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City of Spartanburg,
Spartanburg Area Regional
Transit Agency (SPARTA)

COMPREHENSIVE OPERATIONAL ANALYSIS

DRAFT | March 2020

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Prepared for:

City of Spartanburg
Spartanburg Area Regional Transit Agency (SPARTA)

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1. Executive Summary

The City of Spartanburg initiated a Comprehensive Operational Analysis (COA) of its transit system with the intent of understanding current needs and opportunities for improvement and to better serve the Spartanburg citizens improving their opportunities to access jobs, housing, education and recreational activities. The SPARTA COA looked at current operations, analyzed the routes' performance, and performed a demographic and market analysis to propose recommendations within the budgetary constraints in the short term.

This study looks beyond the short-term and provides recommendations in the mid and long-term to be implemented as funding becomes available, striving to provide a viable transportation option that enhances mobility to members of the community for years to come.

The plan was developed based on strong public involvement process. Almost 300 members of the community participated in this process; pop-up events, surveys to riders, public meetings and focus groups with key stakeholders guided the development of the study and helped the study team defining the priorities for the plan. The Steering Committee, composed by social services agencies, community colleges, the Chamber of Commerce, Spartanburg Area Transportation Study (SPATS) and City staff and other interested parties, was key in providing guidance through the development of the study. This information, along with the operational analysis, demographic and market analysis were considered when crafting the recommendations.

The main operational, capital, personnel and policy recommendations are shown below, according to the short, mid and long-terms:

Table 1-1: Short, Mid and Long-Term Recommendations

Short-term Recommendations (0 – 3 years)		Mid-term Recommendations (4 – 9 years)		Long-term Recommendations (10 + years)	
Operational Streamline existing routes Vanpool	**Capital and Technology** Shelter/benches/accessible bus stops Park and ride / Transfer Station hubs Automated Passenger Counters Automated Vehicle Location System Trip Planner	**Operational** Extended hours on weekdays Vanpool program Sunday Service Saturday's service mirroring weekdays Increase frequency on most productive routes incrementally	**Capital and Technology** Shelter/benches/accessible bus stops Replacement Vehicles Automated Passenger Counters	**Operational** New high frequency routes Flex zones	**Capital and Technology** Transfer stations Shelter/benches/accessible bus stops Replacement vehicles New vehicles
Policies Bus stop policy UDO update to incorporate transit and pedestrian amenities Creation of Citizen's Advisory Committee	**Personnel** Transit Planner		**Personnel** Create Transit Planning position		**Personnel** Create Transit Coordinator position

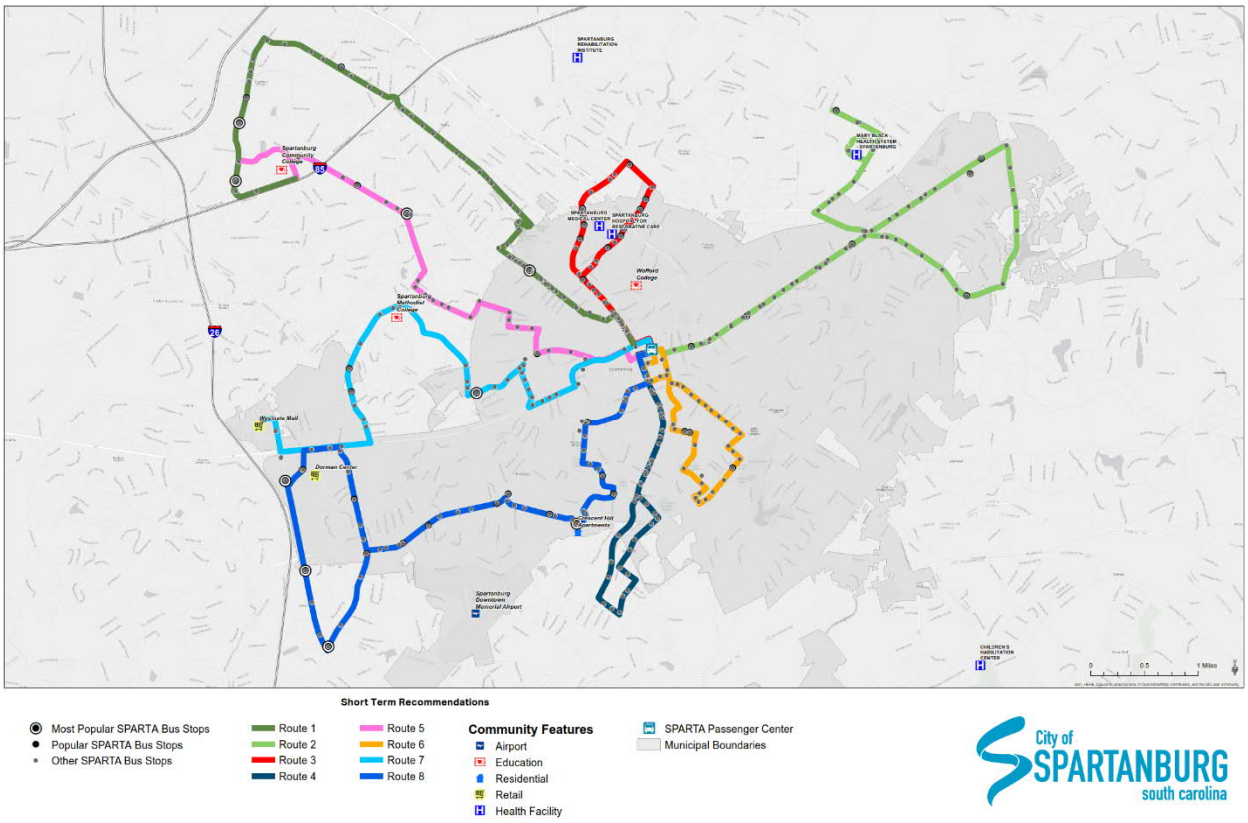
The short-term recommendations are cost and revenue neutral, therefore are designed to reinforce the existing service, strengthening the corridors and areas that have better ridership, eliminate most of the loops to make service more predictable for regular riders and serve more efficiently key destinations along the routes, avoiding redundancies, all within current budget constraints.

This scenario also includes planning for vanpool service. This service will allow SPARTA to partner with business and manufactures located outside city limits to provide job related trips.

For the capital recommendations, shelters, park and ride stations and additional technology is considered.

Personnel and Policies seek to reinforce the planning aspects of the provision of transit. Currently the city doesn't have a dedicated person to perform planning tasks and analyze trends and data to continue planning for the future. In the short-term this position will be outsourced. Updating the Unified Development Ordinance (UDO) to incorporate transit and pedestrian amenities in the development review process will strengthen transit in the long run, as new developments will provide amenities, easements or connections to bus stops when developing new sites along transit routes.

Figure 1-1: Short-term Operational Improvements



Finally, a Citizen's Advisory Committee will serve as liaison with the community and Council, and advocate for transit on behalf of the community.

The mid-term the operational recommendations include the most requested service improvement during the planning process: extension of service hours. As the city identifies additional funding, these improvements can be incorporated in stages. It is recommended to initiate the vanpool program in this stage, once partnerships have been established and funding sources have been secured.

Capital and Personnel recommendations continue building on the prior term recommendations.

In the long term the COA recommends the creation of high frequency routes and to implement micro-transit service to serve the areas where fixed route service is removed. High frequency routes should be at least every fifteen minutes to make them truly convenient and appealing to the riders and the entire community.

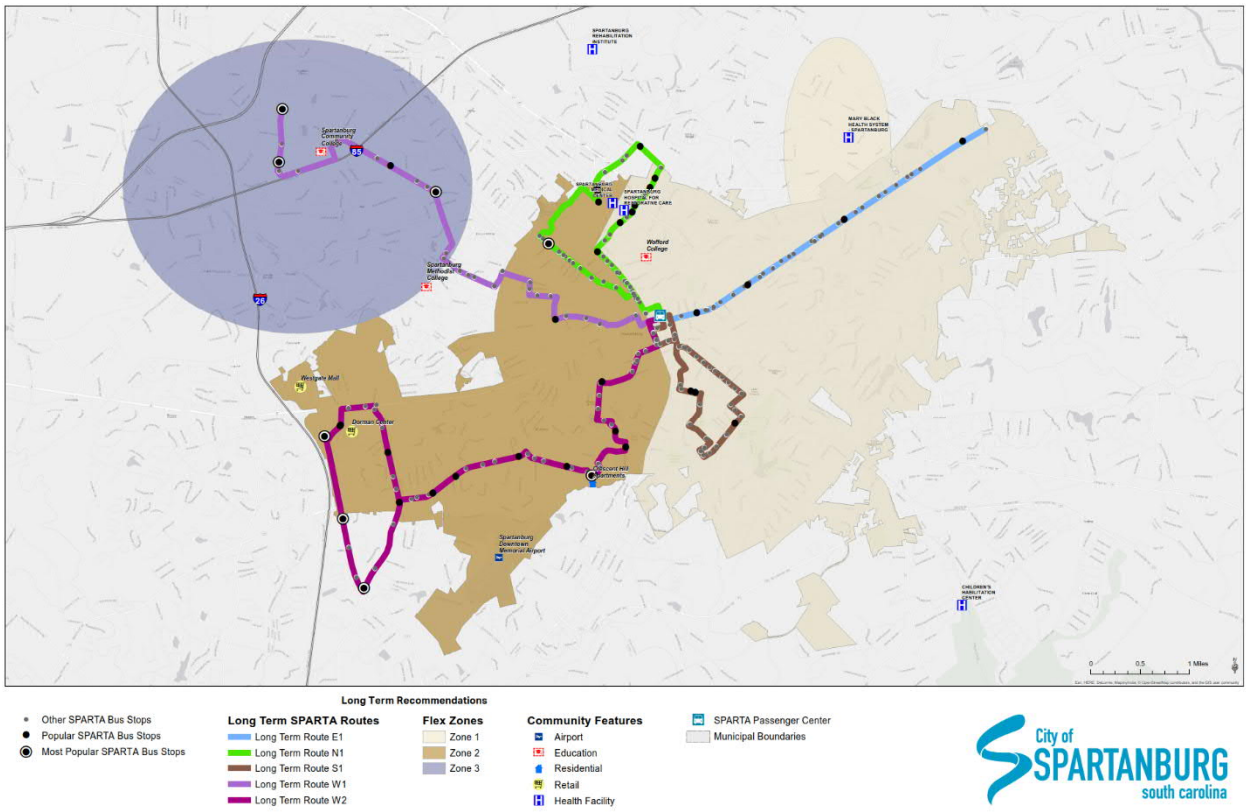
As in the prior scenario, capital and personnel recommendations continue strengthening the provision of transit.

The cost of these recommendations is summarized on table 1-2.

Table 1-2: Operating and Capital Costs

	Year	Total Operating Costs	Capital Improvement	Unit Costs
Short Term	2020	$ 1,419,744	Replacement Vehicles	$ 700,000
			Bus Shelters	$ 75,000
			Personnel (Contracted)	$ 50,000
			APC	$ 91,000
	2021	$ 1,441,040	Bus Shelters	$ 75,000
			Personnel (Contracted)	$ 50,000
	2022	$ 1,462,656	Bus Shelters	$ 75,000
			Personnel (Contracted)	$ 50,000
			Park & Ride Station	$ 50,000
Mid Term	2023	$ 2,587,432	Bus Shelters	$ 75,000
			APC	$ 64,000
			Personnel (Staff)	$ 80,000
	2024	$ 2,626,243	Replacement Vehicles	$ 1,400,000
			Cutaway	$ 80,000
			Bus Shelters	$ 75,000
			Personnel (Staff)	$ 80,000
	2025	$ 2,665,637	Replacement Vehicles	$ 700,000
			Bus Shelters	$ 75,000
			Personnel (Staff)	$ 80,000
	2026	$ 2,705,622	Bus Shelters	$ 75,000
			Personnel (Staff)	$ 80,000
	2027	$ 2,746,206	Bus Shelters	$ 75,000
			Personnel (Staff)	$ 80,000
	2028	$ 2,787,399	Bus Shelters	$ 75,000
			Personnel (Staff)	$ 80,000
Long Term	2029	$ 2,944,082	New Vehicle	$ 700,000
			Cutaway	$ 240,000
			Bus Shelters	$ 75,000
			Transfer Station	$ 150,000
			Personnel (Staff)	$ 160,000

Figure 1-2: Long-term Operational Improvements



2. Study Goals and Objectives

The goals of the Comprehensive Operational Analysis (COA) for the City of Spartanburg are:

- Analyze existing transit services, including demographic information, route performance and system-wide performance.
- Perform extensive community outreach to inform the recommendations.
- Perform a comprehensive analysis of existing services to address the current service area as well as the anticipated future growth.
- Identify innovative ways to deliver transit locally, to provide effective mobility options to improve access to jobs, health services, shopping, attractions and education.
- Identify service improvements in the short, medium and long term, including capital, and personnel needs and a financial plan.

3. Existing Transit Conditions

Public transportation in the City of Spartanburg includes fixed route bus service provided by SPARTA, as well as paratransit service in the same service area, provided by the Spartanburg County Transportation Service Bureau. Other smaller demand-response services operate within Spartanburg County, however, the following Existing Conditions analysis and the COA itself are focused on the fixed route services provided by SPARTA.

SPARTA

The Spartanburg Area Regional Transit Agency (SPARTA) provides bus service within the City of Spartanburg, South Carolina as well as nearby destinations outside of the city limits in unincorporated Spartanburg County. SPARTA currently provides eight local bus routes, all operating out of a central Passenger Center in downtown Spartanburg. Paratransit service is also provided via the Spartanburg County Transportation Service Bureau.

Fare Structure

SPARTA fareboxes currently accept two methods of payment – either cash or a fare pass card. Passes are available in 1-day, 5-day, 31-day, or 10-ride increments. Table 2-1 provides the fare structure for single rides and multi-day/multi-ride passes.

A Half-Fare Program is available to those who are 65 years of age or older, individuals who are Medicare recipients, or individuals who have a physical or mental disability that is verified by a physician.

Table 3-1: SPARTA Fare Structure

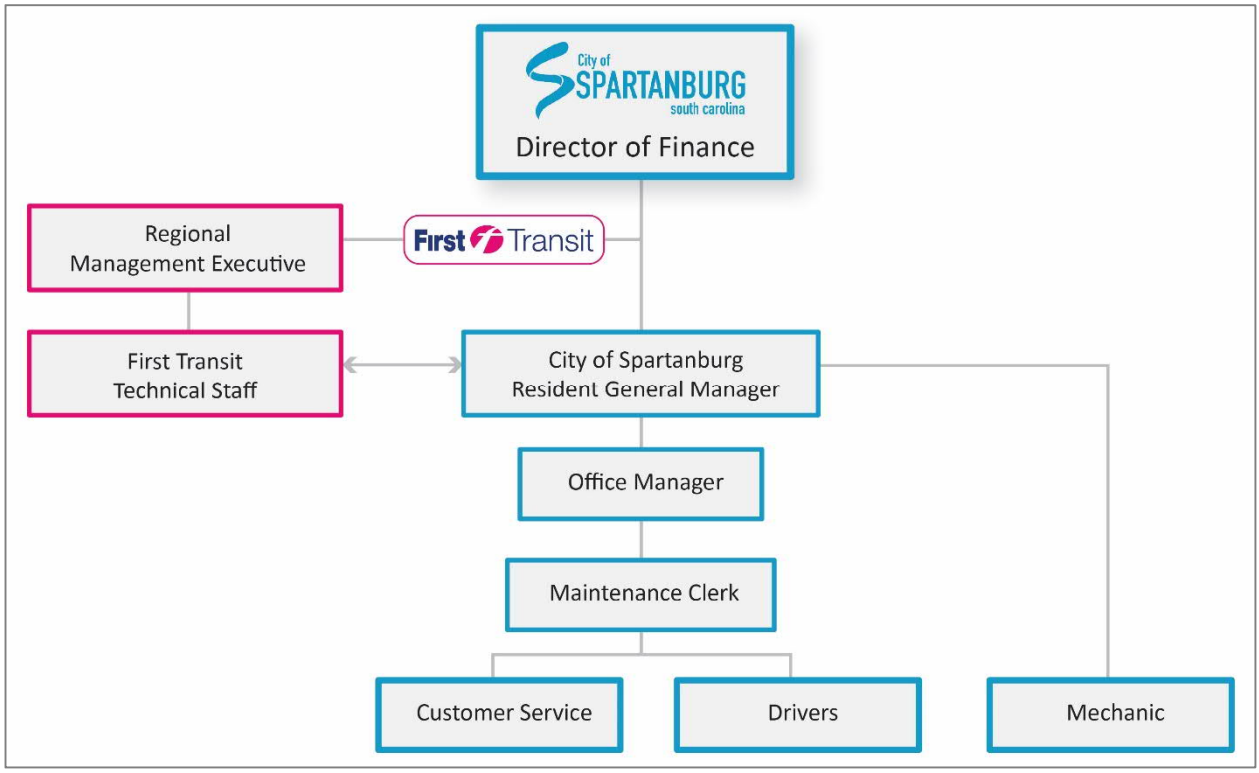
Fare Type	Regular Fare	Elderly, Disabled	Student
Local Bus/ Single Fare	$1.25 per ride	$0.75 per ride	$0.75
Off Peak Reduced Fare (9am – 3pm)	-	$0.50	-
Children (under 3 ft. in height)	Free		
Transfer to Local Routes	$0.30		
ADA Paratransit Trip	Complementary for Qualified Riders (requires application)		
Local 1-Day Pass	$2.50	$1.25	$1.25
Local 5-Day Pass	$11.25	$6.25	$6.25
Local 10-Ride Pass	$11.25	$6.25	$6.25
Local 31-Day Pass	$37.50	$18.75	$18.75

Source: SPARTA website, 2019.

Governance and Management

SPARTA is a department within the City of Spartanburg, and is headed by a General Manager, which reports to the City's Director of Finance. SPARTA employees include office management and administration staff, customer service staff, a maintenance crew, and bus operators (drivers). SPARTA contracts out transit operations to First Transit, a private organization that provides technical, maintenance, and operator staff support. Figure 2-1 shows the organization of SPARTA and First Transit staff.

Figure 3-1: SPARTA (City of Spartanburg) Organizational Chart



Source: Rider, 2018.

SPARTA Passenger Center & Passenger Amenities

All SPARTA routes are based out of the SPARTA Passenger Center, located at 100 Liberty Street in downtown Spartanburg. The local Greyhound intercity bus station is also co-located at the passenger center.

The Passenger Center is open Monday through Friday from 6:00 a.m. to 6:00 p.m., and open Saturdays from 10:00 a.m. to 6:00 p.m.

The Spartanburg Bus Services office and bus operations and maintenance facility is located at 150 Air Flow Drive in southwest Spartanburg immediately west of the Spartanburg Downtown Memorial Airport.

Vehicle Fleet

The SPARTA vehicle fleet consists of eight buses, two hybrid buses, and one cutaway bus. Seating on the SPARTA vehicles ranges from 29 to 31 seats, including 3 to 5 non-ambulatory seats for elderly or disabled passengers, with an approximate average of 26 ambulatory and 4 non-ambulatory seats per vehicle. All of the bus vehicles are lift equipped and can accommodate up to two wheelchair bound patrons. All of SPARTA's fleet is 2012 or later, including three Gillig buses purchased in 2019. SPARTA's younger vehicle fleet allows it to provide quality transit service with minimal vehicle breakdowns and lower maintenance costs. The existing vehicle fleet is summarized in Table 3-2.

The Federal Transit Administration (FTA) has a minimum useful life policy in place for transit vehicles procured with federal money. The "useful life" refers to the recommended age and mileage that should be reached before having to replace a vehicle. This standard is determined based on the type of vehicle. Based on the most recent guidance from FTA Circular 5010.1E Grant Management Requirements, the minimum useful life for buses is 12 years of service, or 500,000 miles, whichever comes first.[1] The useful life for the cutaway buses is 7 years or 200,000 miles; and for the vans it is 4 years or 100,000 miles. Based on these FTA criteria, SPARTA's Goshen Cutaway bus has met its useful life and is eligible to be replaced.

Table 3-2: SPARTA Vehicle Fleet

Vehicle Type	Make – Model (Year)	Ambulatory Seats (avg)	Non-Ambulatory Seats (avg)	Age (Years)
CU – Cutaway Bus	GOSHEN (2012)	26	4	8
BU - Bus	GILLIG (2012)	26	4	8
BU - Bus	GILLIG (2012)	26	4	8
BU - Bus	GILLIG HYBRID (2012)	26	4	8
BU - Bus	GILLIG HYBRID (2013)	26	4	7
BU - Bus	GILLIG (2017)	26	4	3
BU - Bus	GILLIG (2017)	26	4	3
BU - Bus	GILLIG (2017)	26	4	3
BU - Bus	GILLIG (2019)	26	4	1
BU - Bus	GILLIG (2019)	26	4	1
BU - Bus	GILLIG (2019)	26	4	1

Source: SPARTA,

SPARTA Bus Routes

SPARTA operates seven local routes and one regional route, which are described below and shown on Figure 3.2. Each route is numbered and associated with a color. All routes pulse once an hour headway out of the Passenger Center. The local routes serve concentrations of residential areas (particularly multi-family housing developments and concentrations of transportation-disadvantaged populations) and major activity centers (including regional shopping centers and other employment sites). The routes are operated primarily within the City of Spartanburg, but also extend into the county. Route performance profiles were developed for the SPARTA routes to examine their operating characteristics.

Route 1 (Westgate)

Route 1 (Westgate) provides service to the west side of Spartanburg, between Spartanburg Passenger Center in downtown and Westgate Mall. Points of interest include Westgate Mall, Market Square Shopping Center, Camelot

[1] FTA Circular 5010.1E Grant Management Requirements, page IV-25, 2018.

Center, Jesse Bobo Elementary School, Spartanburg Methodist College, and City Hall. Service runs 10 times per day every weekday between 6:30am and 5:30pm, and seven times per day on Saturdays from 10:35am and 5:30pm.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	6:30 am-5:30 pm	10:35 am-5:30 pm
Frequency (min.)		
Peak	60	n/a
Base	60	60
Evening	n/a	n/a
One-way Trips		
Peak	10	n/a
Base	10	14
Evening	0	n/a
Total	20	14
Max. Buses Required	1	1
Daily Miles and Hours		
Revenue Miles	143	107
Revenue Hours	10	7.5

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	5,020	810
Trips	440	56
Rev. Miles	3,148	428
Rev. Hours	220	30
Operating Cost [2]	$14,146	$1,929
Fare Revenue [3]	$2,580	
Service Productivity		
Pass. per Trip	11.4	14.5
Pass. per Rev. Mile	1.6	1.9
Pass. per Rev. Hour	22.8	27.0
Economic Productivity		
Cost per Rev. Mile	$4.49	$4.51
Cost per Pass.	$2.82	$2.38
Farebox Ratio	16.0%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 2 (Hillcrest)

Route 2 provides service extending to the northeast of Spartanburg from the Passenger Center, primarily along U.S. 29 (E. Main Street). Points of interest along this route include Mary Black Hospital, Hillcrest Specialty Row, Walmart Super Center, Converse College, and McCracken Junior High School. The new Spartanburg High School (currently under construction) is also located along this route. Service runs eight times per day every weekday between 7:25am and 5:25pm.

Daily Service Statistics		
Measures	Day of Week	
	Weekday	Saturday
Service Hours	7:25 am-5:25 pm	11:30 am-6:00 pm
Frequency (min.)		
Peak	60	n/a
Midday	60	120
Evening	n/a	n/a
One-way Trips		
Peak	6	0
Midday	10	4
Evening	0	0
Total	16	4
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	144	59
Revenue Hours	10	4

Monthly Service Statistics		
Measures	Day of Week	
	Weekday	Saturday
Ridership [1]	3,983	218
Trips	352	16
Rev. Miles	3,172	236
Rev. Hours	200	20
Operating Cost [2]	$12,860	$1,286
Fare Revenue [3]	$1,935	
Service Productivity		
Pass. per Trip	11.3	13.7
Pass. per Rev. Mile	1.3	0.9
Pass. per Rev. Hour	19.9	10.9
Economic Productivity		
Cost per Rev. Mile	$4.05	$5.46
Cost per Pass.	$3.23	$5.89
Farebox Ratio	13.7%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 3 (N. Church Street)

Route 3 provides service north of the Passenger Center, primarily along North Church Street, E. Pearl Street, and McCravy Drive. Destinations served by this route include the Social Security Office, Spartanburg Marriott Renaissance, Spartanburg Administrative Building, Spartanburg Memorial Auditorium, Wofford College, and Pinewood Shopping Center. Service runs 10 times every weekday between 6:30 a.m. and 5:55 p.m. and eight times per day on Saturdays between 10:30 a.m. and 5:55 p.m.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	6:30 am-5:55 pm	10:30 am-5:55 pm
Frequency (min.)		
Peak	30	n/a
Midday	60	60
Evening	n/a	n/a
One-way Trips		
Peak	22	0
Midday	18	6
Evening	0	0
Total	40	6
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	82	41
Revenue Hours	9	4

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	3,786	182
Trips	880	24
Rev. Miles	1,804	166
Rev. Hours	187	16
Operating Cost [2]	$12,024	$1,029
Fare Revenue [3]	$1,720	
Service Productivity		
Pass. per Trip	4.3	7.6
Pass. per Rev. Mile	2.1	1.1
Pass. per Rev. Hour	20.2	11.4
Economic Productivity		
Cost per Rev. Mile	$6.66	$6.21
Cost per Pass.	$3.18	$5.65
Farebox Ratio	13.2%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 4 (S. Church Street)

Route 4 provides service south from the Passenger Center along S. Church Street down to Airport Road/South Ave., south of the city limits. Destinations served by this route include Chapman Cultural Center, Spartanburg County Library, Spartanburg Main Post Office, Spartanburg Rehabilitation Workshop, Carver Junior High School, and Woodson Recreation Center. Route 4 operates 10 times every weekday between 6:05a.m. and 5:55pm, and eight times every Saturday between 10:05am and 5:25pm.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	6:05 am-5:55 pm	10:05 am-5:25 pm
Frequency (min.)		
Peak	30	n/a
Midday	60	60
Evening	n/a	n/a
One-way Trips		
Peak	24	0
Midday	16	6
Evening	0	0
Total	40	6
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	135	41
Revenue Hours	12	4

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	4,722	273
Trips	880	24
Rev. Miles	2,968	166
Rev. Hours	253	16
Operating Cost [2]	$16,268	$1,029
Fare Revenue [3]	$2,273	
Service Productivity		
Pass. per Trip	5.4	11.4
Pass. per Rev. Mile	1.6	1.6
Pass. per Rev. Hour	18.7	17.1
Economic Productivity		
Cost per Rev. Mile	$5.48	$6.21
Cost per Pass.	$3.45	$3.77
Farebox Ratio	13.1%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 5 (Spartanburg Community College)

Route 5 extends northwest beyond the city limits of Spartanburg, primarily along Asheville Highway. Destinations served by this route include Spartanburg Memorial Auditorium, Wofford College, Spartanburg County Administrative Building, Northtown Shopping Center, USC-Upstate, South Carolina Department of Motor Vehicles, and Spartanburg Community College. Buses for this route run 10 times every weekday between 6:35am and 5:25pm.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	6:35 am-5:25 pm	10:05 am-5:00 pm
Frequency (min.)		
Peak	60	n/a
Midday	60	120
Evening	n/a	n/a
One-way Trips		
Peak	12	0
Midday	8	4
Evening	0	0
Total	20	4
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	146	59
Revenue Hours	10	4

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	3,545	146
Trips	440	16
Rev. Miles	3,219	236
Rev. Hours	220	16
Operating Cost [2]	$14,146	$1,029
Fare Revenue [3]	$1,597	
Service Productivity		
Pass. per Trip	8.1	9.1
Pass. per Rev. Mile	1.1	0.6
Pass. per Rev. Hour	16.1	9.1
Economic Productivity		
Cost per Rev. Mile	$4.39	$4.37
Cost per Pass.	$3.99	$7.07
Farebox Ratio	10.5%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 6 (S. Liberty Street)

Route 6 provides service south of downtown Spartanburg, primarily along S. Liberty Street. Destinations served by this route include The George USC, Spartanburg County Library, Liberty Square Town Houses, Mary H. Wright Elementary School, and Carver Junior High School. Route 6 operates 17 times daily between 7:05am and 5:55pm on weekdays, and eight times daily on Saturdays between 10:30am and 5:55pm.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	7:05 am-5:55 pm	10:30 am-5:55 pm
Frequency (min.)		
Peak	30	n/a
Midday	60	60
Evening	n/a	n/a
One-way Trips		
Peak	20	0
Midday	14	6
Evening	0	0
Total	34	6
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	103	49
Revenue Hours	10	4

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	4,654	177
Trips	748	24
Rev. Miles	2,259	195
Rev. Hours	220	16
Operating Cost [2]	$14,146	$1,029
Fare Revenue [3]	$2,273	
Service Productivity		
Pass. per Trip	6.2	7.4
Pass. per Rev. Mile	2.1	0.9
Pass. per Rev. Hour	21.2	11.1
Economic Productivity		
Cost per Rev. Mile	$6.26	$5.29
Cost per Pass.	$3.04	$5.81
Farebox Ratio	15.0%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 7 (Crestview)

Route 7 provides service to points southwest of downtown Spartanburg. Destinations along this route include the Beacon Drive-In, Frank M. Gooch Homes, The Early Learning Center at Park Hills, and Crescent Hill Apartments. This routes runs 19 times per day on weekdays between 6:05am and 5:55pm, and eight times on Saturdays between 10:05am and 5:30pm.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	6:05 am-5:55 pm	10:05 am-5:30 pm
Frequency (min.)		
Peak	30	n/a
Midday	60	60
Evening	n/a	n/a
One-way Trips		
Peak	24	0
Midday	14	6
Evening	0	0
Total	38	6
Max. Buses Required	1	0.5
Daily Miles and Hours		
Revenue Miles	120	49
Revenue Hours	8	4

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	3,584	266
Trips	836	24
Rev. Miles	2,640	195
Rev. Hours	176	16
Operating Cost [2]	$11,317	$1,029
Fare Revenue [3]	$1,597	
Service Productivity		
Pass. per Trip	4.3	11.1
Pass. per Rev. Mile	1.4	1.4
Pass. per Rev. Hour	20.4	16.6
Economic Productivity		
Cost per Rev. Mile	$4.29	$5.29
Cost per Pass.	$3.16	$3.87
Farebox Ratio	12.9%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

Route 8 (Dorman Centre)

Route 8 provides service west of downtown Spartanburg, primarily along US 29 and South Carolina 296. This route serves destinations including Kensington Manor Apartments, Spartanburg Memorial Airport, SPARTA's offices, the Dorman Centre Shopping Center, Westgate Mall, Sam's Club and Academy Sports. This route runs 10 times per day between 7:00am and 6:00pm on weekdays.

