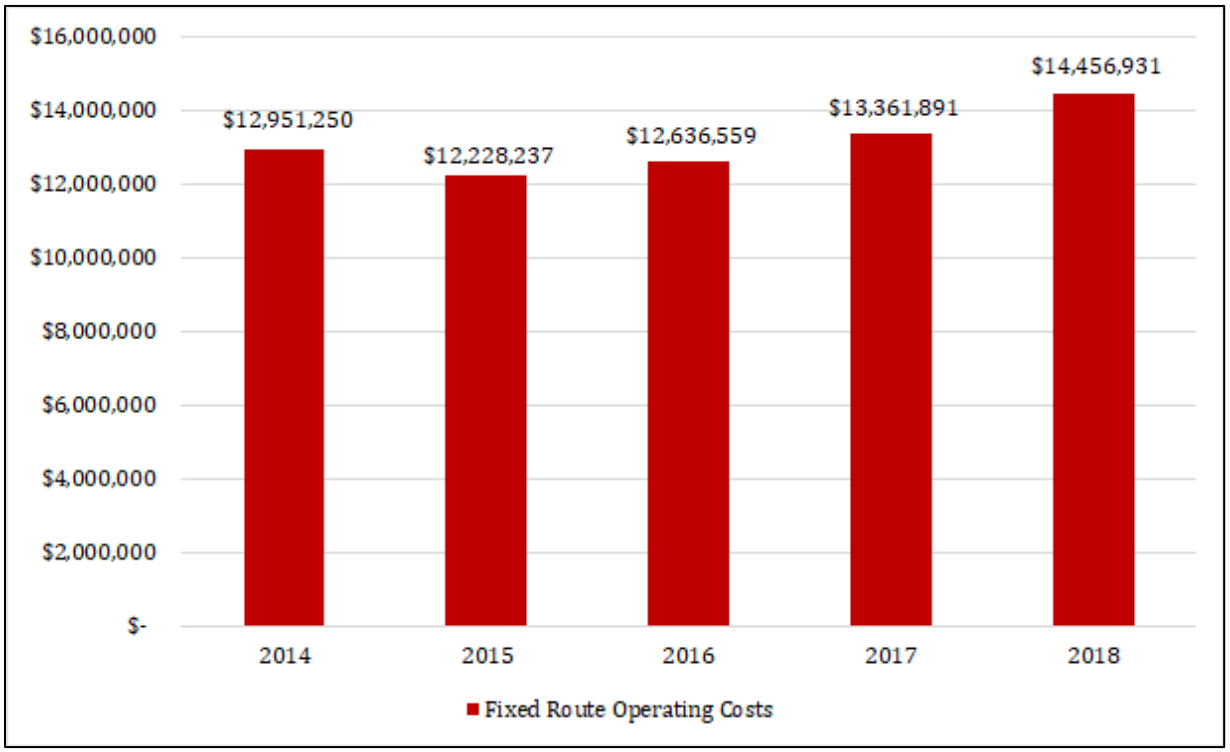
Exhibit 11: Total Hours, 2014-2018, Weekday and Saturday Fixed Route Service



Source: SARTA

Annual operating costs for fixed route service are provided in **Exhibit 12**. Over the past five years, operating costs have increased by 11.6 percent.

Exhibit 12: Annual Operating Costs, Fixed Route



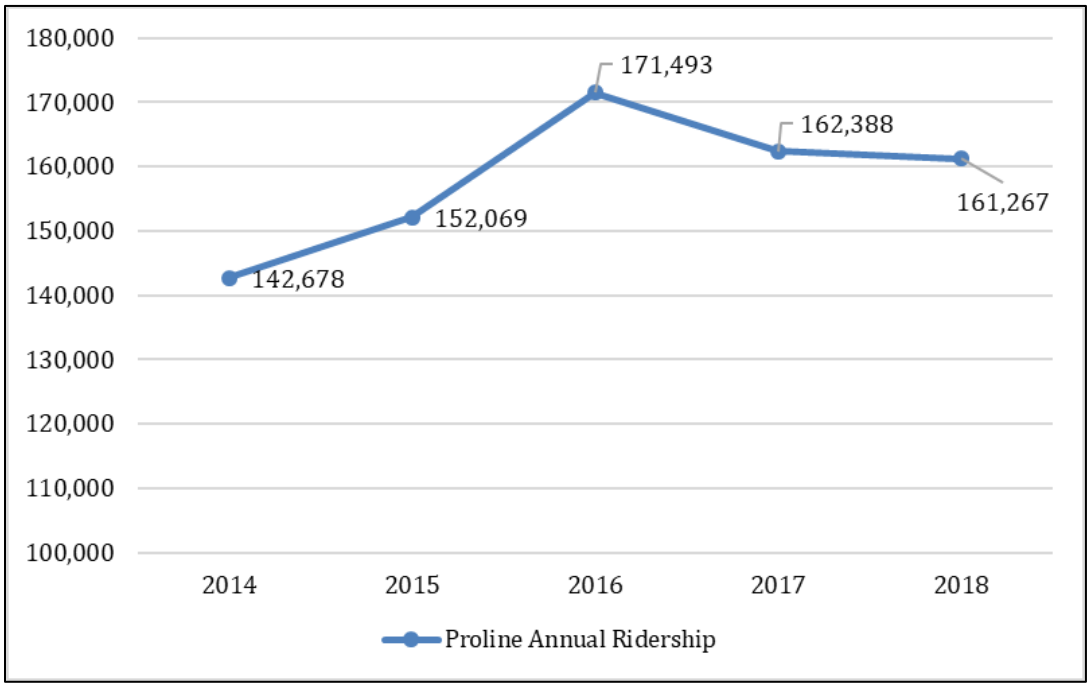
Source: SARTA

Proline

Proline, the ADA complementary paratransit service operated by SARTA, provided 161,267 one-way passenger trips in 2018. Proline ridership grew significantly from 2014 to 2016, before decreasing in 2017 and leveling off in 2018 (**Exhibit 13**). Over the five-year period, ridership grew by 13.0 percent. Throughout United States transit systems as a whole, ridership on demand-response services declined from 2014 to 2017 and increased slightly in 2018. (**Exhibit 14**). The nationwide ridership decrease over the five-year period was 9.8 percent.

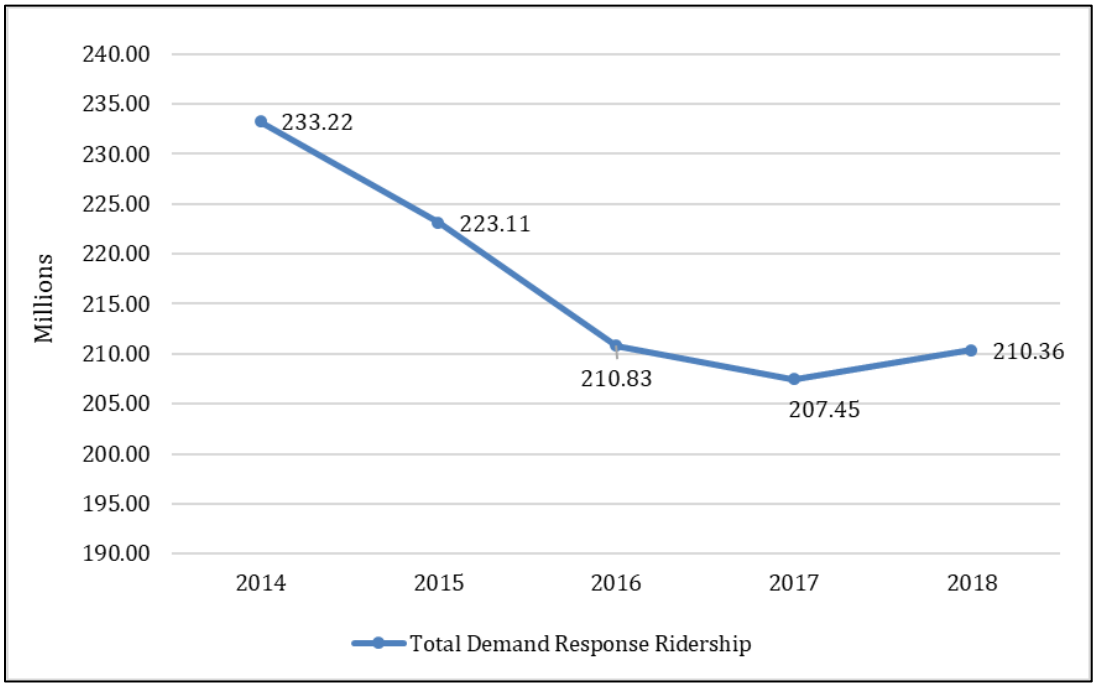
Currently, Proline service is available to people who are unable to use fixed route service due to a disability. Proline service is currently offered countywide, which exceeds the Federal requirement for transit agencies to offer complementary paratransit within a ¾ mile radius of a fixed route.

Exhibit 13: Proline Annual Ridership, 2014-2018 (One-Way Passenger Trips)



Source: SARTA

Exhibit 14: Annual United States Demand-Response Ridership, 2014-2018 (One-Way Passenger Trips)



Source: SARTA

The following tables provide total, revenue, and non-revenue Proline vehicle miles over the past five years. **Table 6** provides this data for weekday service, while **Table 7** provides Saturday service data. **Exhibit 15** displays annual miles for weekday and Saturday service, showing a slight upward trend in all categories for weekday and Saturday service. Over the five-year period, weekday revenue miles of service increased by 7.8 percent. Saturday revenue miles decreased at a rate of 13.1 percent.

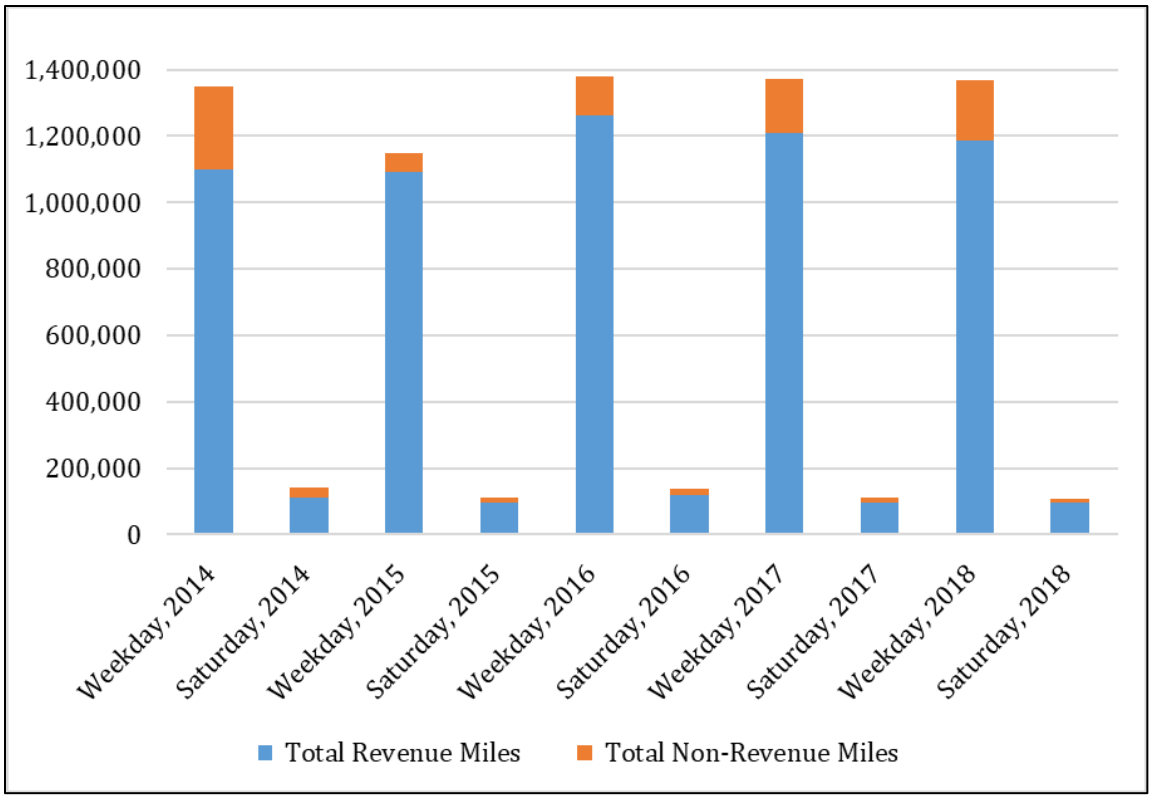
Table 6: Total, Revenue, and Non-Revenue Miles – Proline: Weekdays					
	2014	2015	2016	2017	2018
Total Miles	1,350,912	1,149,096	1,379,840	1,372,920	1,369,605
Revenue Miles	1,101,107	1,091,692	1,264,128	1,210,995	1,186,770
Non-Revenue Miles	248,960	57,404	115,712	161,925	182,835

Source: SARTA

Table 7: Total, Revenue, and Non-Revenue Miles – Proline: Saturdays					
	2014	2015	2016	2017	2018
Total Miles	140,296	112,572	135,892	109,824	106,964
Revenue Miles	109,174	97,467	120,098	96,460	94,848
Non-Revenue Miles	30,966	15,105	15,794	13,364	12,116

Source: SARTA

Exhibit 15: Total Miles, 2014-2018, Weekday and Saturday Proline Service



Source: SARTA

The following tables provide total, revenue, and non-revenue Proline vehicle hours of service over the past five years. **Table 4** provides this data for weekday service, while **Table 5** provides Saturday service data. **Exhibit 16** displays annual hours for weekday and Saturday service, showing an essentially flat trend for both weekday and Saturday service. Over the five-year period, weekday revenue hours increased by 5.3 percent. Saturday revenue hours increased by 14.5 percent.

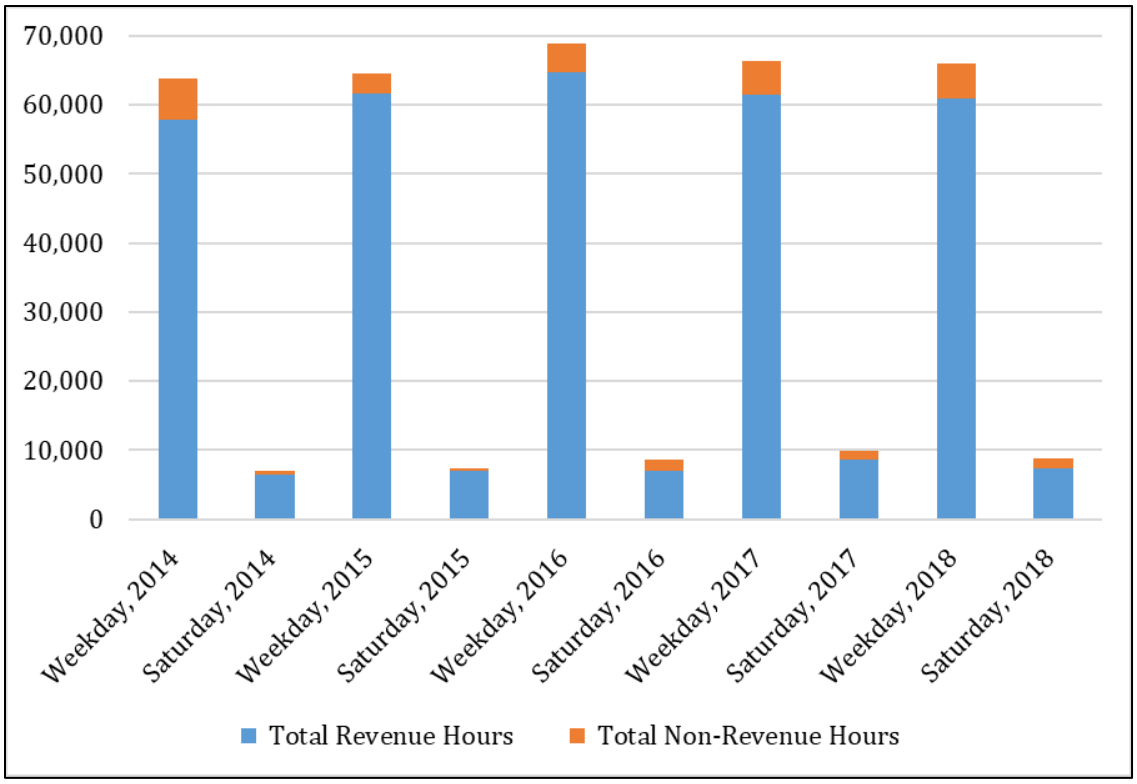
Table 8: Total, Revenue, and Non-Revenue Hours – Proline: Weekdays					
	2014	2015	2016	2017	2018
Total Hours	63,744	64,516	68,864	66,300	66,045
Revenue Hours	57,856	61,722	64,768	61,455	60,945
Non-Revenue Hours	5,888	2,794	4,096	4,845	5,100

Source: SARTA

Table 9: Total, Revenue, and Non-Revenue Hours – Proline: Saturdays					
	2014	2015	2016	2017	2018
Total Hours	7,072	7,420	8,586	8,684	8,840
Revenue Hours	6,448	6,996	6,943	8,684	7,384
Non-Revenue Hours	624	424	1643	1196	1456

Source: SARTA

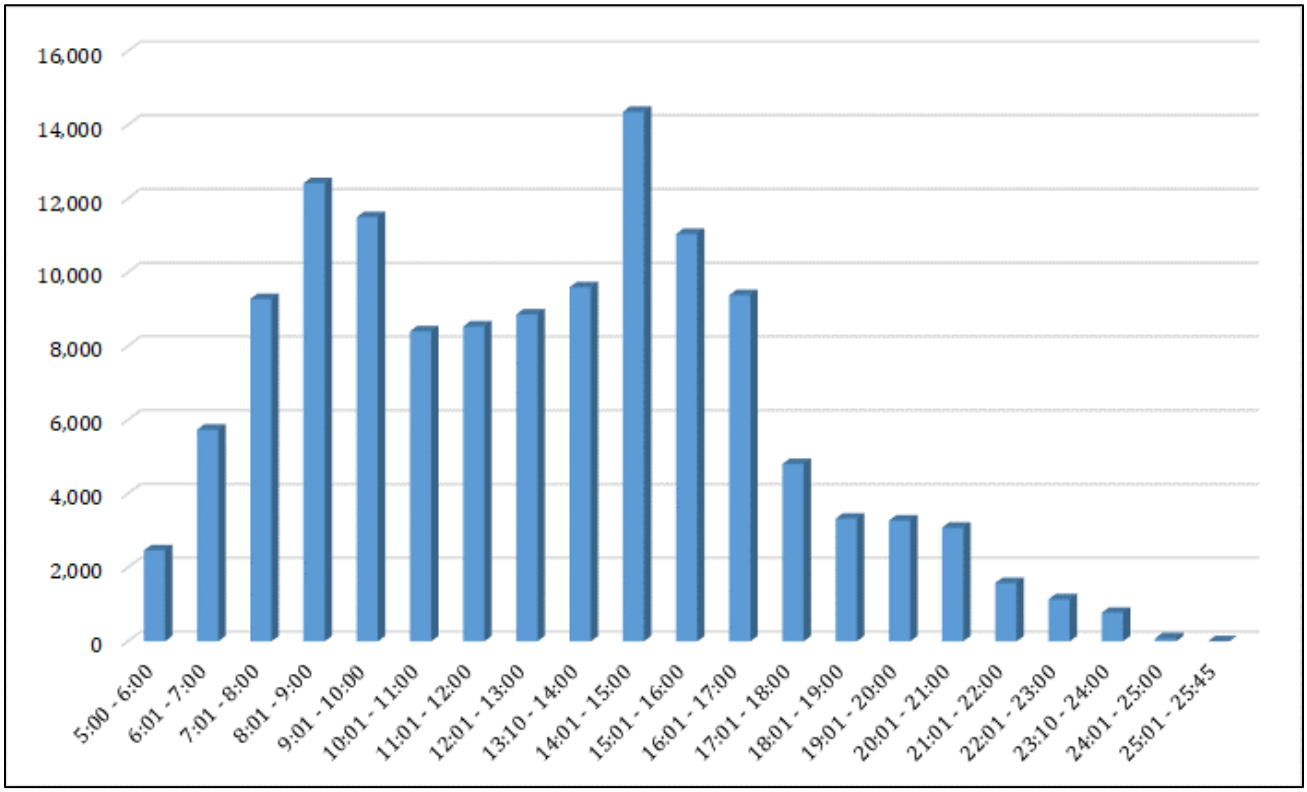
Exhibit 16: Total Hours, 2014-2018, Weekday and Saturday Proline Service



Source: SARTA

Proline ridership trends by hour of the day are provided in **Exhibit 17**. Ridership peaks during the early afternoon between 2:00 PM and 3:00 PM. A secondary peak occurs between 8:00 AM and 9:00 AM.

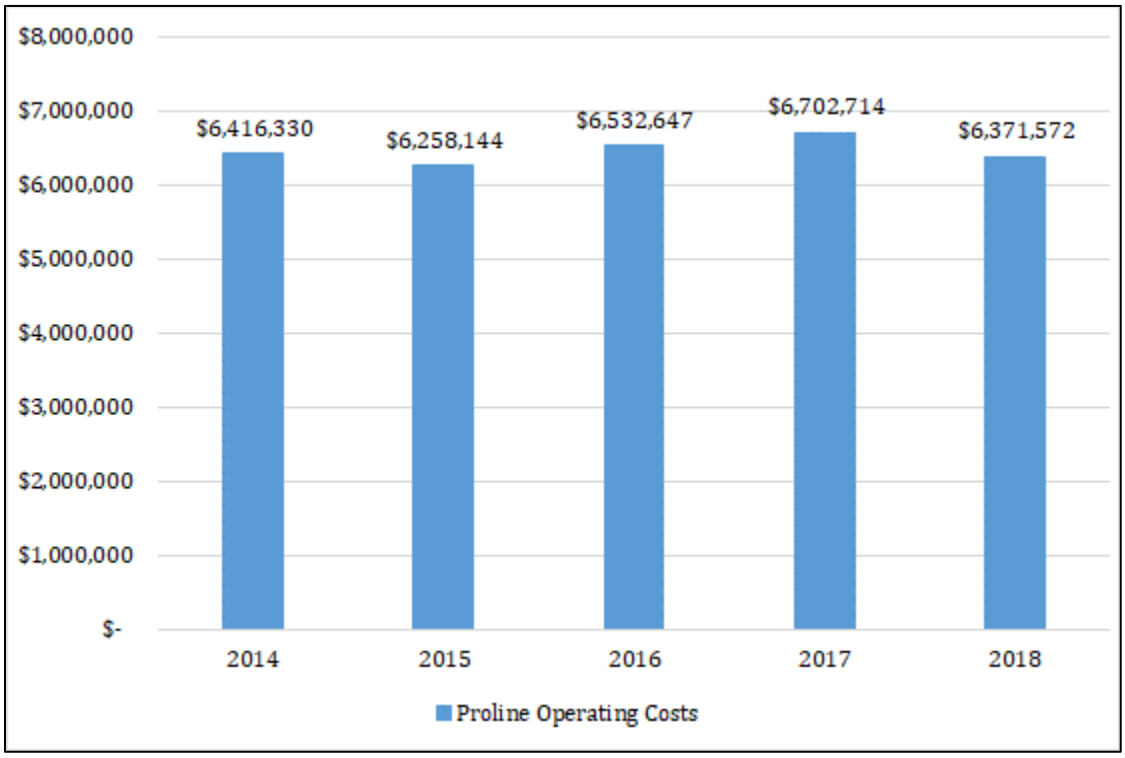
Exhibit 17: Proline Ridership by Hour, August 2018 – July 2019



Source: SARTA

Exhibit 18 displays operating costs for Proline over the past five years. Operating costs fell by 0.7 percent between 2014 and 2018.

Exhibit 18: Proline Annual Operating Costs



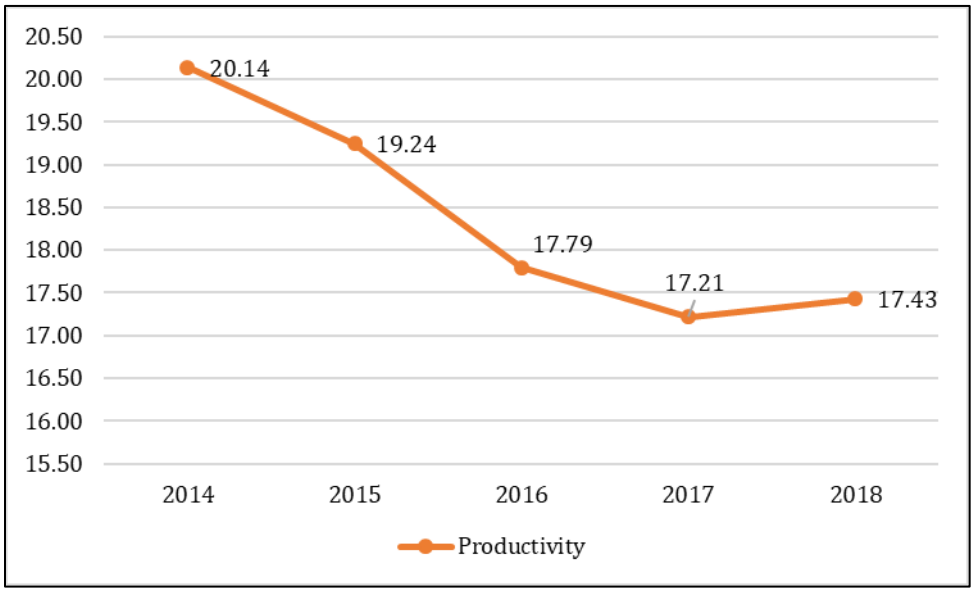
Source: SARTA

System Productivity by Mode

Fixed Route

Productivity is measured by dividing revenue hours of service by the total number of boardings. Transit systems often use productivity as a performance measure because the majority of a system's operating budget is comprised of wages, which are paid on an hourly basis. SARTA's overall fixed route productivity for the past five years has declined due to falling ridership, though it increased from 2017 to 2018 (**Exhibit 19**).