Daily Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Service Hours	7:00 am-6:00 pm	n/a
Frequency (min.)		
Peak	60	n/a
Midday	60	n/a
Evening	n/a	n/a
One-way Trips		
Peak	10	0
Midday	10	0
Evening	0	0
Total	20	0
Max. Buses Required	1	0
Daily Miles and Hours		
Revenue Miles	154	0
Revenue Hours	10	0

Monthly Service Statistics		
	Day of Week	
Measures	Weekday	Saturday
Ridership [1]	3,053	0
Trips	440	0
Rev. Miles	3,391	0
Rev. Hours	220	0
Operating Cost [2]	$14,146	$0
Fare Revenue [3]	$1,382	
Service Productivity		
Pass. per Trip	6.9	0.0
Pass. per Rev. Mile	0.9	0.0
Pass. per Rev. Hour	13.9	0.0
Economic Productivity		
Cost per Rev. Mile	$4.17	$0.00
Cost per Pass.	$4.63	$0.00
Farebox Ratio	9.8%	

Notes:
(1) SPARTA October 2018 Monthly Report
(2) Cost: $64.30 per revenue hour
Source: SPARTA October 2018 Monthly Report
(3) Source: SPARTA October 2018 Monthly Report
(4) Available seats used as measure -
Saturday interlined routes: Routes 2 and 5; routes 3 and 4; Routes 6 and 7

SPARTA Route Performance Evaluation

The SPARTA routes were evaluated and ranked on several transit industry standard performance measures for weekday service. These measures are:

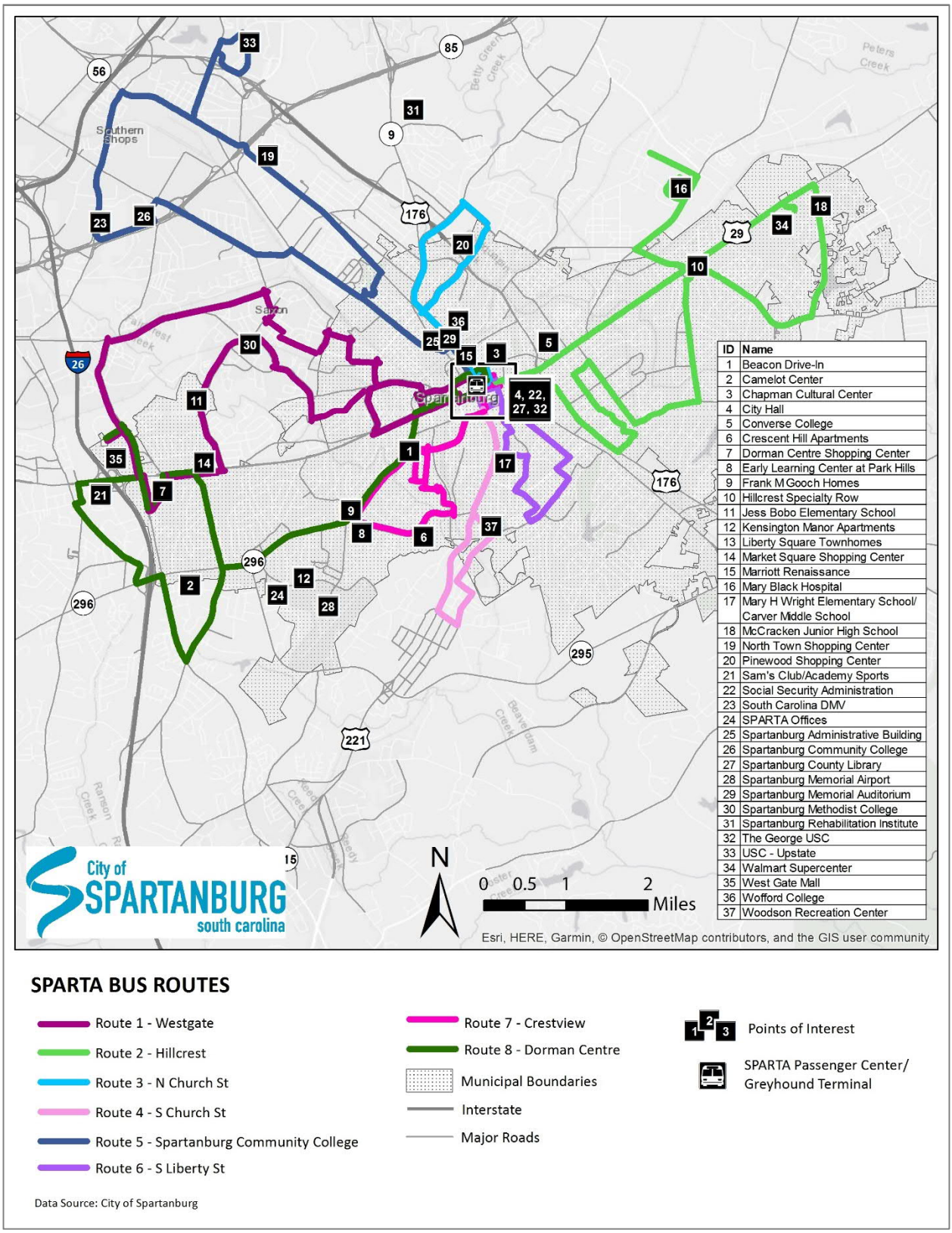
- Passengers per Revenue Hour, - which measures service productivity
- Cost per Revenue Mile - which measures economic productivity
- Farebox Recovery - which measures service efficiency

Each route was evaluated, scored and ranked on these three measures. The rankings on each measure were totaled to produce the overall route ranking. Route 1 was the best overall performing route and Routes 5 and 8 tied for last place.

Table 3-3: SPARTA Weekday Service Route Evaluation Matrix

Weekday								
	Passengers per Revenue Hour (Service Productivity)		Cost per Revenue Mile (Economic Productivity)		Farebox Recovery (Service Efficiency)			
Route	Score	Rank	Score	Rank	Score	Rank	Total Score	Overall Rank
1	22.8	1	$4.49	5	16.0%	1	7	1
2	19.9	5	$4.05	1	13.7%	3	9	2
3	20.2	4	$6.66	8	13.2%	4	16	5
4	18.7	6	$5.48	6	13.1%	5	17	6
5	16.1	7	$4.39	4	10.5%	7	18	7 (Tie)
6	21.2	2	$6.26	7	15.0%	2	11	3
7	20.4	3	$4.29	3	12.9%	6	12	4
8	13.0	8	$4.17	2	9.8%	8	18	7 (Tie)
System	19.0	-	$4.98	-	13.0%	-	-	-

Figure 3-2: SPARTA Route System

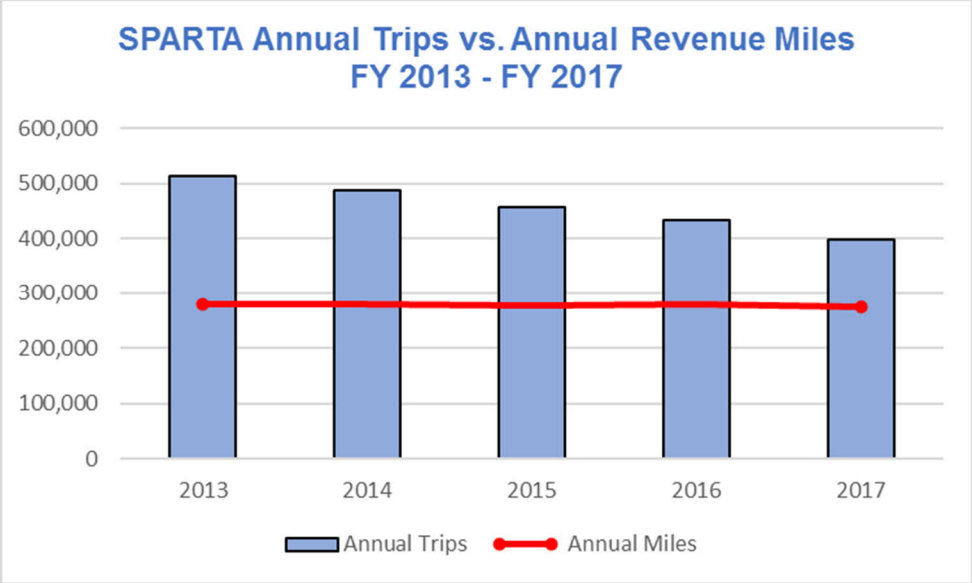


ID	Name
1	Beacon Drive-In
2	Camelot Center
3	Chapman Cultural Center
4	City Hall
5	Converse College
6	Crescent Hill Apartments
7	Dorman Centre Shopping Center
8	Early Learning Center at Park Hills
9	Frank M Gooch Homes
10	Hillcrest Specialty Row
11	Jess Bobo Elementary School
12	Kensington Manor Apartments
13	Liberty Square Townhomes
14	Market Square Shopping Center
15	Marriott Renaissance
16	Mary Black Hospital
17	Mary H Wright Elementary School/ Carver Middle School
18	McCracken Junior High School
19	North Town Shopping Center
20	Pinewood Shopping Center
21	Sam's Club/Academy Sports
22	Social Security Administration
23	South Carolina DMV
24	SPARTA Offices
25	Spartanburg Administrative Building
26	Spartanburg Community College
27	Spartanburg County Library
28	Spartanburg Memorial Airport
29	Spartanburg Memorial Auditorium
30	Spartanburg Methodist College
31	Spartanburg Rehabilitation Institute
32	The George USC
33	USC - Upstate
34	Walmart Supercenter
35	West Gate Mall
36	Wofford College
37	Woodson Recreation Center

Ridership Trends

Figure 2-3 shows SPARTA ridership figures provided by National Transit Database (NTD) agency profiles from the five most recent fiscal years (FY 2013 through FY 2017). As shown in Table 3-4:, system ridership (blue bars) has declined each year, from 513,430 annual trips in FY 2013 down to 397,546 in FY 2017. This represents a 5-year decline of 22.6%. Annual revenue miles (red line) and annual revenue hours however, have only decreased slightly. Annual miles declined from 280,078 in 2013 down to 275,128 in 2017, a decrease of 1.8%, and annual revenue hours decreased only 0.7% from 21,377 to 21,237 over the same time period.

Table 3-4: Ridership Trends



The ridership changes mirror the national trend of declining ridership in recent years. An April 2018 report by the American Public Transportation Association (APTA) titled *Understanding Recent Ridership Changes*, presents three primary explanations for the recent ridership trends seen across the nation:

- **Erosion of Time Competitiveness**

  The decrease in fuel costs and increased availability of auto loans has made personal vehicle ownership more accessible since 2014, and therefore more competitive with transit, particularly bus. The APTA report cites bus ridership down nearly 13 percent between 2000 and 2015 while rail ridership is up 46 percent.

- **Reduced Customer Affinity and Loyalty**

  Telecommuting, alternative work schedules, and online shopping are credited for declining ridership as well as rising prices for monthly transit passes. Furthermore, public transit now competes with transportation network companies (TNC) such as Uber and Lyft. The increased popularity of urban areas has displaced transit dependent riders to suburban areas, which are less accessible by transit.

- **External Factors**

  Other factors related to decreasing ridership were cited in the APTA report: increased parking availability, trip generators locating away from urban areas served by transit, and perceptions of safety. The report is relevant to the Rider service in that it makes the following recommendations that may be considered in response to declining ridership:

  - Improve transit travel times and on-time performance through dedicated lanes
  - Engage with riders through customer loyalty programs
  - Appropriately charge for parking to reflect the true cost of parking and competitiveness of transit

SPARTA Costs and Sources of Revenue

Operating Costs & Revenue

As shown in Table 2-2, SPARTA's transportation service operating costs were $1,365,527 in FY 2017. The sources of revenue for operating expenditures included farebox revenue, local, state and federal funds, and 'other' transportation funds. Approximately 14 percent, or $191,077 of the 2017 operating costs were covered by farebox revenues. Federal assistance provided approximately one-third of the operating costs at 33.1 percent or $451,598. Local funds provided 22.2 percent and state funds covered 11 percent of the operating expenses. The remaining 19.8 percent of expenses was provided by 'Other Funds'.

Table 3-5: Sources of Operating Funds Expended

Source	Funds	Pct. Share
Fare Revenue	$191,077	14.0%
Local Funds	$302,479	22.2%
State Funds	$150,621	11.0%
Federal Assistance	$451,598	33.1%
Other Funds	$269,752	19.8%
Total	**$1,365,527**	**100.0%**

Source: FTA, 2017.

'Other Funds' includes sources such as advertising, sale of property, collection of rent, and insurance proceeds. Table 2-3 shows SPARTA's overall sources of revenue, which includes farebox recovery and pass sales, local general funds, and these other transportation funds.

Table 3-6: Sources of Revenue (24 months)

Revenue	24-Month Revenue (Oct. 2016 – Oct. 2018)	Share
FAREBOX REVENUE	$291,812.02	18.0%
PASS SALES	$93,343.81	5.8%
ADVERTISING	$39,914.00	2.5%
NEWSPAPER	$671.00	0.0%
RENT	$31,856.00	2.0%
INSURANCE PROCEEDS	$25,891.13	1.6%
JOURNAL ENTRY	$67.72	0.0%
MISC. REVENUE	$630.89	0.0%
GENERAL FUNDS	$1,125,000.00	69.4%
SALE OF PROPERTY	$11,576.34	0.7%
TOTAL REVENUE	**$1,620,762.91**	**100.0%**

Capital Funding

The next table shows SPARTA's sources of capital expenses, which were $294,266 for FY 2017. Capital expenses were funded entirely through federal and local funds, at 80 percent and 20 percent, respectively. This also shows that SPARTA's capital expenditures were far less than operating expenses, which as previously reported were nearly $1.4 million in 2017.

Table 3-7: Sources of Capital Funds Expended

Source	Funds	Pct. Share
Fare Revenue	$0	0.0%
Local Funds	$58,853	20.0%
State Funds	$0	0%
Federal Assistance	$235,413	80.0%
Other Funds	$0	0.0%
Total	**$294,266**	**100.0%**

Source: FTA, 2017.

Paratransit Service (through TSB)

SPARTA provides door-to-door Paratransit van service through the Spartanburg County Transportation Service Bureau. This ADA low-cost (half fare) paratransit service is for all eligible persons anywhere within City of Spartanburg's city limits or within ¾ mile of any SPARTA fixed-routes without any restrictions on the trip's purpose. Trip reservations must be made in advance by the close of business on the day prior to the trip requested.

This service is available to those with disabilities that make them unable to utilize SPARTA fixed route service. Eligibility is determined through a two-part application process and functional assessment review process. The first step is for the rider to apply and allowing SPARTA permission to contact a medical professional who is familiar with the patron's limitations. Once the application has been completed, SPARTA sends a request to the rider's physician for him/ her complete a healthcare form. The second step is performing an ADA Paratransit Service Eligibility Determination Evaluation.

4. Demographics and Socioeconomics

Current demographic and socioeconomic characteristics of the population, employment, and travel patterns in and around the City of Spartanburg are discussed in this section. Sources of data for the analysis included the US Census Bureau American Community Survey (ACS) 5-year estimates for 2013-2017, the 2010 Decennial Census and the US Census Bureau Longitudinal-Employer Household Dynamics (LEHD) dataset for 2015. The LEHD dataset, produced through the Local Employment Dynamics Partnership, provides more detailed information on workers and work locations based on employer administrative records.

SPARTA provides public transportation services primarily within the City of Spartanburg; however, some routes extend beyond the city boundaries to key employment, medical and retail service destinations. Therefore, the analysis provided in this chapter is primarily focused on demographic and commuting patterns in the City and its vicinity. Inter- and intra-county patterns are also discussed to show home and work trips for Spartanburg residents and workers as the move into or out of the city to or from elsewhere in the region.

Population

Table 4-1 shows current populations and population growth for the City of Spartanburg, Spartanburg County, surrounding counties, and the state of South Carolina in 2010 and 2017, which represents the most recent decennial census (2010) and most recent population estimates (2017) provided by the Census Bureau. According to these data sets, the City of Spartanburg is estimated to have grown only slightly (1%) from 2010 to 2017, whereas Spartanburg County has grown by 4.7% over the same period. Of the surrounding South Carolina counties, Greenville County is by far the most populated county, it and has had the highest estimated growth rate at 8.7%, growing by 39,107 residents from 2010 to 2017. Cherokee County, the adjacent county to the northeast has had only slightly growth, with an estimated rate of 2.2%. Laurens and Union County, both to the south of Spartanburg County, as well as Polk and Rutherford Counties to the north in North Carolina, have all lost population during this time, according to the 2017 estimates.

Table 4-1: Estimated Population in Spartanburg and Surrounding Areas

Geography	Census 2010 Population	2017 Population Estimate	Difference	Percent Change	Annualized Growth Rate
City of Spartanburg	**37,013**	**37,384**	**371**	**1.0%**	**0.1%**
Spartanburg County	**284,307**	**297,732**	**13,425**	**4.7%**	**0.7%**
Greenville County	451,225	490,332	39,107	8.7%	1.2%
Laurens County	66,537	66,508	-29	0.0%	0.0%
Union County	28,961	27,722	-6,239	-4.3%	-0.6%
Cherokee County	55,342	56,549	1,207	2.2%	0.3%
Polk County, NC	20,510	20,434	-76	-0.4%	-0.1%
Rutherford County, NC	67,810	66,523	-1,287	-1.9%	-0.3%
South Carolina	**4,625,364**	**4,893,444**	**268,080**	**5.8%**	**0.8%**

Source: US Census Bureau, American Community Survey 5-year Estimates (2013-2017), Decennial Census (2010)

Figure 4-1 shows the population density within Spartanburg County, including the City of Spartanburg. Population is mostly concentrated in the center of the county, particularly in and around the City of Spartanburg, as well as north of I-85 up to Boiling Springs, and in the central-west part of the county along US 29 to the Greenville County line near the city of Greer. The majority of Spartanburg County outside these areas have populations ranging from 0 to 500 residents per acre.

Figure 4-1: Spartanburg Population Density (City and County)

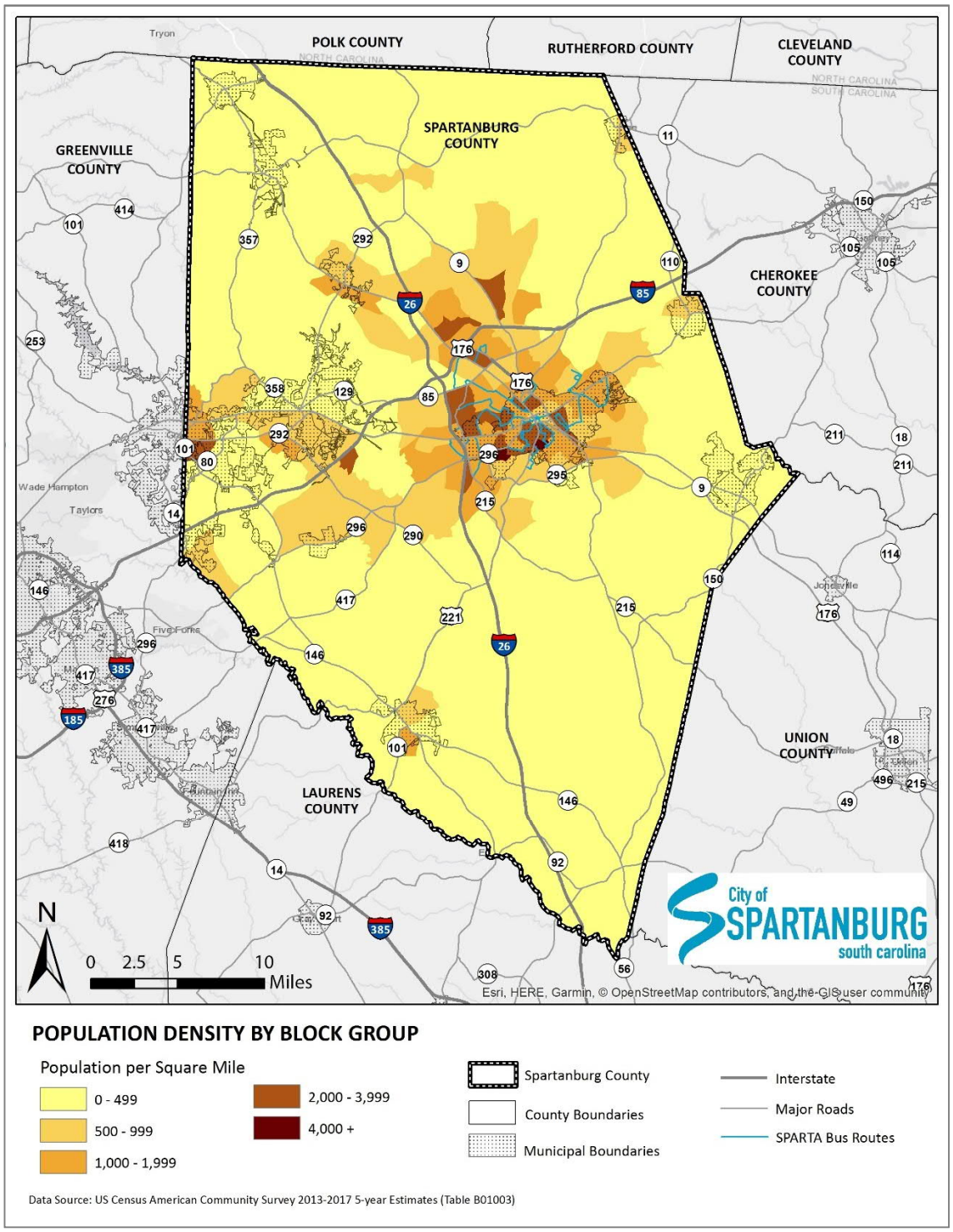
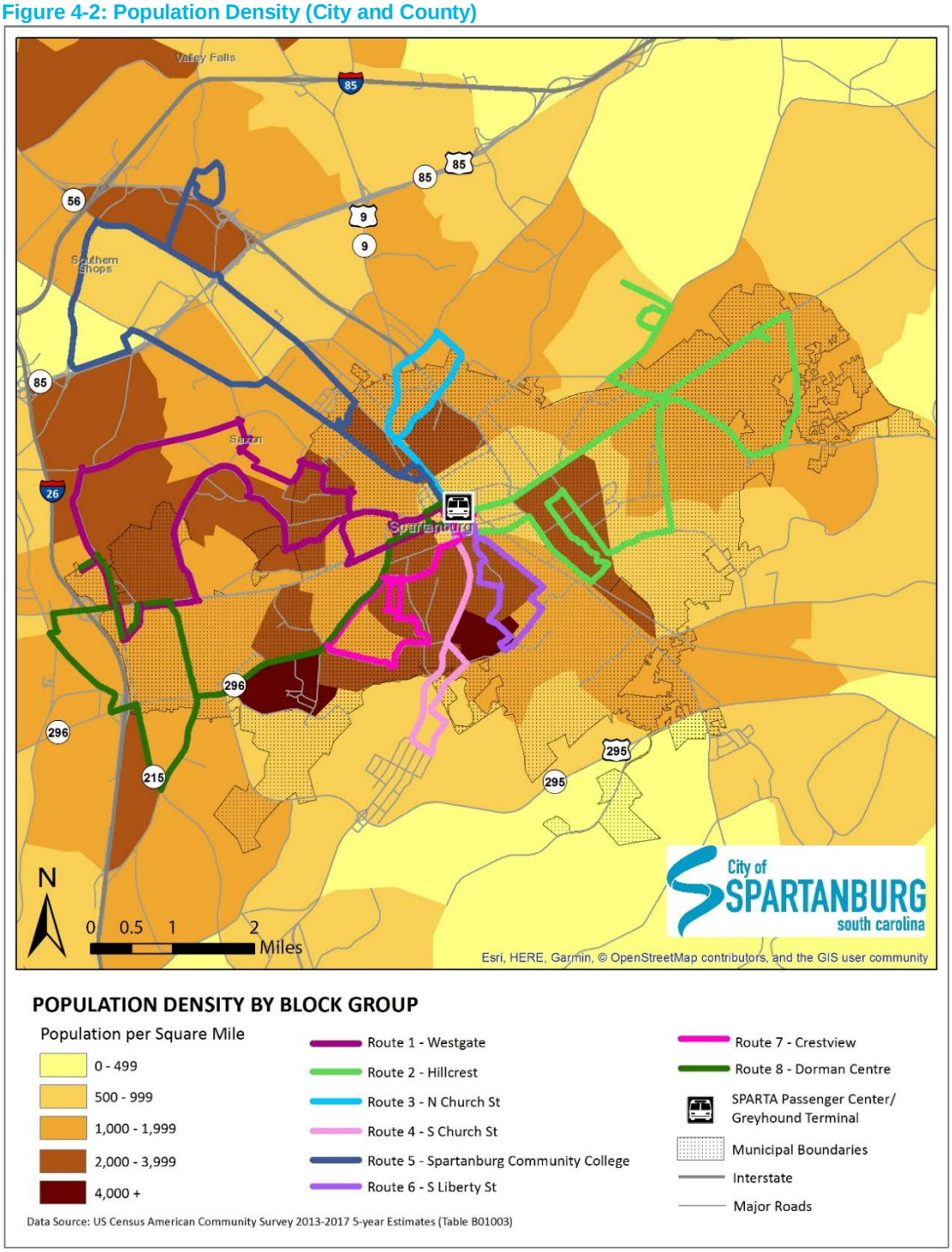


Figure 4-2 shows the population density within the City of Spartanburg by census block group. Population within the city limits is generally between 1,000 and 4,000 persons per acre, with only a few areas below or above that range. Areas nearby but outside of the city limits are generally below 1,000 persons per acre. The most concentrated populations in the city are in the south downtown area, as well immediately north of Spartanburg Downtown Memorial Airport. These two block groups have more than 4,000 persons per acre in each of these sectors. Additionally, several areas within the city and northwest of the city limits have between 2,000 and 4,000 persons per acre. For the most part, SPARTA's current routes provide transit services within or adjacent to all the census block groups that exceed 2,000 persons per acre.

Figure 4-2: Population Density (City and County)



Projected Population Growth

Table 4-2 shows population projections for Spartanburg County, surrounding counties in South Carolina and the state through 2030. According to the South Carolina Department of Revenue and Fiscal Affairs projections, Spartanburg County is expected to grow at a rate of 17.2 percent from the last Census in 2010 through 2030, adding 48,903 residents to the county. Although this is a lesser rate than projected for neighboring Greenville County (37.2 percent) and the State of South Carolina (23.9 percent), it is significant growth in comparison other adjacent counties, which are either projected to continue a population decline or grow only at a slight rate.

Table 4-2: Projected South Carolina County Population Growth

Geography	Census 2000	Census 2010	2015 Projection	2020 Projection	2025 Projection	2030 Projection	2010 to 2030 Growth	2010 to 2030 Growth
Spartanburg County	**253,791**	**284,307**	**297,088**	**310,020**	**322,220**	**333,210**	**48,903**	**17.2%**
Greenville	379,616	451,225	490,661	533,250	576,120	619,280	168,055	37.2%
Laurens	69,567	66,537	66,545	66,480	65,980	65,090	-1,447	-2.2%
Union	29,881	28,961	27,775	26,610	25,290	23,870	-5,091	-17.6%
Cherokee	52,537	55,342	56,493	56,780	57,140	57,170	1,828	3.3%
South Carolina	**4,012,012**	**4,625,364**	**4,894,834**	**5,175,800**	**5,457,700**	**5,730,490**	**1,105,126**	**23.9%**

Sources: U.S. Census, South Carolina Department of Revenue and Fiscal Affairs - Health and Demographics Section

City of Spartanburg population projections were not provided by the State of South Carolina for 2030 growth; however, the next table provides the City of Spartanburg's own population projections for 2018 and 2023 as compared to Spartanburg County, the Upstate region and state of South Carolina. The projection is that the city will grow at a similar but slightly lower rate than the rest of the county and state between 2018 and 2023.

Table 4-3: Projected Population Growth in the Service Area

Geography	Census 2010	2018 Projection	2023 Projection	Growth 2010-2023	Growth 2010-2023	Growth 2018-2023	Growth 2018-2023
City of Spartanburg	37,013	39,018	40,685	3,672	9.9%	1,667	4.3%
Spartanburg County	284,307	311,771	330,347	46,040	16.2%	18,576	6.0%
Upstate SC	1,362,073	1,482,416	1,563,925	201,852	14.8%	81,509	5.5%
South Carolina	4,625,364	5,108,693	5,437,217	811,853	17.6%	328,524	6.4%

Sources: City of Spartanburg

Transit Market Populations

Demographic and socioeconomic statistics are important in transit planning to understand the potential transit markets that exist in an area. Transit dependency is frequently related to demographic factors such as disability status, age, level of income, and vehicle availability.

Income

Income level plays a large role in the modes of transportation available to an individual or a household. Poverty levels are set annually by the US Census Bureau. For 2017, the annual income that defines the poverty threshold for a family of four is $24,600. As shown in Table 4-4 below, the City of Spartanburg has a higher rate of persons living in poverty (24.6%) as compared to Spartanburg County (13.7%) and the state of South Carolina (15.4%). Likewise, the median household income for City residents is lower at $37,920, compared to $47,575 for Spartanburg County and $48,781 for South Carolina.

The percentage of City of Spartanburg residents aged 16 or older that are in the civilian labor force is 59.0 percent, which is very similar to the percentage of Spartanburg County and South Carolina residents participating in the labor force: 61.4 percent and 59.9 percent, respectively.

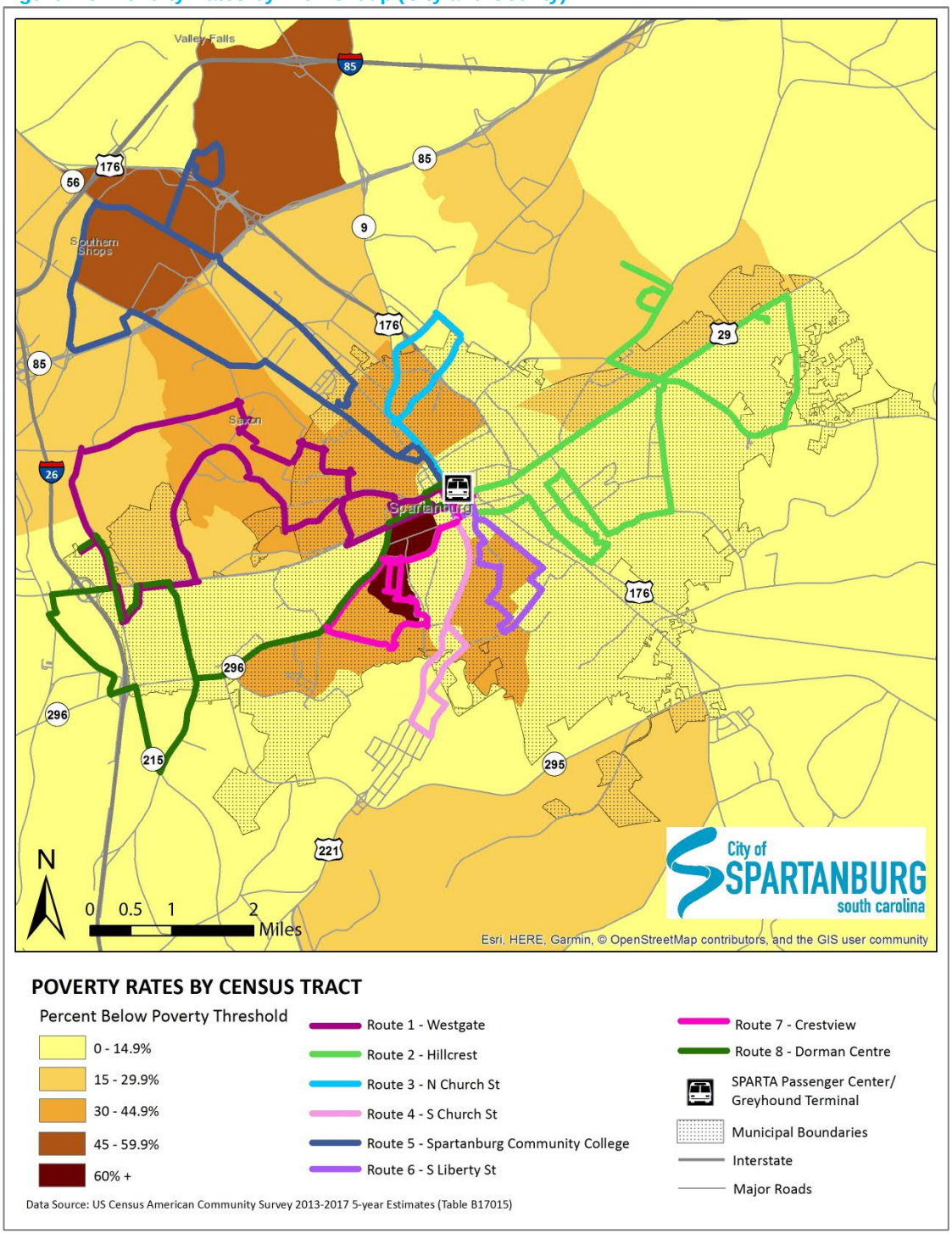
Table 4-4: Income, Poverty, Employment

	City of Spartanburg	Spartanburg County	South Carolina
Persons in Poverty	24.6%	13.7%	15.4%
Median Household Income	$37,920	$47,575	$48,781
In civilian labor force (age 16+)	59.0%	61.4%	59.9%

Source: US Census Bureau, American Community Survey (ACS) 5-year Estimates (2013-2017)

Figure 4-3 on the following page shows where the low-income populations (or persons below poverty) are concentrated in SPARTA's operating area. This figure shows the percentage of the population living below the poverty level by Census block group in and around the City of Spartanburg. The most concentrated areas of Spartanburg residents living below poverty level include the southwest quadrant of downtown Spartanburg, as well as northwest of the city limits in the areas between I-85, I-585, and I-26, which also includes University of SC Upstate and Spartanburg Community College. These two areas have greater than 60 percent of residents that live below the poverty line. Other areas of southwest and northwest Spartanburg within the city limits, and the area immediately north-northwest of the city limits have between 35 and 45 percent of residents living below poverty level. Current SPARTA bus routes run within or adjacent to all these areas.

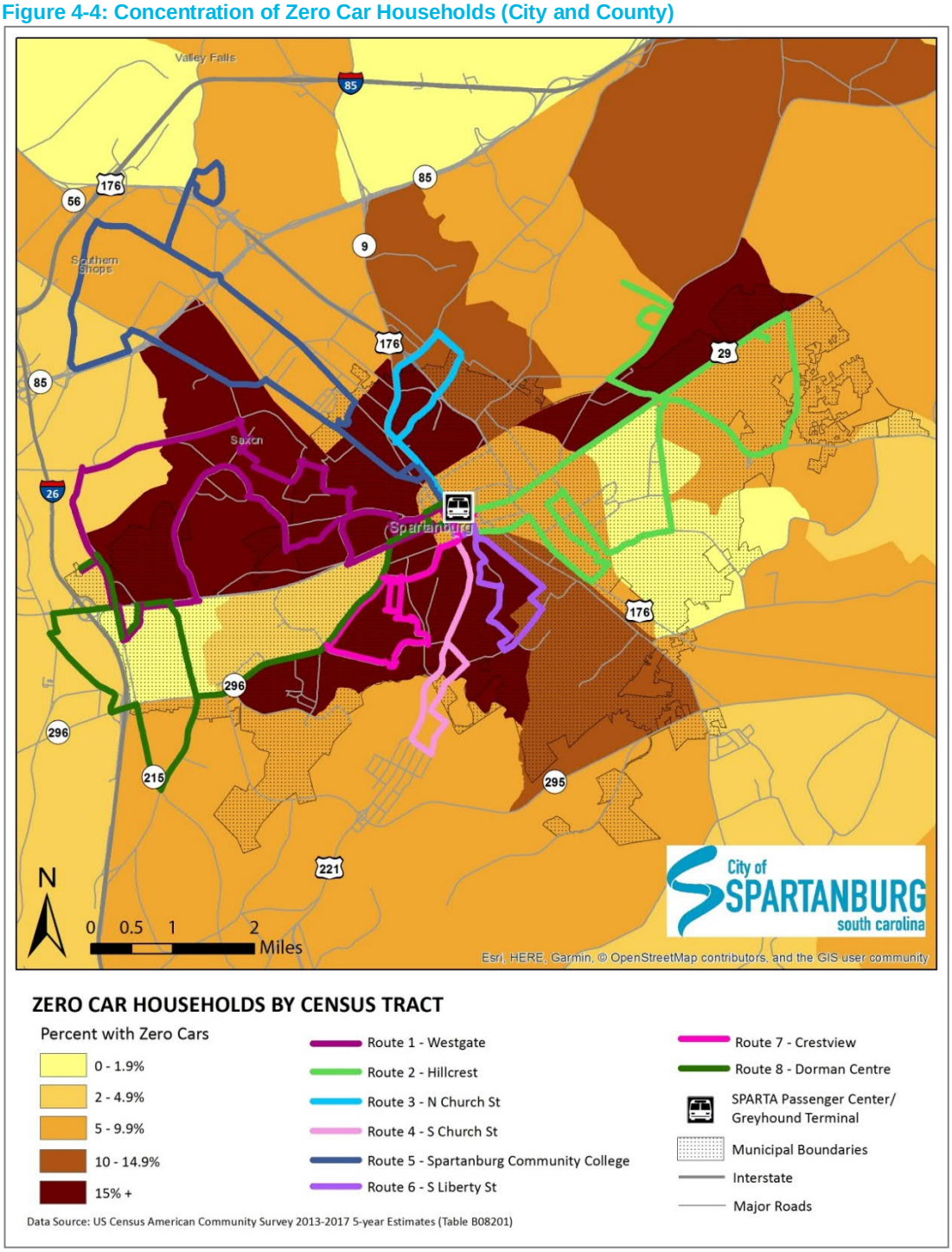
Figure 4-3: Poverty Rates by Blok Group (City and County)



Vehicle Availability

Vehicle availability is also a key factor to determining those who may rely on public transportation services. Although income can play a key factor in vehicle ownership, there are various other reasons for not having access to a vehicle, including age, physical or mental limitations, or choice. Figure 4-4 is a map of the percentage of the population that does not have access to a car. Like the areas of poverty, the highest concentrations of residents without access to a car are located to the southwest and northwest of downtown Spartanburg. There is also a high concentration of residents that live along the north side of US 29 extending northeast of downtown Spartanburg. The block groups in these areas have 15 percent or greater percentage of residents without vehicle availability. For the most part, existing SPARTA bus service is accessible to these areas. However, there are three large areas with 10 to 14 percent of residents without vehicles that are not as well covered by SPARTA bus service.

Figure 4-4: Concentration of Zero Car Households (City and County)



5. Employment & Commuting Patterns

The trip to work is often the most frequent trip taken by many people; therefore, employment characteristics are important factors in the transportation and transit discussion. Large employment centers are commonly destinations for significant numbers of work-related trips, which make these locations important to accessing transit service.

Employment Density

As shown in Figure 5-1, the City of Spartanburg and vicinity is one of the primary job centers in Spartanburg County, with several areas of concentrated jobs exceeding 11,000 jobs per acre. Other areas, particularly along I-85 and I-26 also have concentrations of jobs.

Figure 5-1: Spartanburg County Employment Density

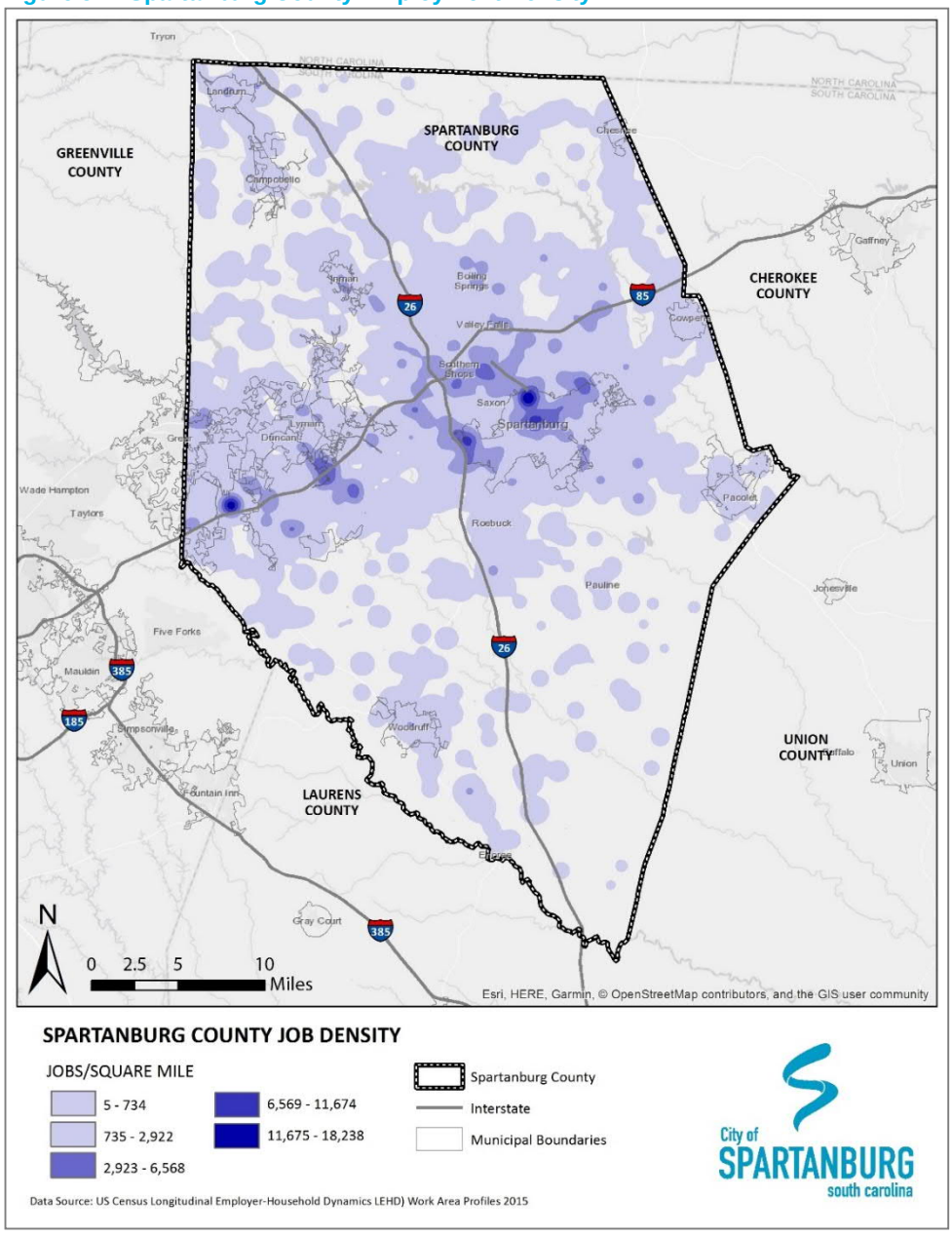
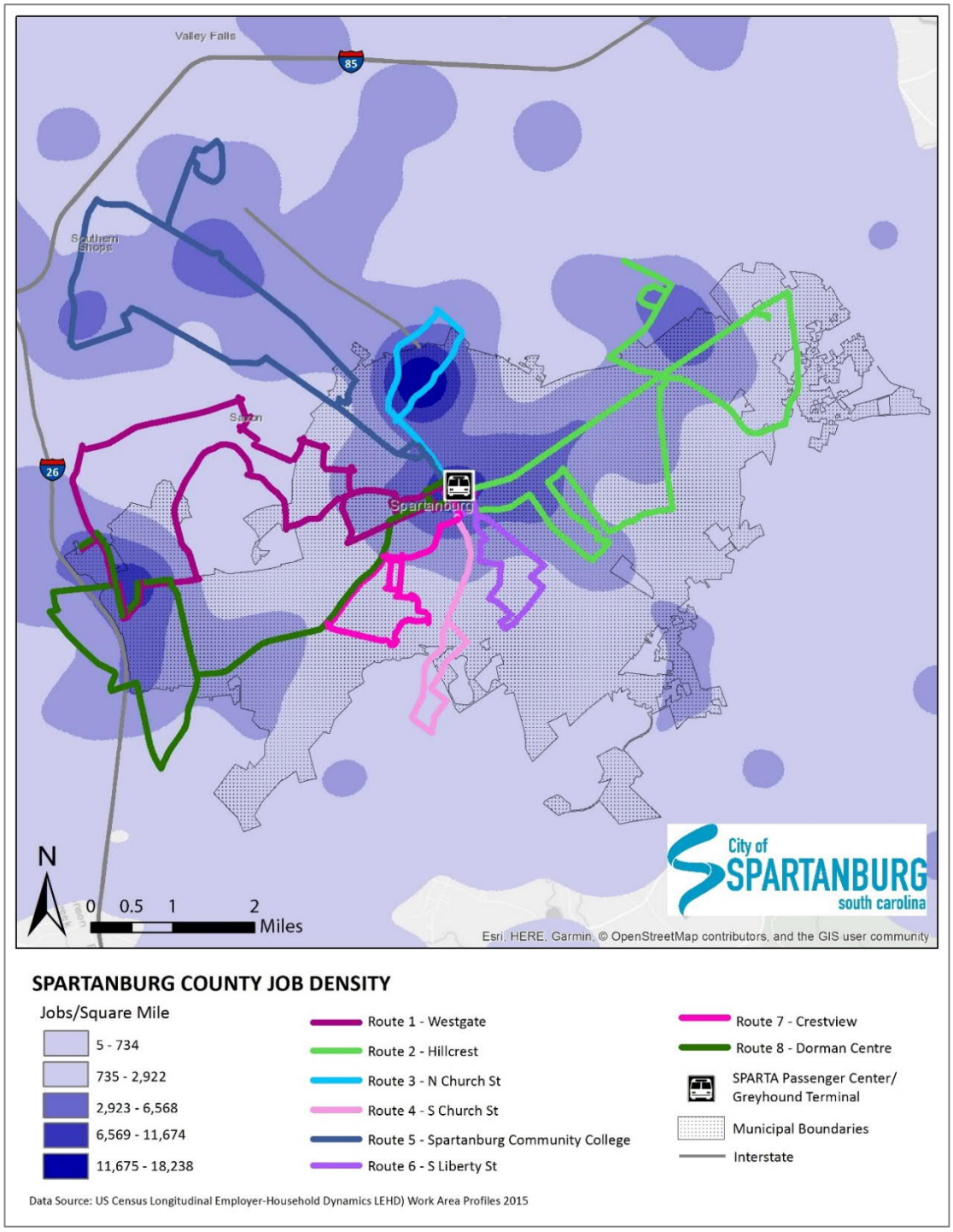


Figure 5-2 shows that within and around the City of Spartanburg, employment is concentrated in the central area of downtown Spartanburg, the north end of the city around Spartanburg Regional Hospital and Wofford College, and at

the west end of the City in the Westgate Mall area. There are also some pockets of concentrated jobs outside of the city limits around Mary Black Healthcare, USC Upstate and Spartanburg Community College. SPARTA provides service to all these locations via their existing bus routes.

Figure 5-2: Job Density in City of Spartanburg



Largest Employers

Table 5-1 and Figure 5-3 provide the top 5 employers in manufacturing and non-manufacturing sectors in Spartanburg County, as provided by the Upstate South Carolina Alliance. The largest manufacturing employer in the County, and the largest employer overall is BMW with 8,800 employees. BMW is located near Interstate 85 in western Spartanburg County near Greenville County and the Greenville-Spartanburg Airport. The largest non-manufacturing employer (and 2nd highest overall in the county) is Spartanburg Regional Healthcare System, with 6,100 employees, and it is located within the City of Spartanburg, just north of downtown and Wofford College.

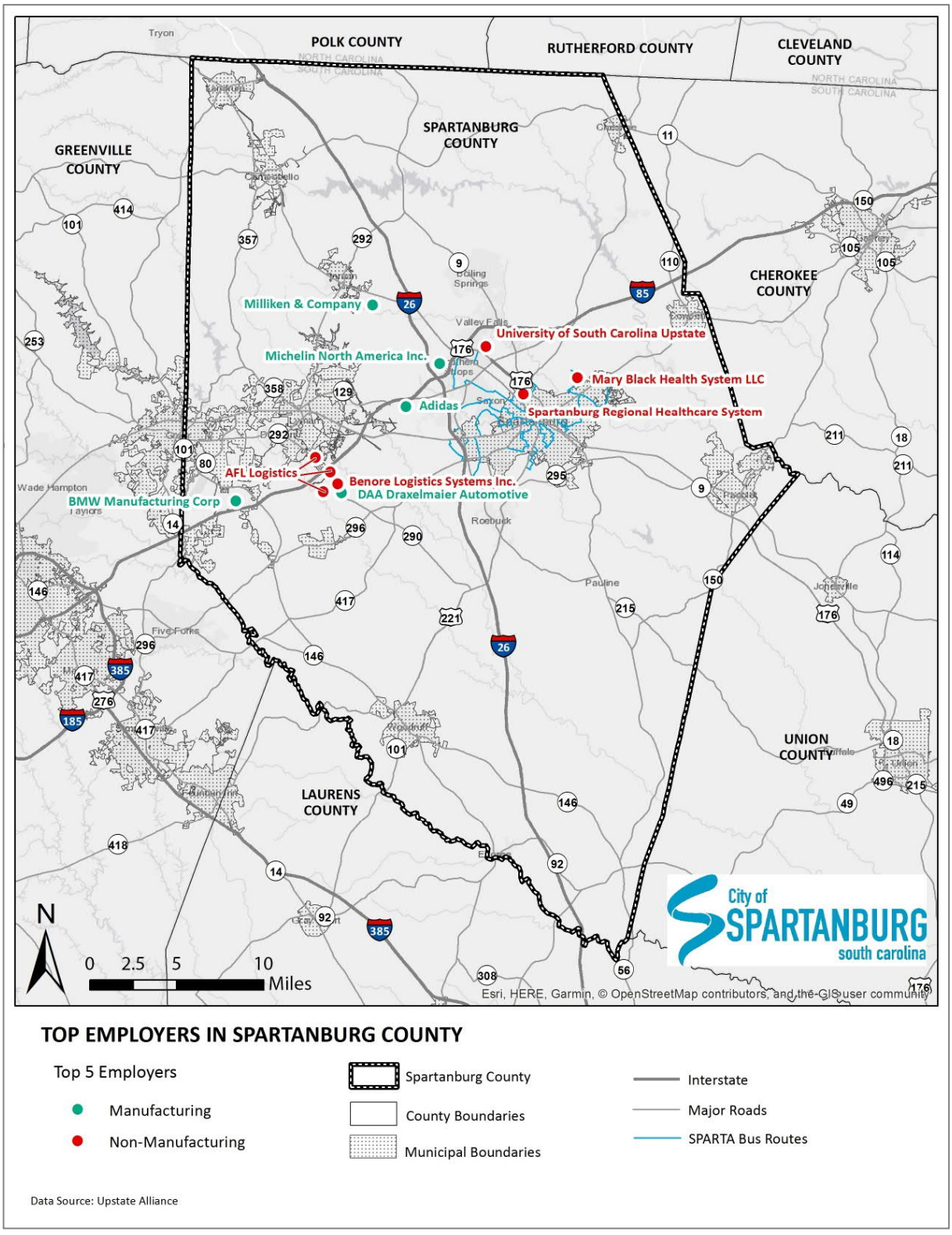
Table 5-1: Top Employers in Spartanburg County: Manufacturing and Non-Manufacturing

Manufacturing	Employer	Number of Employees	Product/Industry
1	BMW Manufacturing Corp.	8,800	Automobile Manufacturing
2	Miliken & Company	4,007	Textiles
3	Michelin North America	3,435	Tires
4	Adidas	2,520	Sporting and recreational goods, supplies
5	Draexlmaier Automotive of America, LLC	1,075	Wire harnesses
Non-Manufacturing	**Employer**	**Number of Employees**	**Product/Industry**
1	Spartanburg Regional Healthcare System	6,100	Healthcare
2	Mary Black Health System, LLC	1,400	Healthcare
3	AFL	858	Logistics
4	Benore Logistics Systems, Inc.	800	Logistics
5	University of South Carolina Upstate	563	Education

Source: Upstate Alliance, 2018

As shown in Figure 5-3, most of the top employers in the County are located along the Interstate 85 corridor, except for: Spartanburg Regional Healthcare System and Mary Black Healthcare System, both of which are located in City of Spartanburg; and Miliken and Company, which is located in the north part of the County near the City of Inman.

Figure 5-3: Top Employers in Spartanburg County: Manufacturing and Non-Manufacturing



Commuting Patterns

Regional/County Level Patterns of City of Spartanburg Residents and Workers

Commuting characteristics can help in understanding regional travel patterns and travel choices. This section provides information about local commutes at a county level into and out of the City of Spartanburg, and the subsequent section describes commutes within the City and vicinity.

Inflow Commutes

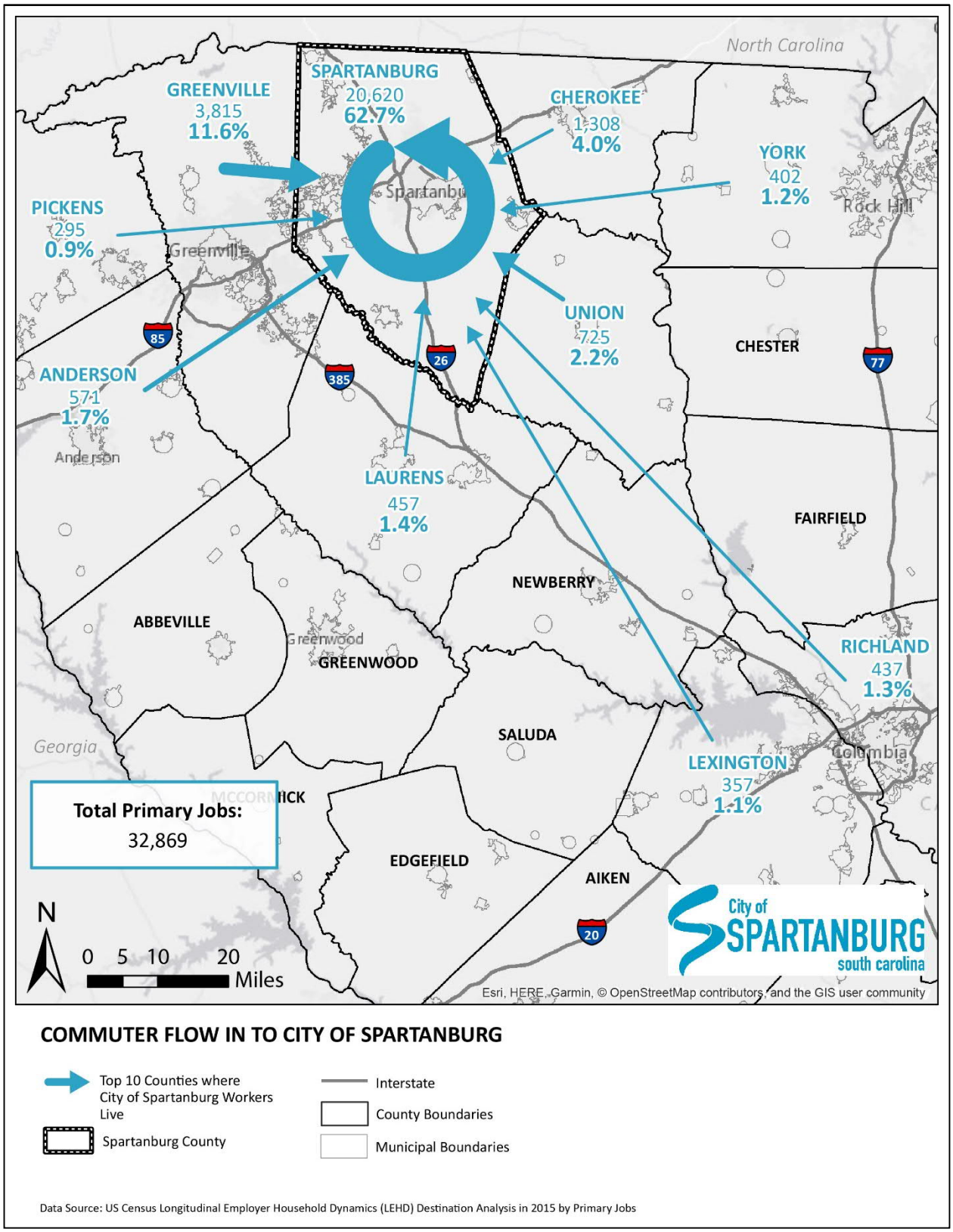
Commuting characteristics can help in understanding regional travel patterns and travel choices. The table below and following figure (5-4) show where City of Spartanburg workers live. From a regional perspective, approximately 63 percent of those working within the City also reside within Spartanburg County. Greenville County has the greatest number of residents commuting into Spartanburg from outside of Spartanburg County with 11.6 percent, followed by Cherokee County (4.0 percent) and Union County (2.2 percent). Collectively, 11.8% of City of Spartanburg workers commute into the city from areas outside of the local region's counties listed below, coming in from other regions in South Carolina, or other states.

Table 5-2: Where City of Spartanburg Workers Live, by County (2015)

County	Count	Share (%)
Spartanburg County, SC	20,620	62.7%
Greenville County, SC	3,815	11.6%
Cherokee County, SC	1,308	4.0%
Union County, SC	725	2.2%
Anderson County, SC	571	1.7%
Laurens County, SC	457	1.4%
Richland County, SC	437	1.3%
York County, SC	402	1.2%
Lexington County, SC	357	1.1%
Pickens County, SC	295	0.9%
All Other Locations	3,882	11.8%
Total Primary Jobs	**32,869**	**100.0%**

Source: US Census Bureau, on the Map Application, LEHD Origin-Destination

Figure 5-4: Commuter Flow Into Spartanburg, by County



Outflow Commutes

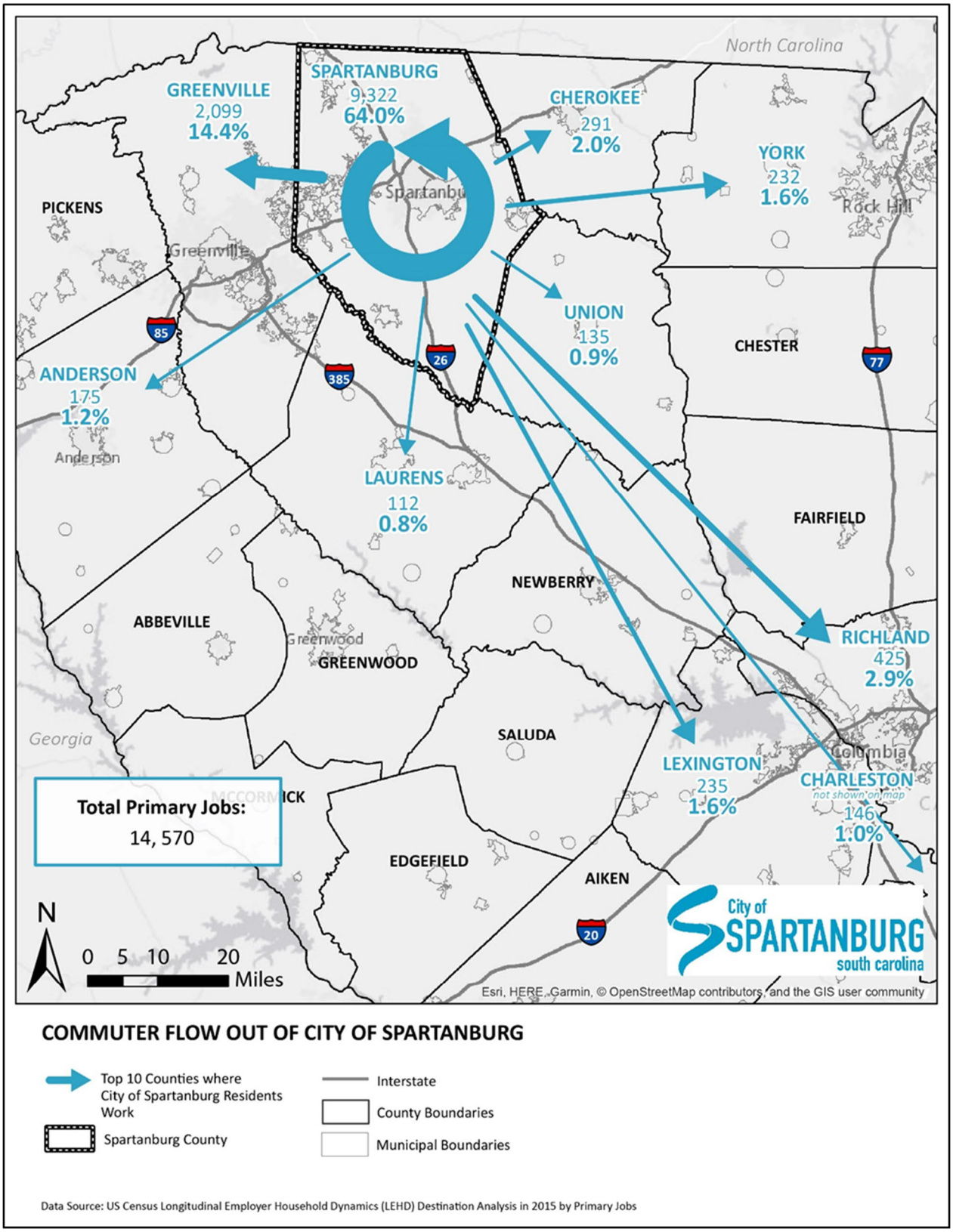
The next table (5-3) and map (Figure 5-5) show where City of Spartanburg residents commute to for work, regionally. Most City of Spartanburg residents in the labor force stay within Spartanburg County to work (64 percent). Slightly over 14 percent (14.4) commute to jobs in Greenville County. Collectively, 9.6 percent of City residents work in areas outside the top South Carolina counties shown in the table.

Table 5-3: Where City of Spartanburg Residents Work, by County (2015)

County	Count	Share (%)
Spartanburg County, SC	9,322	64.0%
Greenville County, SC	2,099	14.4%
Richland County, SC	425	2.9%
Cherokee County, SC	291	2.0%
Lexington County, SC	235	1.6%
York County, SC	232	1.6%
Anderson County, SC	175	1.2%
Charleston County, SC	146	1.0%
Union County, SC	135	0.9%
Laurens County, SC	112	0.8%
All Other Locations	1,398	9.6%
Total Primary Jobs	**14,570**	**100.0%**

Source: US Census Bureau, on the Map Application, LEHD Origin-Destination

Figure 5-5: Commuter Flow Out of Spartanburg, by County



Local Commuting Patterns in the SPARTA Service Area

Local Commutes Into Spartanburg

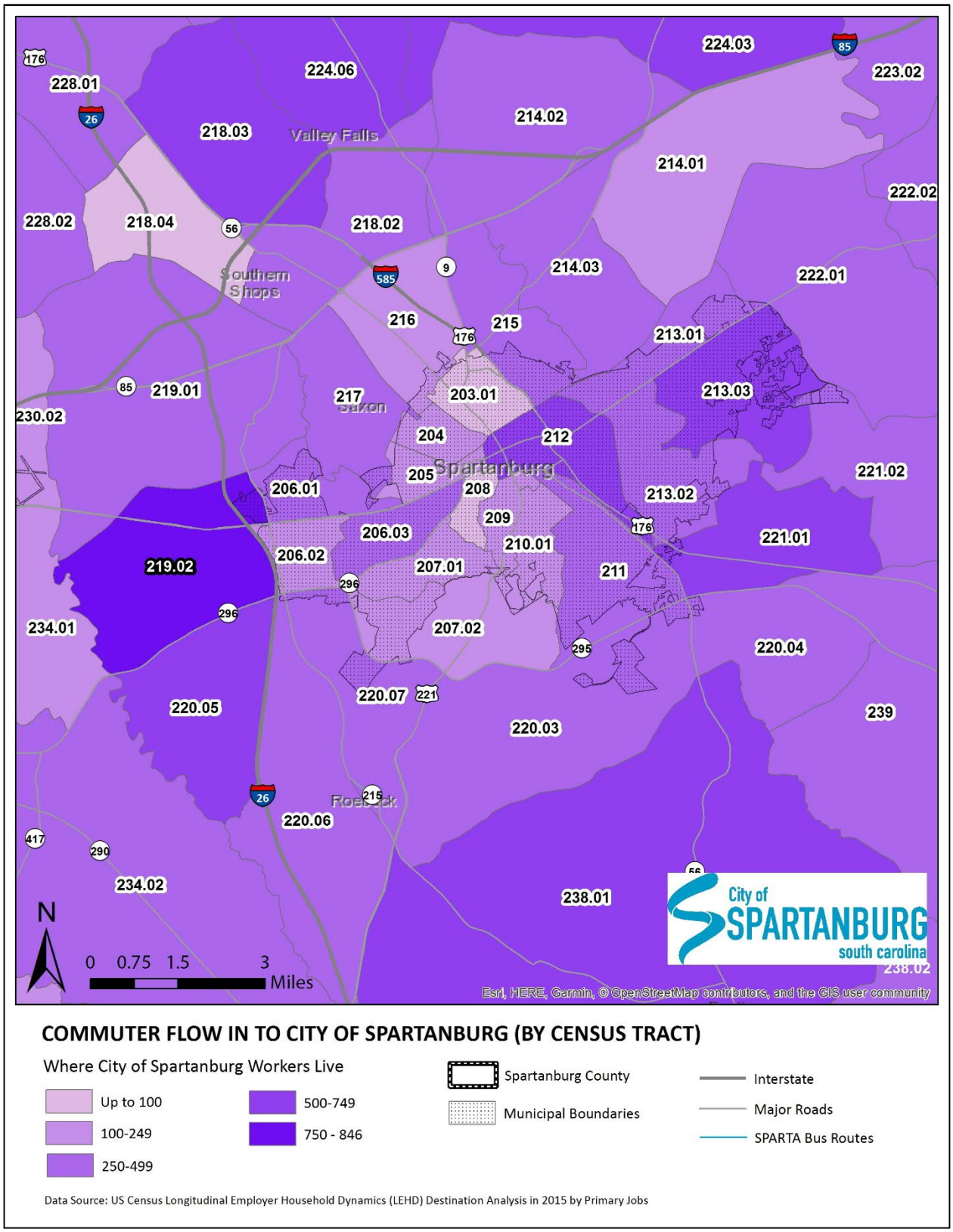
Table 5-4 and Figure 5-6 show commuting patterns within the City of Spartanburg and surrounding areas at the US Census tract level, showing the place of residence for those working in the SPARTA service area. Due to the low number of Spartanburg residents that also work in or around the city, none of the census tracts alone have a high concentration of residents working in the service area. Census Tract 219.02 is home to the highest number of Spartanburg workers, at 846 total and 2.6% of the SPARTA area workers. This area is immediately west of I-26 and the city limits and primarily south of US 29.