Exhibit 19: Fixed Route Productivity, 2014-2018



Source: RLS & Associates, Inc. Computations

The productivity of each of SARTA's fixed routes, for weekdays and Saturdays, is provided in **Table 10**. Urban High-Ridership routes are the most productive of the system, experiencing more than 20 boardings per revenue hour on weekdays, in most cases. The lowest-productivity routes are some of the Community Routes and Route 4, which serves the Cleveland VA. Although these routes experience only three to five boardings per revenue hour, they provide an important service in settings that are less conducive to high ridership, either due to traveling long distances (e.g., from Canton to Cleveland) or due to serving areas with lower population. The lowest-productivity Community Routes are Routes 112 (Belden Village to Hartville), 126 (Northwest Massillon), and 130 (Northwest Alliance). All three of these routes extend into rural areas, serving Census blocks with low levels of population density. Population density is a key factor in transit ridership.

Table 10: Productivity by Route, 2018		
Route	**Weekday**	**Saturday**
Urban Routes (High-Ridership)		
81	13.14	9.93
101	22.43	15.38
102	26.35	31.66
105	27.10	25.35
106	23.51	16.78
108	26.88	18.10
110	24.95	12.25
139	14.66	11.25
Urban Routes (Medium-Ridership)		
103	17.12	11.43

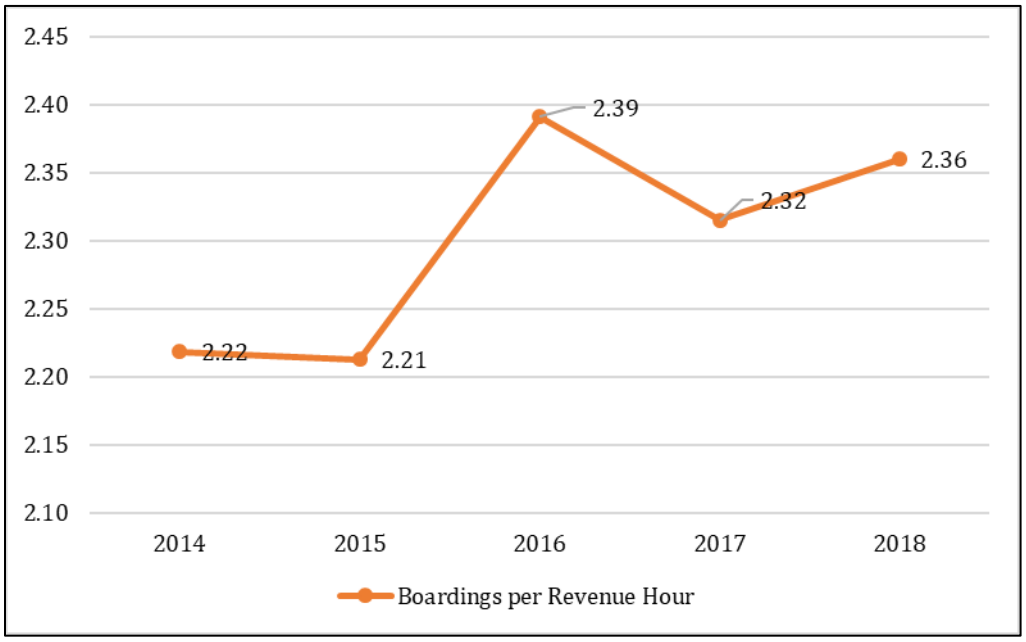
Table 10: Productivity by Route, 2018		
Route	**Weekday**	**Saturday**
107	15.33	11.26
111	13.88	10.72
113	11.51	6.47
114	11.27	7.71
117	18.13	11.10
118	10.33	6.29
119	20.50	16.11
Community Routes		
112	5.04	N/A
120	10.25	5.81
121	8.65	7.10
122	7.04	5.81
124	10.82	8.94
125	11.87	9.17
126	5.48	3.88
128	14.17	14.95
130	5.51	4.30
131	17.41	15.09
132	7.89	6.32
Late Night Loops and Specialized Routes		
4	3.16	N/A
151	8.15	6.97
152	10.84	9.90
153	9.64	8.50
154	31.43	4.49

Source: RLS & Associates, Inc. Computations

Proline

Proline productivity in 2018 was 2.36 boardings per revenue hour. It is typical for demand-response systems to have approximately two boardings per revenue hour of service. Productivity on demand-response systems does not typically differ between weekdays and weekends, because transit systems run only as many demand-response vehicles as warranted by the number of ride requests. **Exhibit 20** provides Proline productivity levels for the past five years. Productivity trended upward over 2014 to 2016, concurrently to ridership. Productivity has remained above 2.3 since 2016.

Exhibit 20: Proline Productivity, 2014-2018



Source: RLS & Associates, Inc. Computations

Transit Centers and Bus Stop Amenities

SARTA operates four passenger facilities. The Cornerstone Transit Center, located in downtown Canton, is the main terminal for passenger transfers. All SARTA urban routes converge at this location. Three smaller facilities are located in the outlying areas served by the community-based route networks. Belden Village Transit Center is located in North Canton near Belden Village Mall. The Massillon Transit Center is located on the ground floor of a downtown parking garage in Massillon. The Phyllis Beyers Alliance Transit Center is located in downtown Alliance.

There are 58 bus stops on SARTA routes that offer seating for customers. Trash cans are located at an additional 13 bus stops. Twenty-nine of SARTA's bus stops have shelters, 15 of which have bicycle racks.

Revenue Vehicle Inventory

SARTA has a fleet of 52 paratransit and 44 fixed route vehicles. The entire fleet is accessible to passengers with wheelchairs. The vehicles utilize a range of fueling technologies, including compressed natural gas and hydrogen fuel cells. SARTA is among a small number of U.S. transit agencies that are pioneering the use of hydrogen fuel cell technology in an effort towards emissions reductions and cost-efficiency. The following tables list SARTA's vehicles for Proline (**Table 11**) and fixed route (**Table 12**).

Table 11: Proline Vehicle Inventory					
Make/Model	**Year**	**Count**	**Fuel**	**Seats/WC Spaces**	**Mileage/Range**
Ford	2012	13	CNG	16/3	186,405 - 209,731
MV-1	2012	8	CNG	3/1	153,764 - 195,804
Chevrolet	2014	9	Diesel	12/3	140,833 - 189,349
Chevrolet	2015	8	Diesel	12/3	107,664 - 154,845
Chevrolet	2016	7	Diesel	12/3	102,053 - 123,945
Chevrolet	2017	4	CNG	16/2	15,811 - 44,339
Chevrolet	2018	3	CNG	16/2	389 - 403

Source: SARTA

Table 12: Fixed Route Vehicle Inventory					
Make/Model	**Year**	**Count**	**Fuel**	**Seats/WC Spaces**	**Mileage Range**
Gillig	2008	4	Diesel	23/2	522,912 - 587,223
Gillig	2009	1	Diesel/Electric	39/2	427,858
Gillig	2009	1	Diesel/Electric	23/2	425,162
Gillig	2010	1	Diesel/Electric	39/2	407,426
Gillig	2010	6	Diesel	32/2	485,103 - 538,616
Gillig	2011	6	Diesel	32/2	422,217 - 483,312
Gillig	2012	9	CNG	32/2	369,477 - 395,408
Gillig	2014	4	CNG	39/2	237,054 - 302,324
Gillig	2015	1	CNG	39/2	201,482
Gillig	2016	4	CNG	39/2	131,421 - 173,259
Eldorado	2016	2	Hydrogen	39/2	3,100 - 24,327
Eldorado	2017	5	Hydrogen	39/2	33,835 - 57,479

Source: SARTA

Facilities

There is one facility for general administration, bus operations, and maintenance, located at 1600 Gateway Blvd. S.E. Canton, Ohio 44707. The Gateway facility is base for all full-sized transit buses, paratransit buses and all personnel required for administration, maintenance, supervision and operation of all services. The facility provides on-site fueling, including hydrogen, compressed natural gas, and diesel/gasoline fueling.

Transit Safety Plan Overview

SARTA maintains a Safety Management System Plan, most recently updated in 2017, which instructs each employee to understand their responsibility in "promoting the safety and security of passengers, employees, and the general public who come in contact with the SARTA transportation system." The Plan provides direction to staff for achieving optimal safety while being the most effective and time/cost-efficient. The Plan describes SARTA's wide range of safety policies, including minimizing the severity of all accidents and using employee training, discipline, and incentive

programs to instill safety awareness throughout the agency. All 'safety critical' positions are identified in the plan, including job duties, position in the safety staff hierarchy and role within the safety team, and roles and responsibilities during safety events. The Plan also includes detailed hazard severity information and protocols, all safety-related maintenance procedures, and verification requirements for all departments and applicable contractors to ensure that compliance with the plan.

Technology

SARTA is strongly focused on improving transit service to the community through innovation. Recent innovations range from alternative fuels to regional fare integration to microtransit. SARTA has made several upgrades to various technologies in recent years, undertaking an agency-wide effort to modernize its systems to achieve greater efficiency and safety. Improvements since 2011 include:

- Wide Area Network Upgrade at Alliance, Belden Village, Massillon, and Gateway facilities;
- Ride scheduling and mapping upgrades to Trapeze PASS;
- Intelligent Transportation Systems (ITS) upgrades including computer-aided dispatch (CAD), automatic vehicle locator (AVL), interactive voice response, and rider alerts;
- Video surveillance upgrades to enhance safety and security of the Gateway, Massillon, and Cornerstone facilities;
- New fleet management software;
- On-board video surveillance equipment upgrades;
- Consolidation and upgrading of facility security access and badge systems;
- Installation of wireless connectivity to all transit centers; and,
- Hardware upgrades to support cellular connectivity.

Technology projects currently underway include:

- Replacing the Stark County-based radio communication system;
- Fare collection equipment upgrades, including paperless ticketing;
- Microtransit/real-time ride-hailing technology;
- Security/access infrastructure for the Gateway administrative and fueling facilities;
- All security and surveillance systems, including cameras, servers and software; and
- Automated fuel management systems.

Regional and Local Coordinated Transportation

SARTA leads efforts to coordinate transportation both within Stark County and among transit providers in the greater Northeast Ohio region. In 2018, SARTA led the Stark County Human Services/Public Transit Coordinated Transportation Plan Update to develop initiatives to address unmet mobility needs in the county. The highest-priority goal in the Coordinated Transportation Plan is to improve mobility management and modify FTA Section 5310 program administration practices. The Section 5310, or Enhanced Mobility of Seniors and Individuals with Disabilities, program provides grant funding for capital costs for eligible organizations that assist in meeting the transportation needs of seniors and individuals with disabilities where existing transportation is unavailable, inappropriate, or insufficient. In Stark County, program funds are managed jointly by

the Stark County Area Transportation Study (SCATS) and SARTA. A group comprised of transportation providers (public, private, and non-profit) and human service agencies form the Stark County Mobility Coordination Committee, which assists in management of this funding. The funding is used to provide accessible passenger vehicles to transportation providers, and may also be used for mobility management activities to improve the effectiveness of the local coordinated transportation network of resources. Mobility management projects are ongoing in many areas of Ohio and the United States. Through planning efforts facilitated by the Mobility Coordination Committee, SARTA will work with the county's human service agencies and private and non-profit transportation providers to implement coordination solutions to mobility challenges faced by older adults, individuals with disabilities, and people with low incomes.

SARTA participates in NEORide, a coalition of Northeast Ohio public transit agencies that are actively working to increase options for transportation that crosses jurisdictional boundaries. Its strategic goals are to introduce a regional fare system, collaborate on joint funding initiatives, and work toward multi-agency procurement of goods and services. SARTA has recently joined other NEORide agencies in implementing EZFare, a smartphone-based fare payment system in which the customer can purchase fares for any of the transit agencies using one app. SARTA began to accept EZFare in late 2019.

SERVICE EVALUATION

PERFORMANCE DATA

This section evaluates SARTA's system-wide performance over 2014 through 2018. Three primary categories of measurement are used: cost-efficiency, cost-effectiveness, and on-time performance.

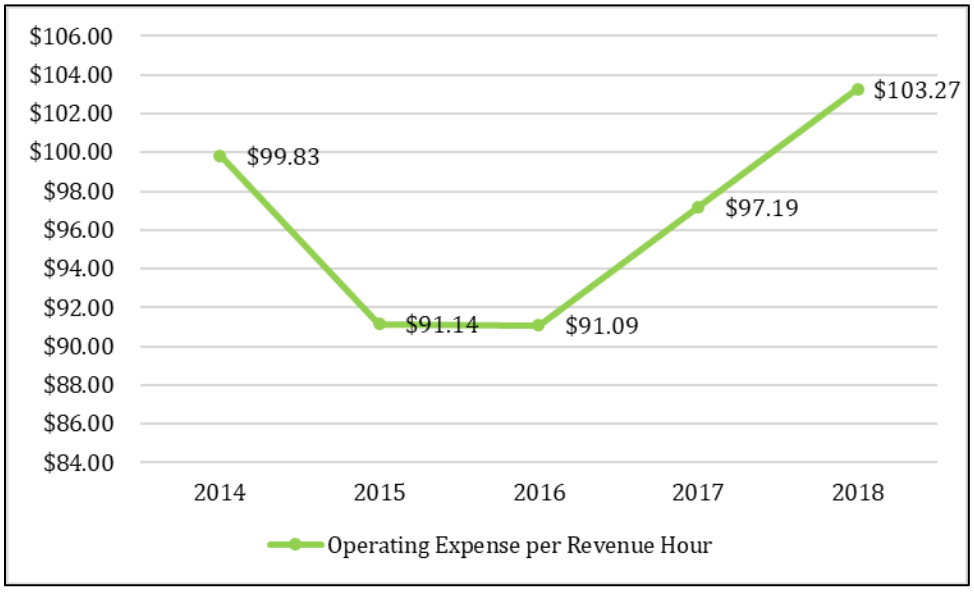
Cost Efficiency

Cost efficiency is the amount of public transportation services produced for the community in relation to the resources expended. This measure attempts to answer the question, "How many resources were expended per unit of public transportation service?"

Units of service produced are measured in terms of service outputs such as vehicle hours or vehicle miles. Resources expended include labor, capital, materials, and services. The smaller the amount of resources expended to produce a unit of service, the greater the resource efficiency of the public transportation service.

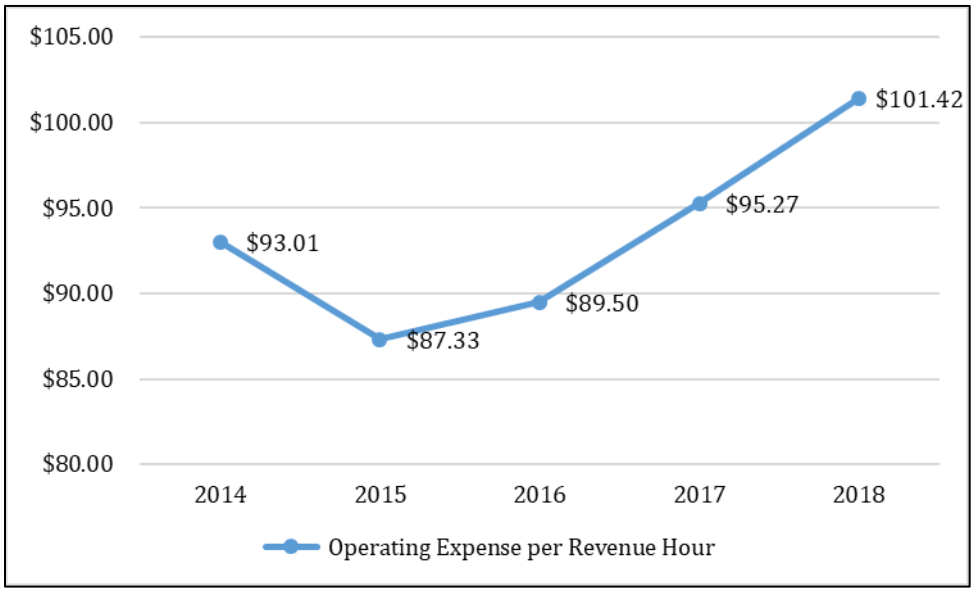
The cost efficiency values for Proline and fixed route service, expressed in operating expense per vehicle revenue hour, are provided in the following exhibits. Cost per hour for Proline increased by 3.4 percent during the five-year period (**Exhibit 21**) and rose by 9.0 percent for fixed route service (**Exhibit 22**).

Exhibit 21: Operating Expense per Revenue Hour, Proline, 2014-2018



Source: RLS & Associates, Inc. Computations

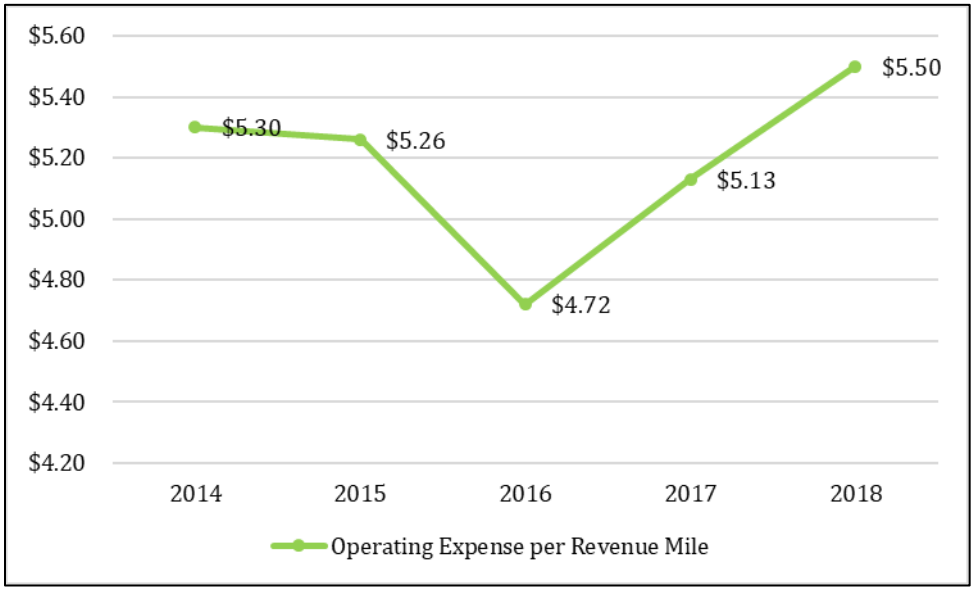
Exhibit 22: Operating Expense per Revenue Hour, Fixed Route, 2014-2018



Source: RLS & Associates, Inc. Computations

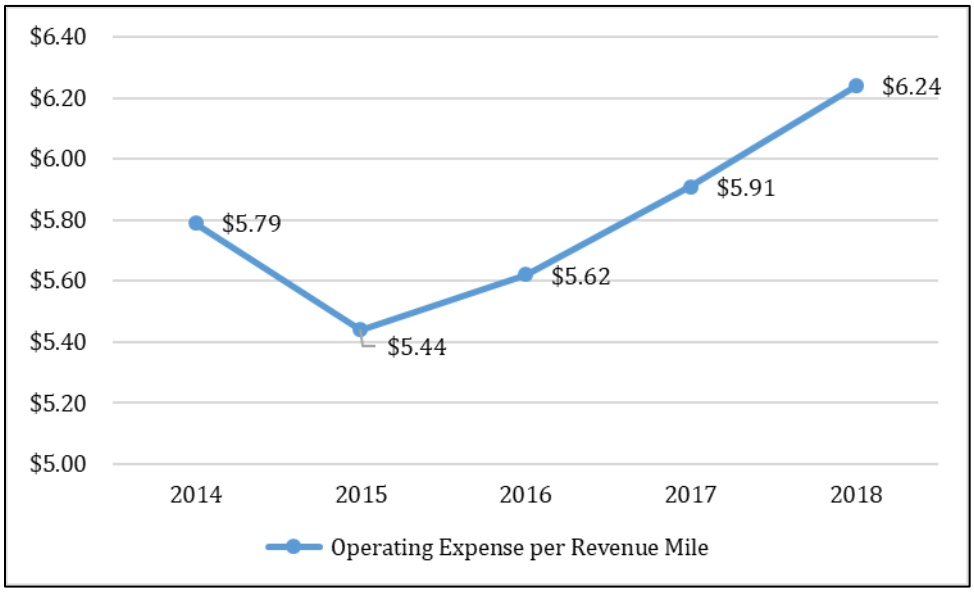
Cost efficiency figures, expressed in operating expense per vehicle revenue mile, are provided in the following exhibits. Cost per hour for Proline increased by 3.8 percent during the five-year period (**Exhibit 23**) and rose by 7.8 percent for fixed route service (**Exhibit 24**).

Exhibit 23: Operating Expense per Revenue Mile, Proline, 2014-2018



Source: RLS & Associates, Inc. Computations

Exhibit 24: Operating Expense per Revenue Mile, Fixed Route, 2014-2018



Source: RLS & Associates, Inc. Computations

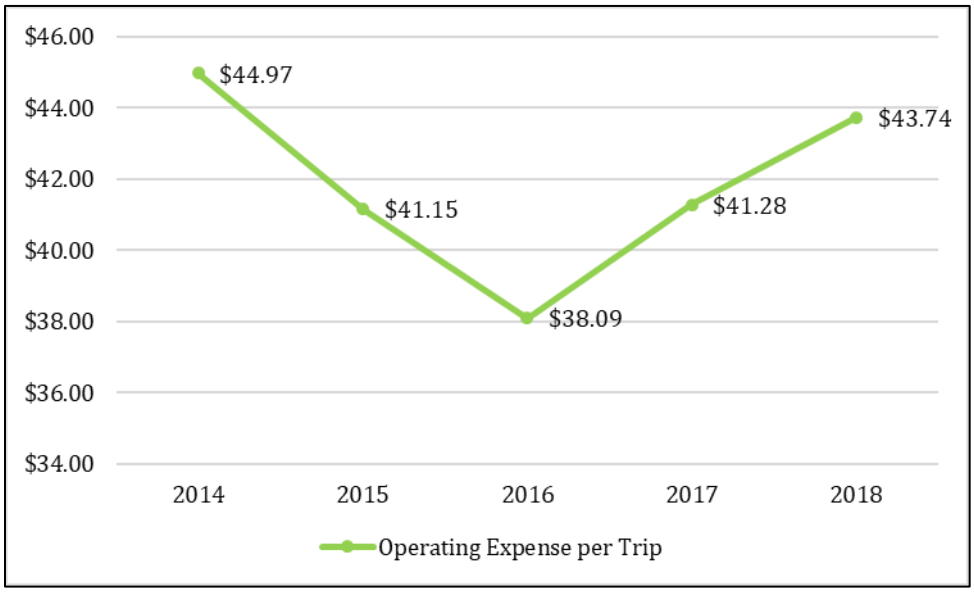
Cost Effectiveness

Cost effectiveness measures the consumption of public transportation services in relation to the resources expended. This concept attempts to answer the question, "How many resources were expended per unit of consumption or how much consumption revenue was received per unit of resource expended?"

Consumption is most often measured by passenger boardings. Resources expended to produce service are normally measured in terms of dollars. The smaller the amount of resources expended in relation to the service consumed or the greater the consumption revenue received in relation to the dollars expended, the more cost effective the service.

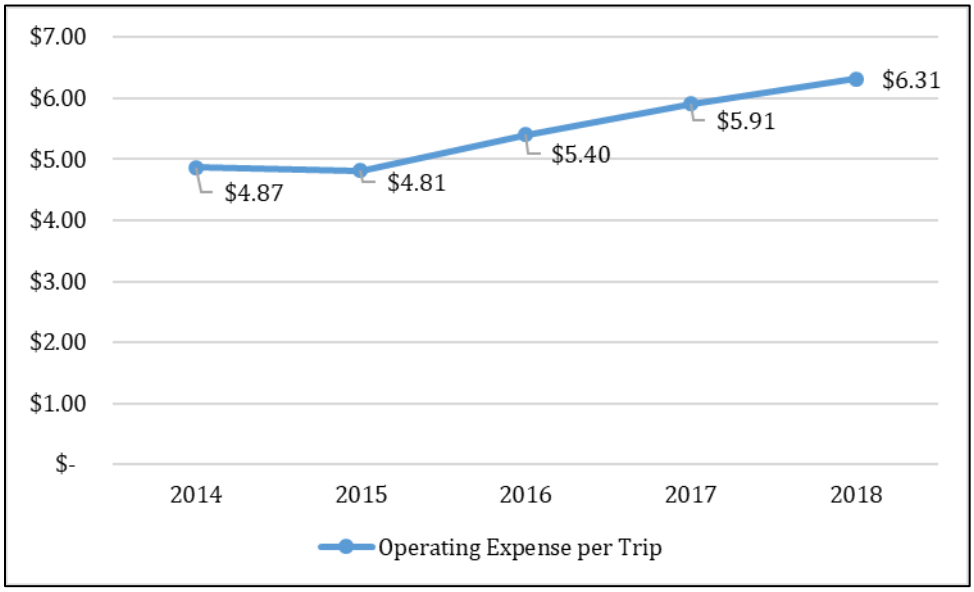
The cost per trip for Proline declined by 2.7 percent over the five-year period (**Exhibit 25**), and it increased by 29.7 percent for fixed route service (**Exhibit 26**). Decreasing cost effectiveness is typical for a fixed route system with declining ridership. SARTA is evaluating potential adjustments to fixed route service in response to declining ridership levels to reverse the current trend.