Table 5-4: Where City of Spartanburg Workers Live, by Census Tract (2015)

Census Tract	Count	Share (%)
219.02 (Spartanburg, SC)	846	2.6%
224.03 (Spartanburg, SC)	677	2.1%
220.05 (Spartanburg, SC)	674	2.1%
213.03 (Spartanburg, SC)	628	1.9%
224.06 (Spartanburg, SC)	601	1.8%
212 (Spartanburg, SC)	579	1.8%
238.01 (Spartanburg, SC)	573	1.7%
218.03 (Spartanburg, SC)	555	1.7%
221.01 (Spartanburg, SC)	513	1.6%
238.02 (Spartanburg, SC)	465	1.4%
City of Spartanburg Census Tracts	**9,274**	**36.3%**
All Other Locations	**26,758**	**81.4%**

Source: US Census Bureau, on the Map Application, LEHD Origin-Destination

Figure 5-6: Where City of Spartanburg Workers Live, Local



Local Commutes out of Spartanburg

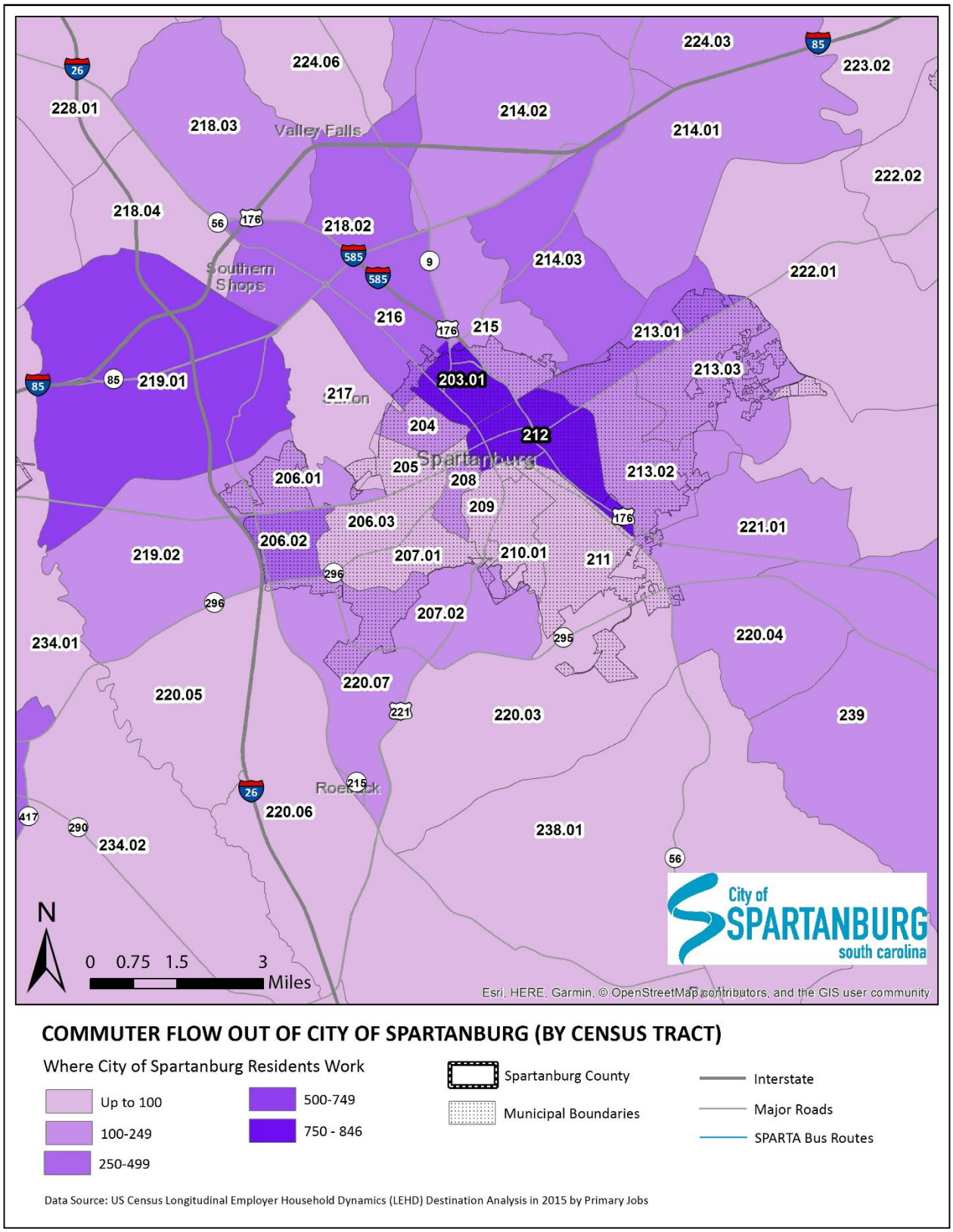
City of Spartanburg residents primarily leave the city and surrounding areas for work – 63.7 percent work in other areas. Those staying in the City to work are working in downtown Spartanburg or in the area of Wofford College and Spartanburg Medical Center. Another 5 percent work in the vicinity of Spartanburg Community College and the I-85/I-26 interchange.

Table 5-5: Where City of Spartanburg Residents Work, by Census Tract (2015)

Census Tract	Count	Share (%)
212 (Spartanburg, SC)	1,244	8.5%
203.01 (Spartanburg, SC)	809	5.6%
219.01 (Spartanburg, SC)	723	5.0%
213.01 (Spartanburg, SC)	410	2.8%
216 (Spartanburg, SC)	367	2.5%
234.03 (Spartanburg, SC)	365	2.5%
218.02 (Spartanburg, SC)	359	2.5%
2 (Greenville, SC)	358	2.5%
214.03 (Spartanburg, SC)	354	2.4%
206.02 (Spartanburg, SC)	307	2.1%
All Other Locations	9,274	63.7%
Total Primary Jobs	14,570	100.0%

Source: US Census Bureau, on the Map Application, LEHD Origin-Destination

Figure 5-7: Where City of Spartanburg Residents Work, Local



Summary of Spartanburg Resident/Worker Inflow/Outflow

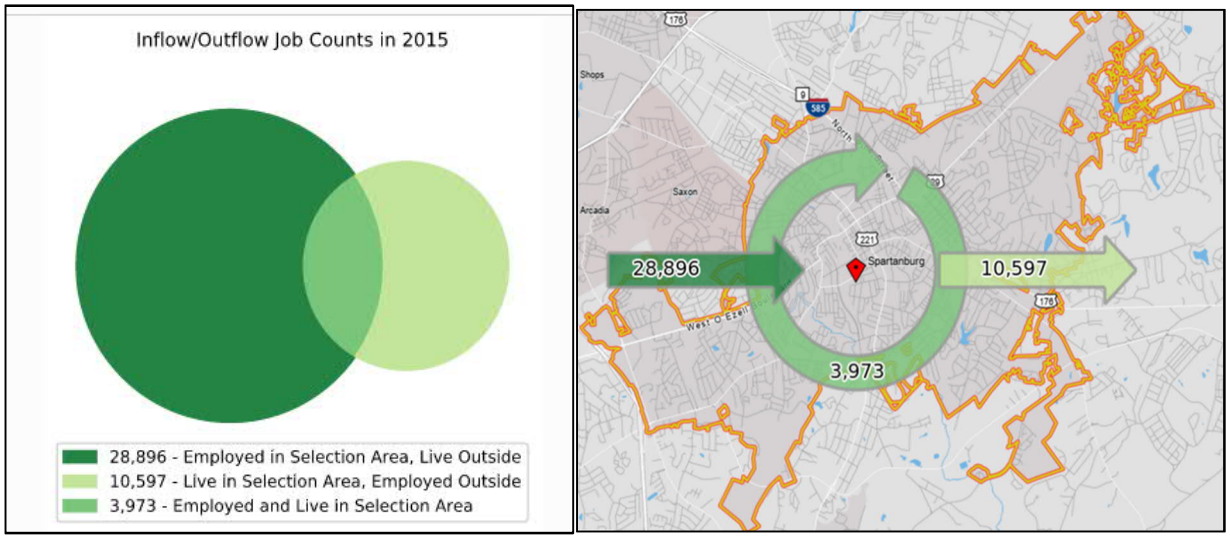
According to the latest LEHD data available, in 2015 there were 32,869 workers employed in the City of Spartanburg, and 14,570 working residents living within the City of Spartanburg. There is a minority of Spartanburg residents in the workforce who both live and work within the city limits (3,973).

Table 5-6: City of Spartanburg Employment Inflow/Outflow

County	Count	Share (%)
Employed in City of Spartanburg (Spartanburg Workers)	32,869	--
Living in City of Spartanburg (Spartanburg Residents)	14,570	-
Living Outside of Spartanburg but Working in Spartanburg (Inflow)	28,896	87.9% of Workers
Living in Spartanburg but Working outside Spartanburg (Outflow)	10,597	72.7% of Residents
Living and Working in Spartanburg	3,973	12.1% of Workers 27.3% of Residents
Net Inflow (Workers – Residents)	18,299	-

There are far more commuters that leave the City to work (10,597), and an even greater number of workers who commute into the City to work (28,896). The net inflow of commuters into the City of Spartanburg is 18,299, meaning there are that many more people coming into the City to work than those leaving the city to work.

Figure 5-8: Inflow/Outflow of Spartanburg Workers



Multimodal Connectivity Analysis

While there are over 400 transit stops within the SPARTA network, not all stops are equally accessible to people walking, using wheelchairs, and riding bicycles. “First- and last-mile” connections describe the beginnings and endings of trips where passengers are walking, wheeling, or biking between a transit stop and their origin or final destination.

Pedestrian Connectivity

Pedestrian connectivity was evaluated within an eighth-mile and quarter-mile of each transit stop. While many passengers may walk farther than an eighth or a quarter of a mile, these distances typically represent a five- to ten-minute walk, which is the distance most pedestrians are willing to travel to access transit stops. This analysis used the existing transit stops and sidewalk data to calculate a ratio of sidewalk completeness to total road lengths surrounding each stop. Buffers were drawn to find the total length of sidewalks and roads within an eighth-mile and quarter-mile of each stop. The road length total within each buffer was then doubled to represent the potential for sidewalk to exist on both sides of the street. If all the roads surrounding a stop had complete sidewalk on both sides the street, the ratio of sidewalk length to doubled road length would be 100%. Table 5-7 presents sidewalk-based walking and wheeling access for transit stops; these levels of connectedness are reflected geographically for each stop on the maps included at the end of this memorandum.

Based on this analysis, there is good connectivity from the existing transit stops nearest to the city center. However, as stops move to the outer limits of the city, the level of connectivity begins to decline, particularly to the north, northwest, and south of the transit center.

As shown in the maps for Routes 1, 4, and 5, there are a significant number of stops with moderate to poor connectivity within one-eighth of a mile of the stop. The stops along Routes 1 and 4 with poor connectivity reside primarily in residential areas. The stops along Route 5 with poor connectivity are near residential and light industrial areas. Where Route 5 travels along Asheville Highway there is moderate connectivity along the street; mostly, sidewalks exist along the frontage of businesses in the area. Where Route 5 travels along Fairforest Road, the stops with poor connectivity are in residential areas. Where Route 5 travels along New Cut Road it passes through an industrial area where no sidewalks exist along the road or in most cases to the business. New Cut Road also borders a residential area at points that have low connectivity.

When expanding the areas of study to one-quarter of a mile from transit stops, connectivity decreases across all routes, with the exception of Route 6, which only has one stop with poor connectivity. As with the analysis of connectivity within one-eighth of a mile of the stop, there is a concentration of stops further from the city center with moderate to poor connectivity. Nearly half of the stops along Route 1 have poor connectivity. These stops are near residential areas, and within the commercial district in proximity to Westgate Mall and Dorman Centre. Route 2 has a greater number of stops with moderate to poor connectivity when the area is extended to one-quarter-mile. There is an increase in stops with poor connectivity that occur in areas where commercial property meets residential along Route 2, specifically along E. Main Street, Fernwood Glendale Road, and Weber Road surrounding Hillcrest Shopping Center, Lowe’s Home Improvement, and Walmart. There are also a number of stops with poor connectivity in residential areas along Route 2. Along Route 3, the stops with poor connectivity are predominately located at the edges of the city and outside the city limits. Route 4 shows poor connectivity in the same areas that it showed poor connectivity on the analysis within one-eighth of a mile, occurring outside the city limits.

Table 5-7: Transit Stop Levels of Walking and Wheeling Connectedness

PEDESTRIAN - TRANSIT ACCESS	DESCRIPTION
Good	Sidewalks exist on both sides of many or all streets within one-eighth or one-quarter of a mile of the stop.
Moderate	Sidewalks exists on both sides of some of the streets or only on one side of the street within one-eighth or one-quarter of a mile of the stop.
Poor	Sidewalks are intermittent or do not exist on either side of the street within one-quarter or one-eighth of a mile of the stop.

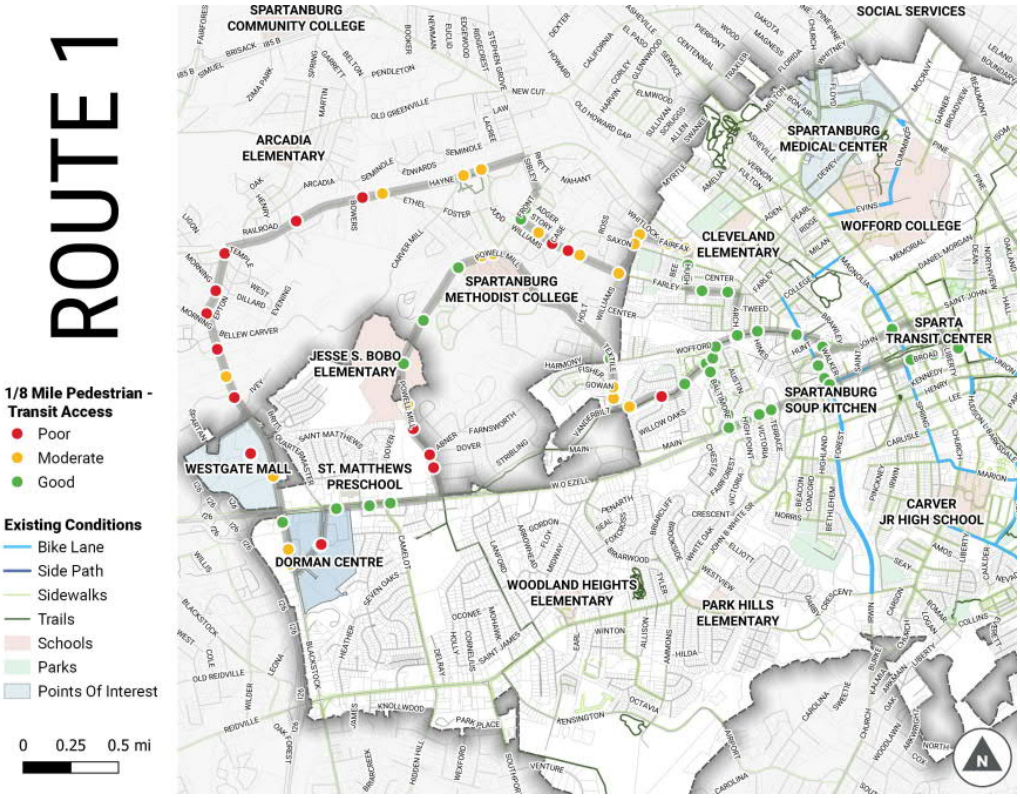
Route 5 has a high number of stops with poor connectivity within a quarter-mile of the stop. Once Route 5 travels north of Cleveland Elementary, all of the stops are classified as moderate to poor, with the vast majority of these stops being in Spartanburg County. This area shows little to no connectivity from residential areas to the primary routes where riders would access transit. Routes 7 and 8 serve dense residential areas and show the greatest number of stops that transition from good at one-eighth of a mile to poor at a quarter-mile. This change is due to a lack of pedestrian facilities in and around residential areas once the user moves beyond the main arterial that the bus travels; however, unlike arterials, residential streets within subdivisions should provide a relatively comfortable walking experience even without sidewalks.

Bicycle Connectivity

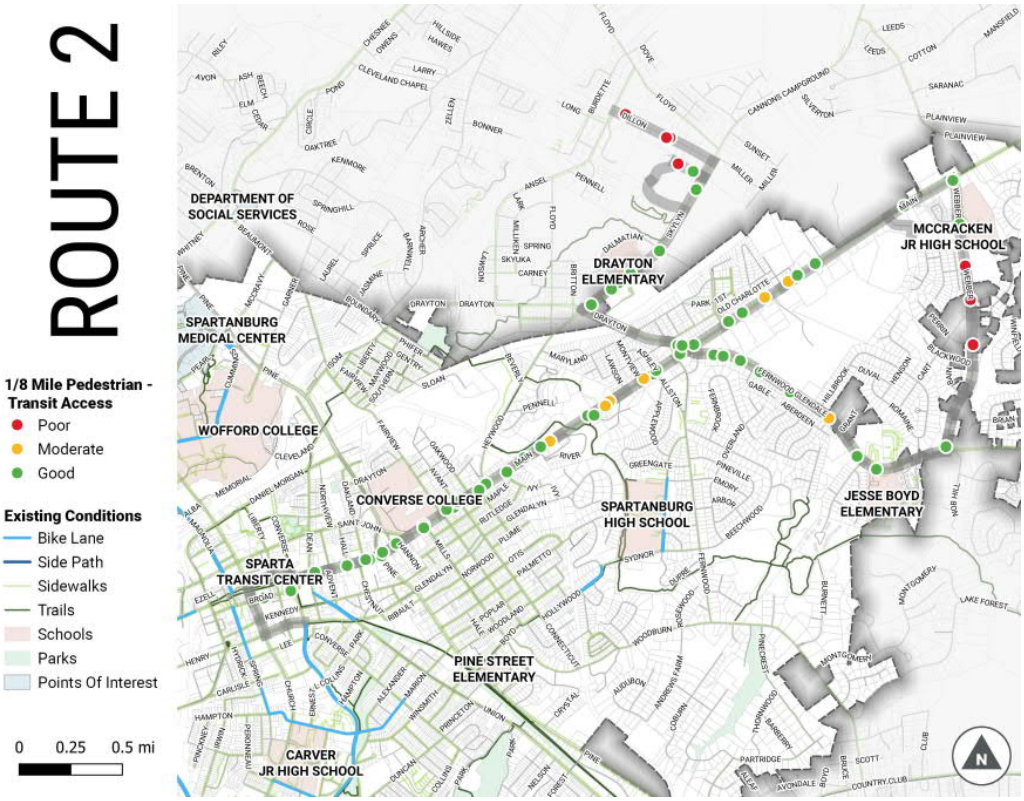
While there are a limited number of dedicated bicycle facilities in the City and County, many SPARTA stops are still accessible by bicycle. To evaluate bicycle connectivity to transit stops, road functional class was used as a proxy to measure bicycle comfort. Interstates and arterial roads have high speeds and high traffic volumes and are typically inaccessible and very dangerous for cyclists. Local streets, which make up a majority of the streets surrounding SPARTA stops, are characterized by slower speeds and lower traffic volumes. Because of this, cyclists can often navigate local streets comfortably even without a dedicated bicycle facility.

The map at the very end of this memorandum shows a full SPARTA service map along with all roads symbolized by functional class. The majority of SPARTA routes follow arterials. However, the streets directly surrounding the routes are predominately low stress collectors and local streets which allow cyclists to comfortably access many stops even with a limited network of bicycle facilities.

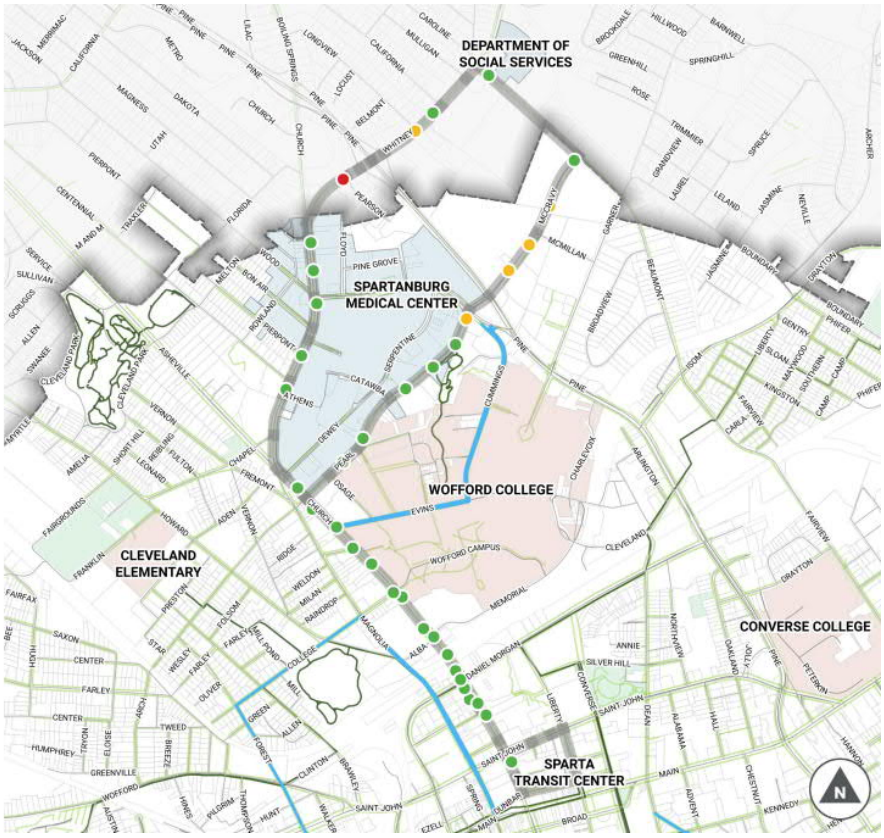
ROUTE 1



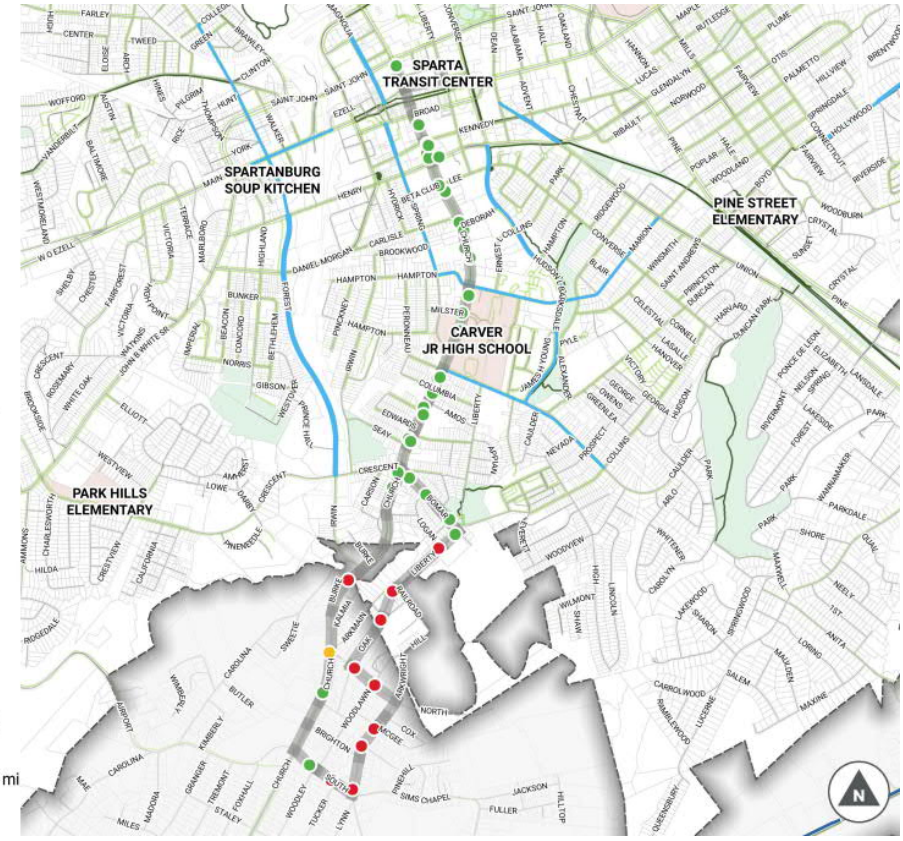
ROUTE 2



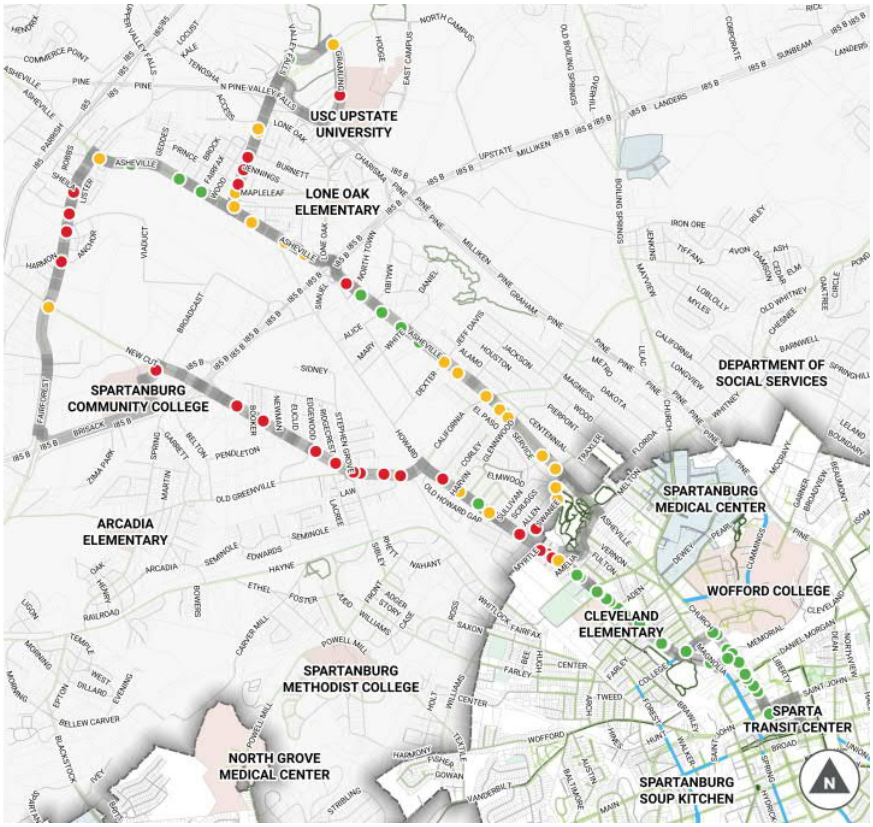
ROUTE 3



ROUTE 4



ROUTE 5

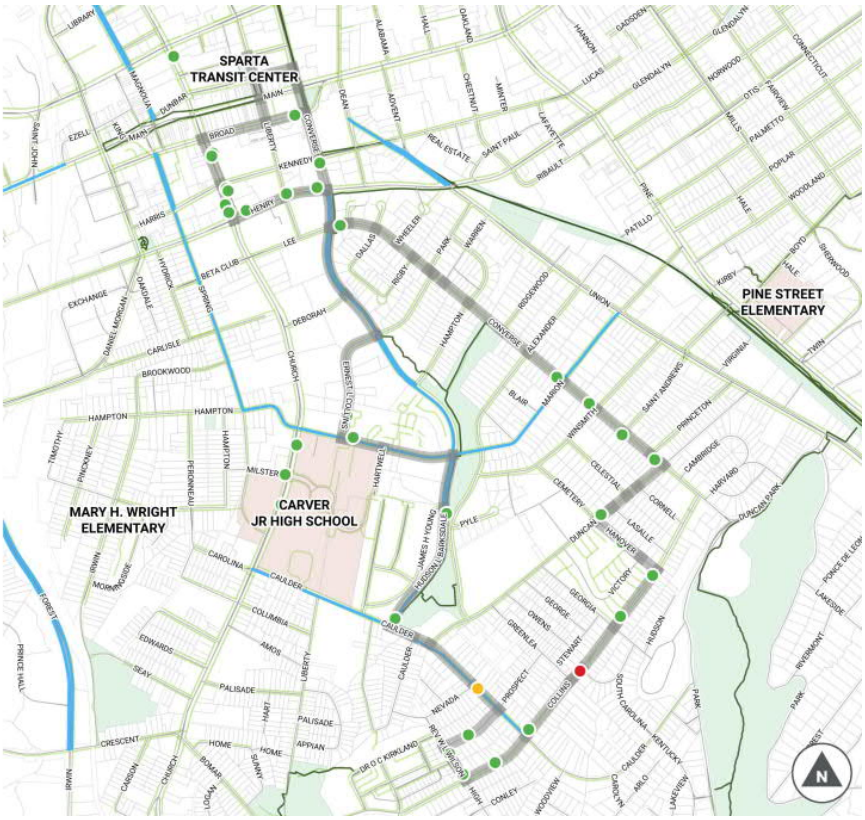


1/8 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 0.5 mi

ROUTE 6

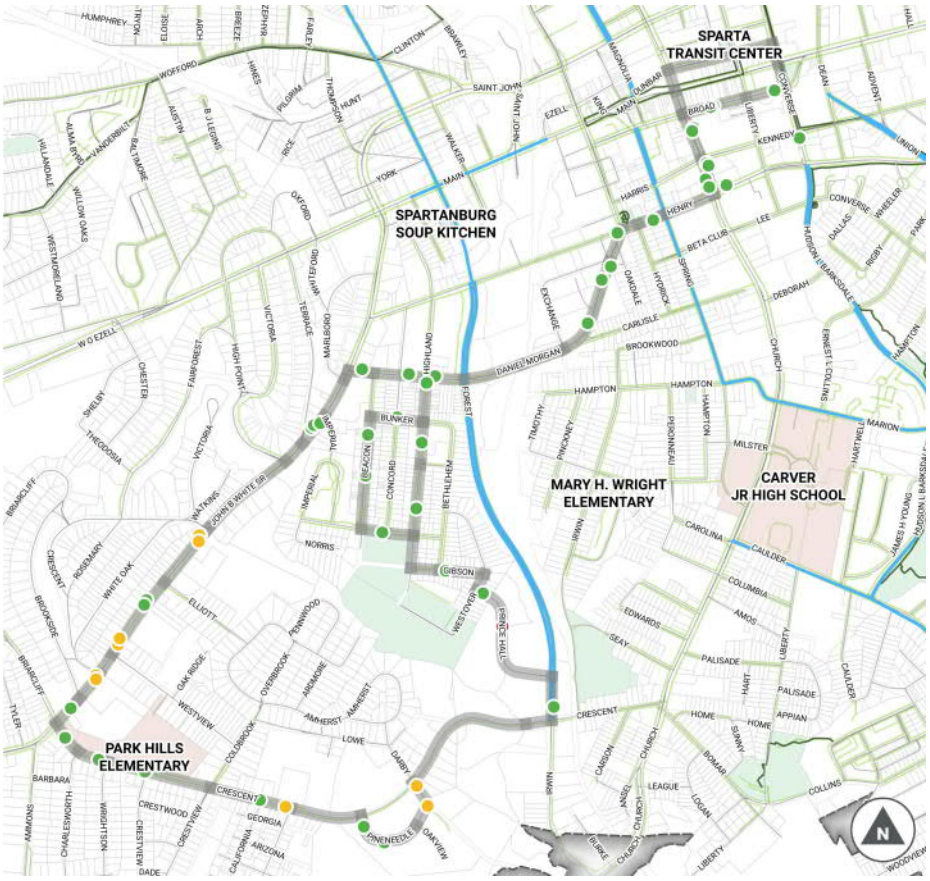


1/8 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

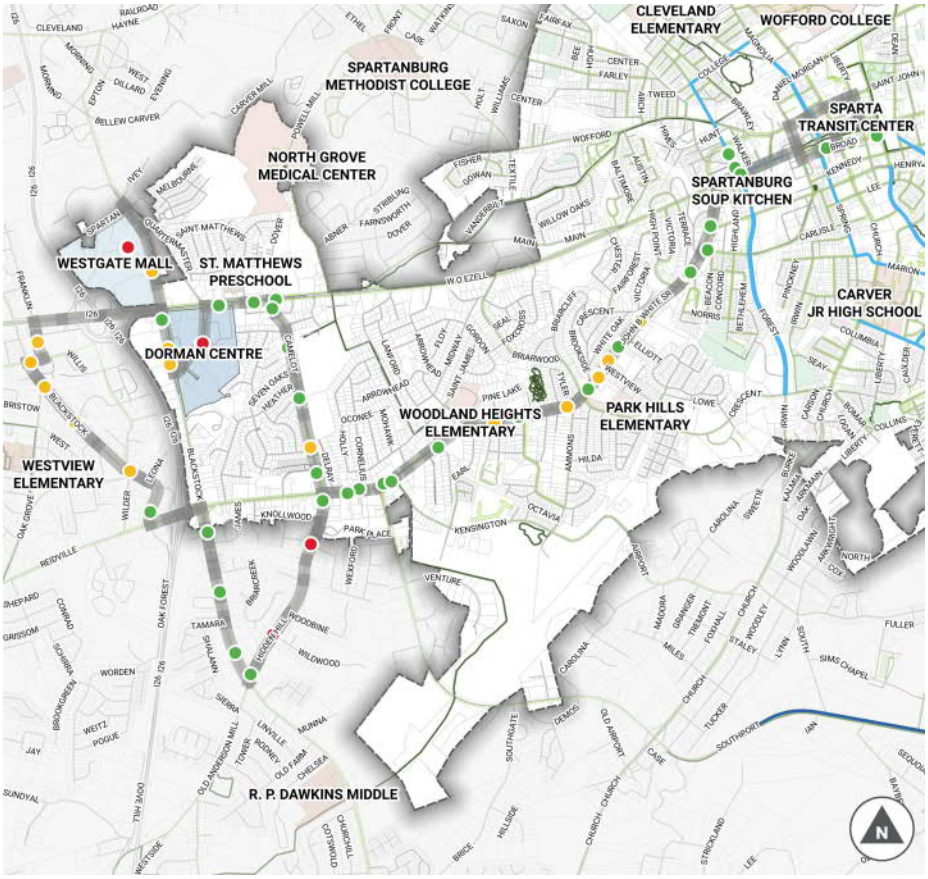
Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 mi

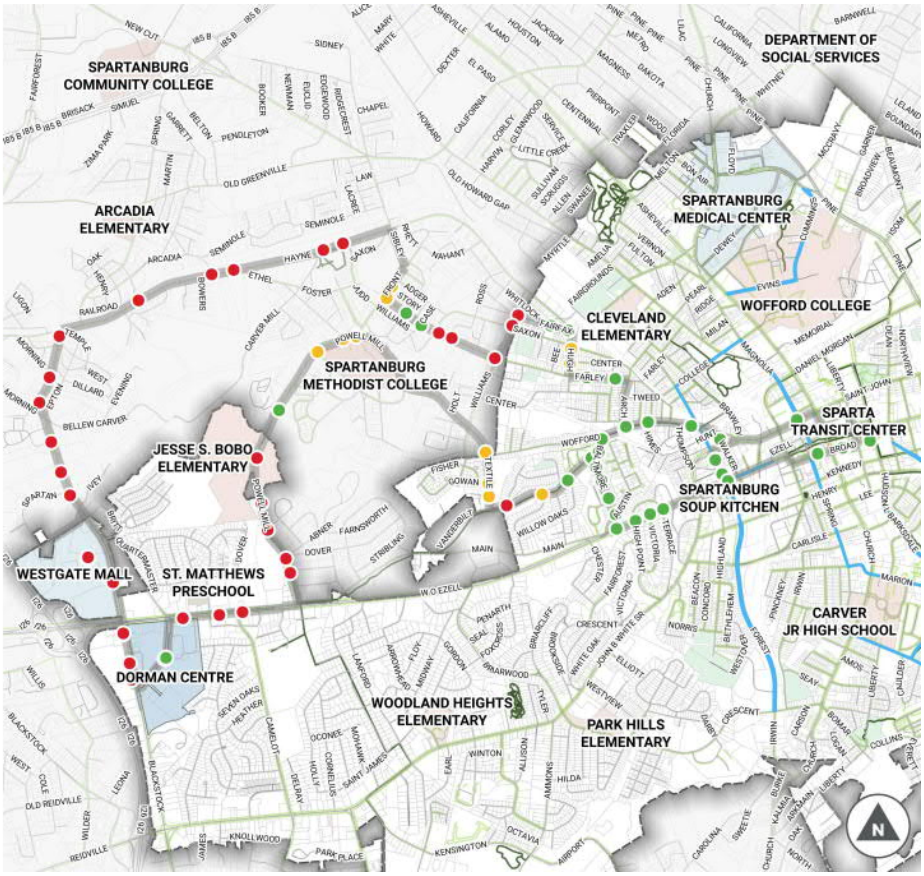
ROUTE 7



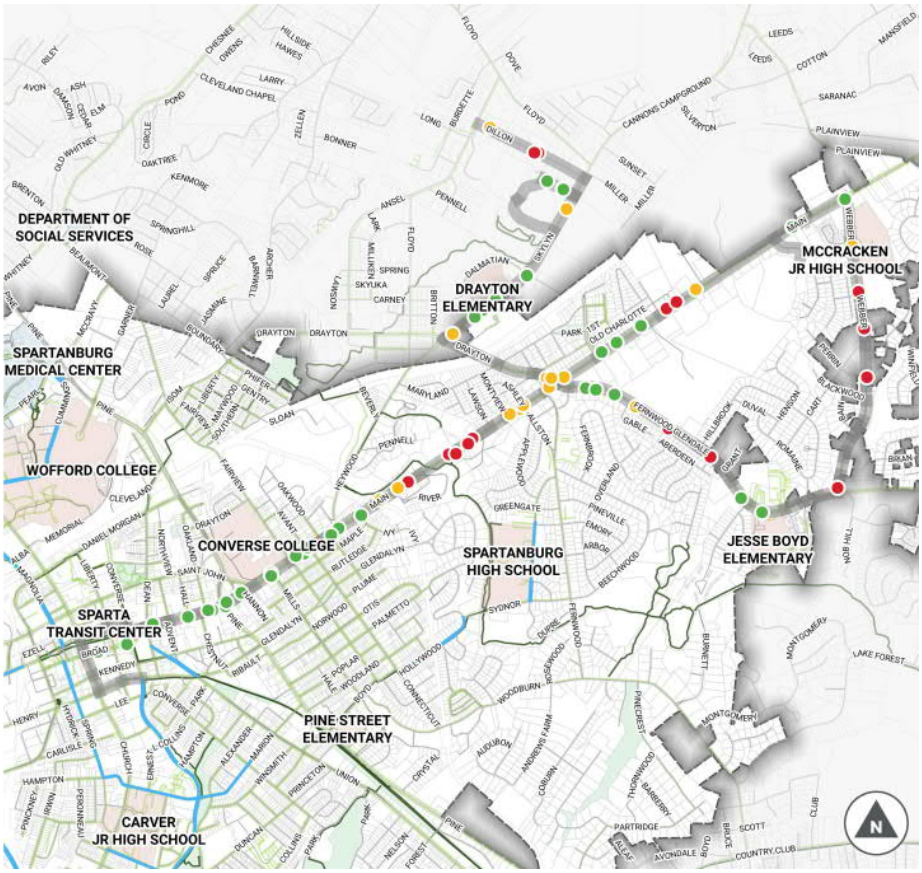
ROUTE 8



ROUTE 1



ROUTE 2

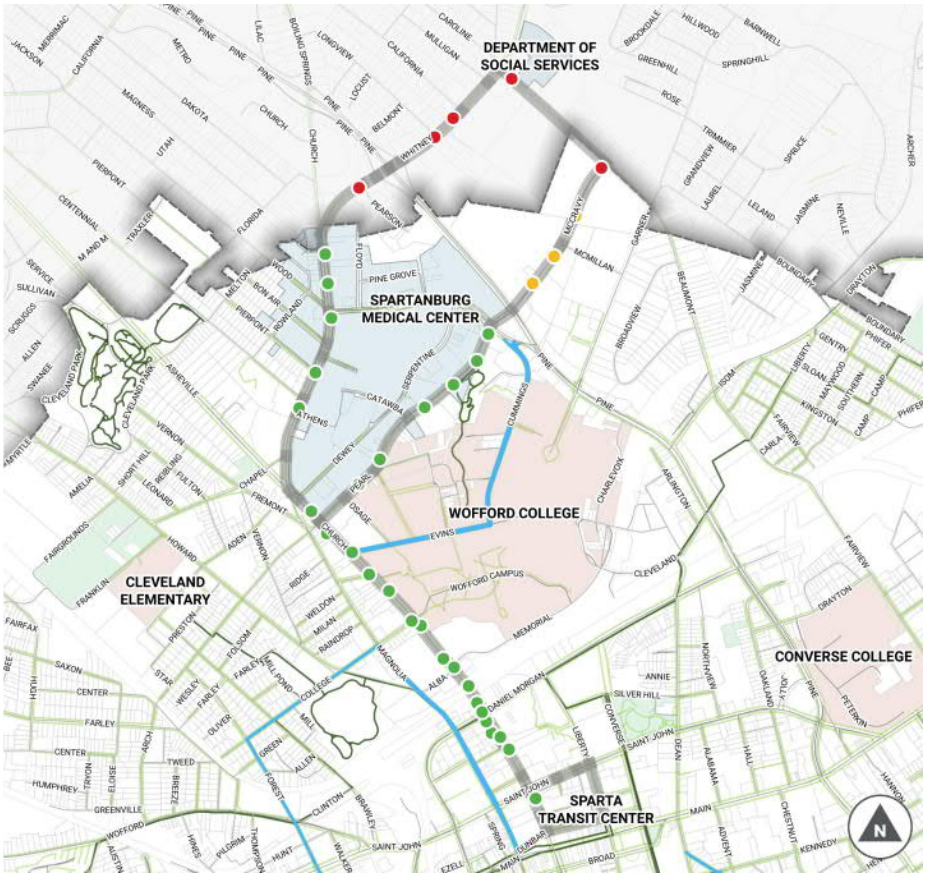


ROUTE 3

1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 mi

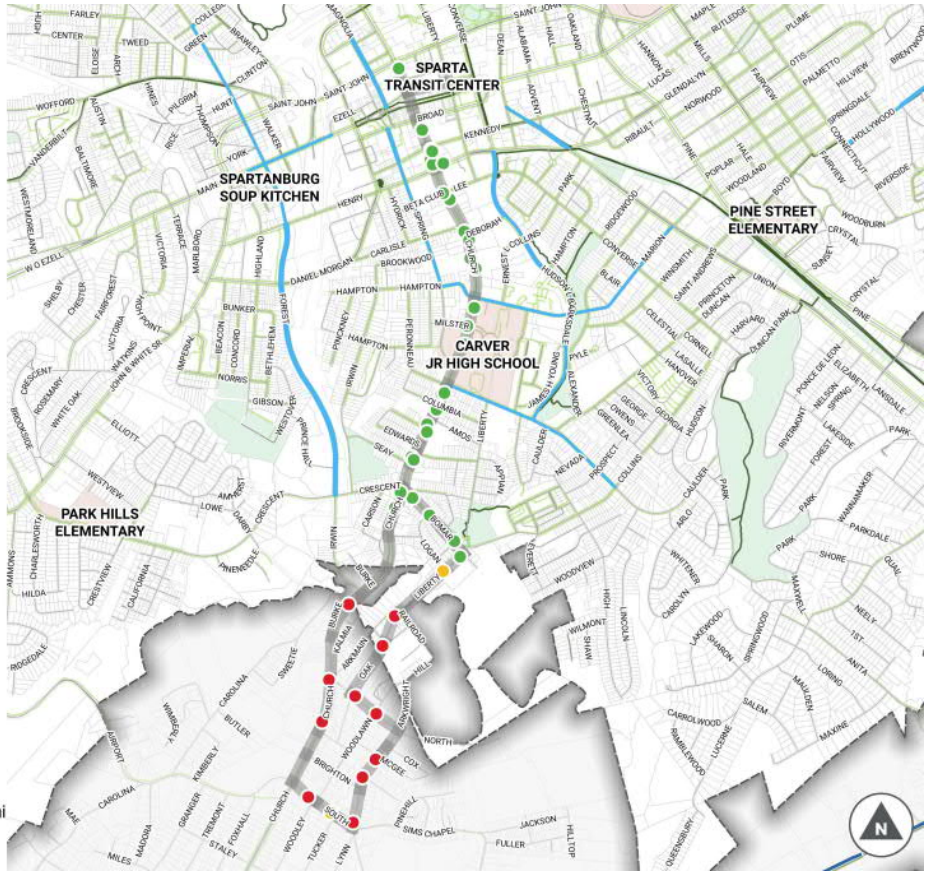


ROUTE 4

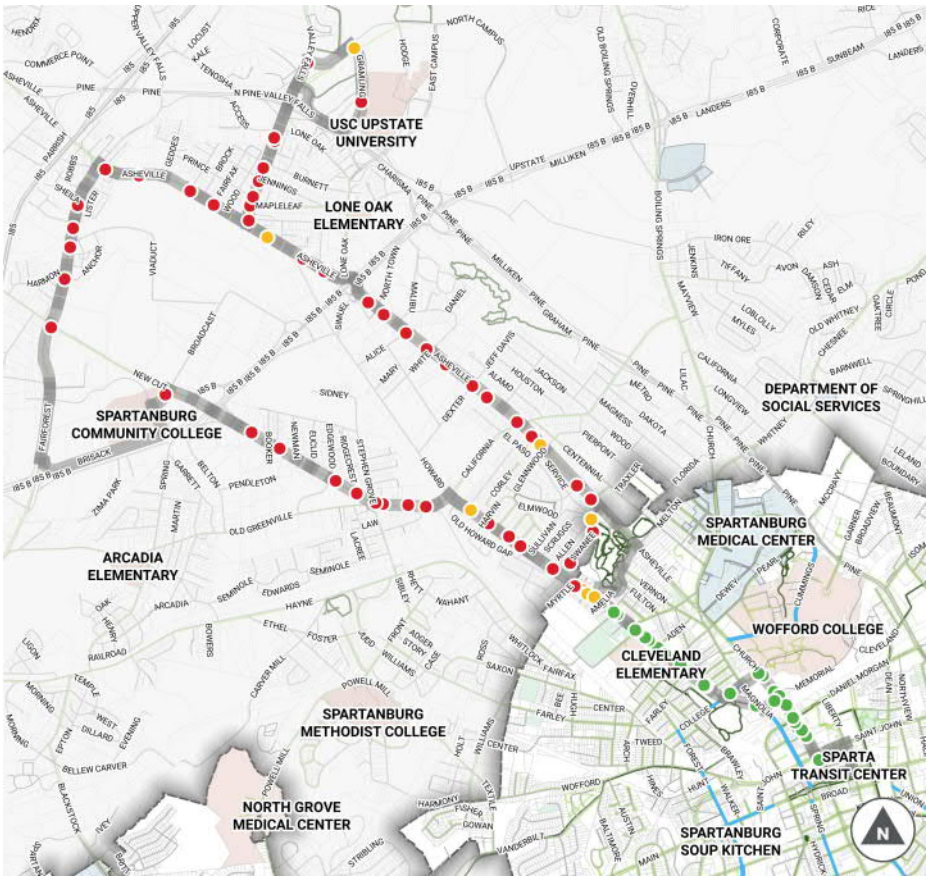
1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 0.5 mi



ROUTE 5

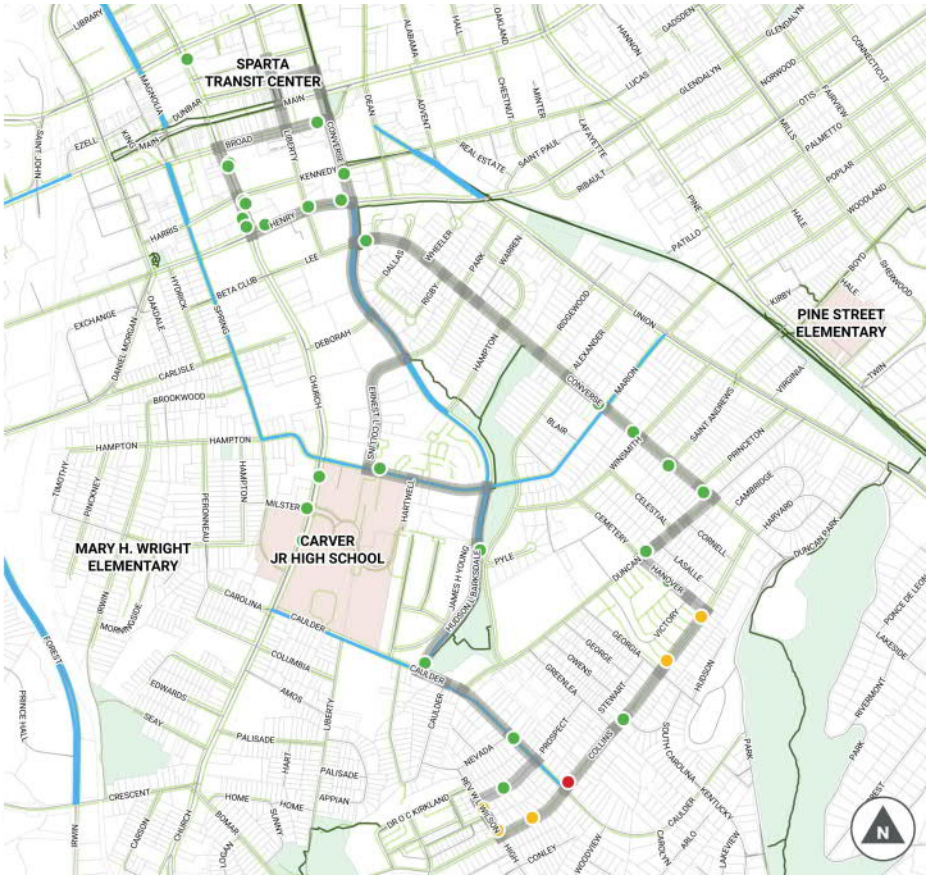


1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 0.5 mi

ROUTE 6



1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

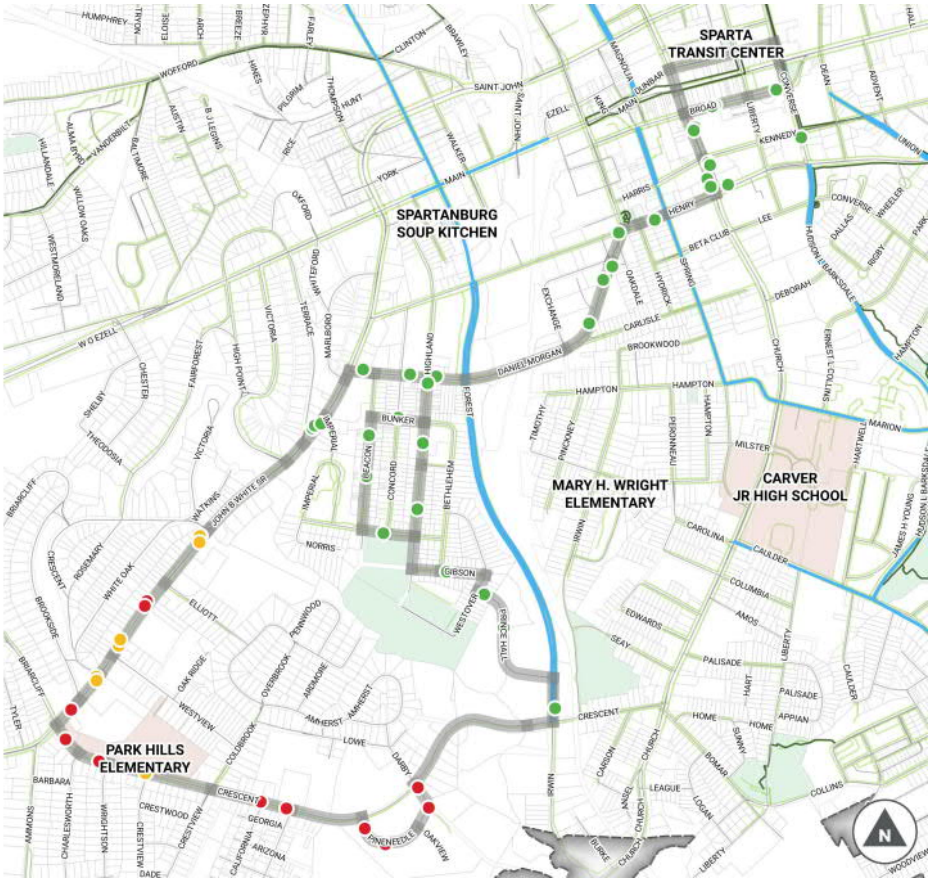
0 0.25 mi

ROUTE 7

1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 mi

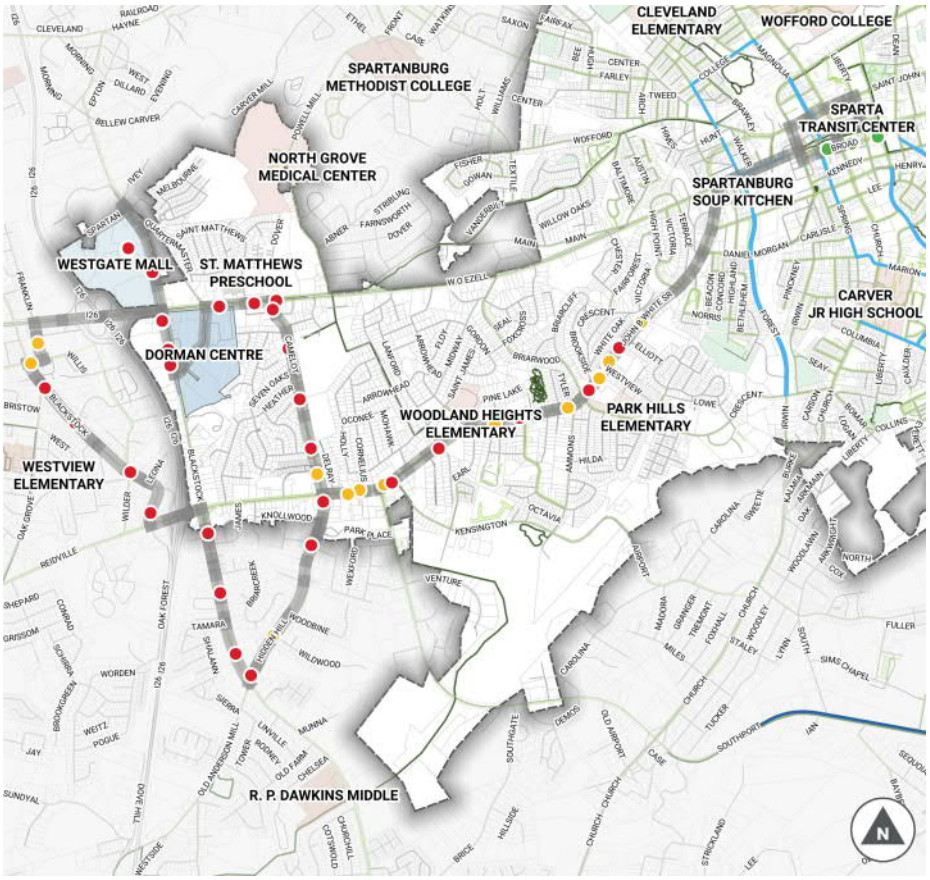


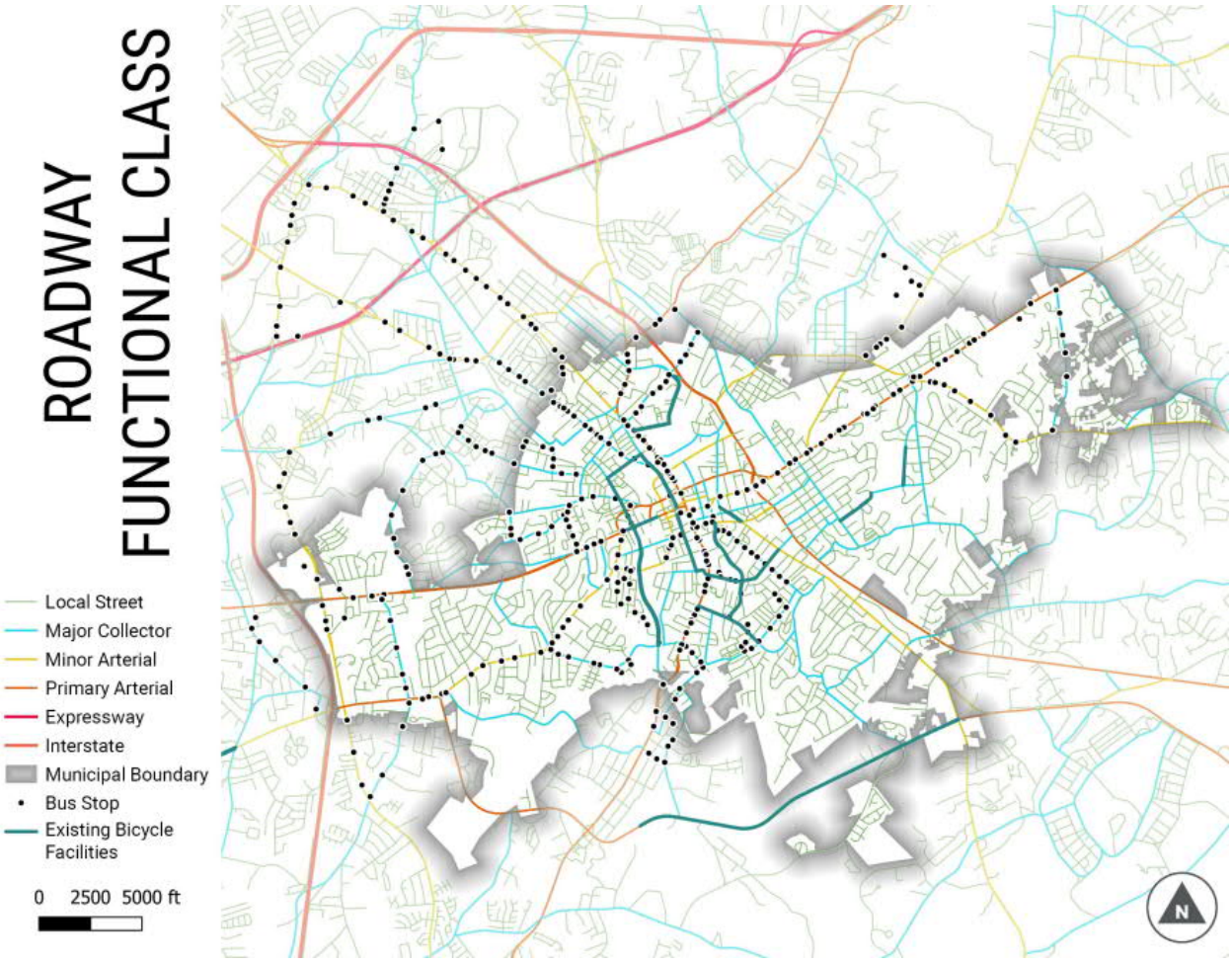
ROUTE 8

1/4 Mile Pedestrian - Transit Access
- Poor
- Moderate
- Good

Existing Conditions
- Bike Lane
- Side Path
- Sidewalks
- Trails
- Schools
- Parks
- Points Of Interest

0 0.25 0.5 mi




ROADWAY FUNCTIONAL CLASS
Local Street
Major Collector
Minor Arterial
Primary Arterial
Expressway
Interstate
Municipal Boundary
Bus Stop
Existing Bicycle Facilities
0 2500 5000 ft
N

6. Public Engagement

The Comprehensive Operational Analysis was developed based on a robust public engagement process that involved numerous stakeholders. A multi-prong approach utilizing diverse techniques to bring people to the table was used to engage the community. The goals of the public engagement process were the following:

a) To educate the public on the study purpose and process and how the results will affect transit service in their communities.

b) To proactively seek the participation and views of the community so that recommended alternatives reflect the desires and address the needs for transit service of riders and potential riders in the near future.

c) To integrate community knowledge and experience into the data collection process to better understand needs and expectations, and priorities.

d) To incorporate citizen feedback, preferences, and input at all levels of the decision-making process.

e) To enhance the current level of public support for the project.

f) To engage a diverse pool of stakeholders that will provide insights, community knowledge and guidance during the development of the project.

g) To develop project goals based on community input.

The process was guided by a Public Engagement Plan that laid out the activities and stakeholders to be involved during the development of the COA.

Activity	Date
Steering Committee meetings	
Meeting #1	February 26, 2019 11:30am to 2:00pm
Meeting #2	January 15, 2020 11:30 am to 2:00pm
Focus Groups	
Neighborhood Groups	April 22, 2019
Business/employers	April 22, 2019
SPARTA Drivers	April 10, 2019
Public Meetings	
1st Pop-up events	April 2, 2019
Passenger Center	9:00 to 11:30 am
3 Main Stops	a. Soup Kitchen 10am-1pm b. Department of Social Services 1pm-3:30pm c. Dorman Center 2pm-4pm
2nd Public Meeting	January 23, 2020: 3:30 to 5:00pm Passenger Center
Survey	
Surveys	March 20, 2019

The public engagement process engaged and collected input from approximately 280 people:

- Pop-up events, approximately 80
- Focus groups, approximately 70

- Rider's survey, approximately 90
- Open houses approximately 40

Steering Committee

The Steering Committee provided direction for the development of the plan and helped the study team identifying priorities and community's needs. It was composed by the following members:

Table 6-1: Steering Committee Members

Chris Story	City of Spartanburg City Manager	Cierra Fawler	Spartanburg Housing Authority
Dennis Locke	City of Spartanburg Finance Director	Terrance Hawes	Chamber of Commerce
Mitch Kennedy	City of Spartanburg Assistant City Manager	Alphoso Atkins	USC - Upstate
Natalia Rosario	City of Spartanburg Planning Director	Page Rogers	DHEC
Kim Barnett	Middle Tyger Community Center	Leslie West	Spartanburg Community College
Laura Ringo	Partners for Active Living	Wilma Moore	Highland Working Group/UWP
Kacie Mueller	SC Works	Steve Mims	Alston Wilkes Society
Erica Rhodes	SRHS	Monier Abusaft	NAACP
Shelley Robbins	Upstate Forever	Sherry Dull	SPATS
Ana Rivera	ReGenesis	Lisa Boilinger	SPATS
Hannah Jarrett	United Way	Luis Gonzalez	SPARTA General Manager
Lekesa Whitner	Northside Dev. Group	Phillip Stone	Citizen and rider

Focus Groups

The study team focused on three specific groups: neighborhoods, businesses and drivers.