Exhibit 25: Operating Expense per One-Way Passenger Trip (Boarding), Proline, 2014-2018



Source: RLS & Associates, Inc. Computations

Exhibit 26: Operating Expense per One-Way Passenger Trip (Boarding), Fixed Route, 2014-2018



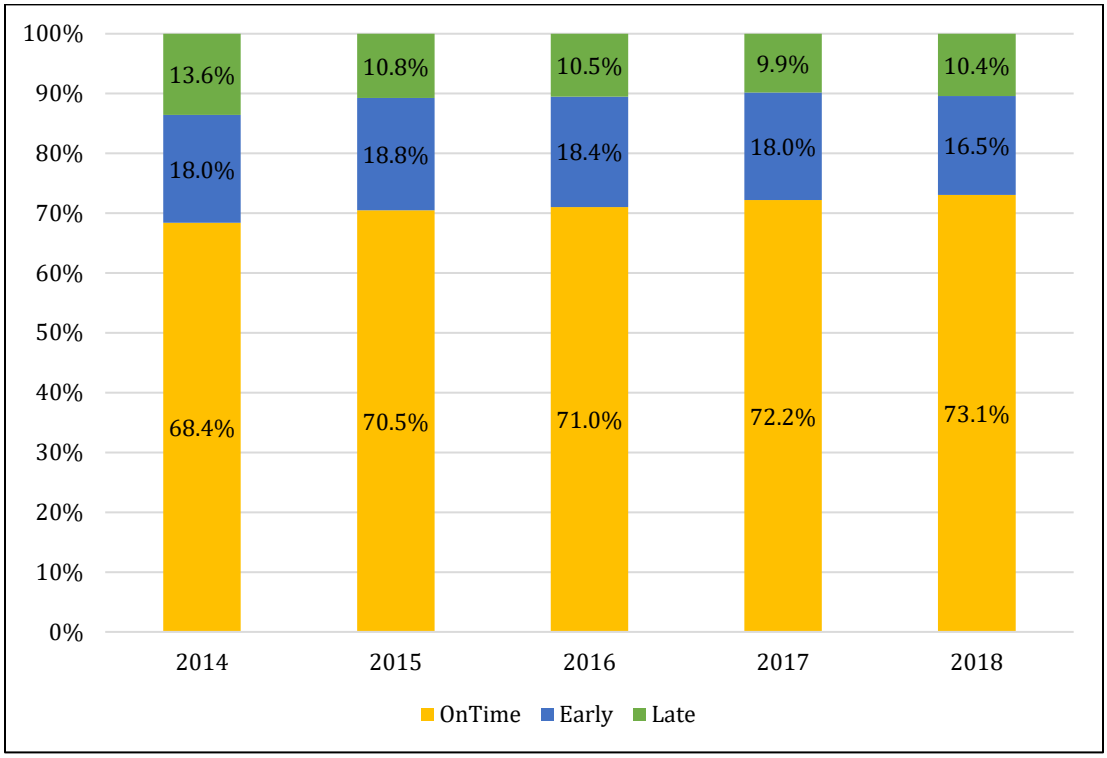
Source: RLS & Associates, Inc. Computations

On-Time Performance

SARTA tracks the on-time performance of fixed route and Proline service, which is shown in the following exhibits for the previous five years. On-time performance is defined as the percentage of time that the vehicle arrives within a specified window around the advertised time of a bus stop for fixed route service, or for demand-response service, around the customer's scheduled pick-up time. Proline on-time performance has increased steadily over the five-year period, as

displayed in **Exhibit 27**. From 2014 to 2018, the percentage of pickups that were on-time increased by 4.7 percentage points.

Exhibit 27: Proline On-Time Performance, 2014 - 2018

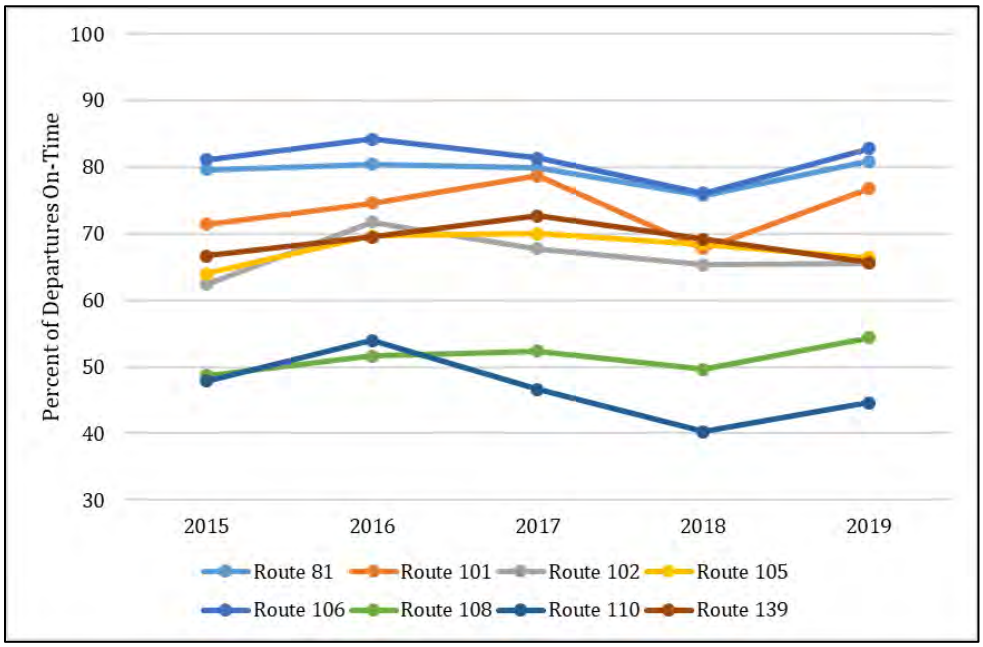


Source: RLS & Associates, Inc. Computations

Fixed route on-time performance is presented in the following exhibits for each route category. On-time performance figures were provided for 2014 through 2019 (2019 figures are for January 1 through November 7).

Exhibit 28 displays on-time performance for the Urban High-Ridership routes. In 2019, the average on-time performance percentage for routes in this category was 67.2 percent. Two routes in this category have the lowest on-time performance for the entire fixed route network – Routes 108 and 110, at 54.4 percent and 44.6 percent, respectively.

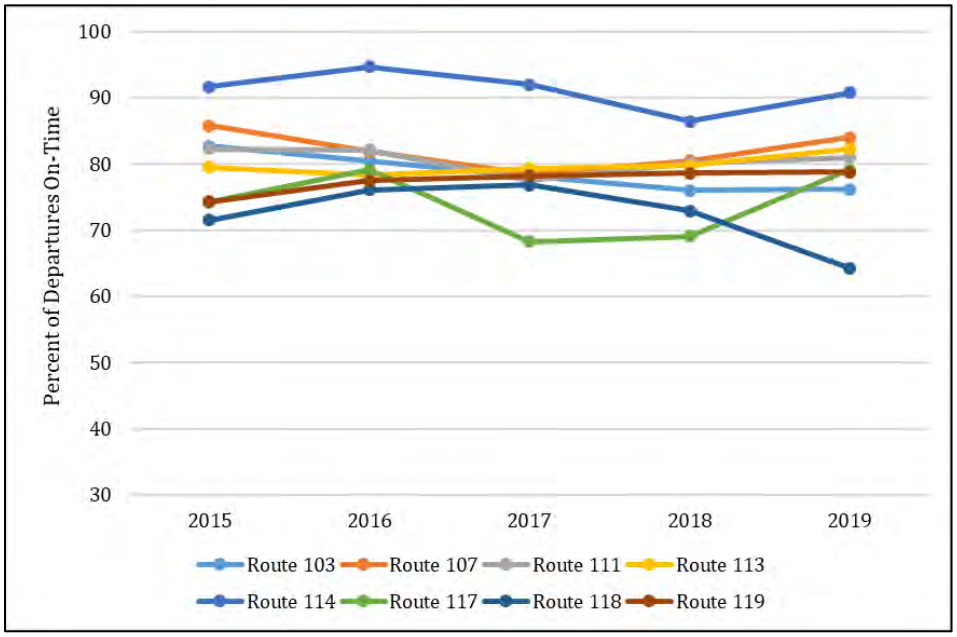
Exhibit 28: On-Time Performance, Urban Routes – High-Ridership



Source: SARTA

Exhibit 29 displays on-time performance for the Urban Medium-Ridership routes. Average 2019 on-time performance for these routes was 79.6 percent.

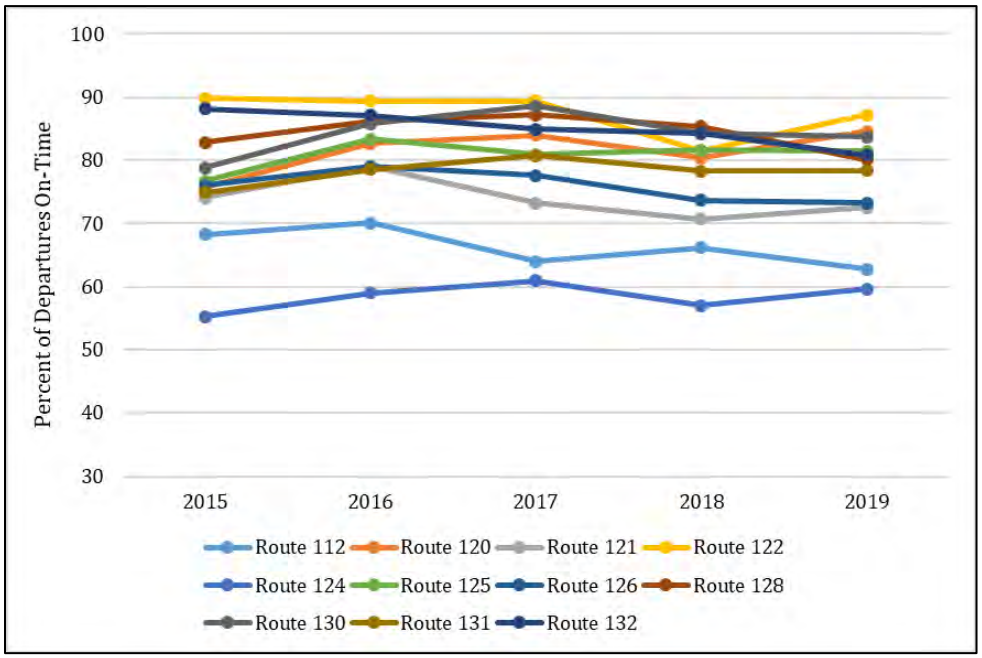
Exhibit 29: On-Time Performance, Urban Routes – Medium-Ridership



Source: SARTA

Exhibit 30 displays on-time performance for the Community Routes. Average 2019 on-time performance for these routes was 76.8 percent.

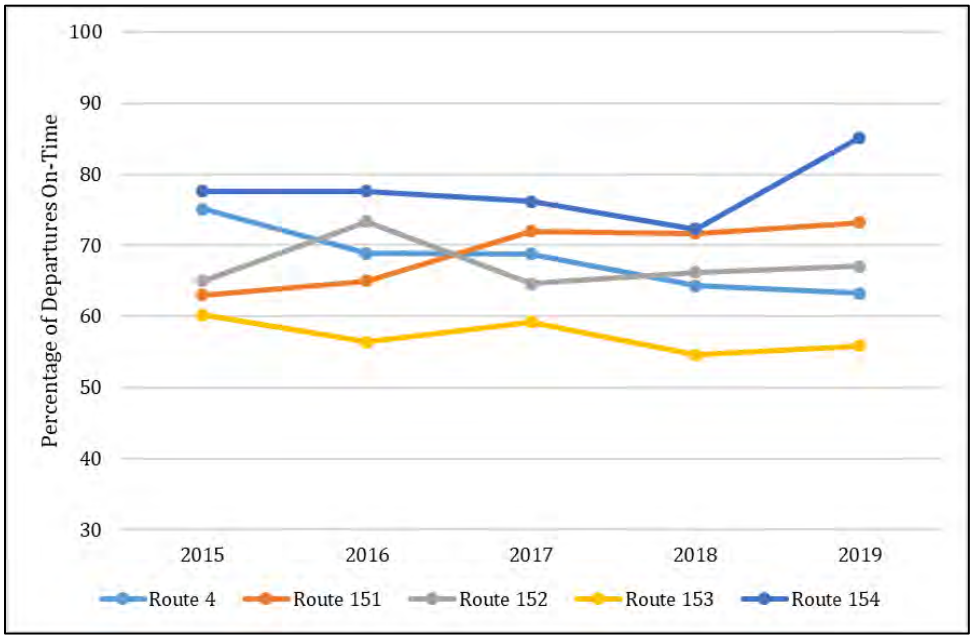
Exhibit 30: On-Time Performance, Community Routes



Source: SARTA

Exhibit 31 displays on-time performance for the Late Night Loops and Specialized Routes. For these routes, average on-time performance in 2019 was 68.9 percent.

Exhibit 31: On-Time Performance, Late Night Loops, and Specialized Routes



Source: SARTA

CUSTOMER FEEDBACK

RLS & Associates, Inc., in conjunction with CJI Research, LLC, conducted an on-board survey of SARTA fixed route customers. The purpose of the survey was to collect input that would inform decision making about future service changes. Prioritizing areas for service improvement is a major operational challenge for a transit system. The survey asked customers to provide demographic information, trip purposes, typical riding patterns, and their evaluation of various aspects of the service. The survey generated 1,286 useable responses. A full report on the results of the survey was provided to SARTA at an earlier date. For the purposes of this document, responses related to potential fixed route service changes are discussed. CJI Research, LLC conducted the following analysis of the survey responses.

The survey's customer service rating question is shown in **Exhibit 32**. Respondents were asked to rate SARTA on thirteen specific aspects of service, as well as overall service, on a seven-point scale on which seven is excellent.

Exhibit 32: Satisfaction Questions

In the past 30 days, how would you rate SARTA services...	Excellent						Very Poor	Don't Know/ Don't use
10. Courtesy of bus operators	7	6	5	4	3	2	1	☐
11. Safety	7	6	5	4	3	2	1	☐
12. How clean is the bus on the inside?	7	6	5	4	3	2	1	☐
13. Is the bus on time at the stops you use?	7	6	5	4	3	2	1	☐
14. Travel time of the bus ride to your destination	7	6	5	4	3	2	1	☐
15. Time SARTA buses stop running in the evening	7	6	5	4	3	2	1	☐
16. Frequency of service, Mon-Fri until 10 PM	7	6	5	4	3	2	1	☐
17. Frequency of Service on Saturday	7	6	5	4	3	2	1	☐
18. How easy is it to transfer buses?	7	6	5	4	3	2	1	☐
19. Accuracy of information from SARTA telephone operators	7	6	5	4	3	2	1	☐
20. The Pinpoint app for the smartphone	7	6	5	4	3	2	1	☐
21. Ability to access information on SARTA's website	7	6	5	4	3	2	1	☐
22. Service to all the places you want to go in Stark County	7	6	5	4	3	2	1	☐

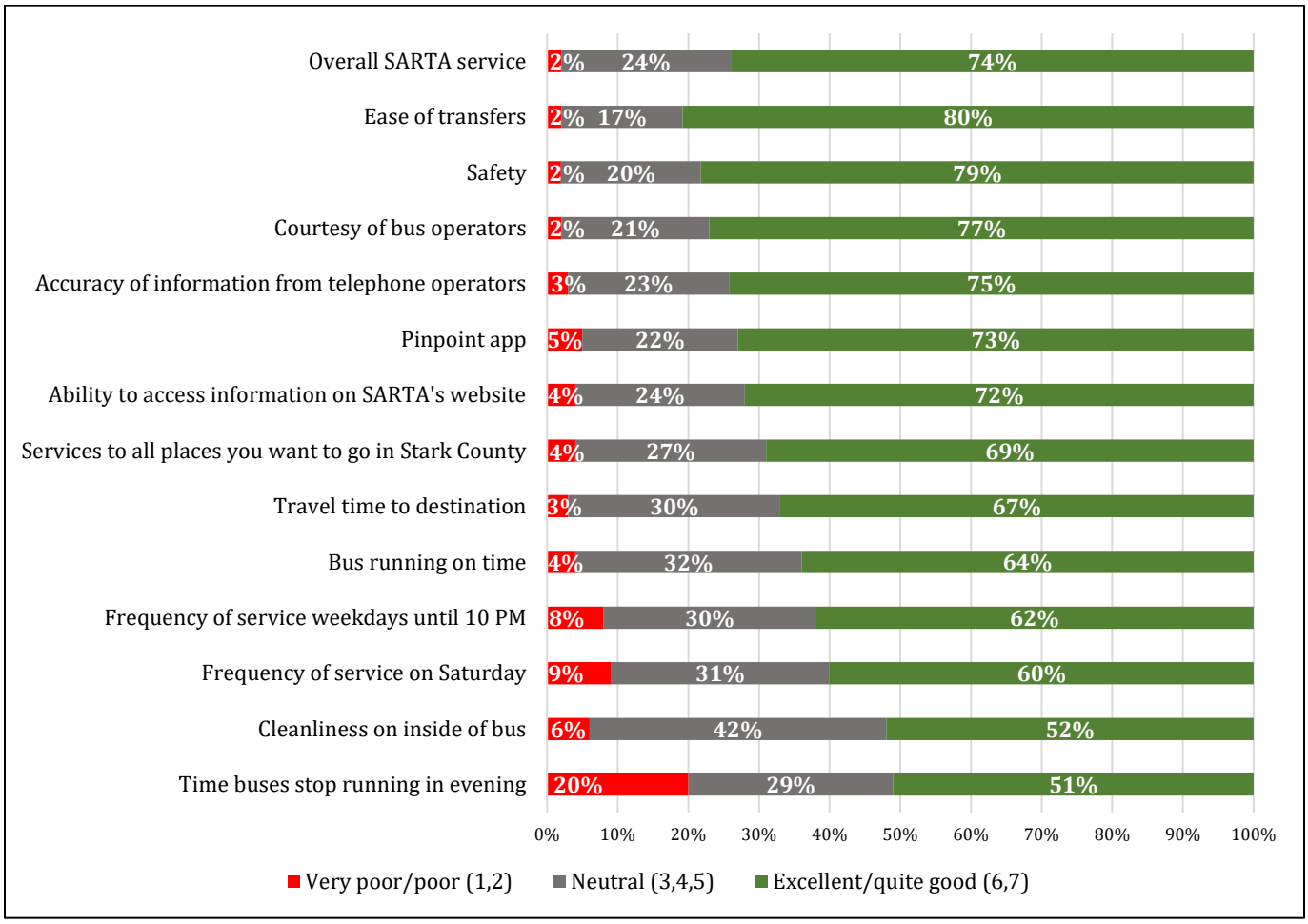
23. OVERALL, how do you rate SARTA service?

Excellent 7 6 5 4 3 2 Very Poor 1

Source: SARTA

Exhibit 33 collapses the rating scores as follows: On the 1 to 7 scale, a score of six or seven indicates a positive level of satisfaction; a score of three, four or five, indicates neutrality; and scores of one or two indicate dissatisfaction. The chart combines responses into the three sets described above. The percent who were not sure how to respond are excluded.

Exhibit 33: Satisfaction with Fixed Route Service



Source: CJI Research, LLC

All aspects of service are rated positively by more than half of responding customers. At the top is ease of transferring, followed by a sense of safety. In order to prioritize lower-scoring service aspects for improvements, the consultant team analyzed scores according to how highly they correlated with scores for overall satisfaction with SARTA, then presented the analysis in a quadrant chart. The key objective of the chart is to relate the individual rating of each element of service to the overall rating. The intent is to answer the question: "How important is each element, like driver courtesy or frequency of service, etc., to the passengers' rating of SARTA service overall?" and thus, "What actions should the SARTA's administration take with respect to each element of service?"

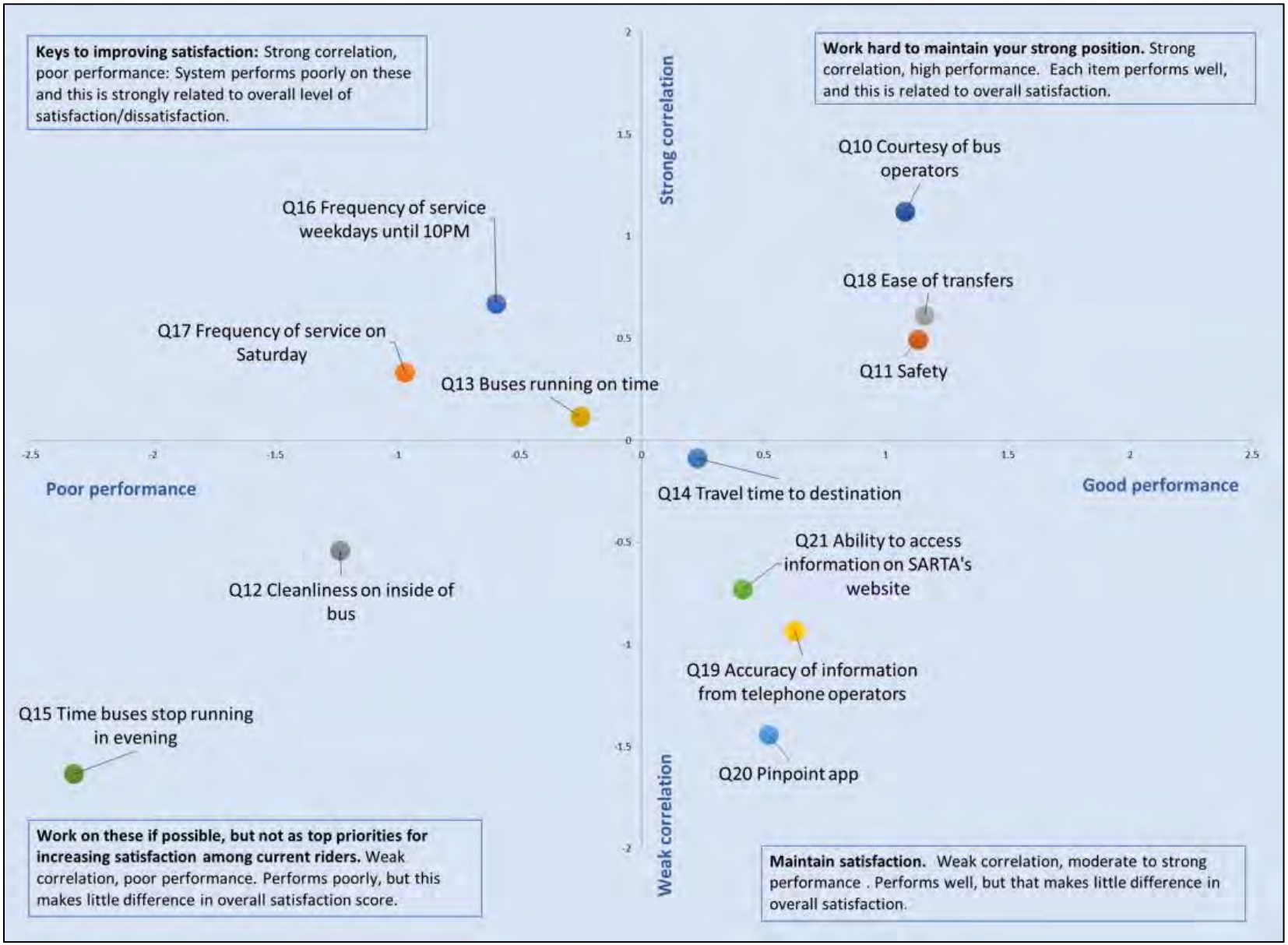
Correlation analysis is used for this purpose. A coefficient of correlation can vary from -1 to +1. The rating scores vary from one to seven. Because these are such different numbers in absolute terms, the only realistic way to compare them is to standardize them. This simply means to relativize them with respect to each other so that they can be compared. Thus, the resulting chart is not a chart of absolute scores on each service but a combination of how well a service was rated and how strongly that rating is associated with the overall rating of SARTA's service.

The resulting chart in **Exhibit 34** contains four quadrants:

High **Correlation of each service rating with the rating of overall service** **Low**	**Keys to improving satisfaction:** Relatively poor performance on these services compared to others, and this is related to overall level of satisfaction. Performance here hurts overall rating.	**Maintain your strong position.** Each item performs relatively well compared to other items and is related to overall satisfaction.
	Work on this if possible, but not as top priority for increasing satisfaction among current riders. Relatively poor performance, but that makes little difference in overall satisfaction score. Riders would be happier with improvement.	**Maintain satisfaction.** Performance of this service is well-rated relative to other services, but that makes little difference in overall satisfaction.
	Service performance rating **Low** **High**	

- The quadrant matrix demonstrates the high priority placed by SARTA customers on three aspects: greater frequency of weekday and Saturday service and more timeliness of the buses. Overall, customer satisfaction with SARTA is highly correlated to these factors. Therefore, improvements in frequency and on-time performance will have the greatest impact on overall satisfaction.
- At the upper right are particular strengths that have a relatively strong and positive impact on overall satisfaction, compared to other aspects of service. In this survey, three factors are strengths that underpin the positive ratings of service overall and must be maintained: courtesy of the operators, ease of transfers, and a sense of safety.
- Also positive, but relatively less important to the overall attitude toward SARTA, are items at the right side of the chart, but below the horizontal center line. In other words, these elements are perceived positively by riders but have relatively little impact on the overall rating. They appear to have become simply assumed positive qualities of SARTA. The challenge here is maintenance, not improvement.
- The lower left quadrant of the chart contains aspects of service that are rated very poorly, but which—compared to items in the upper left quadrant—have relatively little relationship to the overall satisfaction score. In other words, riders are not satisfied with these service elements (cleanliness inside the buses and the time buses stop running in the evening), and therefore they should be improved if possible. But improvement, while it will be appreciated, will have less effect on overall satisfaction with SARTA than improving the items in the upper left quadrant.

Exhibit 34: How Specific Service Ratings Relate to Overall Rating



Source: CJI Research, LLC

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SERVICE ALTERNATIVES

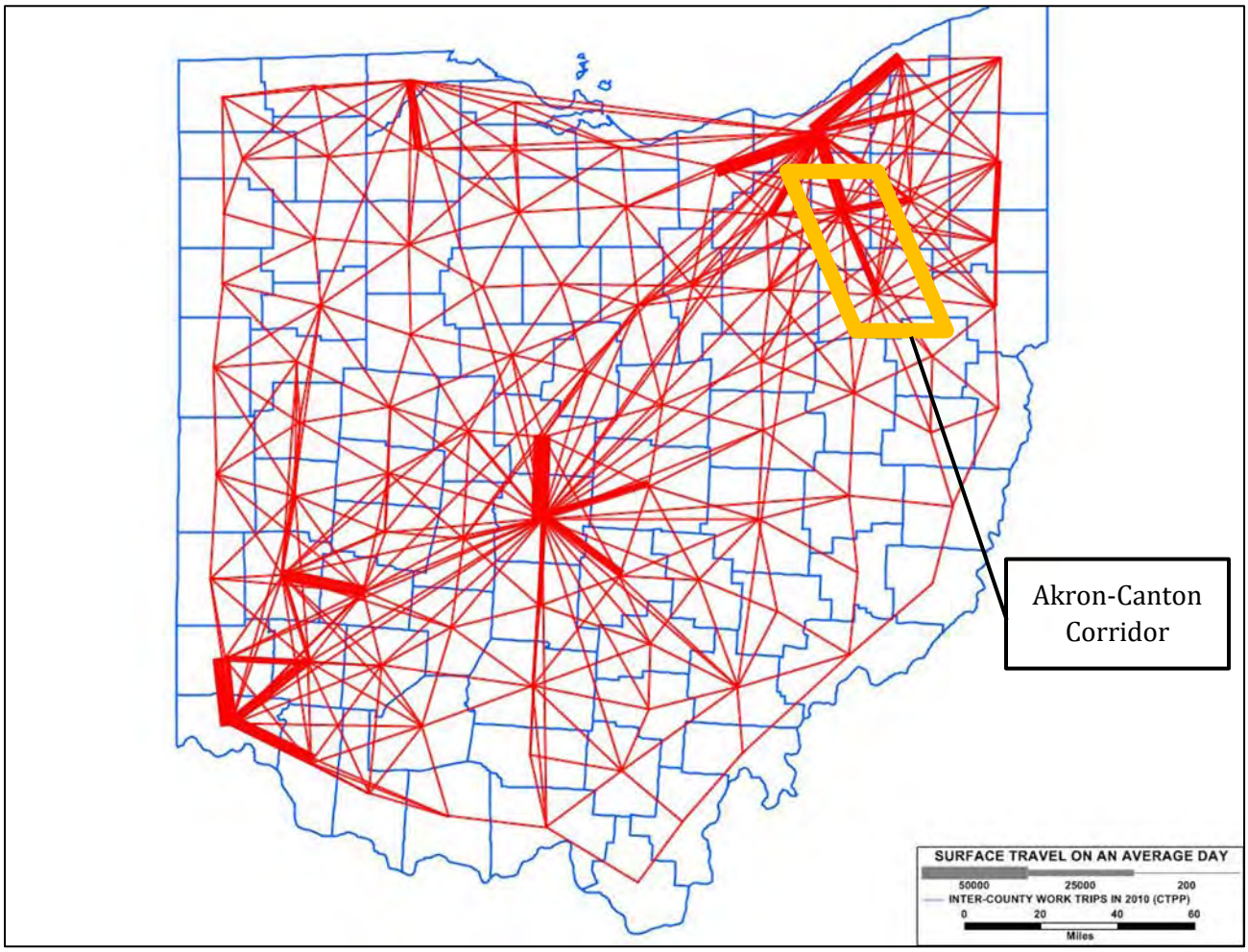
INTRODUCTION

Nine service alternatives are provided in order to increase the productivity and cost-effectiveness of SARTA services while offering increased weekday frequency and improved access to jobs in suburban and outlying communities. The ultimate goal of all alternatives is for SARTA to provide the greatest amount of mobility to Stark County residents within the constraints of available resources.

ALTERNATIVE #1: IMPROVE FIXED ROUTE SERVICE IN THE CANTON-AKRON CORRIDOR TO SUPPORT REGIONAL CONNECTIVITY TO KEY EMPLOYMENT AND TOURISM DESTINATIONS.

The north-south, Canton-Akron corridor is a key travel corridor in Stark County. **Exhibit 35** is a map of inter-county surface travel patterns in Ohio. Thicker lines indicate heavier travel. The Stark-Summit corridor is highlighted. Input from local stakeholders during the planning phase demonstrated the importance of travel along the Canton-Akron corridor, with a focus on commuting to jobs and promoting tourism. SARTA serves the Canton-Akron corridor through Route 81, a limited-stop express bus route.

Exhibit 35: Ohio Inter-County Surface Travel Patterns



Source: Ohio Department of Transportation

The Pro Football Hall of Fame, the hall of fame for professional American football, is a key tourism destination in the SARTA service area. It is currently located approximately one-half mile from Route 117, the nearest fixed route. Many stakeholders who provided input during the planning phase expressed interest in SARTA providing a more robust transit option to serve this destination. Visitors who travel by air to reach the Hall of Fame must use Route 81 from the Akron-Canton Airport, then transfer to Route 117 in downtown Canton. On Route 117, the bus stop that is closest to the Hall of Fame is located at 17th Street and Harrison Avenue NW, approximately 0.4 mile from the attraction. National transit industry research indicates that many riders are typically not willing to walk more than a quarter-mile from a bus stop to their desired destination. Therefore, it is likely that potential passengers visiting the Hall of Fame will choose an alternative to using SARTA.

Statistics for Routes 81 and 117 are provided in **Table 13**.

Table 13: Route Statistics				
Route	**2018 Ridership**	**% Change in Ridership, 17-18**	**Productivity (Weekdays)**	**Frequency (Weekdays)**
81	123,725	4.18%	13.14	60 Minutes
117	83,976	3.48%	18.13	60 Minutes

Source: SARTA and RLS & Associates, Inc. Computations

Customer Usage Analysis for Routes 81 and 117

Route 81 originates at Cornerstone Transit Center in Canton and runs as limited-stop express service along Interstate 81 to Akron. The route exits the interstate to make a limited number of stops, including Belden Village Mall and Transit Center, Akron-Canton Airport, the Arlington Road park-and-ride lot, and the Akron Metro Transit Center. The route operates on 60-minute frequencies, Monday through Saturday, between 6:00 AM and 9:40 PM.

Route 81 is one of SARTA's highest-ridership routes, with ridership growing at a rate of 4.18 percent from 2017 to 2018, making it the fastest-growing route among SARTA's high-ridership routes. Eighty-four percent of Route 81 riders during that year boarded the bus at one of three locations: Cornerstone, Belden Village Transit Center, or Akron Metro Center. Only 13 percent of Route 81 riders used the bus for the other stops, including the airport.

Route 117 originates at Cornerstone Transit Center and serves the near northwest side of Canton. The highest-ridership stop on the route is Mercy Medical Center. Other route segments with high ridership are located in central Canton and near 17th Street NW and Harrison Avenue NW. Route 117 runs Monday through Saturday, 5:45 AM to 9:40 PM on 60-minute headways.

Maps displaying ridership patterns at the stop level on Routes 81 and 117 are included in the Appendix.

Strategies to implement Alternative #1 involve changes to Routes 81 and 117. The following strategies are presented as options for SARTA to improve service in the Interstate 81 corridor, enhancing mobility for individuals traveling between Akron, Belden Village, and downtown Canton, and promoting access to the Hall of Fame for employment and tourism purposes.

Strategy 1.1: Expand Route 81 Hours of Operation.

To more completely address transportation opportunities for entertainment, second- and third-shift employment, and other travel purposes, expand hours of operation of the Route 81 Express Bus until 12:40 AM on Fridays and Saturdays. The route currently operates until 9:40 PM, Monday through Saturday. If demand warrants further expansion and funding is available, additional hours could be added.

Estimated Budget/Expense: The addition of three revenue hours of service per day on Fridays and Saturdays would cost $29,724 per year. Additional hours of service would add $95.27 per revenue hour to the total cost.

Strategy 1.1	
Description	**Cost**
Expand Route 81 Hours of Operation until 12:40 AM on Fridays and Saturdays	$29,724 per Year

Strategy 1.2: Increase Route 81 Frequency of Service.

Currently, Route 81 operates on 60-minute frequencies. The existing route is a hybrid of fixed route and express service, with three timepoints between Cornerstone and Akron Metro Transit Center. SARTA can increase frequency by making the existing route the "Canton-Akron Express Local" and adding a more direct, non-stop route that would also operate on 60-minute headways during peak hours so that riders would have the option to depart either transit center every 30 minutes. The more direct route would become the "Canton-Akron Rapid Express."

Estimated Budget/Expense: Route 81 operates for 32 revenue hours per day, Monday through Saturday. Doubling frequency on the existing schedule would cost approximately $914,592 per year. Increasing frequency during peak hours only would be less costly. For example, adding one vehicle for six revenue hours per day, Monday through Friday, would cost approximately $145,763.

Strategy 1.2	
Description	**Cost**
Increase Route 81 Frequency of Service	$145,763 to $914,592 per Year + Capital Cost of Vehicles ($570,000 per Bus)

Strategy 1.3: Increase Access to the Pro Football Hall of Fame and the Akron-Canton Airport.

The planned expansion of the Pro Football Hall of Fame will attract thousands of visitors and employers to the Canton area. Visitors from Canton, Akron, and other places will need transit access to this destination. Expanded employment opportunities will also necessitate a more robust transit option for commuting from central Canton. Currently, Routes 81 and 117 connect Akron, the airport, downtown Canton, and the Football Hall of Fame.

Route 81

- At present, riders originating in Akron must travel to Cornerstone Transit Center in downtown Canton, then transfer to Route 117 to ride to the stop at 17th Street and Harrison Avenue NW. The Hall of Fame is a 0.4-mile, ten-minute walk from the bus stop. The entire trip from the airport to the Hall of Fame, including the bus rides and walking, takes approximately one hour. The same trip, but beginning at the Akron Metro Downtown Transit Center instead of the airport, takes one hour and twenty minutes.

Route 81 – Key Stops and Travel Times				
Time	**Direction**	**Stop**	**Direction**	**Time**
:40	↑	Akron Metro Transit Center	↓	:45
:09		Akron-Canton Airport		:09
:00		Belden Village		:20
:45		Cornerstone		:40

Route 117

- Route 117 services downtown Canton, beginning at the Cornerstone Transit Center and circulating through northwest Canton. The Route 117 stop at 17th Street and Harrison Avenue Northwest is the closest bus stop to the Hall of Fame, requiring a 0.4-mile walk from the bus stop.

Route 117 – Key Stops and Travel Times				
Time	**Direction**	**Stop**	**Direction**	**Time**
:40	↑	Cornerstone	↓	:45
N/A		Mercy Medical Center		:55
:59		17th Street & Harrison Avenue NW		:59

Options for Improved Access to the Hall of Fame

There are four options for improving transit access to the Hall of Fame. These options have a wide range of costs and impacts on existing riders.

Option 1: Improve pedestrian and bicycle access from 17th Street and Harrison Avenue NW to the Hall of Fame through a collaboration with the Hall of Fame and City of Canton.

- The distance from 17th Street and Harrison Avenue NW to the Hall of Fame is 0.4 mile. This walking distance is likely acceptable to some riders but presents a barrier to others. The experience of walking between the bus stop and the Hall of Fame can be made more attractive through the addition of sidewalk improvements, a passenger shelter, seating, and/or lighting. Riders who stow their bicycles on the bus bicycle racks would benefit from a bike lane on Harrison Avenue and bicycle parking at the Hall of Fame. Many of these improvements would require the cooperation of the City of Canton Street Department. McKinley Senior High School is also a potential partner for this option because its students need pedestrian access to the campus. Potentially, Safe Routes to School funding could be explored as an option for funding new pedestrian and bicycle infrastructure at the school.

Option 2: Increase Frequency on Route 117 to 30-Minute Headways.

- Improving the frequency of Route 117 would allow for better access from downtown Canton to the Hall of Fame, because wait times at Cornerstone would be shortened. Visitors would have greater flexibility in their times of arrival to and departure from the Hall of Fame. Riders who use SARTA's fixed routes that run on 30-minute frequencies to get to Cornerstone would benefit from the ability to transfer (on all schedules) to Route 117

immediately, rather than wait for 30 minutes. This would also be true for riders from Akron if SARTA added the additional express schedules to Route 81, as described in Strategy 1.3.

Option 3: Change Route 117 to Offer Service Closer to the Hall of Fame.

- *Option 3a*: The 0.4-mile walk from the nearest Route 117 bus stop could be remedied by adjusting the routing. Route 117 could be rerouted and extended to the Hall of Fame.

- *Option 3b*: Alternatively, SARTA could extend Route 117 to terminate at Belden Village Transit Center, instead of operating the route as a loop that begins and ends at Cornerstone Transit Center. The advantage of the extension would be to enable riders to transfer from Route 81 and Belden Village local routes to Route 117 without traveling downtown (in order to transfer at Cornerstone). This would enable significantly faster travel to the Hall of Fame from Akron and the Belden Village area. The disadvantage of extending the route would be that a one-way trip from Cornerstone to Belden Village would take approximately 45 minutes. To offer 45-minute frequency on the new route, SARTA would need to dedicate two buses. To offer 30-minute frequencies, three buses would be required for the route.

Option 4: Add Express Loops from Canton to the Hall of Fame.

- During events and peak hours for the Hall of Fame, SARTA could offer two express loops connecting downtown Canton and the Hall of Fame, plus associated restaurants, hotels, and businesses. Express loops would operate on 10-minute frequencies. This option would offer a convenient service for tourists, and improve access to employment at businesses located near the stops.

Estimated Budget/Expense:

Option 1, develop pedestrian and bicycle infrastructure: The cost of infrastructure varies with the types and sizes of selected projects. For example, a substantial walking trail with outdoor lighting, benches, and other amenities would be more costly than a sidewalk extension.

Option 2, increased headways on Route 117: Implementation would essentially double the cost of operating the route today. At the rate of $95.27 per revenue hour, the estimated annual cost to increase frequency, Monday through Saturday, would be approximately $457,296. If service were increased only during peak hours, the cost would be reduced proportionately. This option may require SARTA to purchase one expansion vehicle. A 40-foot CNG vehicle costs approximately $570,000.

Option 3a, change Route 117 routing: A simple rerouting to eliminate some bus stops (likely those west of Broad) and add a stop at the Hall of Fame would be cost-neutral.

Option 3b, change Route 117 routing: Extending the route to Belden Village would increase route mileage by approximately 50 percent, requiring the addition of a second bus to run in the opposing direction. This would double the cost of operating the route today, making this option cost the same as Option 2. This option would also require SARTA to purchase one expansion vehicle, estimated at $570,000.

Option 4, initiate two express loops that would be operated by SARTA at the system's fully allocated cost of service: The loop service would be operated at the fixed route cost of approximately $95.27 per revenue vehicle hour. If the service is operated with a smaller vehicle, the cost would be adjusted. Operating each loop 12 hours per day, seven days a week (including Sundays), would require an annual operating budget (not including the cost of vehicles) of approximately $3 to $5 Million. One to two expansion vehicles would also be required for this strategy, estimated at ($570,000 to $1.14 Million).

Strategy 1.3	
Description	**Cost**
Option 1: Develop Pedestrian and Bicycle Infrastructure	Cost Depends on the Type and Amount of New Infrastructure
Option 2: Increase Route 117 Frequency of Service	$457,296 per Year + Capital Cost of Vehicle ($570,000)
Option 3a: Change Route 117 to Offer Service Closer to the Hall of Fame	Cost-Neutral
Option 3b: Extend Route 117 to Belden Village	$457,296 per Year + Capital Cost of Vehicle ($570,000)
Option 4: Express Loops	$3 to $5 Million per Year + Capital Cost of 1-2 Vehicles ($570,000 to $1.14 Million)

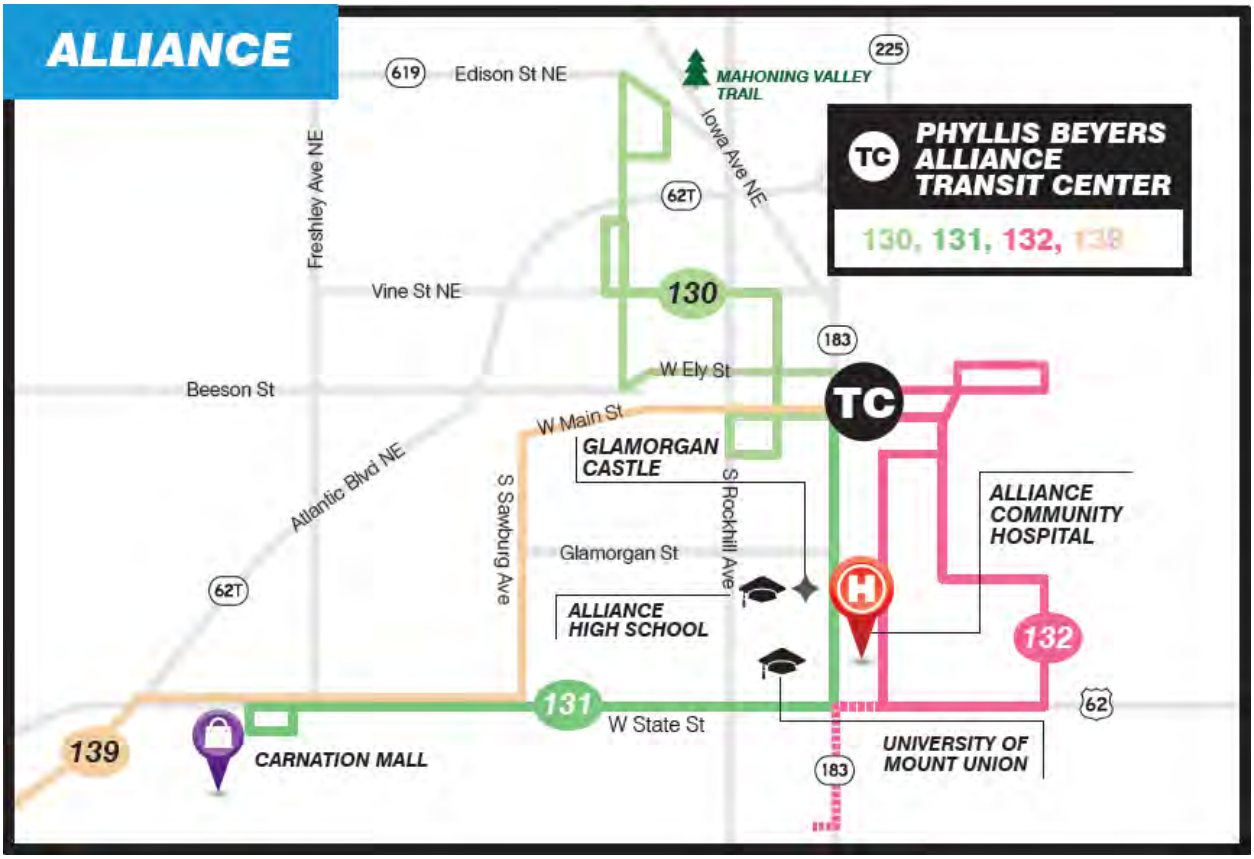
ALTERNATIVE #2: EXPAND TRANSPORTATION ACCESS TO EMPLOYMENT AND IMPROVE ROUTE PRODUCTIVITY IN ALLIANCE.

Needs assessment activities during the Coordinated Human Service-Public Transportation Plan Update indicated that people who rely on SARTA for access to jobs in Alliance sometimes experience difficulties with the hours, frequency, and location of fixed route service. For example, Ohio Means Jobs representatives provided anecdotal evidence that transit-dependent employees must arrive very early and/or wait up to an hour or more after their shifts end for a ride home, because the SARTA routes do not match shift change times. While it is not expected that SARTA can accommodate all shift changes, or make major expansions of the geographic areas served by fixed routes, additional communication between employers and SARTA is strongly recommended to identify changes in route schedules to provide passengers better access to employment.

SARTA Routes 130, 131, 132, and 139 serve Alliance. Routes 130, 131, and 132 are Community Routes, operating as a network of loops within the town. Route 139 is SARTA's third-highest ridership route, connecting Canton and Alliance. Alliance's Community Routes provide transit coverage to a large area of the city. In some cases, these routes experience low ridership and productivity, which is typical for the Community Routes in all three of the suburban and small city areas served by the SARTA network. Alternative #2 provides strategies to concentrate SARTA's investment in areas of highest demand, and extend job access to unserved major employers.

Exhibit 36 displays the existing fixed route service in Alliance.

Exhibit 36: Fixed Routes Serving Alliance



Source: SARTA

Table 14 provides Alliance route statistics.

Table 14: Alliance Route Statistics				
Route	**2018 Ridership**	**% Change in Ridership, 17-18**	**Productivity (Weekdays)**	**Frequency (Weekdays)**
130	13,080	(2.05%)	5.51	60 Minutes
131	41,957	5.06%	17.41	60 Minutes
132	37,567	7.69%	7.89	30 Minutes
139	143,539	(3.26%)	14.66	60 Minutes

Source: SARTA and RLS & Associates, Inc. Computations

Customer Usage Analysis for Alliance Fixed Routes

Route 130, which originates at the Alliance Transit Center, circulates through the north side of Alliance. It is one of the lowest-ridership routes in the SARTA network. The route operates on 60-minute frequencies, Monday through Saturday, between 6:45 AM and 9:10 PM. The highest

levels of ridership on the route occur at the Transit Center and at an apartment complex located on Nantucket Circle.

Route 131 provides service between the Alliance Transit Center and the Walmart/Carnation Shopping Mall area on Union and State Streets, Monday through Saturday, 6:15 AM to 8:40 PM, on 60-minute frequencies. The highest ridership levels occur at the shopping area. One bus operates both Route 130 and 131, alternating between routes every 30 minutes.

Route 132 circulates through the east side of Alliance, beginning at the Alliance Transit Center. The route runs on 30-minute frequencies, Monday through Saturday, from 6:15 AM to 9:15 PM. The highest ridership levels occur at the stops on Arch Avenue from State Street to Broadway Street, particularly at stops near the Alliance Community Hospital and Alliance Towers, a large apartment building.

Route 139 originates at the Cornerstone Transit Center and travels through northeast Canton and Louisville before taking Highway 62 to Alliance. The route operates on 60-minute frequencies, Monday through Saturday, between 5:45 AM and 9:40 PM. The highest levels of boardings occur along Mahoning Avenue, at the Stark Regional Community Correction Center, and on State Street in Alliance at Walmart and Carnation Mall.

Maps that display bus stop usage levels for Routes 130, 131, 132, and 139 are included in the Appendix.

Strategy 2.1: Introduce an Alliance Employment Route.

SARTA could work with the City of Alliance and major employers on Alliance's far north side to plan and implement a peak-service route to meet job transportation needs. A large cluster of employers is located in the Rockhill Avenue area, north/east of Ohio State Route 183, and is currently unserved by the SARTA network. The route will originate at the Alliance Transfer Center, running northbound to the employment area. SARTA will conduct interviews with the employers to determine shift times, then create a schedule for the service.

Estimated Budget/Expense: The cost for this alternative is dependent on the amount of service that SARTA implements to meet the employment transportation needs in the target area. Fixed route service costs $95.27 per revenue hour.

Strategy 2.1	
Description	**Cost**
Alliance Employment Route	$95.27 Per Revenue Hour

Strategy 2.2: Increase Frequency of Service on Route 139.

SARTA will explore opportunities to increase frequency on Route 139. Increased frequency could be applied throughout the day, or only during shift change hours to reduce the total travel times for riders, particularly those who are using the service for employment.

Estimated Budget/Expense: At a cost of $95.27 per revenue vehicle hour, it is estimated that an additional $457,296 annually will be needed to increase frequency from 60 minutes to 30 minutes during all hours of operation. The estimated increased annual cost is based on an additional 16 hours per day for 300 days per year. Actual costs will depend upon the number of hours per day for higher frequency if service frequency is only increased during shift change hours.

Two expansion fixed route vehicles will also be required to ensure that SARTA's spare ratio continues to be adequate. Expansion vehicle costs are estimated to be $1.14 million for two buses.

Strategy 2.2	
Description	**Cost**
Increase Frequency on Route 139	$457,296* + Capital Cost of 2 Vehicles ($1.14 Million)

*The cost would be lower for limited frequency increases during peak periods only.

Strategy 2.3: Restructure Alliance Routes.

Routes 130 and 132 are two of SARTA's lowest-productivity fixed routes, at 5.51 and 7.89 boardings per revenue hour, respectively. Routes with low productivity result in a high cost per passenger trip. The 2018 weekday average cost per trip was $17.61 for Route 130 and $12.31 for Route 132, while the systemwide average was $9.03. Potentially, SARTA could restructure the Alliance fixed route network to generate higher ridership per revenue hour. If this strategy is chosen, the restructuring effort should strive to meet the following objectives:

- Maintain transit service where needs are highest: apartment complexes, shopping areas, major employers, medical facilities, and other critical trip generators;
- Maintain headways at 30 minutes to facilitate easier transfers; and,
- Reallocate resources to other SARTA priorities for Alliance: increasing frequency on Route 139 and introducing microtransit. These priorities are discussed further under Alternatives #5 and #7.

A potential restructure would consolidate portions of Route 130 and 131 with Routes 132 and 139, eliminating 130 and 131 as routes. Route 139 would add service to State Street and Union Street, creating a loop that includes existing mileage on Sawburg Street and Main Street. Route 132 would eliminate low-usage stops south of State Street, and add the segment of Route 130 that runs along Lincoln Avenue and Vine Street, extending only to Nantucket Circle Apartments.

The restructure would maintain the existing cost of Route 132, as it would stay at 30-minute frequencies and maintain roughly the same mileage as the current route.

Strategy 2.3	
Description	**Cost**
Restructure Alliance Routes	The consolidation would result in an annual savings of $477,247 in operating costs. The vehicles used to operate Routes 130 and 131 would be reallocated to Route 139; therefore, there would be no capital costs.

ALTERNATIVE #3: EXPAND TRANSPORTATION ACCESS TO EMPLOYMENT AND IMPROVE ROUTE PRODUCTIVITY IN NORTH CANTON/BELDEN VILLAGE.

The North Canton area is important for the SARTA network. The area is home to many major trip generators for Stark County residents. Belden Village Mall and surrounding retail plazas are the locations for thousands of jobs in the service sector. Stark State College and Kent State University at Stark are located directly north of the mall area. North Canton also has several large industrial employers that have only limited SARTA service. North Canton is currently served by a small network of Community Routes that run on weekdays: Routes 112, 120, and 121. Route 45 runs on Saturdays only. Route 125 connects Belden Village Mall with Massillon, while Routes 105 and 106 provide service between Belden Village Mall and Canton. Finally, Route 81 provides express service connecting Belden Village to Akron and Canton. All of the routes converge at the Belden Village Transit Center, which serves as the local SARTA hub. **Exhibit 37** displays the area's routes. [1]

[1] Route 88, a route that operated between Akron and Belden Village, was discontinued in mid-2019 due to low ridership.