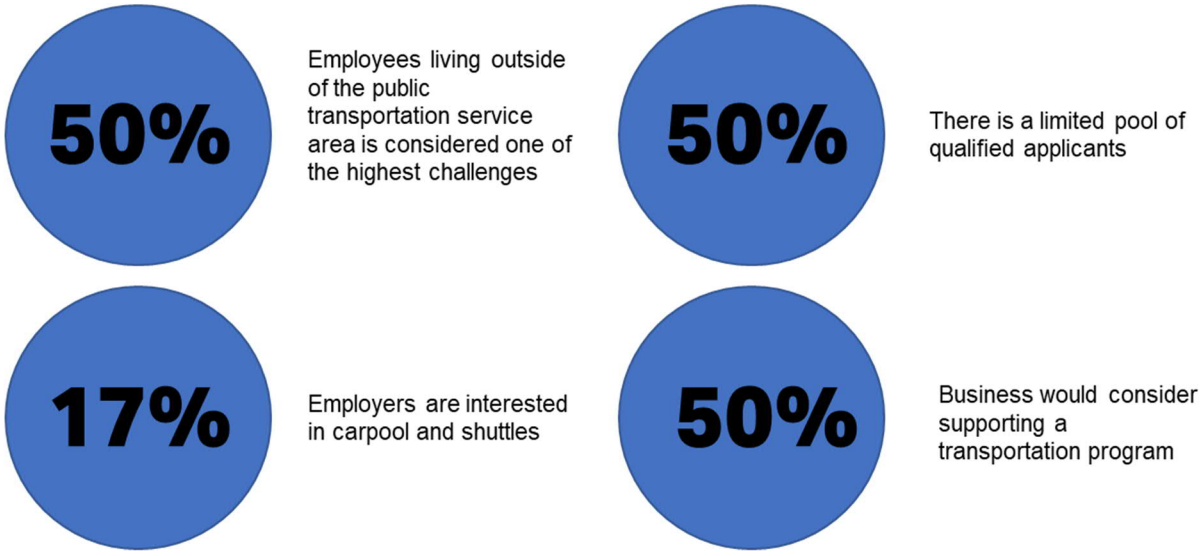
The **Neighborhood Focus Group** was attended by members of the Neighborhood Committee and other interested members of the community. They helped the study team understanding the transit priorities from a community perspective.

The **Driver's Focus Group** was instrumental to understand operational challenges, redundancies in service and bus stop usage, as well as bus stop location challenges.

The **Business Leaders Focus Group** was hosted by the Chamber of Commerce. The Business Leaders completed a survey that helped us determining the challenges their employees and potential employees face with transportation.

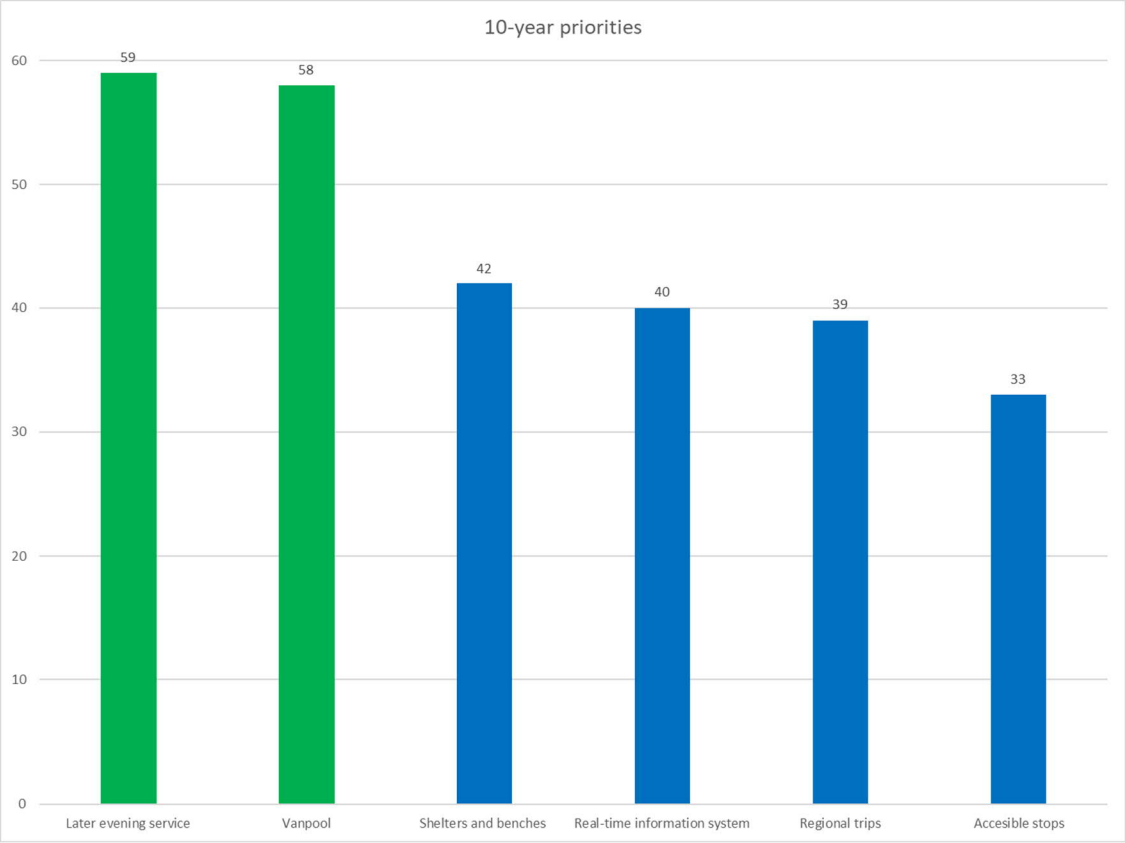
Table 6-2: Focus Groups

Table 6-3: Business Leaders Focus Group Responses



The graphic below shows the Steering Committee and Focus Groups rank of the six top 10-year priorities.

Table 6-4: Top 10-year Priorities

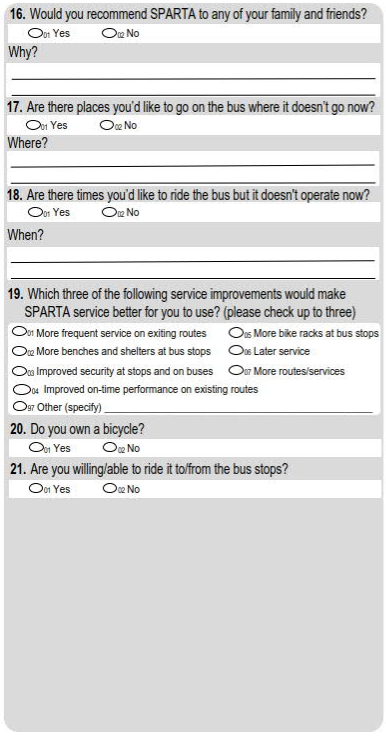


The focus groups priorities point out to priorities associated with the workforce. Some of the topics stressed during the meetings were the inability to access jobs that require 2nd and 3rd shifts because the lack of transportation. Later evening service and vanpools to jobsites outside of city limits could provide more options to workers.

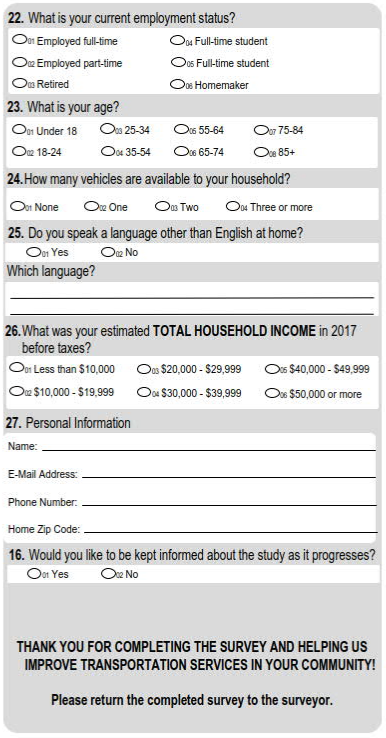
Providing shelters and benches also ranked high. It is important to ensure bus stops are ADA compliant and have infrastructure for riders to wait comfortably at their stops.

Transit Riders Survey

The surveys provided valuable information about the riders and the way they use the transit system. It also helped identifying which improvements are more important for them.



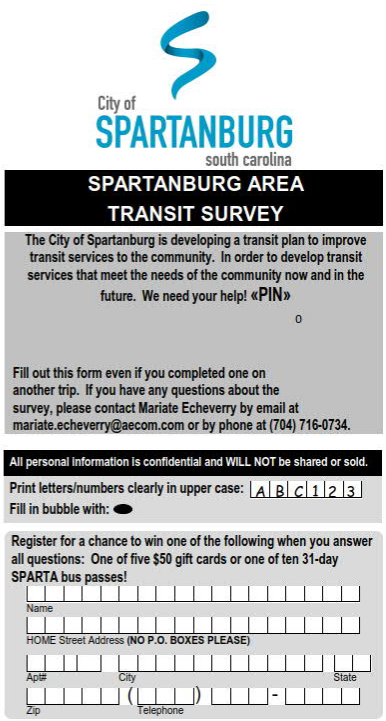
16. Would you recommend SPARTA to any of your family and friends?
○01 Yes ○02 No
Why?
17. Are there places you'd like to go on the bus where it doesn't go now?
○01 Yes ○02 No
Where?
18. Are there times you'd like to ride the bus but it doesn't operate now?
○01 Yes ○02 No
When?
19. Which three of the following service improvements would make SPARTA service better for you to use? (please check up to three)
○01 More frequent service on exiting routes ○05 More bike racks at bus stops
○02 More benches and shelters at bus stops ○06 Later service
○03 Improved security at stops and on buses ○07 More routes/services
○04 Improved on-time performance on existing routes
○97 Other (specify)
20. Do you own a bicycle?
○01 Yes ○02 No
21. Are you willing/able to ride it to/from the bus stops?
○01 Yes ○02 No



22. What is your current employment status?
○01 Employed full-time ○04 Full-time student
○02 Employed part-time ○05 Full-time student
○03 Retired ○06 Homemaker
23. What is your age?
○01 Under 18 ○03 25-34 ○05 55-64 ○07 75-84
○02 18-24 ○04 35-54 ○06 65-74 ○08 85+
24. How many vehicles are available to your household?
○01 None ○02 One ○03 Two ○04 Three or more
25. Do you speak a language other than English at home?
○01 Yes ○02 No
Which language?
26. What was your estimated **TOTAL HOUSEHOLD INCOME** in 2017 before taxes?
○01 Less than $10,000 ○03 $20,000 - $29,999 ○05 $40,000 - $49,999
○02 $10,000 - $19,999 ○04 $30,000 - $39,999 ○06 $50,000 or more
27. Personal Information
Name:
E-Mail Address:
Phone Number:
Home Zip Code:
16. Would you like to be kept informed about the study as it progresses?
○01 Yes ○02 No

THANK YOU FOR COMPLETING THE SURVEY AND HELPING US IMPROVE TRANSPORTATION SERVICES IN YOUR COMMUNITY!

Please return the completed survey to the surveyor.



City of SPARTANBURG south carolina

SPARTANBURG AREA TRANSIT SURVEY

The City of Spartanburg is developing a transit plan to improve transit services to the community. In order to develop transit services that meet the needs of the community now and in the future. We need your help! «PIN»

0

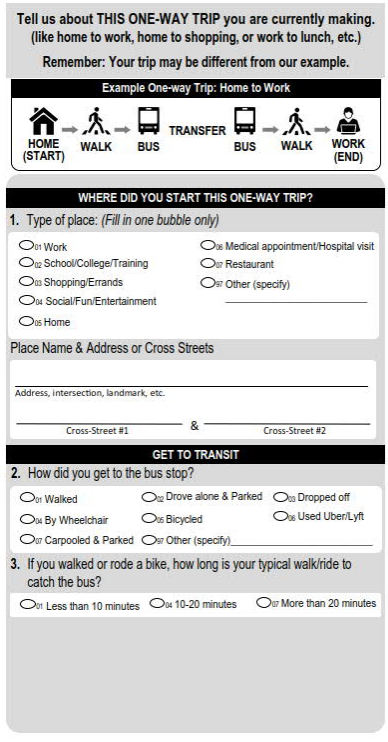
Fill out this form even if you completed one on another trip. If you have any questions about the survey, please contact Mariate Echeverry by email at mariate.echeverry@aecom.com or by phone at (704) 716-0734.

All personal information is confidential and WILL NOT be shared or sold.

Print letters/numbers clearly in upper case: A B C 1 2 3
Fill in bubble with: ●

Register for a chance to win one of the following when you answer all questions: One of five $50 gift cards or one of ten 31-day SPARTA bus passes!

Name
HOME Street Address **(NO P.O. BOXES PLEASE)**
Apt# City State
Zip Telephone



Tell us about THIS ONE-WAY TRIP you are currently making. (like home to work, home to shopping, or work to lunch, etc.)

Remember: Your trip may be different from our example.

Example One-way Trip: Home to Work

HOME (START) → WALK → BUS → TRANSFER → BUS → WALK → WORK (END)

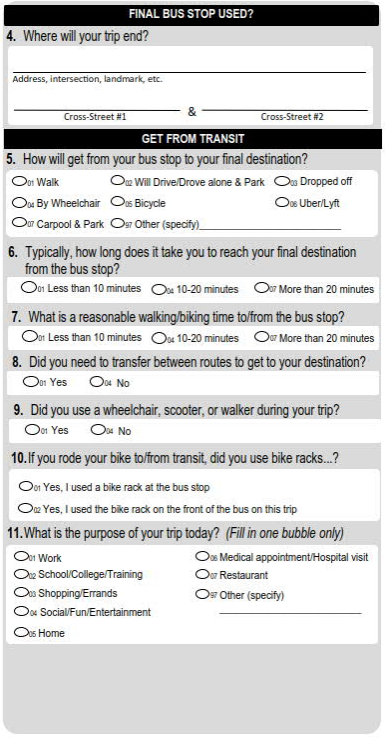
WHERE DID YOU START THIS ONE-WAY TRIP?

1. Type of place: *(Fill in one bubble only)*
○01 Work ○06 Medical appointment/Hospital visit
○02 School/College/Training ○07 Restaurant
○03 Shopping/Errands ○97 Other (specify)
○04 Social/Fun/Entertainment
○05 Home

Place Name & Address or Cross Streets
Address, intersection, landmark, etc.
Cross-Street #1 & Cross-Street #2

GET TO TRANSIT

2. How did you get to the bus stop?
○01 Walked ○02 Drove alone & Parked ○03 Dropped off
○04 By Wheelchair ○05 Bicycled ○06 Used Uber/Lyft
○07 Carpooled & Parked ○97 Other (specify)
3. If you walked or rode a bike, how long is your typical walk/ride to catch the bus?
○01 Less than 10 minutes ○04 10-20 minutes ○07 More than 20 minutes

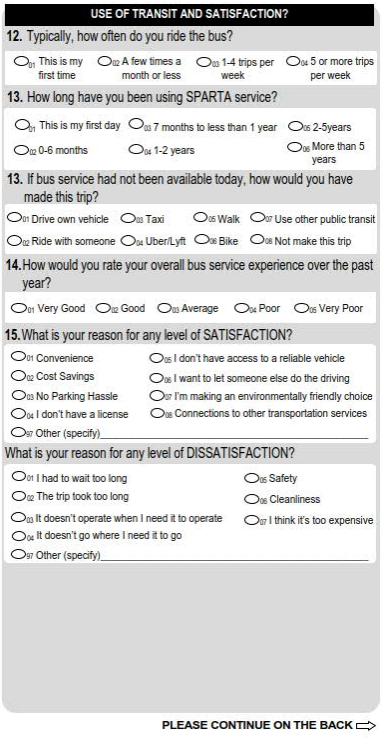


FINAL BUS STOP USED?

4. Where will your trip end?
Address, intersection, landmark, etc.
Cross-Street #1 & Cross-Street #2

GET FROM TRANSIT

5. How will get from your bus stop to your final destination?
○01 Walk ○02 Will Drive/Drove alone & Park ○03 Dropped off
○04 By Wheelchair ○05 Bicycle ○06 Uber/Lyft
○07 Carpool & Park ○97 Other (specify)
6. Typically, how long does it take you to reach your final destination from the bus stop?
○01 Less than 10 minutes ○04 10-20 minutes ○07 More than 20 minutes
7. What is a reasonable walking/biking time to/from the bus stop?
○01 Less than 10 minutes ○04 10-20 minutes ○07 More than 20 minutes
8. Did you need to transfer between routes to get to your destination?
○01 Yes ○04 No
9. Did you use a wheelchair, scooter, or walker during your trip?
○01 Yes ○04 No
10. If you rode your bike to/from transit, did you use bike racks...?
○01 Yes, I used a bike rack at the bus stop
○02 Yes, I used the bike rack on the front of the bus on this trip
11. What is the purpose of your trip today? *(Fill in one bubble only)*
○01 Work ○06 Medical appointment/Hospital visit
○02 School/College/Training ○07 Restaurant
○03 Shopping/Errands ○97 Other (specify)
○04 Social/Fun/Entertainment
○05 Home



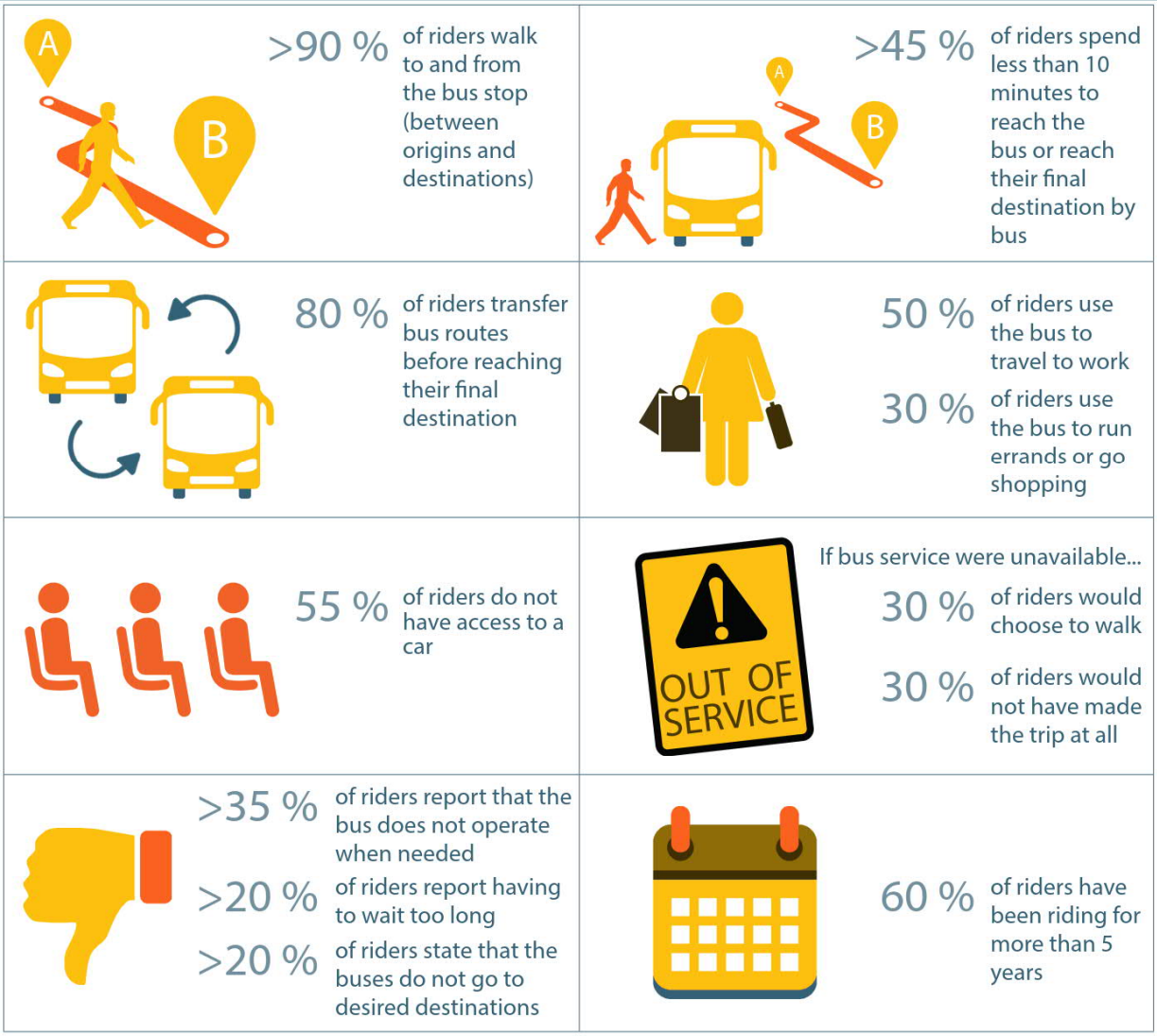
USE OF TRANSIT AND SATISFACTION?

12. Typically, how often do you ride the bus?
○01 This is my first time ○02 A few times a month or less ○03 1-4 trips per week ○04 5 or more trips per week
13. How long have you been using SPARTA service?
○01 This is my first day ○03 7 months to less than 1 year ○05 2-5years
○02 0-6 months ○04 1-2 years ○06 More than 5 years
13. If bus service had not been available today, how would you have made this trip?
○01 Drive own vehicle ○03 Taxi ○05 Walk ○07 Use other public transit
○02 Ride with someone ○04 Uber/Lyft ○06 Bike ○08 Not make this trip
14. How would you rate your overall bus service experience over the past year?
○01 Very Good ○02 Good ○03 Average ○04 Poor ○05 Very Poor
15. What is your reason for any level of SATISFACTION?
○01 Convenience ○05 I don't have access to a reliable vehicle
○02 Cost Savings ○06 I want to let someone else do the driving
○03 No Parking Hassle ○07 I'm making an environmentally friendly choice
○04 I don't have a license ○08 Connections to other transportation services
○97 Other (specify)
What is your reason for any level of DISSATISFACTION?
○01 I had to wait too long ○05 Safety
○02 The trip took too long ○06 Cleanliness
○03 It doesn't operate when I need it to operate ○07 I think it's too expensive
○04 It doesn't go where I need it to go
○97 Other (specify)

PLEASE CONTINUE ON THE BACK ⇨

The information showed in the next pages summarizes the survey results.

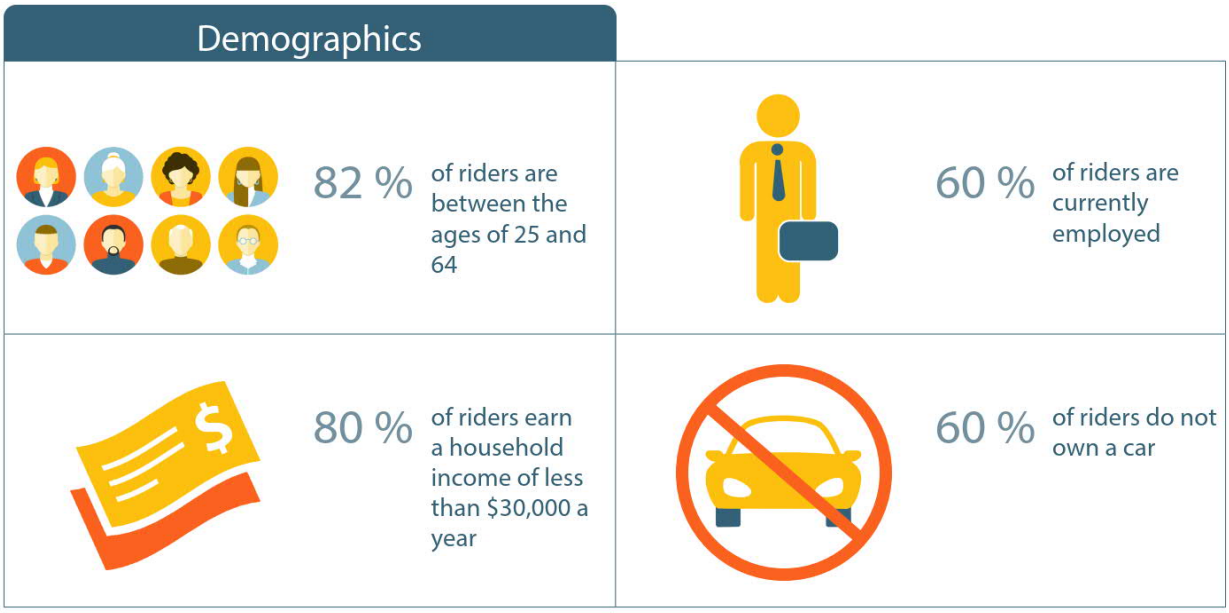
The Anatomy of the Rider



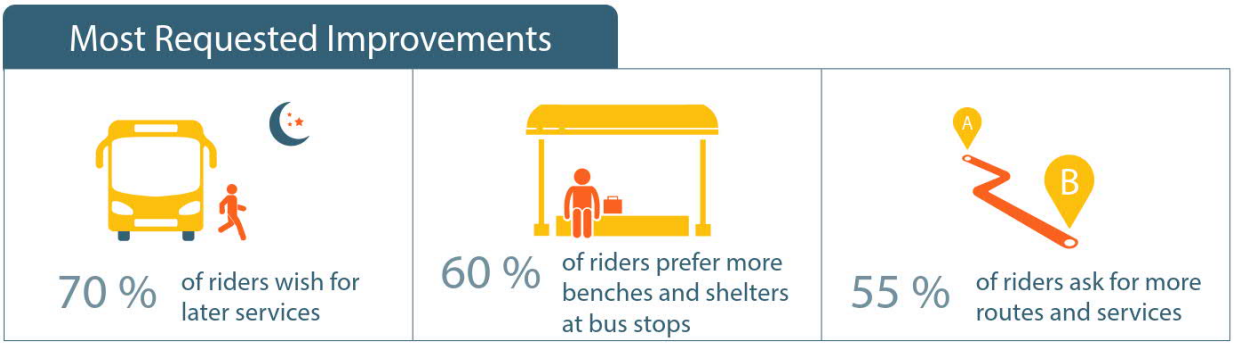
These stats indicate that more than 50% of the riders are captive riders and they are loyal to the system (60% have been riding for more than five years), they don't have access to a car and their only mobility option is to walk or use transit. Most people use transit for work purposes.

The first mile / last mile treatments are very important, as 90% of riders walk from and to a bus stop. When looking a the bigger picture, the city will need to align their pedestrian and bicycle policies to provide safe and convenient access to stops.

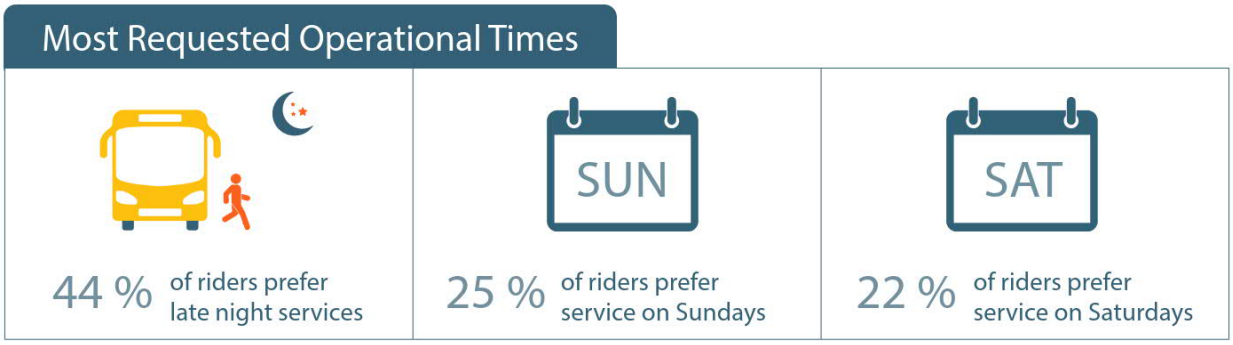
The demographics collected on the surveys reinforce this information: 82% are between the ages of 25 and 64 years old, which corresponds with the productive age. 60% are employed and 80% earn less than $30K a year.



For riders, their main priority is later service, followed by installation of more shelters and benches at bus stops, and more routes and services.

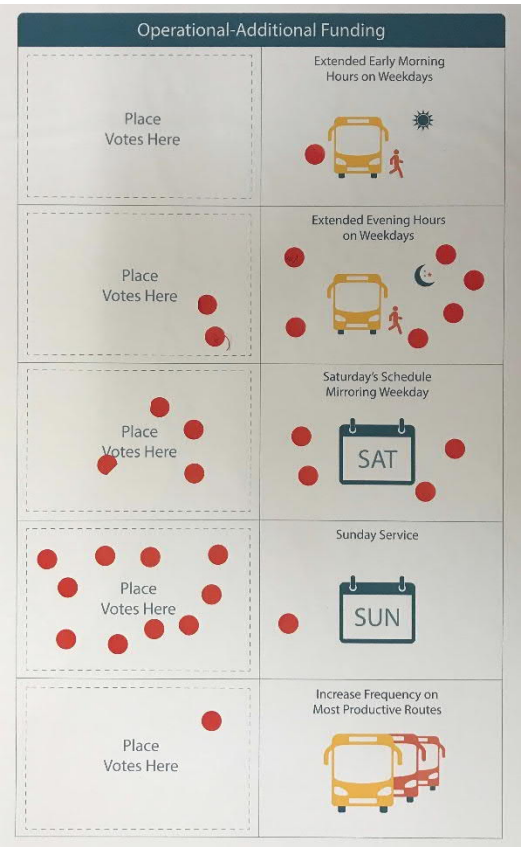


This was corroborated with the next questions, when riders requested later service, followed by Sunday service and running the entire system on Saturdays.



Open House

Two open houses were held on January 23 2020 to present the recommendations to transit riders and the general public. The first one at the Transfer Center drew about 30 people who provided comments on the recommendations. The second one attracted mostly neighborhood representatives.



The main comments received at these two events are as follow:

- Extend service hours
  - Evening service
  - Saturday service mirroring weekdays service
  - Sunday service

Some riders requested service to other areas:

- Boling Springs
- Northbook Medical Plaza
- North Grove
- YMCA
- Goodwill

The most voted service improvement was to provide service on Sundays (11), followed by evening service on weekdays (8).

7. Service Recommendations

The Comprehensive Operational Analysis recommendations were developed based on input from a variety of sources which are summarized in the prior sections. The initial sources included and analysis of existing conditions and the understanding of the transit market population. The data includes population and employment densities, demographic information, socio-economic and land use data. A robust public engagement process guided the development of the recommendations. Meetings with the Steering Committee, focus groups provided an overview of the community as a whole; surveys and open houses solicit community and riders input on service provided by SPARTA and on desired changes and new service requests.

Those recommendations have been grouped in three scenarios: short, middle and long term. The intent is to provide the city with tools to make the system more efficient and at the same time prepare it for future service and expansion.

Transit Modes

To best serve the community, there are a few types of transit service that could be adopted, as described in the overview below:

Fixed Route

Fixed Route

Operation of transit service along a set route with scheduled stops at various common collection points. Operation of fixed route service requires the operation of ADA complementary demand response service for individuals unable to ride the fixed route vehicle.

Commuter Service

Commuter Service

Fixed route service operated only during peak commuting times in the morning and evening connecting major residential areas with major employment areas. Commuter service is generally an ‘express’ service in that it makes limited stops along its route to keep the trip time as close as possible to automobile trip times. Commuter service does not require the operation of complementary ADA paratransit service.

Deviated Fixed Route

Deviated Fixed Route

Operation of transit service along a set route with scheduled stops but with scheduling flexibility built in to the scheduling process that allows the driver to deviate within a certain distance of the route with an advance reservation. Route deviation services meet the requirement for complementary ADA paratransit service.