Exhibit 37: Fixed Routes Serving North Canton/Belden Village

Source: SARTA

Alternative #3 focuses on addressing low productivity on some portions of the weekday fixed route network that serves North Canton, which consists of Routes 112, 120, and 121. **Table 15** provides statistics for these routes.

Table 15: Route Statistics				
Route	**2018 Ridership**	**% Change in Ridership, 17-18**	**Productivity (Weekdays)**	**Frequency (Weekdays)**
112	9,706	15.42%	5.04	45-90 minutes
120	46,606	(8.36%)	10.25	30 minutes
121	41,591	36.86%	8.65	60 minutes

Source: SARTA and RLS & Associates, Inc. Computations

Customer Usage Analysis for Belden Village Fixed Routes

Route 112 connects Belden Village, North Canton and Hartville. Service is limited to Monday through Friday, 6:30 AM to 5:40 PM. The route has low ridership and low productivity, running on 90-minute headways, with an additional morning run to provide peak frequency of 45 minutes. The busiest segment of the route is in North Canton on Main Street/Cleveland Avenue from Everhard Road/Easthill Street to Whitewood Street.

Route 120 provides service every 30 minutes between Belden Village and Stark State/Kent State, Monday through Friday, from 6:45 AM to 9:40 PM. The route does not experience high student ridership. The majority of riders travel between the Belden Village Transit Center and other points within the Belden Village Mall area.

Route 121 runs Monday through Saturday from 6:21 AM to 9:03 PM, providing hourly service from Belden Village to the North Canton Industrial Park. The majority of the ridership boards at stops in the Strip, a large retail area.

Maps that display bus stop usage levels for Routes 112, 120, and 121 are included in the Appendix.

Alternative #3 provides strategies to increase the productivity of the weekday Community Route network, as well as to increase access to employment in the North Canton area. Two of the area's three Community Routes experience low productivity; these routes could be restructured to provide improvements in frequency and connectivity for greater numbers of customers.

Strategy 3.1: Restructure Routes 112 and 121.

Routes 112, 120, and 121 operate from the Belden Village Transit Center. Route 112 has the lowest productivity of any SARTA daytime fixed route, with ridership concentrated at the section of the route that is south of Mt. Pleasant Street. Routes 120 and 121 have stronger ridership and productivity, and operate in areas that are adjacent; Route 120 serves the Belden Village Mall area and the Stark State/Kent State campus, with Route 121 serving the Strip, directly to the north of the Route 120 service area. SARTA may achieve higher productivity by eliminating low-ridership segments and increasing frequency where ridership is highest. The highest ridership route segments are located in the following areas:

- Main Street/Cleveland Avenue from Eberhard Road to Mt Pleasant Street
- Whipple Avenue from Shuffel Street to 47th Street

- Freedom Avenue from Shuffel Street to Applegrove Street
- Strip Avenue/Dressler Road from Applegrove Street to Munson Street

Under this strategy, SARTA would eliminate the segment of Route 112 that operates north of Mt Pleasant Street, which experiences low ridership. Route 112 would be restructured as a loop that runs northbound from the Belden Village Transit Center on Main Street, turns westbound on Mt Pleasant Street, then runs southbound on Pittsburg Avenue and Whipple Avenue to return to the Transit Center. This loop would operate on 45-minute headways, using one vehicle.

SARTA would also redirect Route 121 to increase route frequency and improve productivity. And, because Route 112 would now serve Whipple Avenue, the segment of Route 121 serving Whipple could be eliminated. The new routing would originate at Belden Village Transit Center, travel northbound on I-77, and exit on Portage Street to loop through the Strip Avenue/Mega Street area. Then, the route would run northbound on Sunset Strip Avenue, turn eastbound on Applegrove Street, then turn northbound on Freedom Avenue to serve the cluster of employers located north of Applegrove Street. Finally, the route would return to the Transit Center by traveling southbound on Freedom Avenue, Promway Avenue, Dressler Road, Eberhard Road, and Whipple Avenue. With the new routing, Route 121 would operate on 45-minute headways using one vehicle.

The exact routing for the revised Routes 112 and 121 would be determined after SARTA conducts route testing. The new routing would improve headways to 45 minutes, which would improve transfers that involve the routes. No additional funding or vehicles would be required under this strategy, making it cost-neutral. Route 120, which already runs on 30-minute headways, would not be changed.

Estimated Budget/Expense: This strategy would not require any additional operating or capital expenses.

Strategy 3.2	
Description	**Cost**
Restructure Routes 112 and 121	Cost-Neutral

Strategy 3.2: Introduce a North Canton Employment Route.

The needs assessment for this plan indicated a need for more job access transportation that serves employers located in North Canton. An employment route will provide first/last mile service between existing SARTA fixed routes and job sites that are located in the vicinity of the Akron-Canton Airport. The route will be an expansion of the existing Route 154, which provides peak-hour service to Special Pack. The expansion will allow for early morning shift arrivals at North Canton employers. Currently, it is difficult for employees who ride SARTA to get to work in outlying areas of Stark County, including North Canton, for shifts that begin before 7:30 AM. Many employers have shifts that begin between 6:00 AM and 7:00 AM. A preliminary route map and schedule are provided in the Appendix.

Estimated Budget/Expense: This strategy would require funding to support approximately 1.5 revenue hours per weekday at $95.27 per revenue hour. No additional vehicles would be necessary.

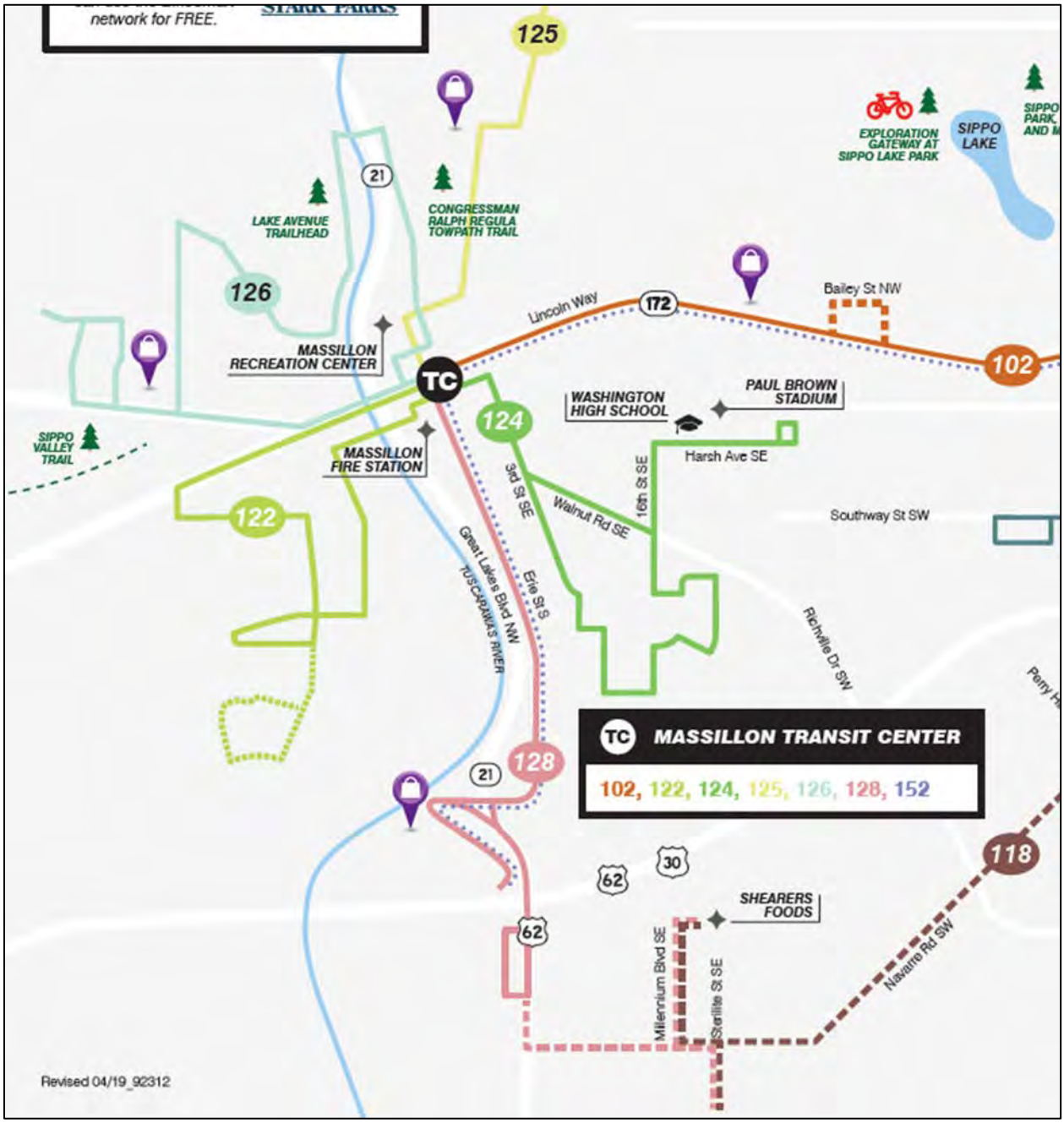
Strategy 3.2	
Description	**Cost**
North Canton Employment Route	$36,441

ALTERNATIVE #4: EXPAND TRANSPORTATION ACCESS TO EMPLOYMENT AND IMPROVE ROUTE PRODUCTIVITY IN MASSILLON.

In Massillon, the local route network converges in the center of town, providing economic support to the thriving downtown area. Massillon has several large employers that are accessible on SARTA routes. In town, there are four routes that operate as loops using hourly headways. Additionally, Routes 102 and 125 connect Massillon with Canton and North Canton, respectively.

Exhibit 38 displays the Massillon route network.

Exhibit 38: Fixed Routes Serving Massillon



Source: SARTA

Table 16 provides route statistics for the local fixed route network serving Massillon. Alternative #4 focuses on addressing low productivity on Routes 122 and 126, and freeing up resources that can be reallocated to serving job access transportation needs in Massillon.

Table 16: Route Statistics				
Route	**2018 Ridership**	**% Change in Ridership, 17-18**	**Productivity (Weekdays)**	**Frequency (Weekdays)**
122	16,535	(6.57%)	6.96	60 Minutes
124	26,041	(1.66%)	10.82	60 Minutes
126	12,878	(15.49%)	5.46	60 Minutes
128	35,479	2.58%	14.17	60 Minutes

Source: SARTA and RLS & Associates, Inc. Computations

Customer Usage Analysis for Massillon Local Fixed Routes

Route 122 loops from the Massillon Transit Center to the southwest edge of town, with extensions during peak periods to an industrial park. The route has low ridership and productivity. It runs Monday through Saturday from 6:30 AM to 8:55 PM on 60-minute headways. There is an average of one boarding per day at the industrial park. The busiest stops are located in the West Park residential area.

Route 124 serves the southeast side of Massillon, running Monday through Saturday from 6:00 AM to 8:25 PM on 60-minute headways. The portion of the loop from the Transit Center to 25th Street and Harsh Avenue has strong ridership, especially at the southeast portion on/near Arapahoe Avenue. Ridership is low on the Walnut Road segment.

Route 126 loops through the north/northwest side of Massillon on 60-minute headways, operating Monday through Saturday from 5:30 PM to 8:55 PM. Although this route, which passes through residential areas and small commercial centers, has steady ridership, overall it has low ridership and productivity.

Route 128 provides service along Erie Street on Massillon's south side, with high ridership stops at Walmart and Menard's shopping areas. The route deviates to Sterilite, a large employer, on some runs. Service runs on 60-minute headways Monday through Saturday from 6:00 AM to 9:25 PM.

Maps that display bus stop usage levels for Routes 122, 124, 126, and 128 are provided in the Appendix.

Strategy 4.1: Consolidate and Reduce Operating Hours for Routes 122 and 126.

Routes 122 and 126 serve the west side of Massillon; weekday productivity is low, at 6.96 and 5.46, respectively. Saturday ridership is also low, with an average of 72 passenger boardings on both routes combined per Saturday. One bus is used to operate both routes. Each route is a 30-minute loop, allowing the bus to alternate between the two routes, providing one-hour headways on each route. Under this strategy, SARTA will consolidate the two routes into one, eliminate Saturday service, and reduce the weekday total revenue hours from 16.15 to approximately 12. SARTA will analyze ridership by hour and reduce schedules so that the lowest-productivity hours are eliminated.

Estimated Budget/Expense: The elimination of Saturday service and 20 weekday hours of revenue service would reduce the cost of Routes 122 and 126 by approximately $139,085.

Strategy 341	
Description	**Cost**
Consolidate and Reduce Operating Hours for Routes 122 and 126	Savings of $139,085 per Year

Strategy 4.2: Introduce a Massillon Morning Employment Route

The needs assessment for this plan indicated a demand for more job access transportation to serve Massillon employers. An employment route will provide first/last mile service between existing SARTA fixed routes and Massillon job sites. The expansion will allow for arrival at Massillon employers for early morning shifts. Currently, it is difficult for employees who ride SARTA to get to work in outlying areas of Stark County, including Massillon, for shifts that begin before 7:30 AM. Many employers have shifts that begin between 6:00 AM and 7:00 AM.

Estimated Budget/Expense: This strategy would require funding to support approximately 1.75 revenue hours per weekday at $95.27 per revenue hour. No additional vehicles would be necessary.

Strategy 4.2	
Description	**Cost**
Massillon Employment Route	$42,514

ALTERNATIVE #5: INCREASE WEEKDAY FREQUENCY ON URBAN ROUTES.

The on-board survey conducted during the planning phase indicated that the frequency of fixed route buses on weekdays is the potential service improvement that is most closely correlated to customer satisfaction. In other words, many SARTA customers are currently unsatisfied with weekday route frequency, and improvements to frequency (lower headways) would have a more significant impact on their satisfaction than any other service improvement. There is wide consensus in the transit industry that frequency is a key aspect of satisfying and effective transit service. Many of the country's urban transit systems have redesigned their fixed route networks

around frequent routes, resulting in significant ridership increases that counter the trend of declining U.S. fixed route bus ridership.

Most of the SARTA network operates on 60-minute frequencies. A map displaying current frequencies throughout the fixed route network is included in the Appendix. Increasing frequency would double the amount of schedule flexibility available to residents who depend on SARTA for mobility. SARTA's highest-ridership route, Route 102, operates on 30-minute frequencies, attracting 366,954 riders in 2018. This is 94% more ridership than on the second-highest ridership route, Route 105, which operates on mixed headways (30-minute during peak, 60-minute during off-peak) and had 189,192 riders in 2018. The urban routes with 60-minute frequencies had 143,439 fewer riders in 2018. Routes 102 and 105 also had high productivity on weekdays in 2018, at 26.35 and 27.10, respectively, as well as low cost-per-trip values, at $3.69 and $3.58. Increased frequency will grow ridership and increase cost-efficiency on SARTA's urban fixed routes, and provide a major improvement to customer service.

Strategy 5.1: Increase Weekday Frequency on Urban Routes.

Increasing weekday frequency on all urban routes will bring a number of benefits to SARTA riders. It is recommended that frequency on all urban routes that currently operate on 60-minute headways increase to 30 minutes. Urban routes that currently experience strong productivity (greater than 16 boardings per revenue hour on weekdays) should be prioritized for moving from 60-minute to 30-minute frequency. In order of priority (highest to lowest), frequency should be increased on Routes 105, 108, 106, 101, 119, 117, and 103. Priority is based on ridership, with highest-ridership routes prioritized ahead of lower-ridership routes. Frequency improvements to Routes 81 and 139 are not included in this alternative since they were included in Alternatives #1 and #2.

A secondary priority is to increase frequency on urban routes that also serve the SARTA network's urban core, but that have lower ridership and productivity. These routes, in order of priority, are Route 111, 113, 118, 114, and 107. It is noted that Routes 107 and 114 currently operate on 30-minute headways, but on an irregular basis, due to deviations to the outlying communities of East Canton and East Sparta. Elimination of these deviations would allow SARTA to adjust the schedules for Routes 107 and 114 to offer consistent frequency and boost ridership and productivity. The implementation of microtransit (see Alternative #7 below) in these communities will provide residents with a mobility option to replace the deviations.

These routes operate from 5:45 AM to 9:40 PM. Doubling frequency on routes with 60-minute headways would double the operating expenses for the affected routes and require purchase of additional vehicles. However, SARTA could reduce the cost of increasing frequency by focusing on peak hours only. For example, frequency can be doubled during peak commuting hours – generally, 6:00 AM to 9:00 AM and 4:00 PM to 7:00 PM on weekdays. The cost estimates presented below assume that 30-minute headways are implemented during all operating hours on weekdays.

Estimated Budget/Expense: The cost for increasing frequency on each priority route, using the cost per revenue hours of $95.27, is provided in the following table. For routes that would require an additional vehicle, a capital cost of $570,000 per bus is assumed.

Strategy 5.1	
Description	**Cost**
First Priority	
Increase Frequency on Route 105	Operating: $194,351 Capital: $0 (No Additional Bus Needed)
Increase Frequency on Route 108	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 106	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 101	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 119	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 117	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 103	Operating: $392,346 Capital: $570,000
Total Cost Estimate for Frequency Increases on First Priority Routes	**Operating: $2.55 Million** **Capital: $3.42 Million**
Secondary Priority	
Increase Frequency on Route 111	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 113	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 118	Operating: $392,346 Capital: $570,000
Increase Frequency on Route 114	No cost, but requires eliminating East Sparta extension
Increase Frequency on Route 107	No cost, but requires eliminating East Canton extension
Total Cost Estimate for Frequency Increases on Secondary Priority Routes	**Operating: $1.18 Million** **Capital: $1.71 Million**

ALTERNATIVE #6: MAKE MINOR ROUTING CHANGES TO ENABLE TRANSFERS BETWEEN URBAN ROUTES.

The SARTA fixed route network is designed so that most transfers occur at the Cornerstone Transit Center in downtown Canton, and the three outlying transfer centers in Alliance, Belden Village, and Massillon. Most of the higher-ridership, urban routes provide hourly access to Cornerstone, where customers can transfer to complete cross-town trips. Under this alternative,

SARTA will examine its network for opportunities to make minor routing adjustments that allow customers to transfer outside of the transit centers. There are many areas of the city where two SARTA routes operate in close proximity. In some cases, moving a bus stop by one to three blocks creates a new opportunity to transfer between routes. The purpose of enabling more transfers is to build the network's capacity to offer faster trips to customers who can now avoid traveling all the way into downtown Canton just to transfer to another route.

The potential for improved transfers through routing adjustments is greatly enhanced by increasing route frequency, as proposed in Alternative #5. Transfers that occur outside of the transit facilities are not timed. Therefore, with most routes using one-hour headways, customers making these transfers must wait up to 60 minutes for their second bus. Doubling route frequency narrows the wait time to a maximum of 30 minutes, which allows for faster overall trip times.

Estimated Cost/Budget: This strategy is intended to be cost-neutral. It assumes that route adjustments do not require additional revenue hours of service.

Strategy 6.1	
Description	**Cost**
Minor Routing Changes to Enable Transfers	Cost-Neutral

ALTERNATIVE #7: IMPLEMENT MICROTRANSIT SERVICES.

Microtransit is an emerging transit industry practice that uses technology to offer flexible routing and/or flexible scheduling with vehicles that are smaller than the traditional fixed route bus. Microtransit is on-demand, curb-to-curb transit service using a smartphone-based interface for hailing a ride. Many microtransit services also offer a telephone-based ride request option and a method for cash payments. There are a growing number of successful examples of microtransit, including the models implemented by the Central Ohio Transit Authority (Columbus, Ohio), City of Arlington, Texas, and Sacramento Regional Transit District (California).

SARTA plans to implement microtransit as a way to provide service throughout Stark County, particularly in areas where fixed routes are unable to meet performance standards and/or ridership goals due to lack of population density, major trip generators, or other factors that induce transit ridership. Microtransit will be implemented in conjunction with the adjustment of the Proline complementary paratransit service area from the whole county to the ¾-mile buffer around fixed routes. Proline customers will be able to use microtransit for trips that are not covered by the ¾-mile service area.

Strategy 7.1: Implement Microtransit Throughout Stark County.

Countywide implementation of microtransit would provide an affordable shared mobility option to every Stark County resident, provided that SARTA can invest in adequate operating expenses and vehicles to meet the demand for rides. A phased approach, with SARTA rolling out microtransit progressively throughout the county in a zone by zone fashion over a period of one

year, would allow the agency to pilot a small version of the service and learn from early experiences before serving the entire county. Coordinating microtransit for the general public and ADA service through the comingling of riders will be more cost-effective than running Proline and microtransit with separate fleets of vehicles.

Estimated Budget/Expense: A countywide microtransit service is likely to cost a similar amount as Proline, which currently offers complementary paratransit service throughout Stark County for individuals who qualify for the service as defined by the Americans with Disabilities Act (ADA). Whereas ADA regulations mandate that transit agencies offer paratransit during the same hours as fixed route service for no more than twice the fixed route fare, SARTA has flexibility to adjust the operating hours and fare structure of microtransit, which will allow it to control the cost of the service. SARTA anticipates that the annual marginal cost of this strategy will be no greater than $50,000.

Up-front costs associated with microtransit include ride scheduling software acquisition or upgrades, and a marketing campaign to educate the community about using microtransit. These costs are scalable, depending on the necessity of different software options and the scale of the marketing campaign. Potentially, SARTA could apply for an FTA discretionary grant to fund these expenses.

Strategy 7.1	
Description	**Cost**
Implement Microtransit Throughout Stark County	Operating Cost: Up to $50,000 Above the Existing Cost of Proline Capital Cost: Technology Upgrades and Marketing Campaign

ALTERNATIVE #8: ENHANCE BICYCLE AND PEDESTRIAN INFRASTRUCTURE FOR FIXED ROUTE CUSTOMERS.

While SARTA's primary service mode is the operation of vehicles, the agency must also invest resources in the infrastructure that supports a customer's complete trip. Fixed route customers typically walk to and from their bus stop, and require sidewalks and bus stops with amenities that enable a safe and comfortable waiting area. Many customers also use bicycles for the first and/or final segments of trips and need an on-board location to stow bicycles. Alternative #8 addresses pedestrian and bicycle infrastructure within the fixed route network.

Strategy 8.1: Add Shelters to Bus Stops Serving Multiple Routes.

The SARTA Service Standards and Policies identify minimum requirements for SARTA bus shelter placement. However, SARTA passengers and community stakeholders have identified a need for additional shelters so that passengers have a better waiting environment. Indeed, bus shelters are a well-appreciated amenity for passengers, and they can also be a benefit to the business or community where they are placed if that business or community is seeking to encourage the use of public transit. SARTA will evaluate its Service Standards and Policies

regarding placement of shelters. Also, local communities and businesses will be given an opportunity to purchase and sponsor the maintenance of a new bus shelter.

SARTA will add up to 10 shelters per year according to its Service Standards and Policies. SARTA will prioritize transfer bus stops (Alternative #6) for shelters. The reason for this prioritization is that customers who transfer outside of a transit facility may have long waits between routes. The availability of seating and shelter from poor weather conditions allows for a better riding experience despite a lengthy transfer period.

Estimated Budget/Expenses: Estimated capital expenses are $80,000 per year. SARTA bus shelters, including cement and shelter installation, cost approximately $8,000 each.

Strategy 8.1	
Description	**Cost**
Add Up to 10 Shelters Per Year	Capital Expenses of $80,000 Per Year

Strategy 8.2: Expand Bicycle Racks Capacity on Fixed Route Buses.

SARTA vehicles are equipped with bike racks for two bikes per vehicle. As bike racks are replaced or expansion vehicles are purchased, SARTA should purchase racks that have capacity for up to three bikes. This expansion will help bike riders who include transit in their commute.

Estimated Budget/Expenses: This budget assumes a $10,000 annual capital cost for three-space bicycle racks, which would be purchased as necessary for replacement or expansion.

Strategy 8.2	
Description	**Cost**
Install Three-Bicycle Racks on Buses	Capital Expenses of $10,000 Per Year

ALTERNATIVE #9: ADDRESS SUNDAY SERVICE NEEDS.

Currently, SARTA does not provide transit services on Sundays. One of the most commonly requested service expansions from passengers was the addition of Sunday service. However, it is a risky expansion because it is difficult to estimate the level of demand on Sundays, which are typically lower ridership days for transit systems that operate seven days per week.

Strategy 9.1: Add Sunday Demand-Response Service and Create a Brokerage with Partner Providers.

Three organizations, in addition to private taxi services and Uber/Lyft, operate human service transportation on Sundays: The Workshops, Inc., Canton Crossroads United Methodist Church, and The ABCD, Inc. Each of these organizations operate services for certain eligibility groups. It is recommended that SARTA and the Stark County Mobility Coordination Committee work with these organizations to explore the possibility of expanding the available Sunday transportation services to make them available to the general public.

SARTA would expand its hours of operation to Sundays and schedule trips for the other organizations that are operating on Sundays. In this manner, SARTA would act as a broker to the participating agencies and would also provide some trips in-house using paratransit vehicles.

Estimated Budget/Expenses: The costs would include contracts for transportation service provided by human service agencies, scheduling and dispatching staff for an expansion of the existing Proline call center to include the Sunday brokerage, and transportation directly operated by SARTA on Sundays. The cost would be scalable to the extent of the Sunday service. For example, SARTA may wish to confine the service to a limited geographical area, or serve all of Stark County; hours of service could be limited to Sunday mornings or offered during typical operating hours (5:45 AM to 9:40 PM).

Strategy 9.1	
Description	**Cost**
Implement Brokerage Model for Sunday Service	Cost depends on the amount of service provided

Strategy 9.2: Create a Transportation Network Company Partnership.

Many transit agencies in the U.S. have initiated partnerships with transportation network companies (TNCs) to offer supplemental transportation that fills spatial and temporal gaps in service. Under this strategy, SARTA would contract with Uber, Lyft, and/or an alternative TNC to provide rides on Sundays. TNC subsidies should be for shared-ride service (e.g., UberPOOL or LyftLine). Otherwise, the program will incentivize single-occupant trips and increased vehicle miles traveled.

Typically, transit systems offer a subsidy for TNC trips that is applied after the passenger pays an initial flat amount. If the cost is more than the sum of the passenger amount and subsidy, the passenger pays the balance. For example, SARTA might offer a $4 subsidy per trip and require the passenger to pay the first $2 per trip, with the passenger covering any cost in excess of the $6 total. Subsidies are usually provided through a customer code that SARTA would develop with the TNC, then provide to passengers. TNCs use geofencing to limit the ability of passengers to use the code within the boundaries of a geographical area, such as Stark County.