Demand Response

Demand Response

Service operated on an on-demand basis. Also known as paratransit or dial-a-ride service. Demand response service requires that patrons call ahead to schedule trips. Service can be door-to-door or curb-to-curb. Demand responsive service does not operate along a set route; service on any given day depends on the trips scheduled. However, standing reservations, or subscription services are often allowed that give patrons who make the same trip on a recurring basis to schedule multiple trips within a specific time period. Also, where possible, the dispatcher tries to group, or batch trips to serve multiple passengers during a single trip between common origins and destinations.

Flex Zones

Service is also operated on an on-demand basis. This service, also called microtransit, is defined as a shared transportation system that can offer fixed routes and schedules, as well as flexible routes but all on an on-demand scheduling.

Vanpooling

Vanpools

Can be operated by a paid driver or can be driven by vanpool participants. Vanpools are for larger groups of people going to a common destination or a small number of somewhat adjacent destinations. The pick-up location also needs to be convenient to vanpool participants and convenient to the highway. A park-and-ride lot is a common starting point for vanpools. The cost of the vanpool is split between riders and generally a successful vanpool participant would usually have a 15+ mile work commute

Park and Ride

Park and Ride

A parking area where people meet to share rides or to utilize transit service. The parking location is generally well lit and has a place to wait for ridesharing partners. Retail locations are often used to accommodate park and ride participants. A sheltered location is advantageous for participants to consider. Generally there is no cost to park in the park and ride area and this helps to encourage ridesharing and transit usage.

Recommendations

The recommendations are summarized by terms in the subsequent report sections. Each term reviews the major service improvements for SPARTA

The short-term recommendations are focused on cost neutral changes maintaining the current level of funding for operations and introduces the planning phase of the vanpool program, which will be implemented in the mid-term.

The recommendations provide gradual changes in the mid-term scenario that can be implemented over time as the City identifies additional sources of revenue.

Finally, the long-term scenario moves SPARTA towards a visionary approach, streamlining the routes, concentrating service on main corridors and introducing a new service, the Flex Zones. The city continues providing service into the county through partnerships with the county and employers.

Policy and personnel considerations and capital items are part of all the scenarios.

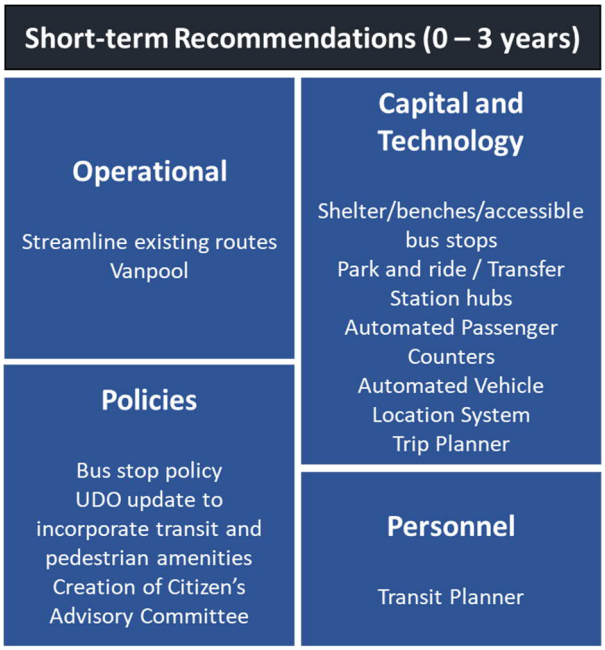
As the plan moves into the future a key recommendation is to establish transit hubs that would serve as major connection points between fixed routes and flex zones. These hubs could potentially serve the vanpool program once it is operational. The plan recommends keeping the hub and spoke system, but creates a cross town route with the consolidation of a route in west-east direction.

Although this change may require additional connections for some riders, it could benefit the system overall by decreasing route cycle times, allowing for cross-town expansion into other areas of the city and county, and reducing congestion at the Transfer Center. Furthermore, passengers would now be able to make connections at transit hubs located closer to their origins and destinations instead of having to travel to the Transfer Center.

Below is a detailed description of each one of the scenarios.

Short-term recommendations

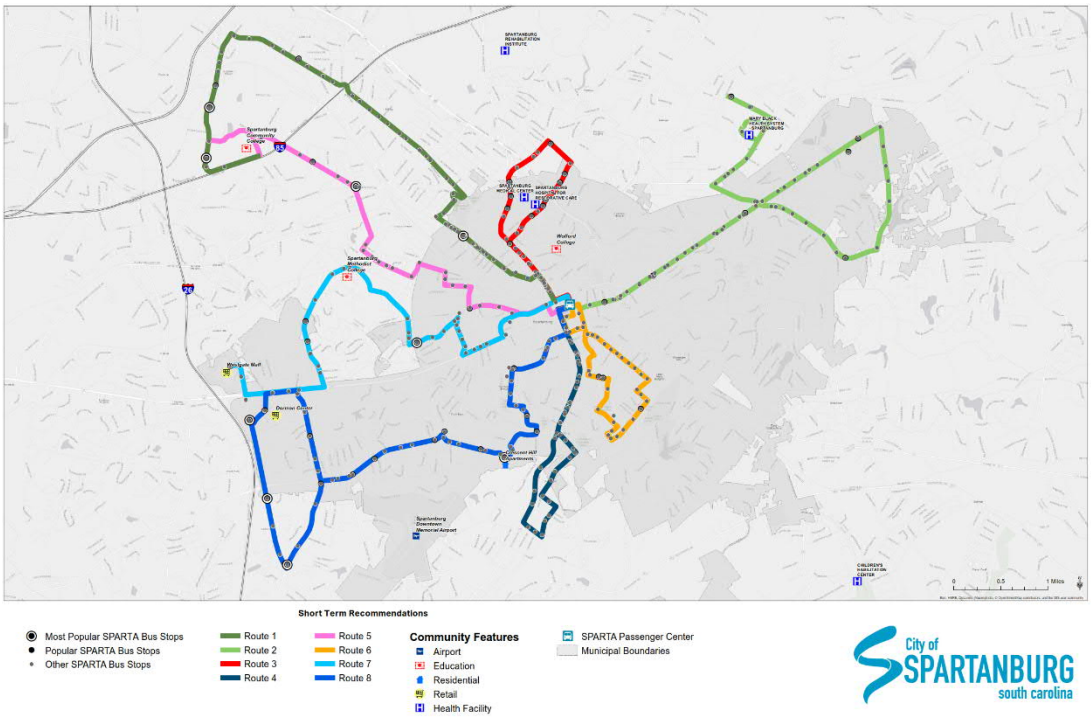
The short-term recommendations include improvements that can be achieved in the next 3 years. The scenario baseline is to keep operating expenses at the current level and incorporates capital and technology, policy and personnel recommendations that will strengthen SPARTA's service.



Operational Improvements

The operational improvements keep the same coverage and frequency of service in most routes. Eight routes are part of this scenario providing service within city limits and to some areas within the county. In order to increase operational efficiencies, the routes eliminate most of the loops, except in cases that it was not possible to find alternatives. This improvement will help providing a more reliable service and will help riders understanding the system better as routes will go and come back on the same corridors. The short-term scenario also reduces redundancies, in areas like Westgate Shopping Center and Dorman Center, distributing the service across the service area. Figure 6-1 shows the new route layout.

Figure 7-1: Short-Term Operational Improvements



Individual route layouts are provided in Appendix A . Service hours remain the same in this scenario. This ensures the recommendations remained cost and revenue neutral. Current service hours are from 6:30 am to 5:30 pm with a two-hour break from 12:00 pm to 2:00 pm.

Table 7-1: Short-Term Operational Details

Route Name	Area served	Span of Service	Frequency/Headway (minutes)	Required Vehicles
Route 1	Spartanburg Community College	6:30 a.m. to 5:30 p.m.	60	1
Route 2	Hillcrest	6:30 a.m. to 5:30 p.m	60	1
Route 3	North Church St.	6:30 a.m. to 5:30 p.m	60	1
Route 4	South Church St.	6:30 a.m. to 5:30 p.m	60	1
Route 5	Spartanburg Community College via New Cut Road	6:30 a.m. to 5:30 p.m	60	1
Route 6	South Liberty Street	6:30 a.m. to 5:30 p.m	60	1
Route 7	Westgate Shopping Center	6:30 a.m. to 5:30 p.m.	60	1
Route 8	Dorman Center	6:30 a.m. to 5:30 p.m	60	1

Turn-by-turn sheets are provided in Appendix B.

Capital Improvements

Bus stop infrastructure: Public input identified placing shelters and benches at bus stops as one of the highest priority capital improvements needed. The plan identifies retrofitting and installing 3 new shelters and benches per year. The bus stops should include other amenities such as lighting and trash cans.

Transfer Station Hubs: Another capital improvement recommendation in the short-term would be to begin the planning process for establishing transfer hubs. At first the hubs would serve the vanpool program; those could be located along transit routes and it areas with higher densities. The transfer hubs would also incorporate park and ride

facilities for people that can drive to the vanpool pick up areas. These transfer hubs will be in operation in the mid-term if the vanpool program is implemented.

- Vehicles

This scenario will continue operating with existing fleet, since the main operational changes are focusing on streamlining the routes.

Technology

There are several technology improvements that can be made immediately that would enhance the transit rider experience. The stakeholders identified providing real time information to riders as a desirable technology improvement. SPARTA has already applied for funding to acquire a real time information system. This platform will allow users to know the exact location and arrival time of the bus; there are many great options currently in the market that require minimal infrastructure investment and operate on web-based platforms, such as Swiftly. Better understanding of arrival times will reduce complaints from riders and may have a positive impact on ridership. This type of software also provides data on route segments and intersections causing avoidable performance issues and will allow SPARTA to analyze route performance.

Automated passenger counters are recommended for all of the buses. Even when FTA requirement for reporting purposes is 20 percent of the fleet, once the software is acquired the cost of the individual counters is nominal and can be incorporated in new bus acquisition. In this scenario two buses should be retrofitted with APC systems to fulfill the reporting requirements. This would allow collecting reliable passenger information, perform segment analyses and overall understand the ridership trends.

A trip planner is also recommended in the short-term scenario. The trip planner is usually provided through the Google platform, it requires a GTFS feed and annual maintenance, but the operational cost is low (around $5K/year). The trip planner is very effective to provide information to riders that are unfamiliar with the transit system.

Personnel

The short-term recommendations include a transit planner to perform dedicated transit planning tasks. It is recommended to contract out this position for the first 3 years and have someone embedded for at least part-time. This planner will analyze data to determine the effectiveness of transit service provided, ridership numbers, bus stop usage, etc.

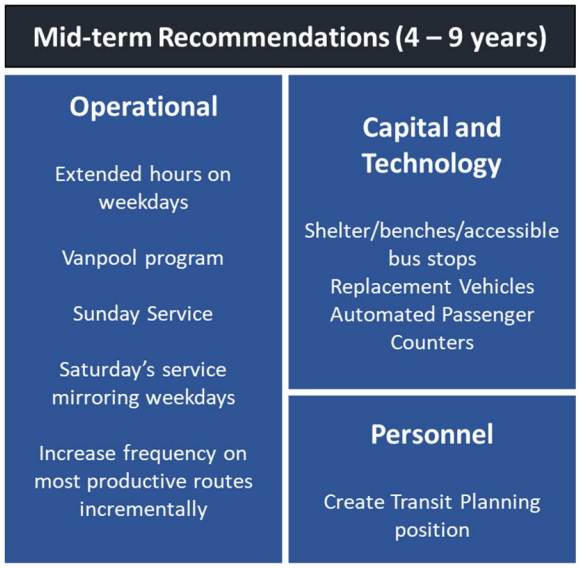
Policy

There are recommendations that don't have financial impact yet can produce big impacts on the provision of transit service. In the short term, the policy recommendations include the following:

- Creation of a Citizen's Advisory Committee: The purpose of the committee would be to engage on future transit planning and operations, to bring the community know-how to the table and to advocate for transit. It is recommended to develop an application for people to apply for the seat. The first committee would be selected and appointed by City Council; successive committee member applications would be reviewed by the Citizen's Advisory Committee members and a recommendation made to council to appoint those individuals.
- Bus Stop Policy: it is recommended the development of a bus stop policy that addresses the location of bus stops. This policy would include minimum distances in urban and suburban areas, what type of ridership will grant the installation of shelters or benches and identify the location of all shelters in the system.
- Unified Development Ordinance (UDO) update: the UDO would incorporate provisions that allow transit planning staff to request bus stops amenities, including pads, shelters and benches, and easements when developers request permits. This is something many agencies do to be able to secure adequate transit infrastructure and the cost to the developer is minimum.
- Pedestrian and Bicycle Policies related to Transit Stops and Transfer Stations: the surveys indicated that 90% of the riders walk from and to their destination. The first and last miles become a very important element in the provision of transit, and policies need to be developed to incorporate those elements. Appendix C provides policy recommendations that could help advancing safe and convenient access to transit.

Mid-term recommendations

The mid-term recommendations build up on the prior recommendations for years four to nine. The routes remain the same, giving opportunity to the system to measure performance and tweak the routes according to fluctuations in ridership. These recommendations have been developed based on input from stakeholders and riders and will have financial implications. A summary of the recommendations is shown below.



Operational Improvements

The operational improvements in this scenario would need to be implemented incrementally. The recommendations in the mid-term for fixed route include mostly all those improvements that can make a difference for the workforce: later evening service, Sunday service and increases Saturday hours.

Later evening service was the number one priority for the Steering Committee and Stakeholders that participated in the focus groups and was the rider's number one request. This recommendation will increase service hours from 5:30 p.m. until 8:30 p.m. Additional hours can be added in future years as demand increases.

Sunday service and Saturday service mirroring weekday service were rated high by the riders in the surveys, more routes and services were in the top three requests. The riders confirmed the importance of these two options at the Open House at the Transfer Center.

These options were rated higher than reliability and frequency. Riders understand there are limited resources and prefer to focus on more service hours than on additional buses on current routes.

Increase frequency on most productive routes is recommended once all the other operational recommendations in this scenario are implemented and if the city is successful finding new sources of revenue. Increasing frequency will not only be beneficial for captive riders but also to it will appeal to other segments of the population that currently don't ride.

All these improvements will ease the transition to the more streamlined system, higher frequencies and flex services in the long-term.

- Vanpool Program

Recognizing that fixed-route service is not always the most appropriate transit mode for the transit need, a vanpool program is recommended to serve employees and employers. SPARTA can take the lead role in promoting and implementing a vanpool program that would strive to achieve the initiatives of energy conservation, reducing congestion, improving air quality, reducing vehicle miles, and provide an enhanced regional connectivity. The rideshare program would be more flexible and would allow for more long-distance work commute travel that fixed-

route services cannot efficiently accommodate. The vanpool program would target potential employees living in the city and working in the county, where a great number of jobs are located.

Vanpool Benefits. SPARTA can provide employers with an opportunity to accommodate a target market of employees who have long commutes to and from the workplace, or have no means of transportation and no current opportunities to benefit from the manufacture jobs in the county. The intent of this program would be to increase mobility for captive riders living within city limits, increase the use of alternative transportation in the region and connect individuals and employers with building a sustainable solution for work-related commuter trips. Employers would benefit through improved worker productivity, expanded labor market, increased worker retention, and reduced need to expand parking facilities. The regional labor markets are very diverse, and workers commute from many outlying areas to travel to employment centers.

Vanpool routes are usually designed to begin at a meeting/pick up location and travel to the worksite. Pick up locations can range from shopping centers, churches, businesses, or designated park and ride lots. In Spartanburg, pick up locations could include the Transfer Center and other transit hubs, current and future park and ride lots, as well as shopping centers along major travel nodes convenient for vanpool participants.

Each van would have the seating capacity of 5 to 14 passengers, depending on the size configuration of the vehicle. Minivans are very popular and require fewer passengers, though some agencies deploy 14-passenger vans that can carry many more people. An important distinction between a vanpool program and other transit modes is that the vans are not directly operated by the transit agency. Instead, a vanpool participant (employer) would lease the van from the City of Spartanburg and be responsible for driving and fueling. The vanpool driver would be allowed to park the vehicle at his or her residence, which is particularly convenient for the driver when the vanpool route is far from a transit hub.

It is recommended that SPARTA identify potentially interested local employers and conduct internal, employee surveys with these employers to assess employee interest and to note the trip patterns made to the workplaces. Interested local employers may be identified through several means: South Carolina Department of Commerce, Chamber of Commerce, and municipal economic development departments. In addition, the US Census Bureau's LEHD dataset provides quantitative information on commute patterns as well as concentrations of jobs and workers. SPARTA may use this dataset to identify likely vanpool partners by focusing on employers that have higher job concentrations paired with higher concentrations of worker origins. This type of analysis was conducted for the COA using the most recent LEHD data and is included in Chapter 3.

Since the vanpool program would be a new service, SPARTA would need to procure vans to be able to implement this service as well as providing necessary insurance coverage. However, there are third party providers, such as Enterprise, that have programs in place and lease vans for vanpool programs across the country. The program then can be as big or small as the demand and the agency doesn't have to incur in capital expenses.

Capital and Technology Improvements

The recommendations include continuation of the bus stop program, installing three ADA compliant shelters per year. In this way the city can continue advancing the shelter program in a way that is not onerous or draining their scarce resources.

- Vehicles

This scenario includes the acquisition of three replacement 35ft vehicles and one cut away. The city has done a great job keeping the fleet in good repair and it is recommended to continue doing so.

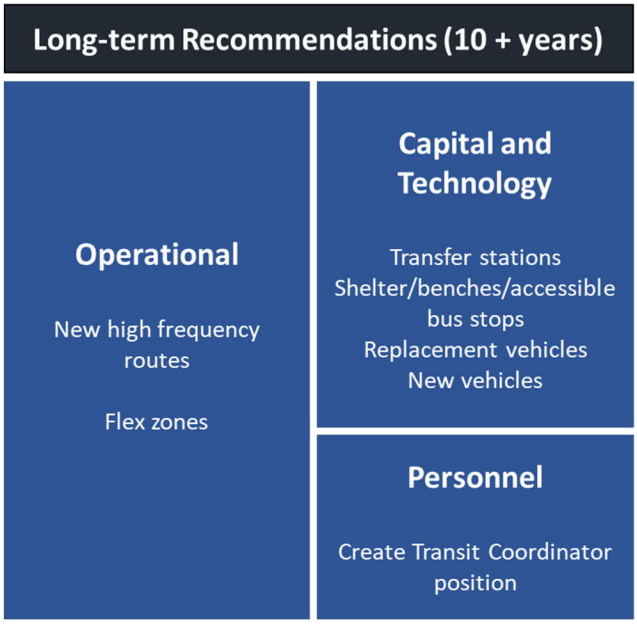
In terms of technology, the city will include APCs in any new vehicles acquired in the future. In this way the reporting will improve over time and the rotation of vehicles to sample routes on a regular basis will be less important.

Personnel

The mid-term recommendations formalize the transit planner position, becoming a full-time position dedicated to transit planning. This position could potentially be funded with 5303 funds as the city is already providing regional connectivity and working at regional level.

Long-term Recommendations

The long-term recommendations begin on year ten and beyond. This scenario introduces a new model of providing service, with the incorporation of flex zones. Capital and technology recommendations are an expansion of the prior scenarios and personnel incorporates an additional position.



Operational Improvements

The operational improvements in this scenario radically change service delivery introducing high frequency routes that serve the areas with more ridership and flex zones, providing an on-demand service that connects to fixed route. These two strategies complement each other, eliminate redundancies and increase efficiencies. On the operational side only the most productive routes run on a fixed route mode, and the rest of the service is on-demand. For this scenario, three zones have been identified to be served by flex services, two within city limits and one in the county. This zone will most likely require a partnership with the county.

Current routes are condensed in five routes serving each quadrant in the city and extending into the county (route W1).

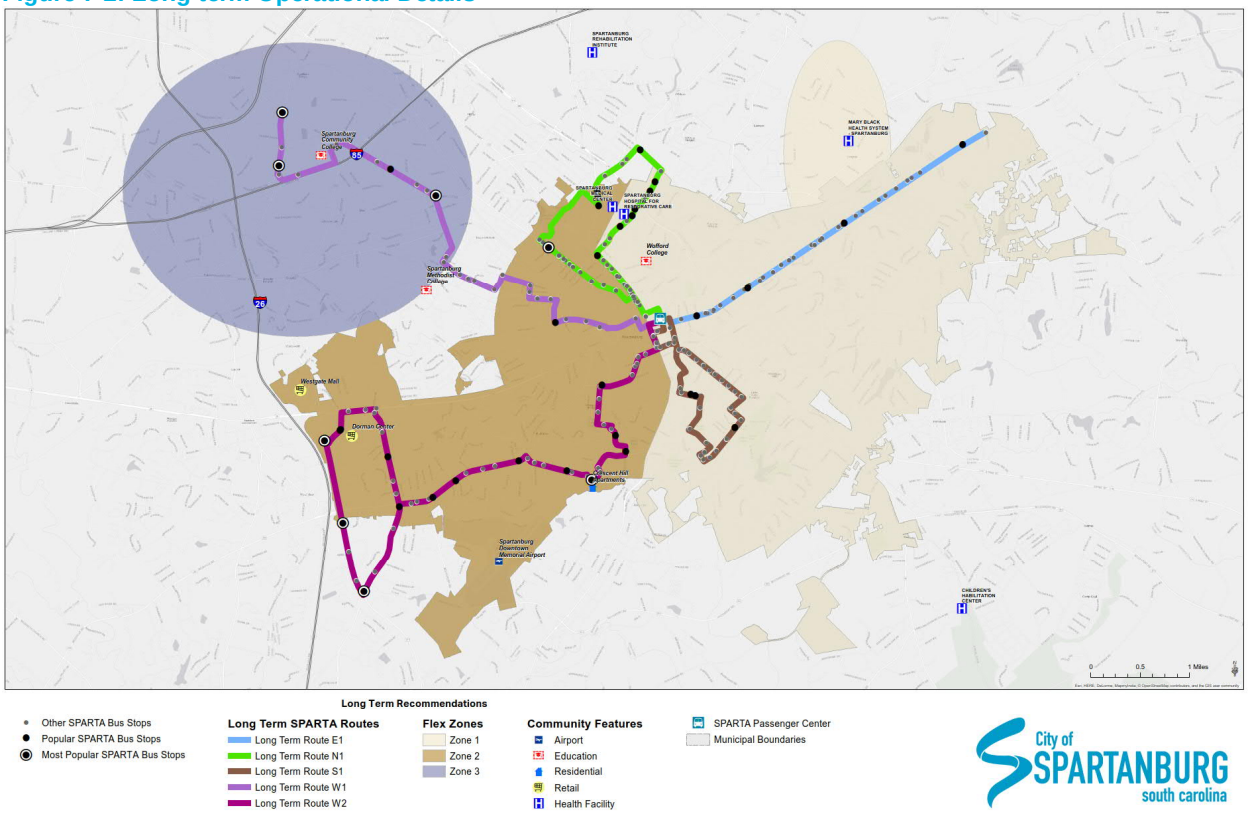
Table 7-2: Long-term Operational Details

Route Name	Area served	Span of Service	Frequency/Headway (minutes)	Required Vehicles
Route E1	Hillcrest	6:30 a.m. to 8:30 p.m.	30	2
Route N1	North Church St.	6:30 a.m. to 8:30 p.m	30	1
Route S1	South Liberty Street	6:30 a.m. to 8:30 p.m	30	1
Route W1	Spartanburg Community College	6:30 a.m. to 8:30 p.m	30	2
Route W2	Dorman Center	6:30 a.m. to 8:30 p.m	30	2
Zone 1	East Spartanburg	6:30 a.m. to 8:30 p.m	N/A	1
Route 2	West Spartanburg	6:30 a.m. to 8:30 p.m.	N/A	1
Route 3	New Cut Road area	6:30 a.m. to 8:30 p.m	N/A	1

The flex zones serve riders based on requests. The van picks up riders at centralized locations and bring them to designated bus stops along existing routes or within the zone. This eliminates the need for riders to go to the transfer center every time they need to reach a destination outside of their regular route. Systems that have implemented this

service offer apps to schedule rides on the same day, though each transit agency establishes their own operational parameters. In order to attract riders, service needs to be provided expeditiously. Due to the almost door to door nature, this service has the potential to absorb ADA trips, therefore reducing the cost per trip for people with disabilities.

Figure 7-2: Long-term Operational Details



Capital and Technology Improvements

The recommendations include continuation of the bus stop program, installing three ADA compliant shelters per year.

- Vehicles

This scenario includes the acquisition of one new 35ft vehicle.

Personnel

The long-term recommendations incorporate an additional full-time position, the transit coordinator. This position will work with the transit planner coordinating transit projects and assisting with grant writing and compliance.

8. Implementation and Financial Plan

The services recommended for implementation and the estimated annual operating cost of implementing the recommendations for the first ten years are presented in Table 8-1. The operating statistics and ridership estimates for the services in Table 8-1 are presented in Appendix D.

In Table 8-1, the following assumptions were made for the first three years:

- New routes are implemented and cost and revenue neutral assumptions are made.
- A new part-time transit planning position is assumed to be a contracted position, with an estimated cost of $50K
- Bus shelters, benches and bus stop retrofit will start on year 1
- New APC software will be acquired and installed in at least 2 buses.
- Federal Section 5307 funding will be applied for from FTA and utilized.

Years four to nine assumptions are as follows:

- New expanded hours of operation are assumed based on mid-term recommendations in Section 6.
- A new full-time transit planning position is funded with a cost of $80,000.
- Three replacement buses and one cutaway are acquired to continue the enhanced proposed service plan.
- Bus shelter program continues with the same funding as in the first three years.
- New buses are retrofitted with APC systems, for a total of five buses.

Year 10 and beyond assumptions are as follows:

- New routes are in effect and flex zones are implemented.
- New 35ft. bus is acquired and retrofitted with APCs.
- A transit coordinator position is funded.

Potential Funding Sources

This section evaluates the financial plan for the proposed transit system service. Transit expenditures, capital, operating costs and funding sources are calculated in this chapter. In addition, this chapter includes a discussion of the financial capacity and identifies the financial impact for the City of Spartanburg of this proposed transit service plan.

In order to fund the long-term recommendations, local revenues will be required to provide the necessary local match needed to acquire federal and state funding. The South Carolina Department of Transportation (SCDOT) administers various Federal and State Aid Grant Programs to assist localities with funding for public transportation systems. SCDOT distributes various types of Federal Transit Administration (FTA) funding to small urbanized localities based on an application process.

The Spartanburg UZA is a small urbanized area and therefore eligible for the use of FTA Section 5307 Urbanized Area funding. Formula funding from the FTA is typically used to fund up to 50% of operating expenses and 80% of capital investments in the transit system for Section 5307 Urbanized Area funding.

Federal Sources of Transit Funding Table 7-3 is a summary of the Federal grants, some of which are administered by SCDOT, which SPARTA is eligible for the financing of an expanded public transportation system. Most all transit systems in the United States receive substantial federal funding. This section provides a summary of the transit funding options available for Spartanburg UZA. All funding programs include limiting factors related to the eligible recipients and eligible costs, either planning, capital and/or operating costs.

Federal funding is established through legislative program structures and programs maintained in the Fixing America's Surface Transportation (FAST) Act. The FAST Act preserved much of the previous transportation reauthorization bill, Moving Ahead for Progress in the 21st Century (MAP-21), legislative programs and funding shares. Because the horizon of the FAST Act is much longer than MAP-21, the FAST Act provides longer term funding provisions for transportation agencies. Federal funding categories that can be leveraged for transit improvement projects are detailed below.

Table 8-1: Capital and Personnel Financial Plan

	Year	Total Operating Costs	Sparta Share (Section 5307)	Federal Source (5307)	State Share (5307)	Local Share (5307)	Total Capital Cost	Federal Source (Section 5307)	State Share (5307)	Local Share (5307)	Federal Source (Section 5339)	State Share (5339)	Local Share (5339)	Remaining Capital Costs	Total Local Share	Section 5307 Accrual	Capital Improvement	Unit Costs
Short Term	2020	$ 1,419,744	$ 1,136,844	$ 709,872	$ 141,974	$ 567,898	$ 916,000	$ 426,972	$ 91,600	$ 91,600	$ 120,000	$ 15,000	$ 15,000	$ 155,828	$ 830,326	$ -	Replacement Vehicles	$ 700,000
																	Bus Shelters	$ 75,000
																	Personnel (Contracted)	$ 50,000
																	APC	$ 91,000
	2021	$ 1,441,040	$ 1,159,581	$ 720,520	$ 144,104	$ 576,416	$ 125,000	$ 40,000	$ 12,500	$ 12,500	$ 48,000	$ 6,000	$ 6,000	--	$ 594,916	$ 399,061	Bus Shelters	$ 75,000
																	Personnel (Contracted)	$ 50,000
	2022	$ 1,462,656	$ 1,182,772	$ 731,328	$ 146,266	$ 585,062	$ 175,000	$ 80,000	$ 17,500	$ 17,500	$ 48,000	$ 6,000	$ 6,000	--	$ 608,562	$ 371,445	Bus Shelters	$ 75,000
																	Personnel (Contracted)	$ 50,000
																	Park & Ride Station	$ 50,000
Mid Term	2023	$ 2,587,432	$ 1,206,428	$ 1,031,228	$ 258,743	$ 1,297,461	$ 219,000	$ 175,200	$ 21,900	$ 21,900	--	--	--	--	$ 1,581,849	$ (0)	Bus Shelters	$ 75,000
																	APC	$ 64,000
																	Personnel (Staff)	$ 80,000
	2024	$ 2,626,243	$ 1,230,557	$ 1,230,557	$ 262,624	$ 1,133,063	$ 1,635,000	$ 770,506	$ 163,500	$ 163,500	$ 360,000	$ 45,000	$ 45,000	$ 87,494	$ 1,429,057	$ -	Replacement Vehicles	$ 1,400,000
																	Cutaway	$ 80,000
																	Bus Shelters	$ 75,000
																	Personnel (Staff)	$ 80,000
	2025	$ 2,665,637	$ 1,255,168	$ 878,617	$ 266,564	$ 1,520,456	$ 855,000	$ 376,550	$ 47,069	$ 47,069	$ 240,000	$ 30,000	$ 30,000	$ 84,312	$ 1,681,837	$ -	Replacement Vehicles	$ 700,000
																	Bus Shelters	$ 75,000
																	Personnel (Staff)	$ 80,000
	2026	$ 2,705,622	$ 1,280,271	$ 1,165,047	$ 270,562	$ 1,270,013	$ 155,000	$ 115,224	$ 14,403	$ 14,403	--	--	--	$ 10,970	$ 1,295,385	$ -	Bus Shelters	$ 75,000
																	Personnel (Staff)	$ 80,000
	2027	$ 2,746,206	$ 1,305,876	$ 1,188,348	$ 274,621	$ 1,283,238	$ 155,000	$ 117,529	$ 14,691	$ 14,691	--	--	--	$ 8,089	$ 1,306,018	$ -	Bus Shelters	$ 75,000
																	Personnel (Staff)	$ 80,000
	2028	$ 2,787,399	$ 1,331,994	$ 1,212,114	$ 278,740	$ 1,296,545	$ 155,000	$ 119,879	$ 14,985	$ 14,985	--	--	--	$ 5,151	$ 1,316,680	$ -	Bus Shelters	$ 75,000
																	Personnel (Staff)	$ 80,000
Long Term	2029	$ 2,944,082	$ 1,358,634	$ 1,086,907	$ 135,863	$ 1,721,311	$ 1,325,000	$ 271,727	$ 33,966	$ 33,966	$ 400,000	$ 50,000	$ 50,000	$ 485,342	$ 2,290,619	$ -	New Vehicle	$ 700,000
																	Cutaway	$ 240,000
																	Bus Shelters	$ 75,000
																	Transfer Station	$ 150,000
																	Personnel (Staff)	$ 160,000

Table 8-2: Federal Sources of Funding

Administered Federal Aid Grant Programs			
Federal Aid Grant Program	**Program Description**	**Eligible Recipients**	**Matching Ratios**
FTA Section 5303, 5304 and 5305 – Metropolitan and Statewide Planning formula funding	Support transit planning expenses.	• Metropolitan Planning Organizations (MPOs) • State DOTs	Up to 80% of eligible expenses
FTA Section 5307 – Urbanized Area formula funding	Supports operating and capital costs of transit operators. Used by the State DOT to fund small urban transit systems.	Funding is made available to designated recipients, which must be public bodies. Typically the State DOT is the designated recipient for urbanized areas between 50,000 and 200,000.	UP to 50% of eligible operating expenses. Up to 80% of eligible capital expenses.
FTA Section 5339(a) – Bus and Bus Facilities *formula* grant – contingent to Sparta becoming a large urbanized area	Provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.	• Designated Recipients of urbanized areas. • State DOTs that operate or allocate funding to fixed-route bus operators. • Sub-recipients include public agencies or private non-profits engaged in public transit.	Up to 80% of eligible capital expenses.
FTA Section 5339(b) – Bus and Bus Facilities *discretionary* grant – contingent to Sparta becoming a large urbanized area	Provides capital funding to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities.	• Designated Recipients of urbanized areas. • State DOTs that operate or allocate funding to fixed-route bus operators. • Sub-recipients include public agencies or private non-profits engaged in public transit.	Up to 80% of eligible capital expenses.
Flexible Funding Program – Surface Transportation Program (STP) Funds	Provides funding for a wide variety of projects that support operating and capital costs of transit operators. Used by the State DOT to fund small urban transit systems.	Funding is made available to designated recipients, which must be public bodies. Typically the State DOT is the designated recipient for urbanized areas between 50,000 and 200,000.	Up to 88.5% of eligible capital expenses.