It is important that any TNC service contract includes adequate data-sharing requirements for the TNC. SARTA needs access to detailed trip data in order to incorporate TNC usage analysis into planning efforts.

When TNCs are used to provide public transportation, the transit agency must offer an equivalent wheelchair-accessible alternative with the same level of service as the TNC service provided to those without disabilities, measured by the following seven criteria:

1. Response time
2. Fares (people need to be able to pay even if they don't have a credit card; some agencies allow passengers to purchase pre-paid cards as a way around this)

3. Geographic area of service
4. Hours and days of service
5. Restrictions or priorities based on trip purpose
6. Availability of information and reservations capability (people need to be able to call to request their on-demand trip, not just hail through a smartphone)
7. Any constraints or capacity or service availability

Typically, transit agencies contract with wheelchair-accessible taxi providers to ensure that passengers have access to an accessible alternative to the TNC.

The FTA's taxicab exception requires that customers must have a choice between two or more providers; otherwise, the contracting taxi/TNC is subject to FTA's drug and alcohol testing requirements.

Estimated Budget/Expenses: The costs would include subsidies for TNC rides and on-demand wheelchair accessible taxi service, and an expansion of the existing Proline call center to include a telephone reservation option for rides. The cost would be scalable to the extent of the Sunday service in terms of operating hours and geography.

A sample cost breakdown is provided in **Table 17**.

Table 17: Sample Cost Breakdown for a TNC Partnership	
Annual Ridership (assumes 10% of average Saturday SARTA ridership in 2018)	28,496
Average Subsidy Per Trip	$4.00
Total TNC Subsidy Cost	$113,984
2% of TNC Rides Provided as On-Demand Wheelchair Accessible Taxi Rides	570
Average Cost of On-Demand Wheelchair Accessible Taxi Ride	$100
Total Wheelchair-Accessible Taxi Cost	$56,992
Total Cost	**$170,976**

Strategy 9.2	
Description	**Cost**
TNC Partnership	Cost depends on the amount of service provided – tentative range of $150,000 to $250,000

Strategy 9.3: Microtransit

SARTA could implement the microtransit service described in Alternative #7 as a Sunday service option. This option would be more expensive than a TNC or brokerage option but would provide some additional benefits. Offering microtransit on Sundays would require the least amount of investment in marketing and community outreach, because there would be no new provider partnerships or reservation/pick-up procedures that would require extensive community education. Direct operation, as opposed to a partnership with an outside provider, would allow for the greatest level of quality control.

Estimated Budget/Expense: A countywide Sunday microtransit service could have a cost that is comparable to, or lower than, the Proline service cost for Saturdays. This estimated cost is provided as a basis for planning, with the understanding that the actual cost will depend greatly on the parameters set by SARTA for the service (for example, the hours of operation) and actual demand.

Strategy 9.3	
Description	**Cost**
Implement Microtransit Throughout Stark County	$842,187

ALTERNATIVES SUMMARY AND IMPLEMENTATION TIMELINE

The service alternatives and strategies with estimated costs are presented in **Table 18**. A tentative implementation timeline follows in **Table 19**. The timeline is designed so that SARTA can implement general public microtransit service at the same time that the affected Community Routes are consolidated or reduced. This way, customers who are adversely impacted by the route changes will have access to demand-response service during the changes. Other alternatives, such as adding shelters, are ongoing for SARTA and will take place continually, or as funding permits.

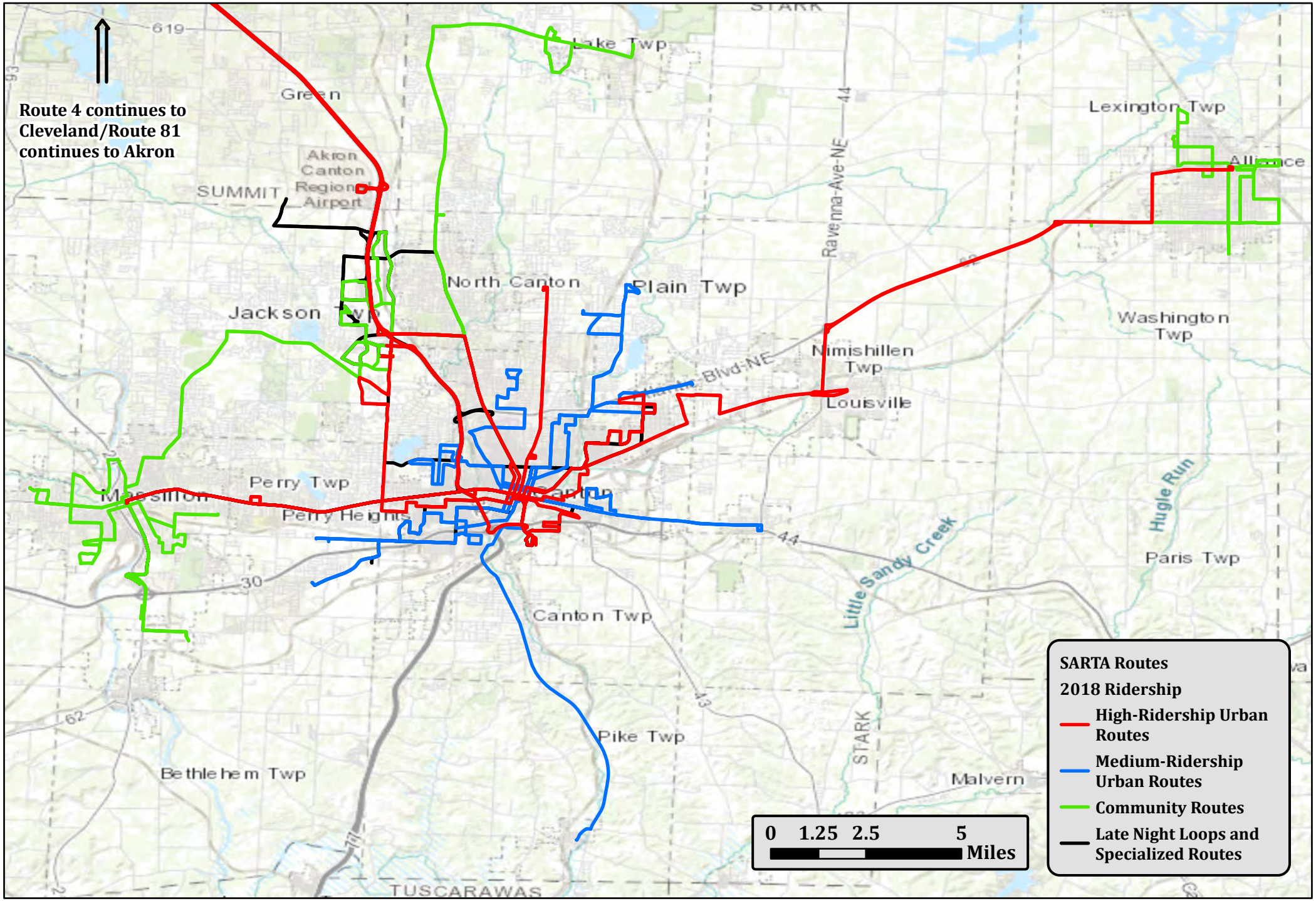
Table 18: Strategy Costs Summary			
Strategy	**Description**	**Operating Cost**	**Capital Cost**
Alternative #1: Improve Fixed Route Service in the Canton-Akron Corridor to Support Regional Connectivity to Key Employment and Tourism Destinations			
1.1	Expand Hours of Operation of the Route 81 until 12:40 AM on Fridays and Saturdays	$29,724	$0
1.2	Increase Route 81 Frequency of Service (Peak Only)	$145,763	$570,000
1.2	Increase Route 81 Frequency of Service (All Days/Hours)	$914,592	$570,000
1.3 (Option 1)	Develop Pedestrian and Bicycle Infrastructure	Cost depends on infrastructure (maintenance)	Cost depends on infrastructure (construction)
1.3 (Option 2)	Increase Route 117 Frequency of Service	$457,296	$570,000
1.3 (Option 3a)	Adjust Route 117 to Offer Service Closer to the Hall of Fame	$0	$0
1.3 (Option 3b)	Restructure Route 117 to Offer Service to the Hall of Fame	$457,296	$570,000
1.3 (Option 4)	Express Loops	$3 to $5 Million	$570,000 to $1.14 Million

Table 19: Strategy Costs Summary			
Strategy	**Description**	**Operating Cost**	**Capital Cost**
Alternative #2: Expand Transportation Access to Employment and Improve Route Productivity in Alliance			
2.1	Alliance Employment Route	Cost depends on the amount of service provided	$0
2.2	Increase Frequency on Route 139	$457,296	$1.14 Million
2.3	Restructure Alliance Routes	($477,247)	($1.14 Million)
Alternative #3: Expand Transportation Access to Employment and Improve Route Productivity in North Canton/Belden Village			
3.1	Restructure Routes 112 and 121	$0	$0
3.2	North Canton Employment Route	$36,441	$0
Alternative #4: Expand Transportation Access to Employment and Improve Route Productivity in Massillon			
4.1	Consolidate Routes 122 and 126	($139,085)	$0
4.2	Massillon Employment Route	$42,514	$0
Alternative #5: Increase Weekday Frequency on Urban Routes			
5.1	Increase Monday-Friday Frequency on Priority Urban Routes	$2.55 Million	$3.42 Million
5.2	Increase Monday-Friday Frequency on Other Urban Routes	$1.18 Million	$1.71 Million
Alternative #6: Make Minor Routing Changes to Enable Transfers Between Urban Routes			
6.1	Minor Routing Changes to Enable Transfers	$0	$0
Alternative #7: Implement Microtransit Services			
7.1	Microtransit	$50,000	Cost depends on technology and marketing expenses
Alternative #8: Enhance Bicycle and Pedestrian Infrastructure for Fixed Route Customers			
8.1	Add up to 10 Shelters per Year	$0	$80,000
8.2	Install Three-Bicycle Racks on Buses	$0	$10,000
Alternative #9: Address Sunday Service Needs			
9.1	Implement Brokerage Model for Sunday Service	Cost depends on the amount of service provided	$0
9.2	Sunday TNC Partnership	$150,000 to $250,000	$0
9.3	Sunday Microtransit	$0	$842,187

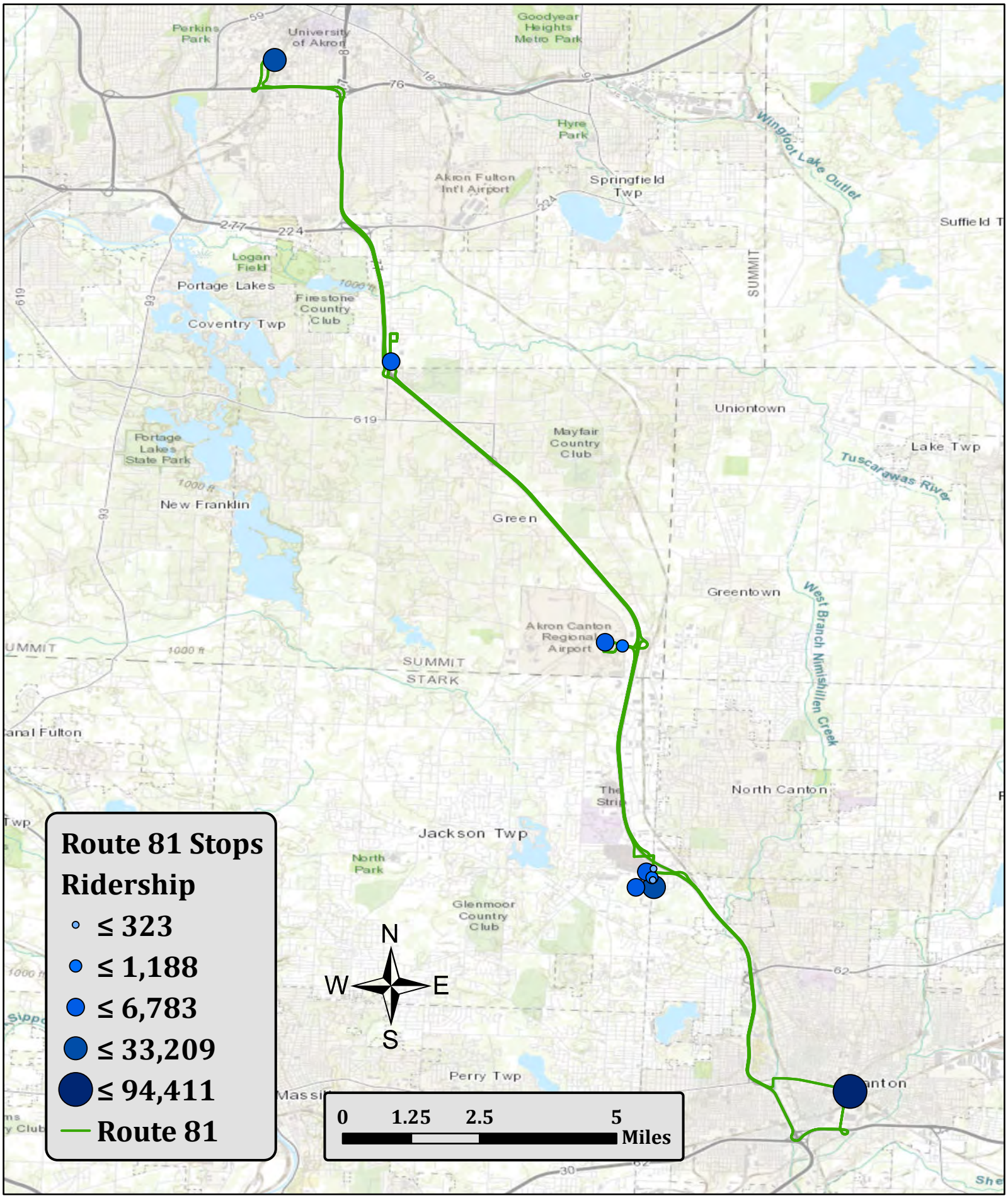
Table 20: Implementation Timeline					
Alternative	**2020**	**2021**	**2022**	**2023**	**2024**
Alternative #1: Improve Fixed Route Service in the Canton-Akron Corridor to Support Regional Connectivity to Key Employment and Tourism Destinations	**X**				
Alternative #2: Expand Transportation Access to Employment and Improve Route Productivity in Alliance	**X**				
Alternative #3: Expand Transportation Access to Employment and Improve Route Productivity in North Canton/Belden Village	**X**				
Alternative #4: Expand Transportation Access to Employment and Improve Route Productivity in Massillon.		**X**			
Alternative #5: Increase Weekday Frequency on Urban Routes			**X**	**X**	**X**
Alternative #6: Make Minor Routing Changes to Enable Transfers Between Urban Routes	**X**	**X**			
Alternative #7: Implement Microtransit Services	**X (Western/ Central Stark Co.)**	**X (Eastern Stark Co.)**			
Alternative #8: Enhance Bicycle and Pedestrian Infrastructure for Fixed Route Customers	**X**	**X**	**X**	**X**	**X**
Alternative #9: Address Sunday Service Needs			**X**	**X**	**X**

APPENDIX

SARTA Fixed Routes
2018 Ridership

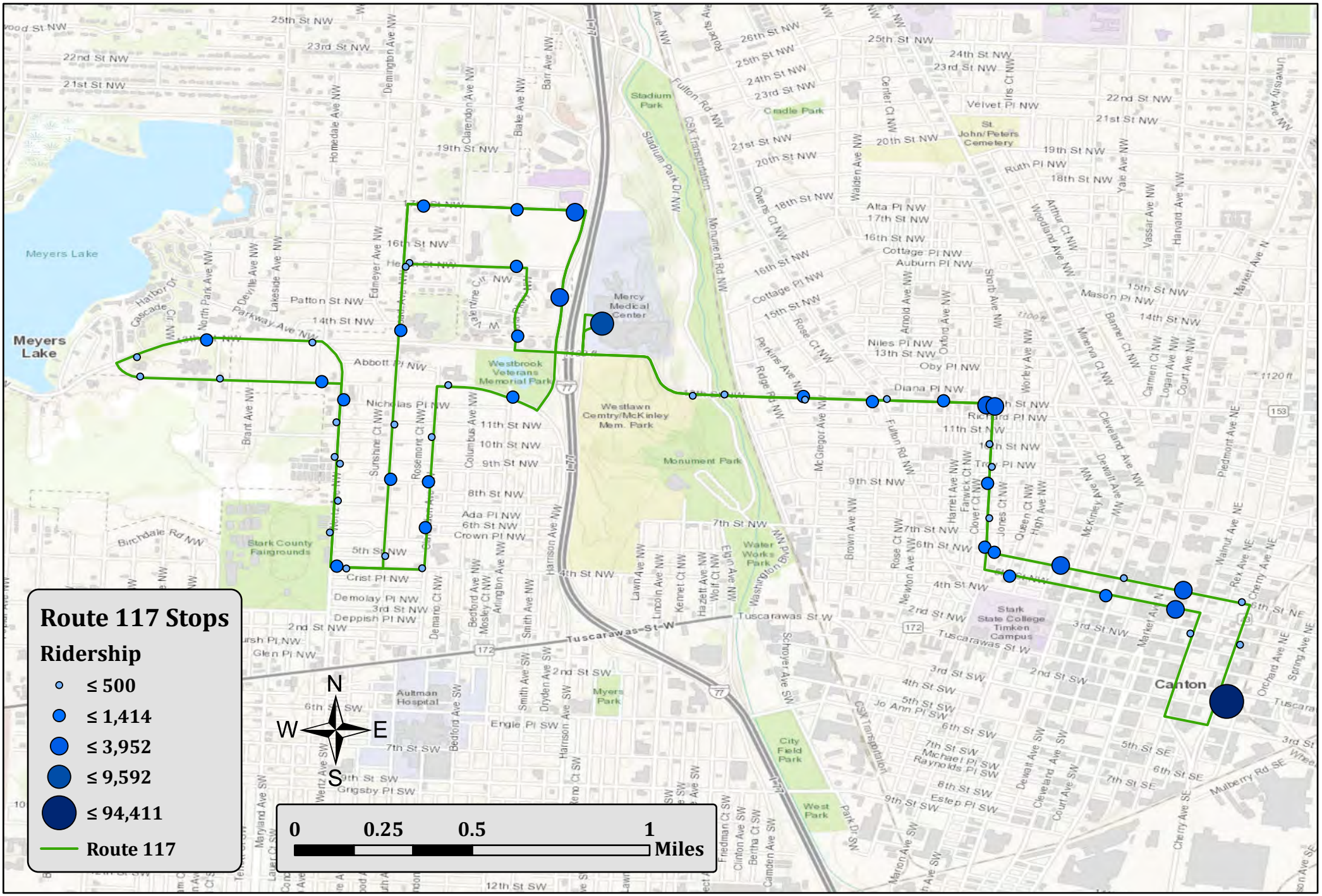


SARTA Bus Stop Usage
Route 81

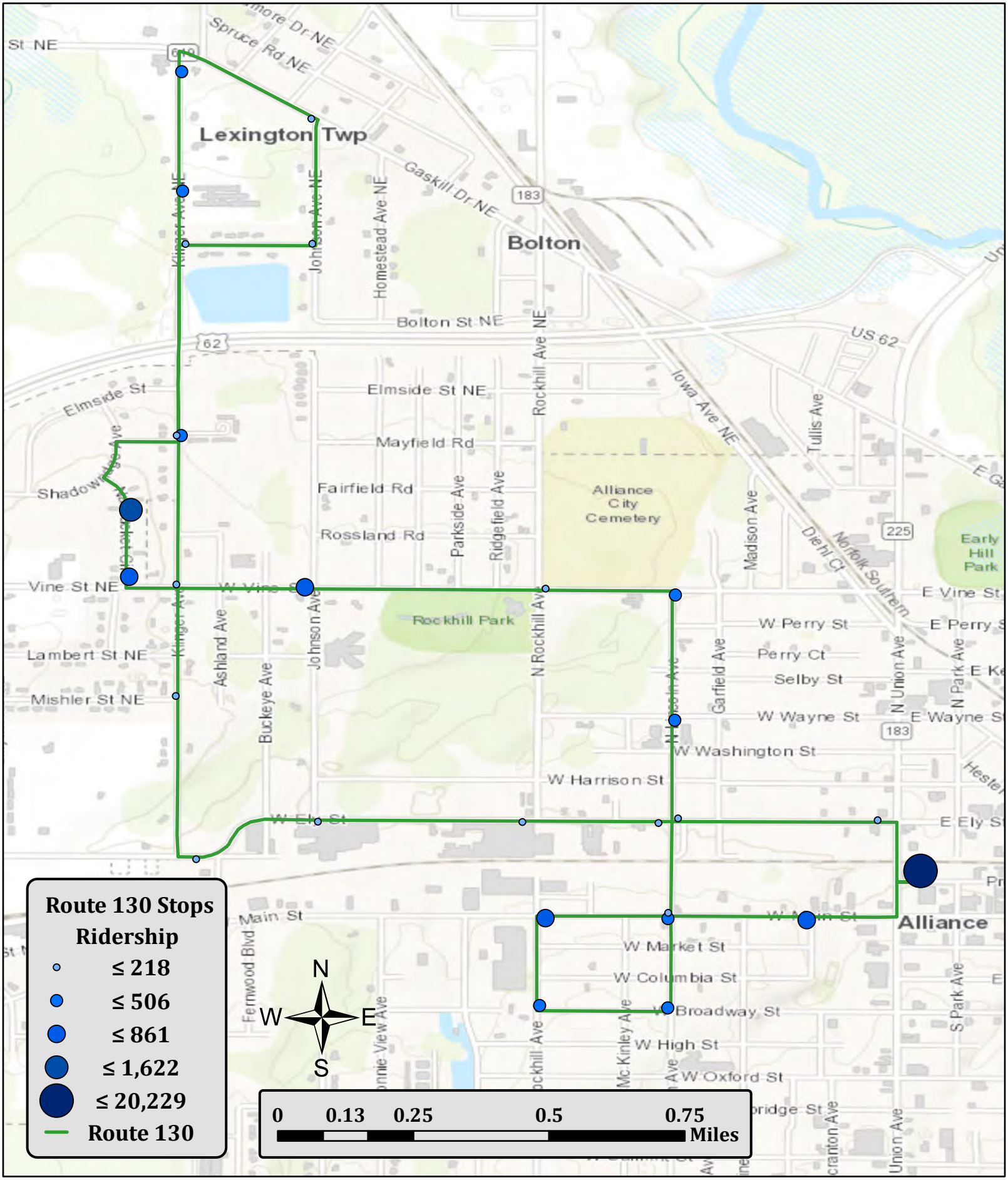


SARTA Bus Stop Usage

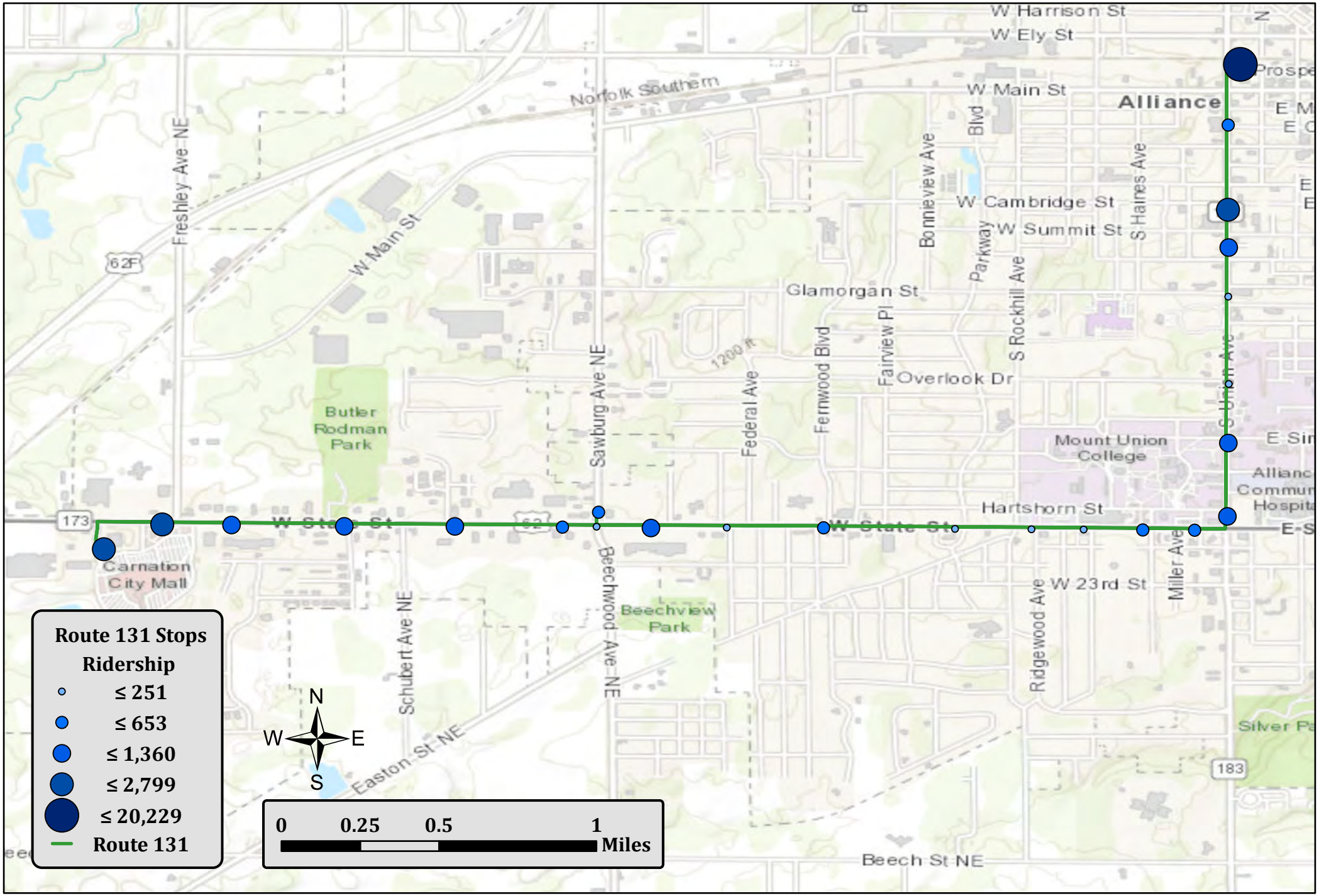
Route 117



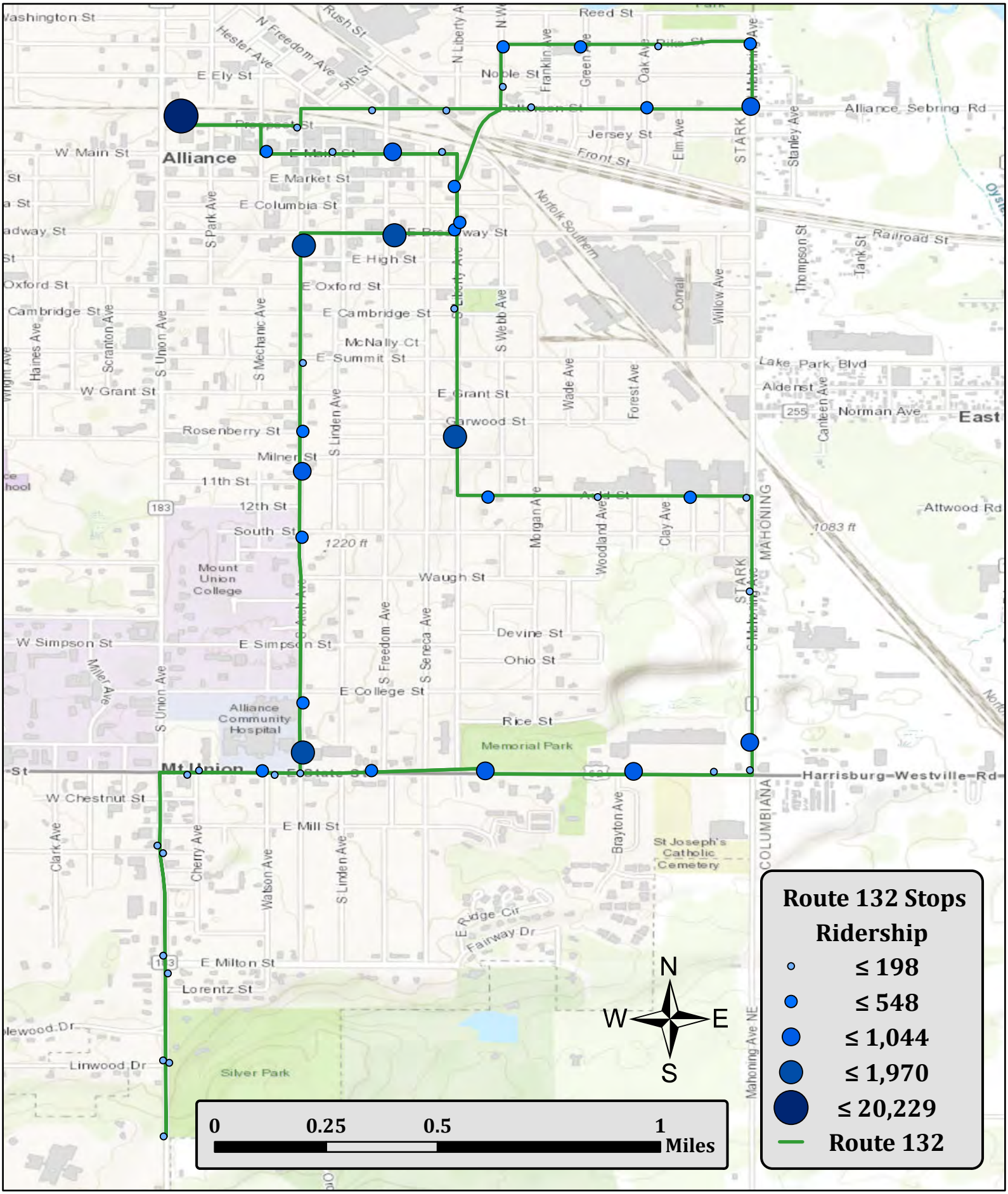
SARTA Bus Stop Usage
Route 130



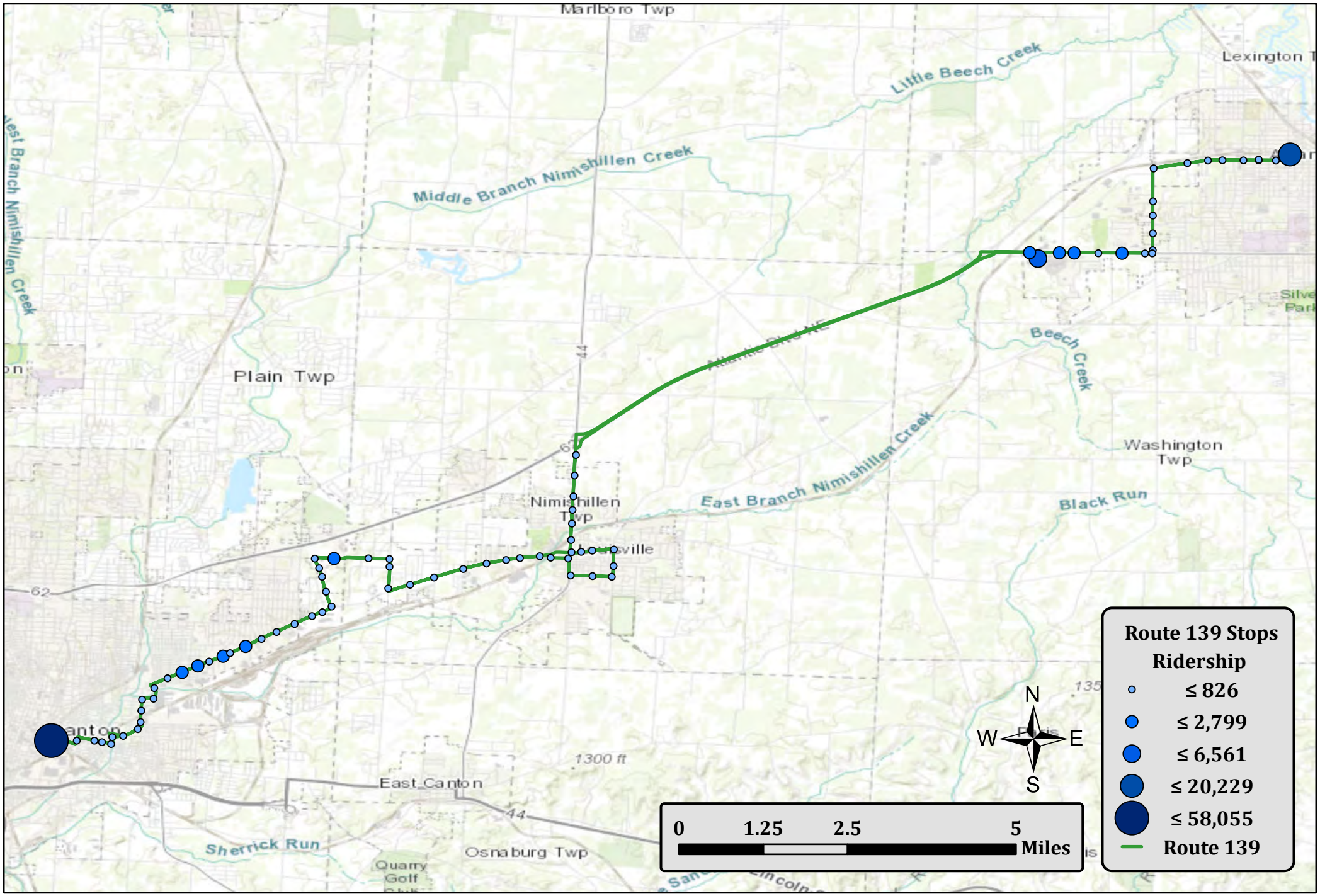
SARTA Bus Stop Usage
Route 131



SARTA Bus Stop Usage
Route 132



SARTA Bus Stop Usage
Route 139



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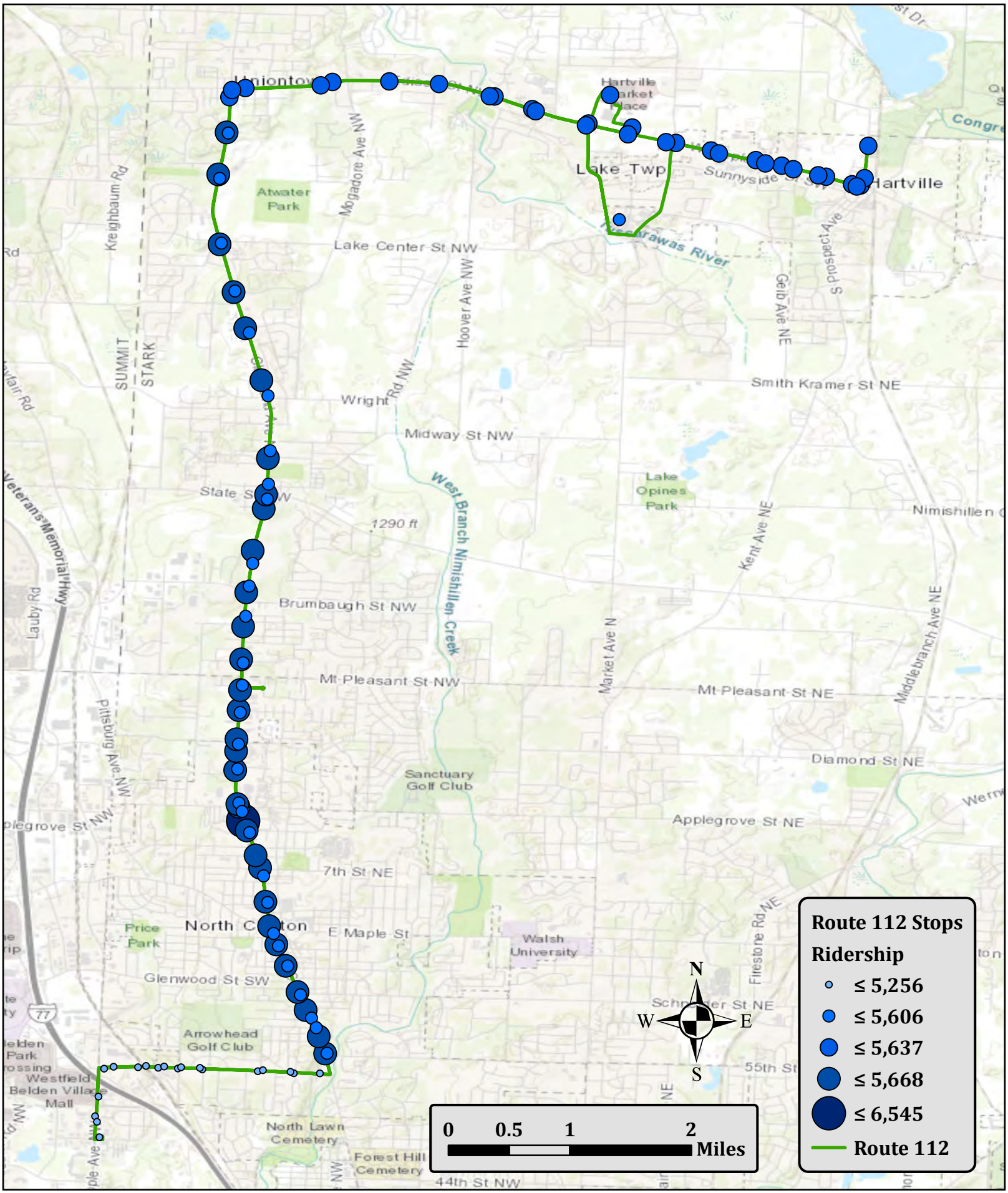
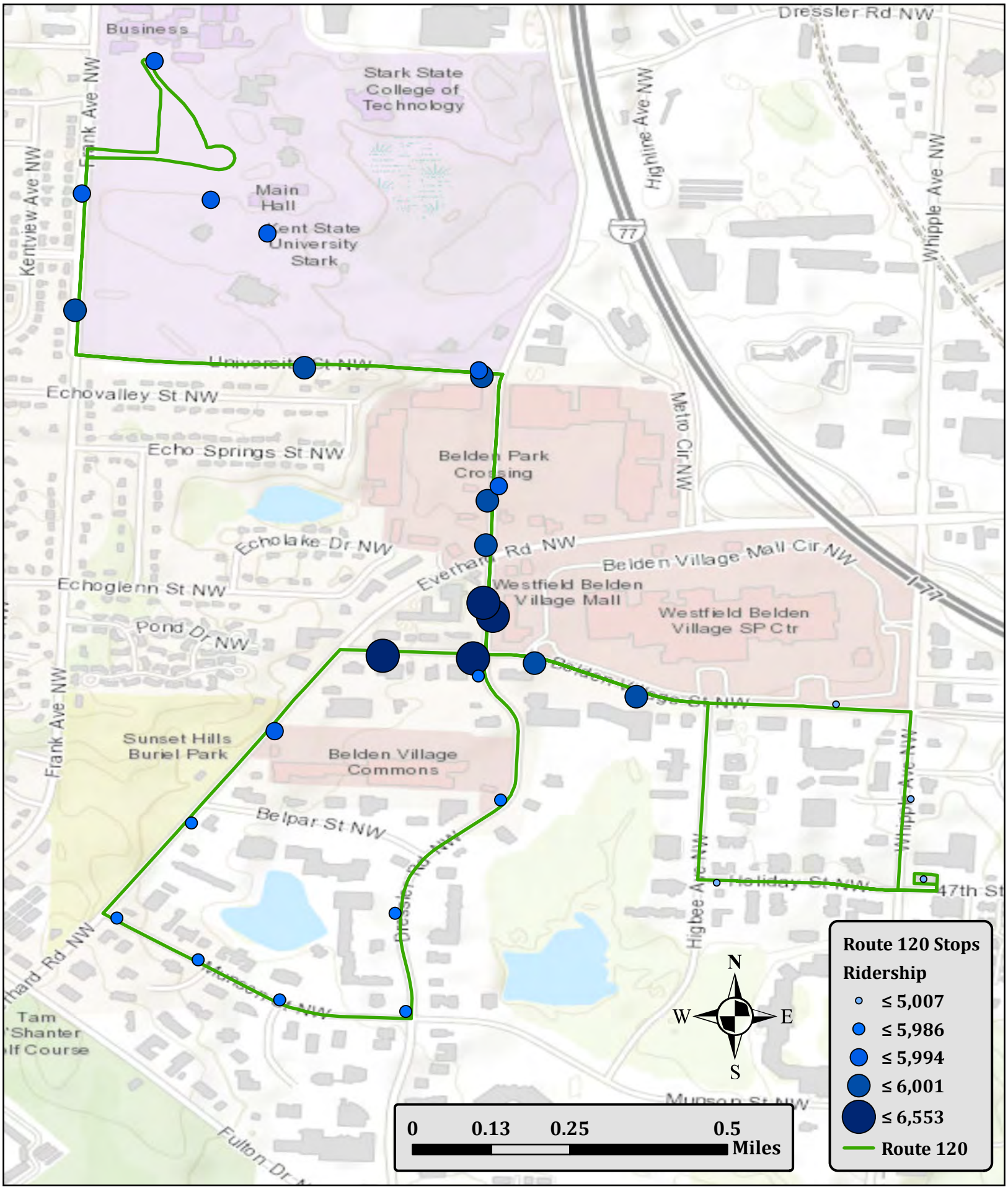
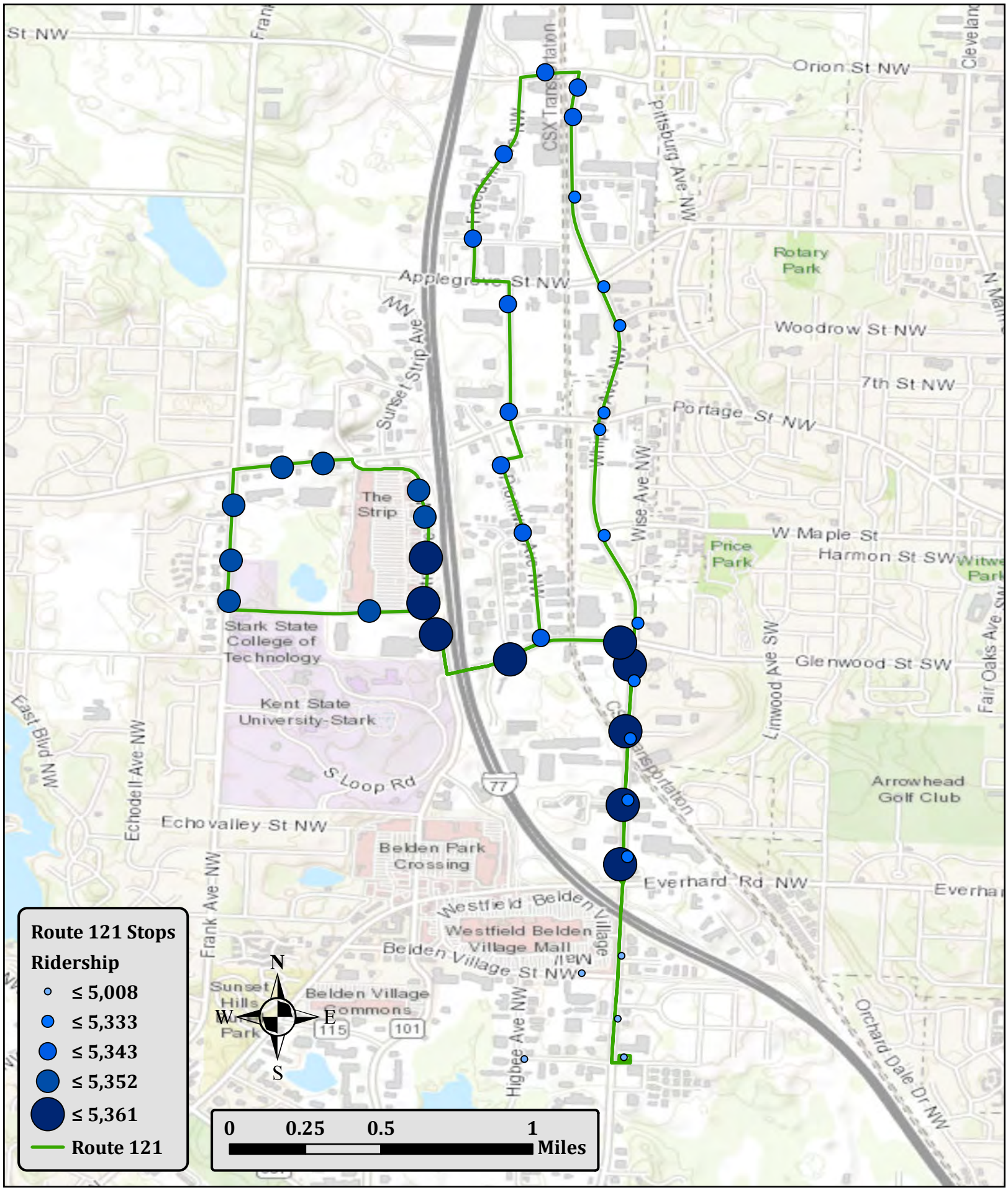
Route 112



SARTA Bus Stop Usage
Route 120



SARTA Bus Stop Usage
Route 121



SARTA Bus Stop Usage
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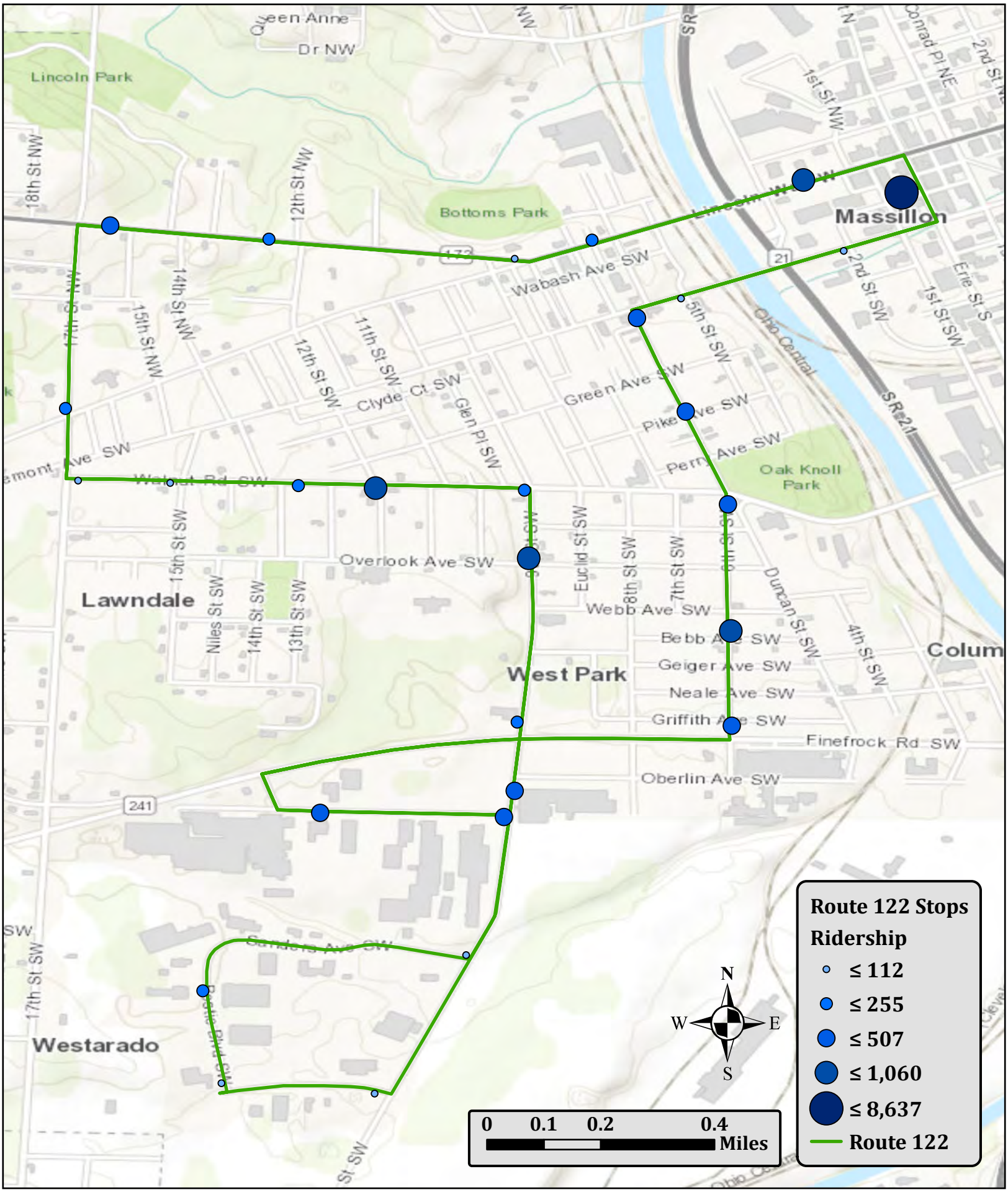
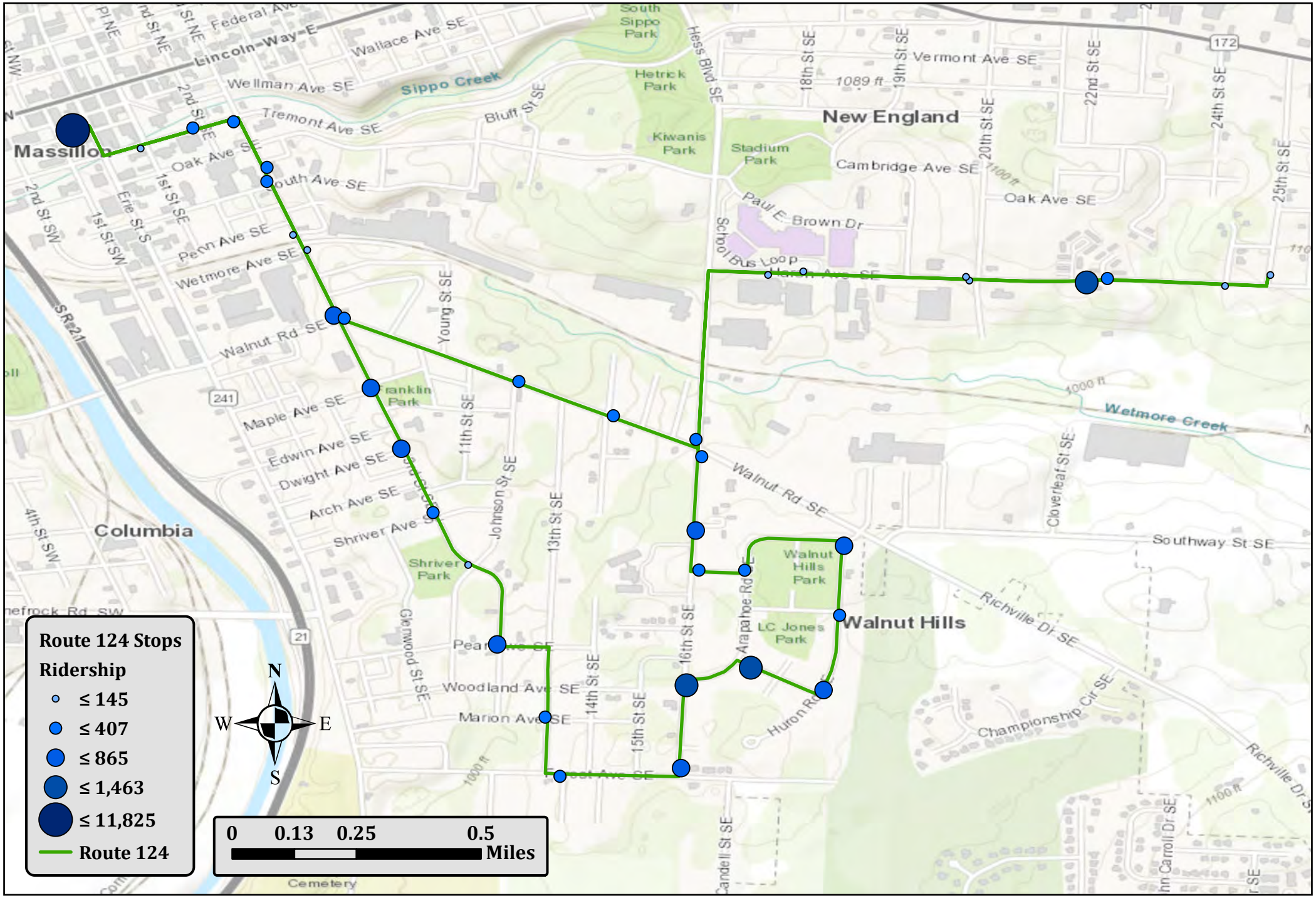
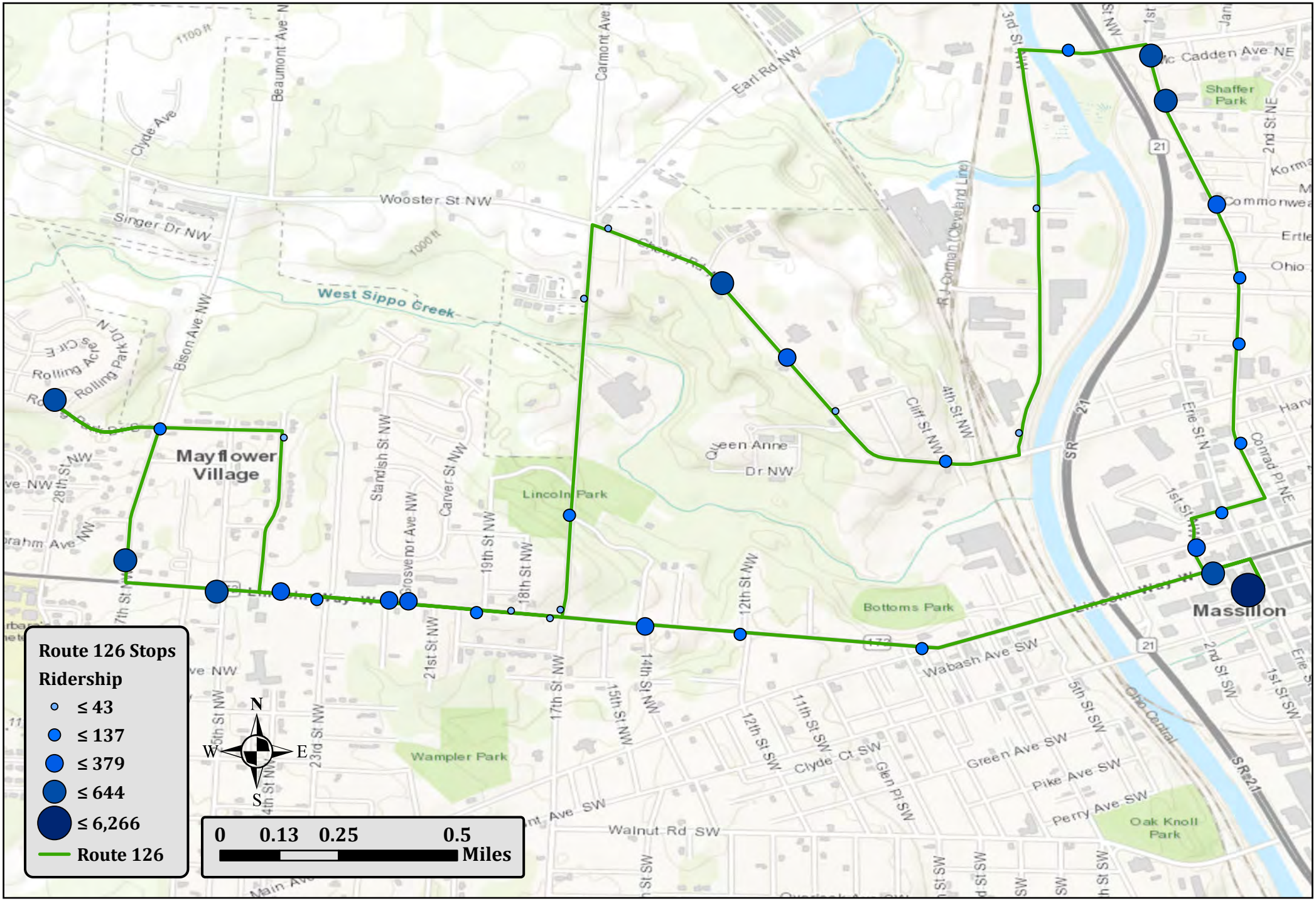


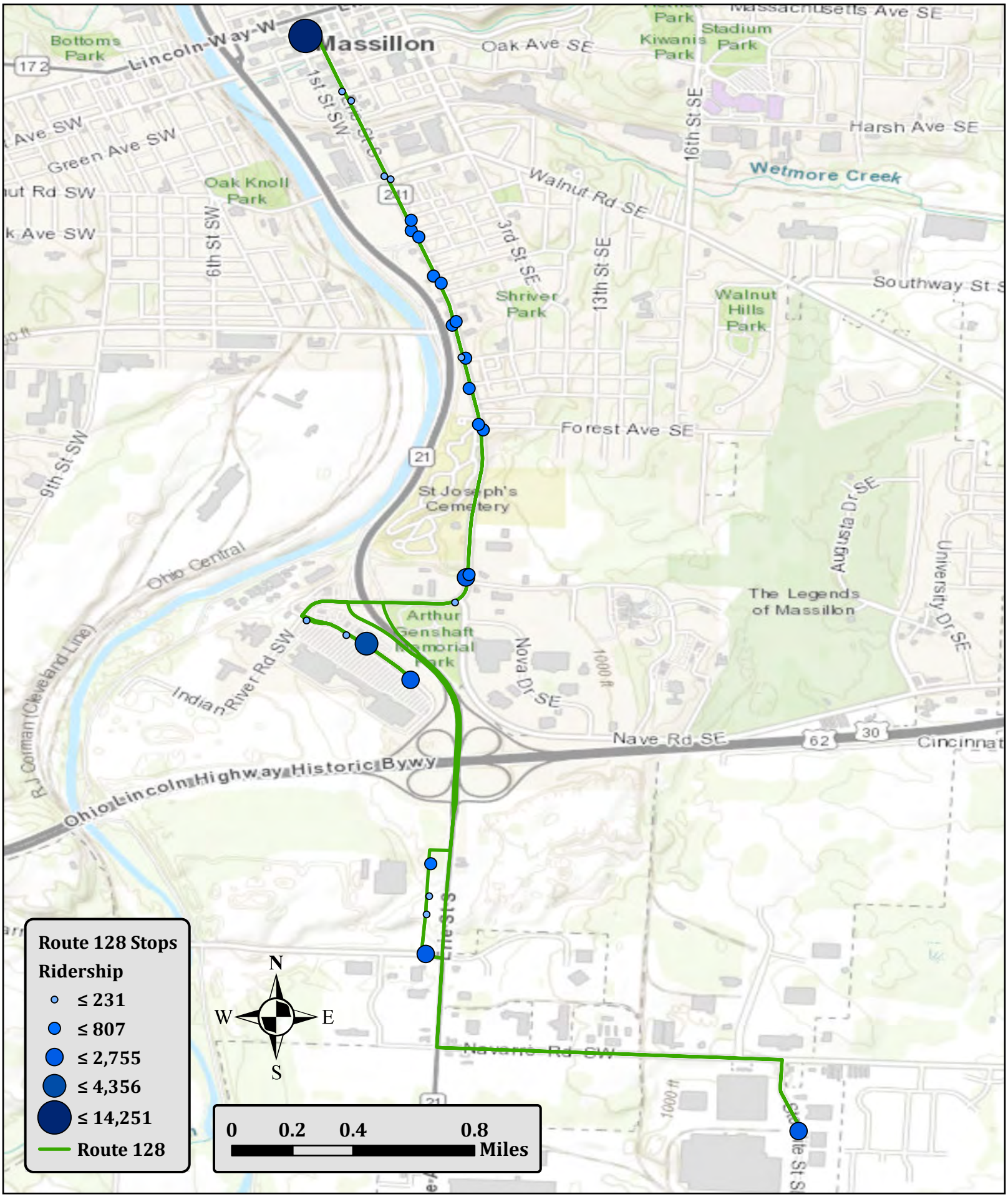
SARTA Bus Stop Usage
Route 124



SARTA Bus Stop Usage
Route 126

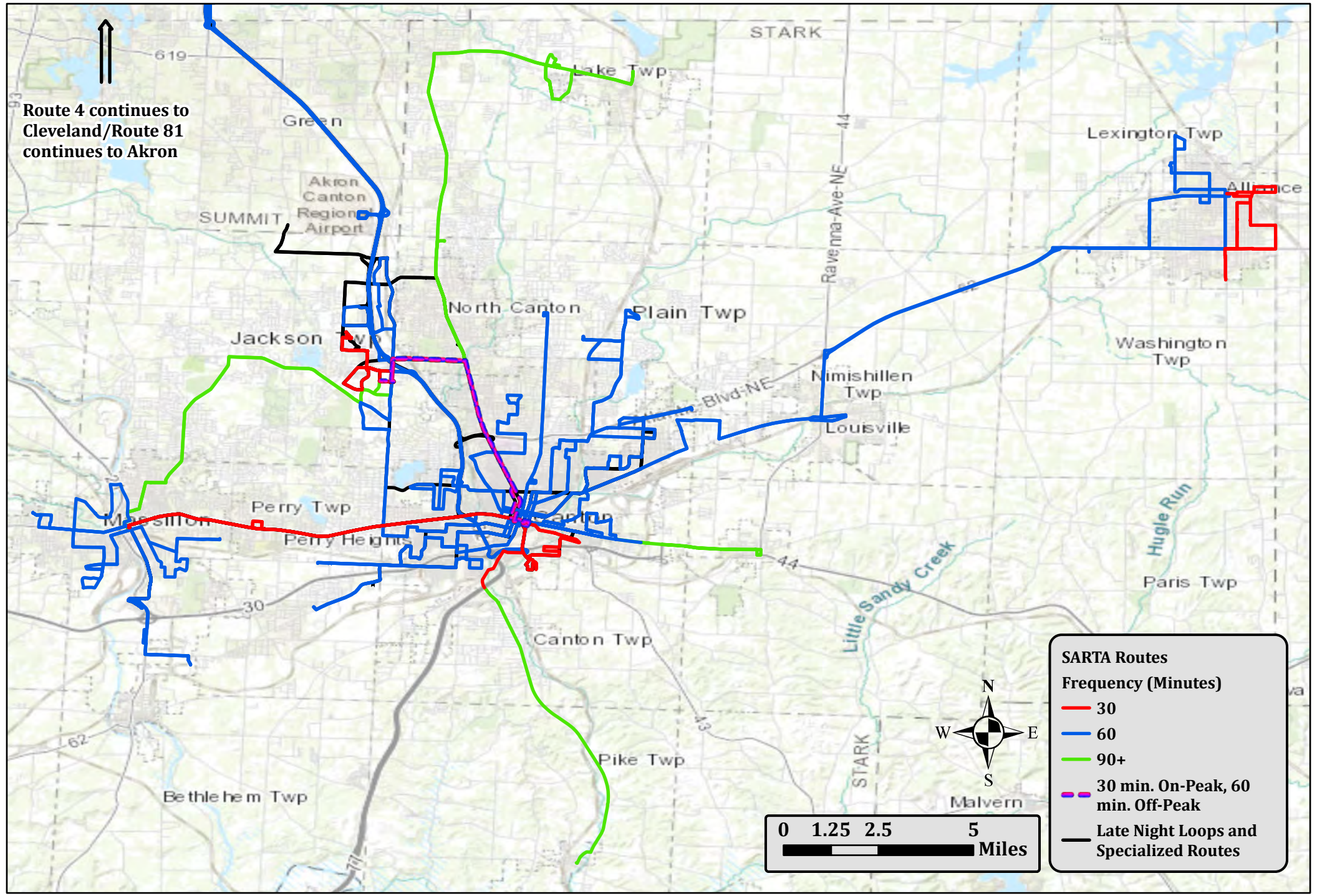


SARTA Bus Stop Usage
Route 128

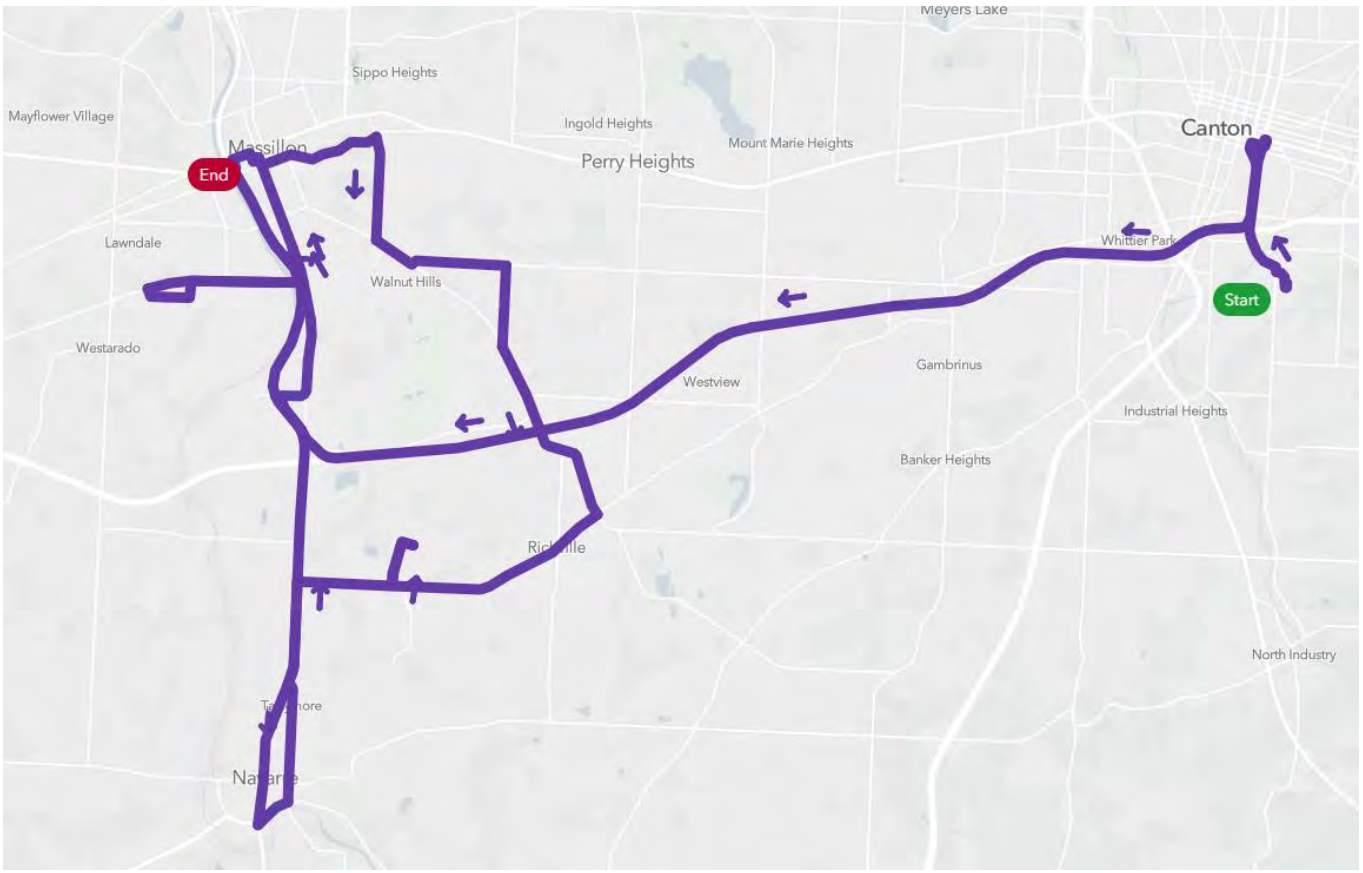


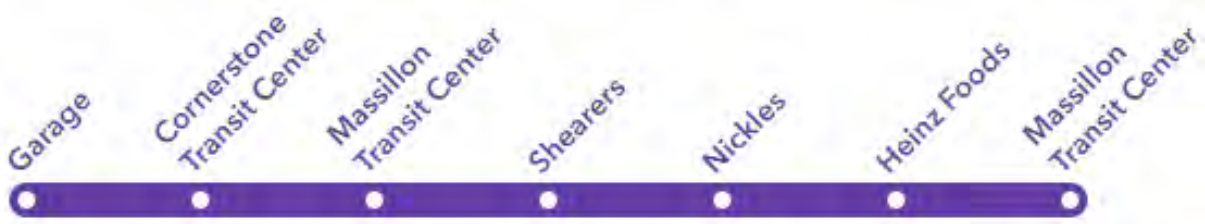
SARTA Fixed Route Frequencies

Monday - Friday



Massillon Employment Loop 1





04:50 – 06:00 · Every 87 min · 1 trip (inbound)

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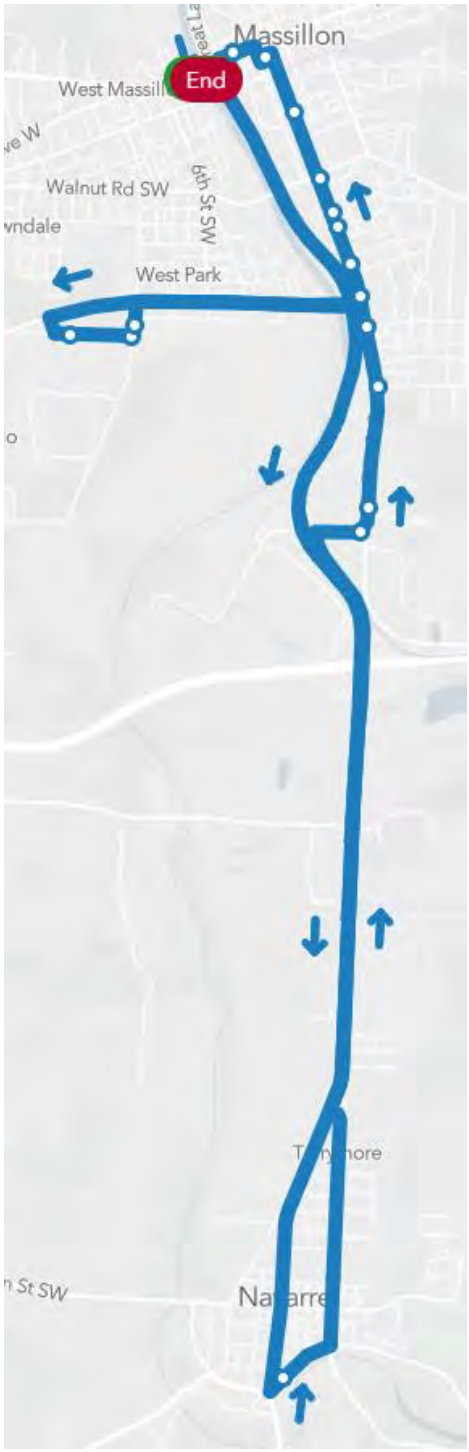
A	04:50	04:55	05:15	05:30	05:42	05:54	06:00

Massillon Employment Loop 2



06:05 – 06:35 · Every 37 min · 1 trip (inbound)

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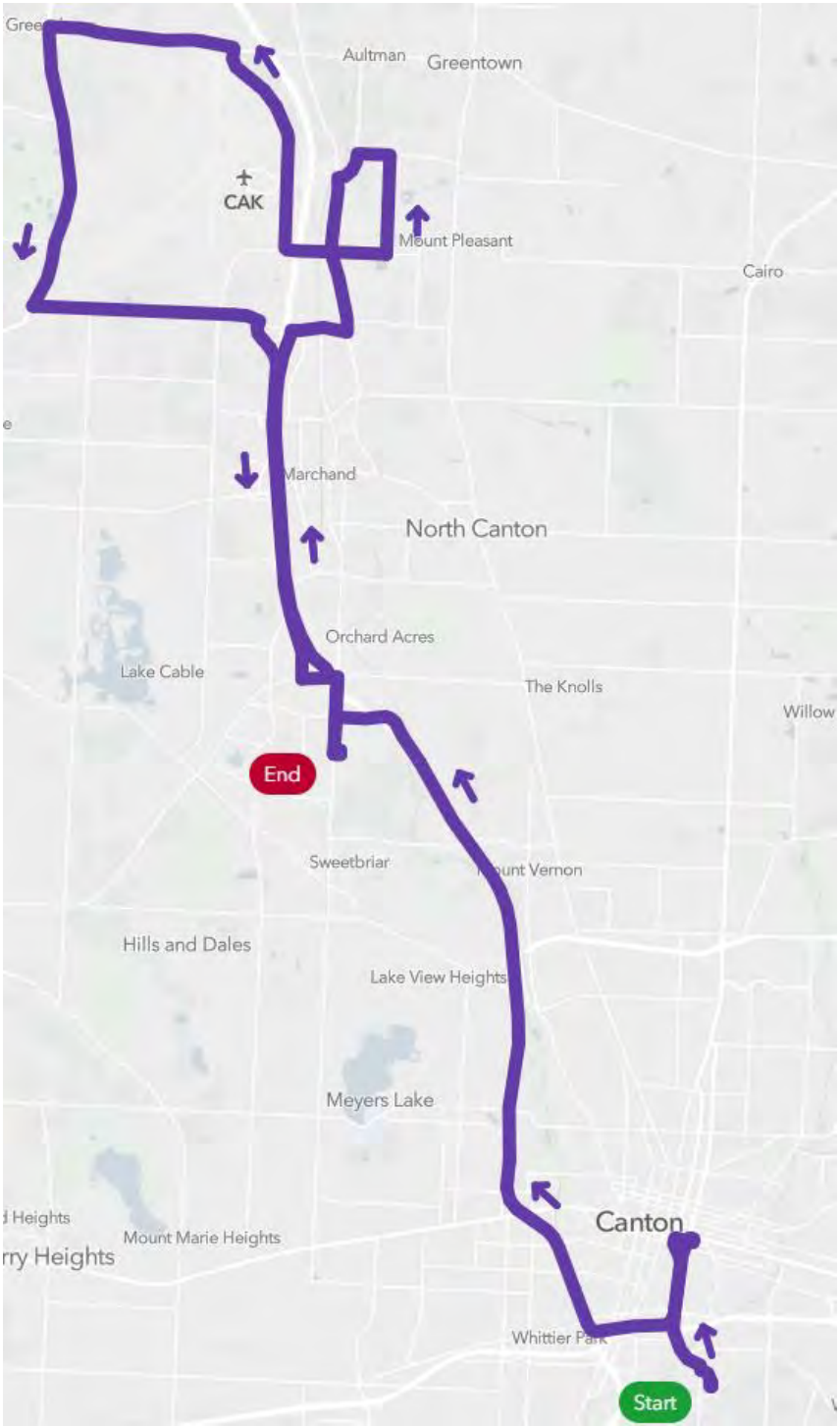
North Canton Employment Loop 1



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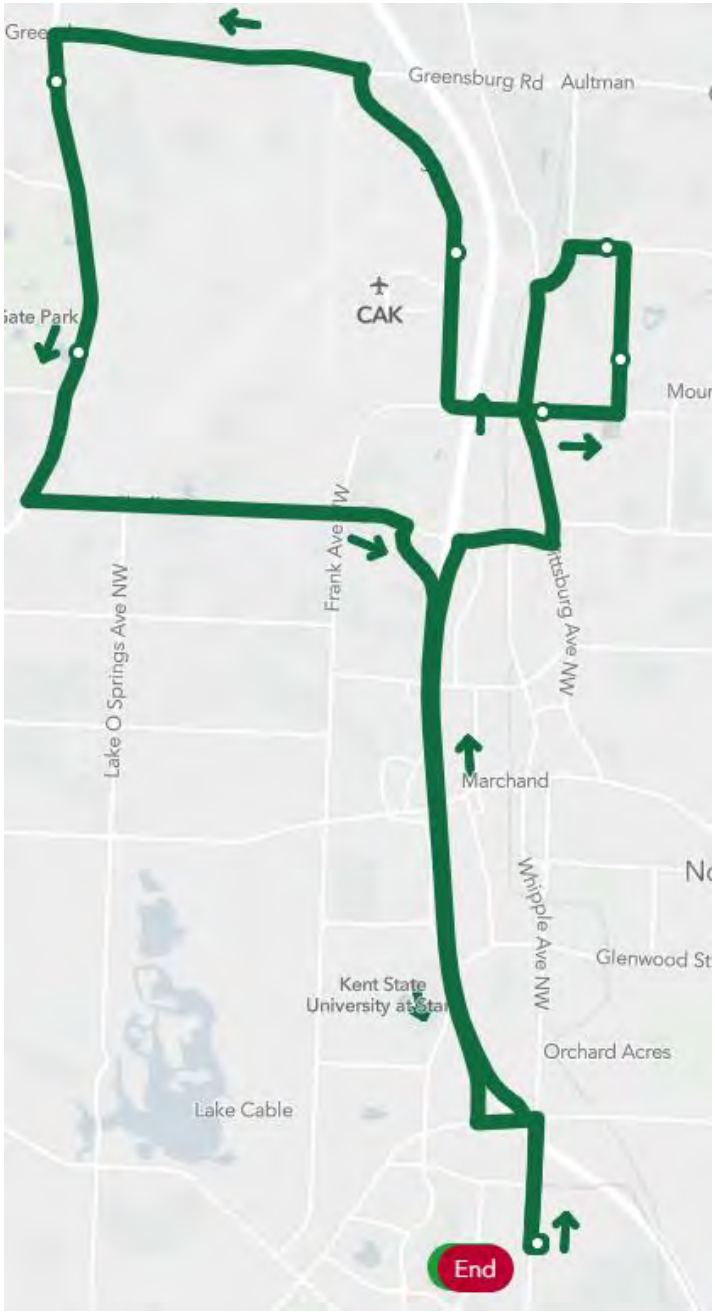
North Canton Employment Loop 2



05:40 – 06:15 · Every 43 min · 1 trip (inbound)

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