Metropolitan and Statewide Planning – Sections 5303 Programs

These funds are available for planning activities that:

- Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency;
- Increase the safety of the transportation system for motorized and non-motorized users;
- Increase the accessibility and mobility of people and for freight;
- Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns;

- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight;
- Promote efficient system management and operation; and
- Emphasize the preservation of the existing transportation system.

This funding is allocated to SCDOT and then distributed to the MPOs in the state of South Carolina through a grant process with FTA. Each specific MPO receives an allocation through a SCDOT-administered formula.

Urbanized Area Formula Grant – Section 5307 Program

The Section 5307 formula grant provides transit capital, operating and planning assistance to urbanized areas with populations of more than 50,000. This program has the most encompassing eligibility of any federal program providing funding to transit systems. Grant funds are utilized to support the development, maintenance and improvement of public transportation in urbanized areas. Eligible projects fall into three primary categories: Planning Projects, Capital Projects and Operating Projects.

Planning eligible activities include, but are not limited to: studies relating to management, operations, capital requirements, and economic feasibility; work elements and related activities preliminary to and in preparation for constructing, acquiring, or improving the operation of facilities and equipment; plans and specifications; evaluation of previously funded projects; job access and reverse commute projects; and other similar or related activities before and in preparation for the construction, acquisition, or improved operation of public transportation systems, facilities, and equipment.

Capital projects eligible under the Urbanized Area Formula Program include all projects included under 49 U.S.C. 5302(3). In general, capital project expenses involve purchasing, leasing, constructing, maintaining, or repairing facilities, rolling stock, and equipment for use in a public transportation system. Capital project costs may include all direct costs and indirect costs associated with the project (provided that the grantee has an approved cost allocation plan or indirect cost proposal). It is noted that a listing of eligible projects is not shown here because of the breadth of projects. All eligibility of projects is generally determined by the FTA regional offices.

Example eligible projects include engineering design and evaluation of transit projects, capital investments in bus and bus-related activities such as replacement and overhaul of buses, rebuilding of buses, crime prevention and security equipment, construction of maintenance and passenger facilities and capital investments in new and existing fixed guideway systems. All preventive maintenance and some Americans with Disabilities Act (ADA) complementary paratransit service costs are considered eligible.

FTA provides funding to eligible recipients for costs incurred in the operation of public transportation service. In general, operating expenses are those costs necessary to operate, maintain, and manage a public transportation system.

Operating expenses usually include such costs as driver salaries, fuel, and items having a useful life of less than one year. Recipients in small UZAs, such as the Spartanburg area, may use Section 5307 funds for operating assistance. There is no limitation on the amount of their apportionment that recipients in these UZAs may use for operating assistance.

Established under MAP-21 and upheld by FAST Act legislation, the Section 5307 grant program also includes eligible activities from the Job Access and Reverse Commute (JARC) Program (formerly known as Section 5316), which focuses on providing services to low-income individuals to access jobs. These activities include operating assistance with a 50 percent local match for JARC activities. In addition, the urbanized area formula for distributing funds now includes the number of low-income individuals as a factor. There is no minimum or maximum amount of funding that can be spent on JARC activities.

The local match required for the Section 5307 funding can vary from 10% - 50% depending on the type of project. The federal share for planning and capital projects that receive funding under the Section 5307 Program may not

exceed 80 percent of the project cost. There are several notable exceptions in which the federal share may exceed 80 percent for certain projects related to ADA, Clean Air Act, and certain bicycle projects as follows:
Vehicles. The federal share is 85 percent for the acquisition of vehicles for purposes of complying with or maintaining compliance with the Americans with Disabilities Act of 1990 (ADA; 42 U.S.C. 12101 et seq.) or the Clean Air Act (CAA; 42 U.S.C. 7401 et seq.).

Vehicle-Related Equipment and Facilities. The federal share for project costs for acquiring vehicle-related equipment or facilities (including clean fuel or alternative fuel vehicle-related equipment or facilities) for purposes of complying or maintaining compliance with the CAA, or required by the ADA, is 90 percent.

The federal share for operating expenses may not exceed 50% of the net operating cost.

Bus and Bus Facilities Grant – Section 5339 Program

The Bus and Bus Facilities is a formula grant program created by MAP-21 legislation which replaced the previous Section 5309 discretionary Bus and Bus Facilities program. This capital-only program provides funding to replace, rehabilitate, and purchase buses and related equipment, and to construct bus-related facilities.
Distribution of this grant is formula based and requires a 20% local match. A portion of the total Section 5339 program has been also set aside as a discretionary pot of funding through the FAST Act. These competitive grants also provide additional federal resources to state DOTs and designated and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct facilities including technological changes or innovations to modify low or no emission vehicles or facilities. Note that despite the Section 5339 supporting capital only expenditures, preventive maintenance is not an eligible activity. A sub-program, the Low- or No-Emission Vehicle Program, provides competitive grants for projects that support the purchase or rehab of those specified vehicles. Note that Sparta currently access these funds through the SCDOT. The direct use of these funds will be contingent to becoming a large urbanized area with the 2020 census.

Flexible Funding Program – Surface Transportation Program (STP) Funds

The STP program provides a national annual appropriation to the Federal Highway Administration (FHWA). This funding has a broad project eligibility and funding may be used for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge project on any public road, facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities. This program funding can also be “flexed” to FTA for use by transit agencies. Once flexed to FTA, the funds generally follow the regulations and eligibility of Section 5307 funding.

State Sources of Transit Funding

The State of South Carolina, through SCDOT, has administrative responsibility for several FTA funding programs including the 5339 program. The Office of Public Transit at SCDOT has established administrative guidelines that are updated regularly that govern the use of a variety of FTA funding programs. The Office of Public Transit has integrated the administration of several FTA programs as much as possible to streamline its oversight functions, while remaining committed to the separate goals established for each program by Congress. South Carolina provides funding assistance for transit capital and operations through a formula program. The State has a matching fund of roughly $6 million dollars on an annual basis that is used for matching the FTA funding programs. These matching funds are predominately used in the large and small urban areas along with the matching funds for the rural (Section 5311) program.

Local Sources of Transit Funding

The local share for funding transit capital and operating expenses can come from a variety of sources, provided that they did not originate from a federal source. Local share is normally made in the form of cash; however, in some cases the local share can be made in the form of in-kind services or contributions. In-kind services are those services which may be used by the transit operation but paid for from another local source and not directly by the

transit operation. For example, shared use of a garage facility may be counted as in-kind contribution because the value of the service provided by the use of the garage could be paid from another source such as the Public Works Department. Typically, local share comes from three main sources, general fund, ad valorem taxes (property taxes), or sales taxes dedicated specifically to transit. For capital, general revenue or capital improvement bonds may be considered as a local share source.

Local funding can also come from public-private partnerships, local taxes, and advertising revenues. These funding sources are briefly described below.

Public-Private Partnerships: Large local employers could have a financial interest in the creation of various transit programs in the area, such as the Vanpool program. Consideration should be given to identifying these potential partners in formulating strategies to create a successful transit system.

Local Taxes: A property tax designated specifically for transit operations and capital improvements could be assessed. A dedicated millage levy could offset local funding costs and deficits in farebox revenues. Other potential sources could include car rental or lodging taxes or special fees.

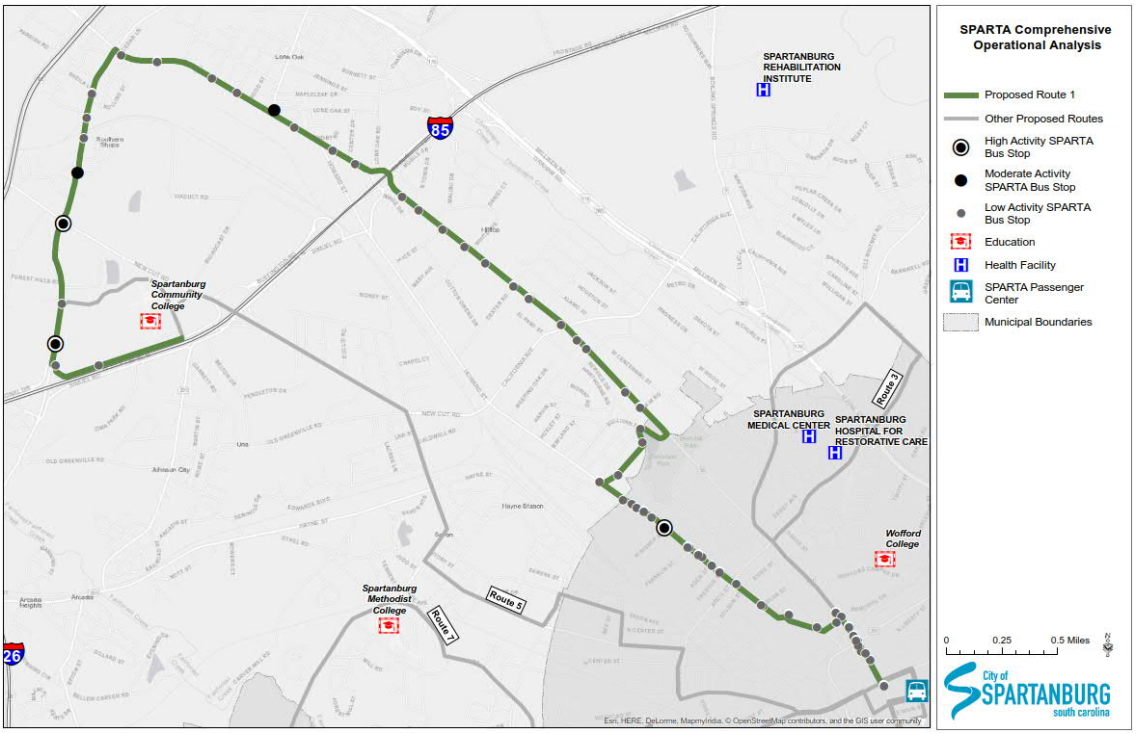
Sales Tax: The transportation sale tax is authorized under Section 4-37-30 of the Code of Laws of South Carolina 1976. It allows counties in South Carolina to raise up to one percent within its jurisdiction for a single project or for multiple projects and for a specific period of time to collect a limited amount of money. This sales tax needs to be approved by referendum and enacted in an ordinance. The ordinance must specify the project or projects to be funded, which could include: highways, roads, streets, bridges, mass transit systems, greenbelts, and other transportation-related projects facilities including, but not limited to, drainage facilities relating to the highways, roads, streets, bridges, and other transportation-related projects; other jointly-operated projects. The county is the entity allowed to call for a referendum under this law.

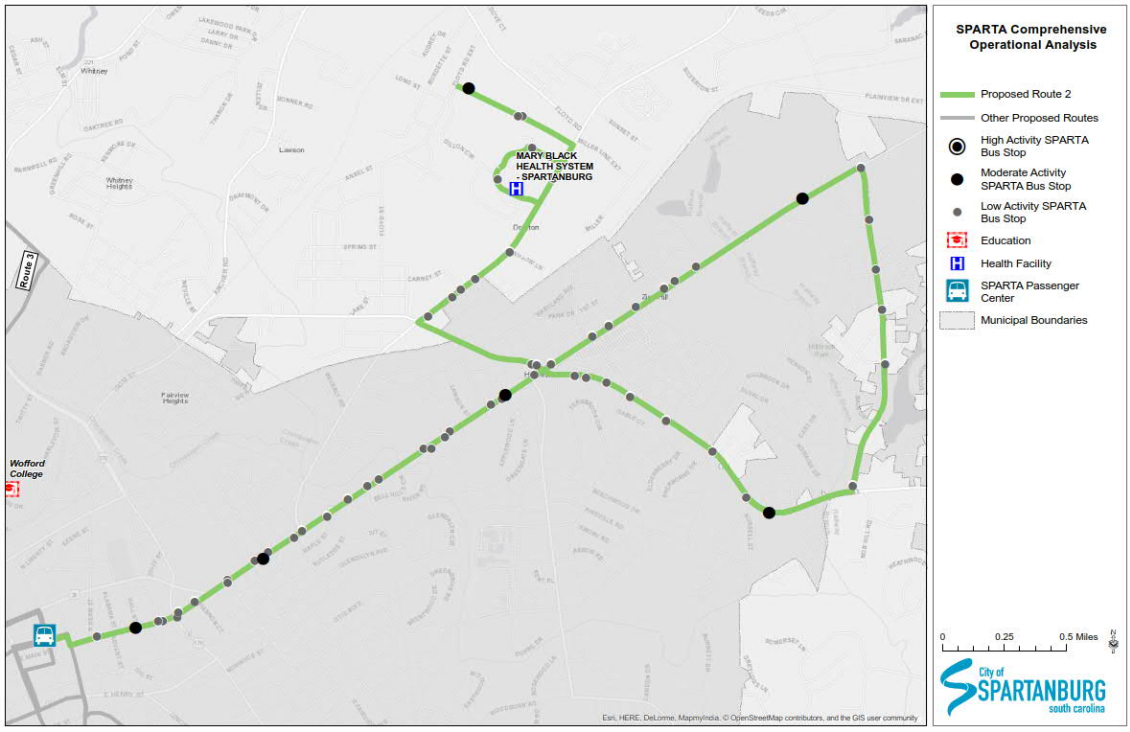
Advertising Revenues: While transit related advertising revenues are not usually a large revenue generator, they can still be used to help with operating and maintenance cost. Advertising revenues can typically be generated from display signage applied to bus exteriors or interiors and through shelter display programs.

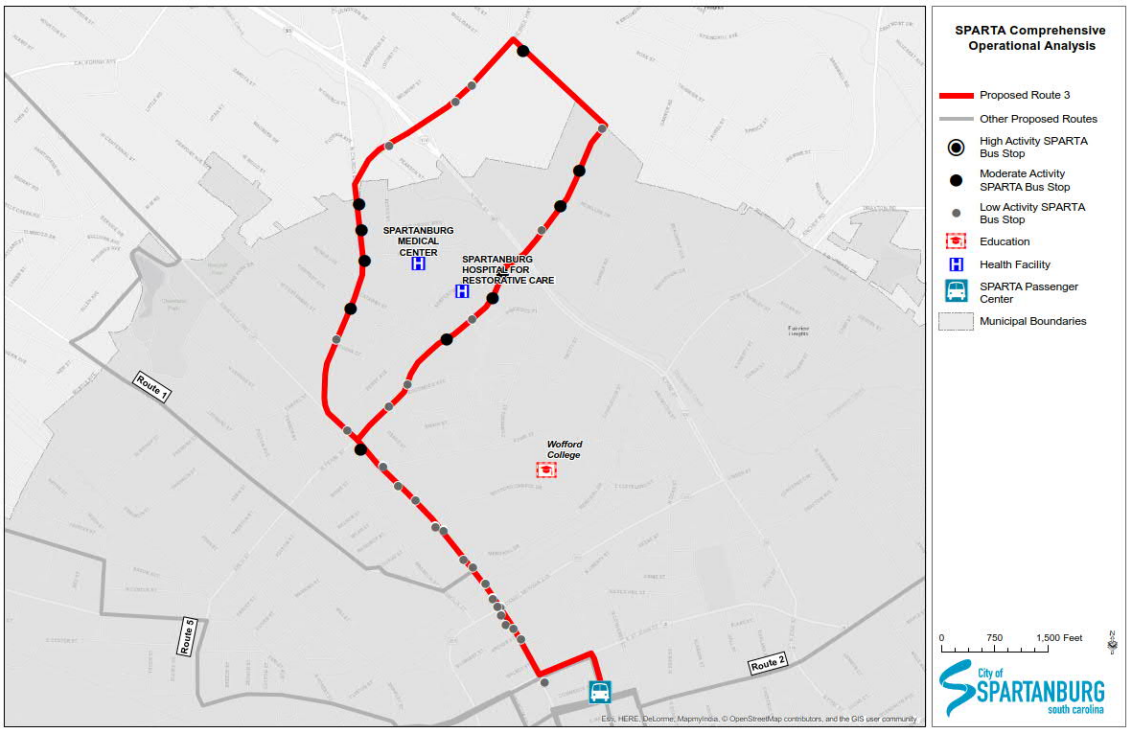
Other local funds SPARTA has been using are related to facility rentals, as they host Greyhound services in the transfer center. These funds are a good source of local match.

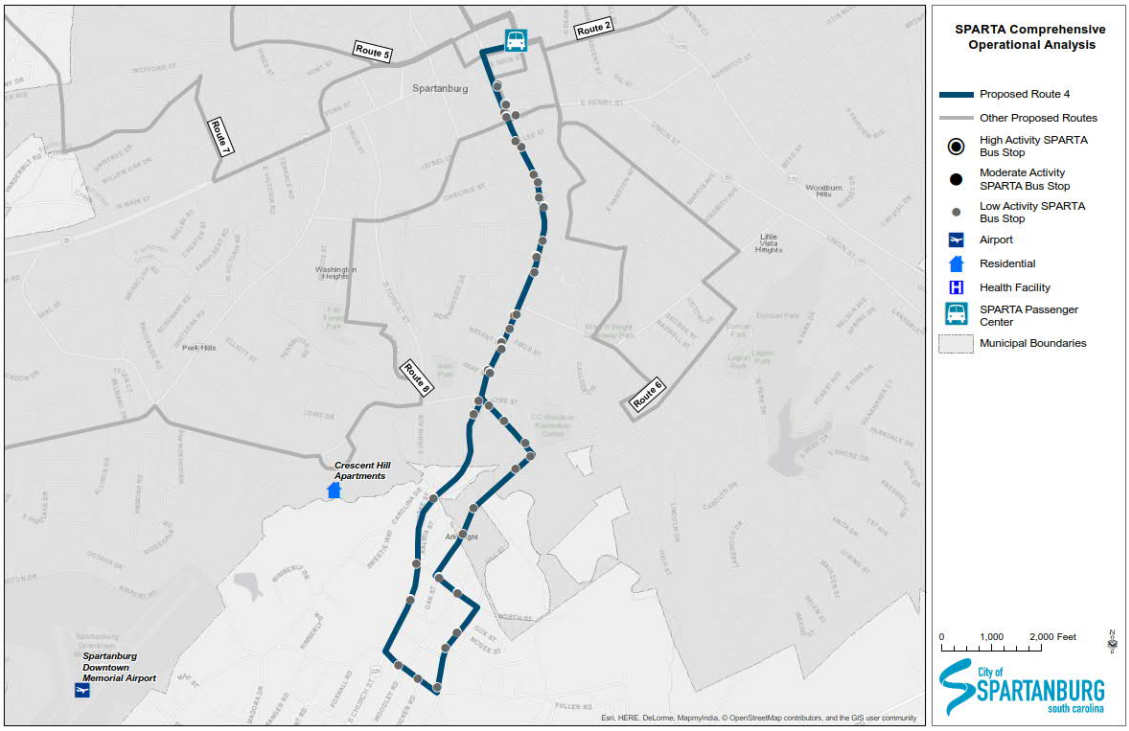
Appendix A Individual Route Maps

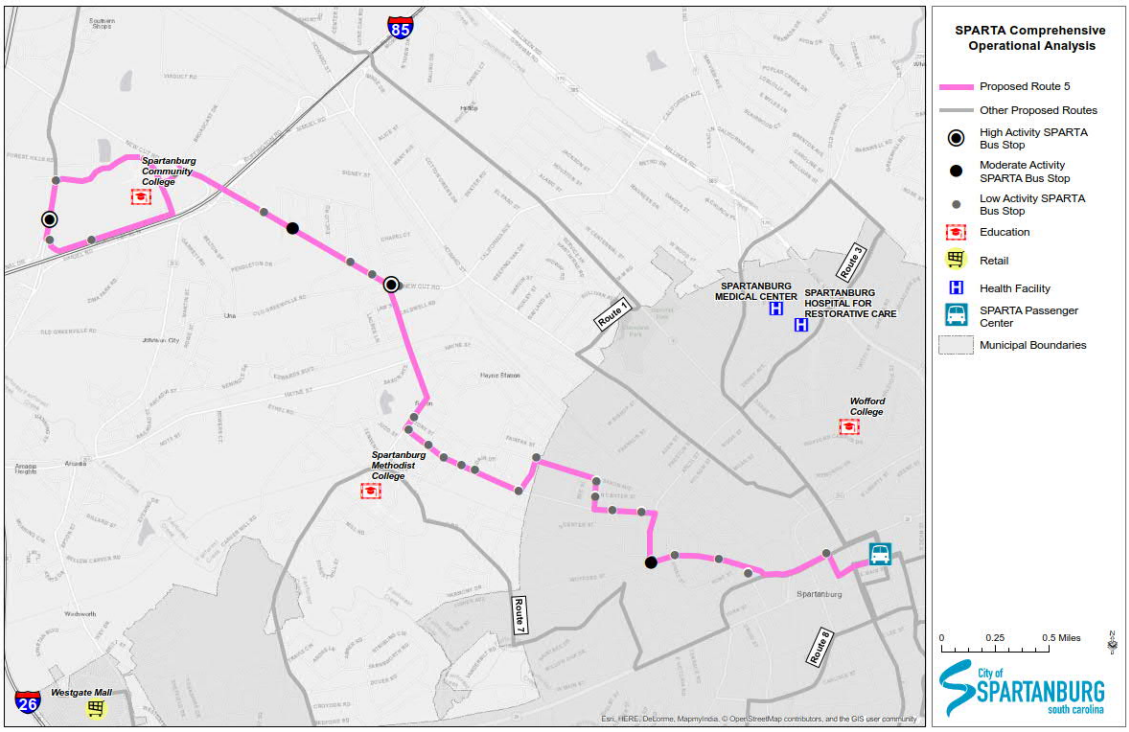
Short-Term Route Maps

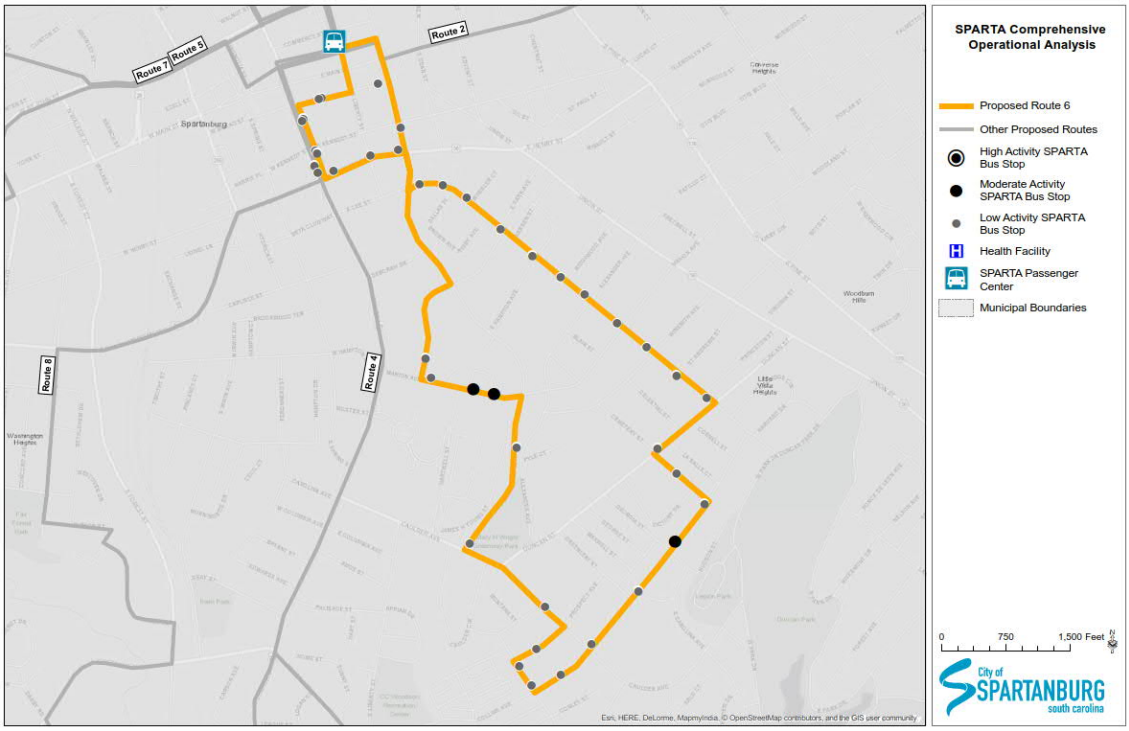


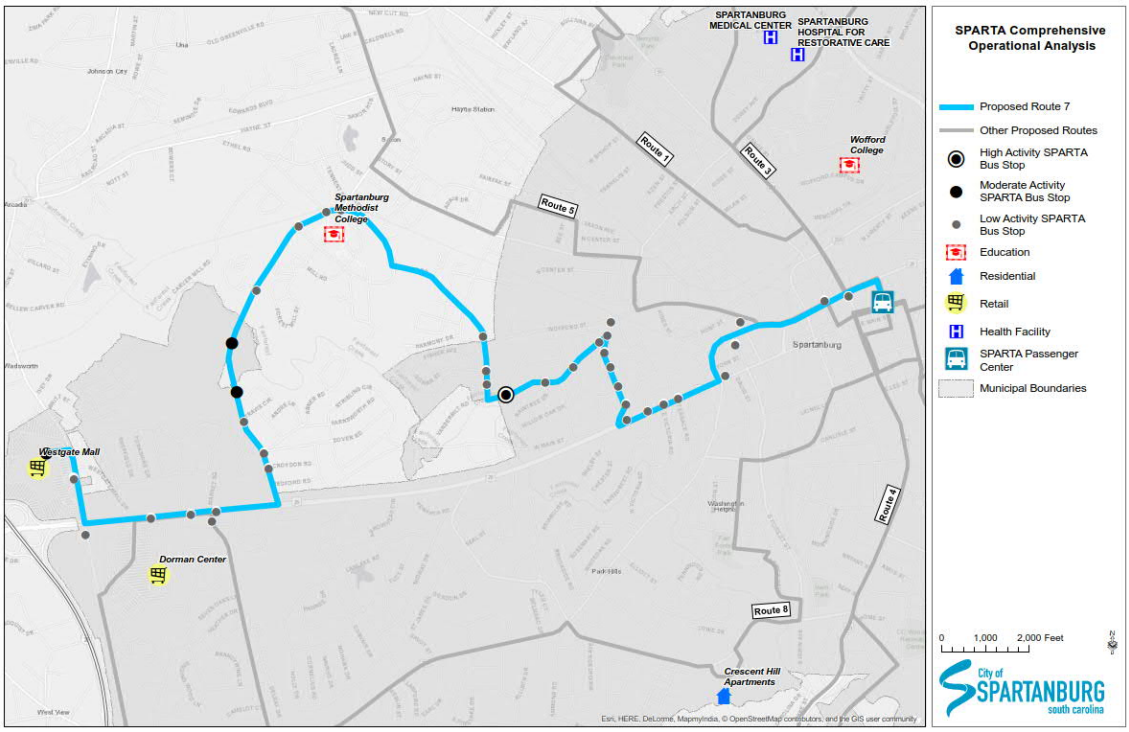


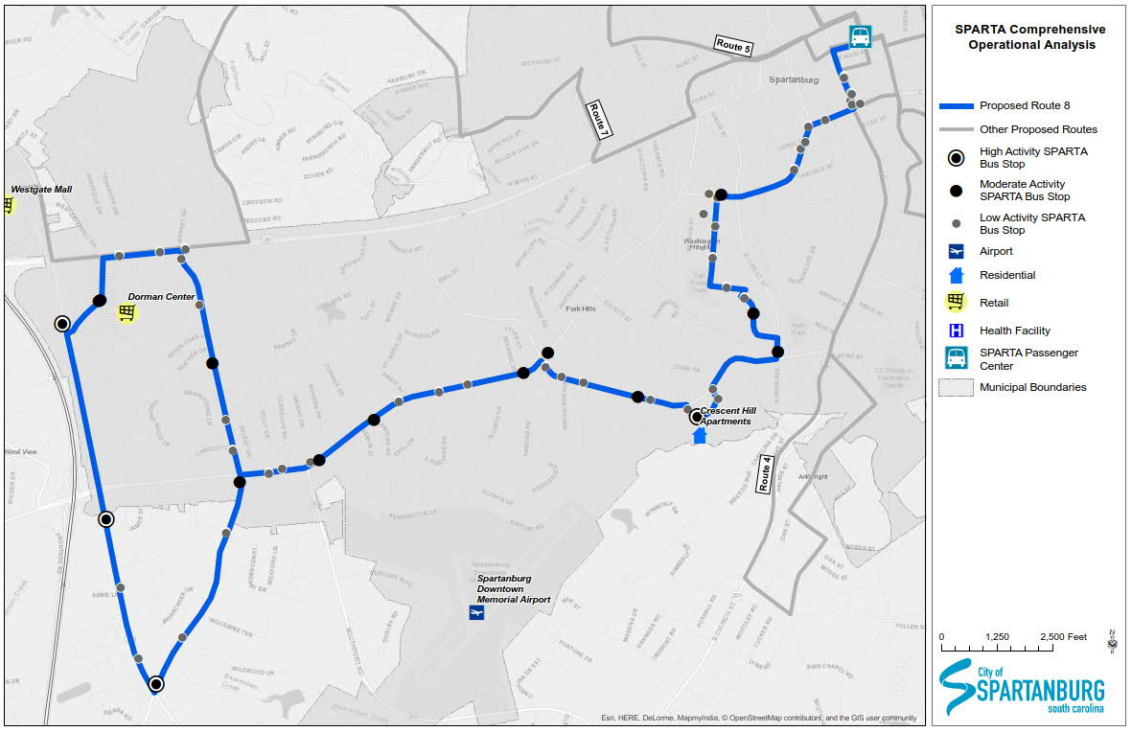

SPARTANBURG MEDICAL CENTER
SPARTANBURG HOSPITAL FOR RESTORATIVE CARE
Wofford College
Route 1
Route 5
Route 2
SPARTA Comprehensive Operational Analysis
Proposed Route 3
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Education
Health Facility
SPARTA Passenger Center
Municipal Boundaries
0 750 1,500 Feet
City of SPARTANBURG south carolina


Route 5
Route 2
Route 7
Spartanburg
Route 8
Route 6
Crescent Hill Apartments
Spartanburg Downtown Memorial Airport
SPARTA Comprehensive Operational Analysis
Proposed Route 4
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Airport
Residential
Health Facility
SPARTA Passenger Center
Municipal Boundaries
0 1,000 2,000 Feet
City of SPARTANBURG south carolina

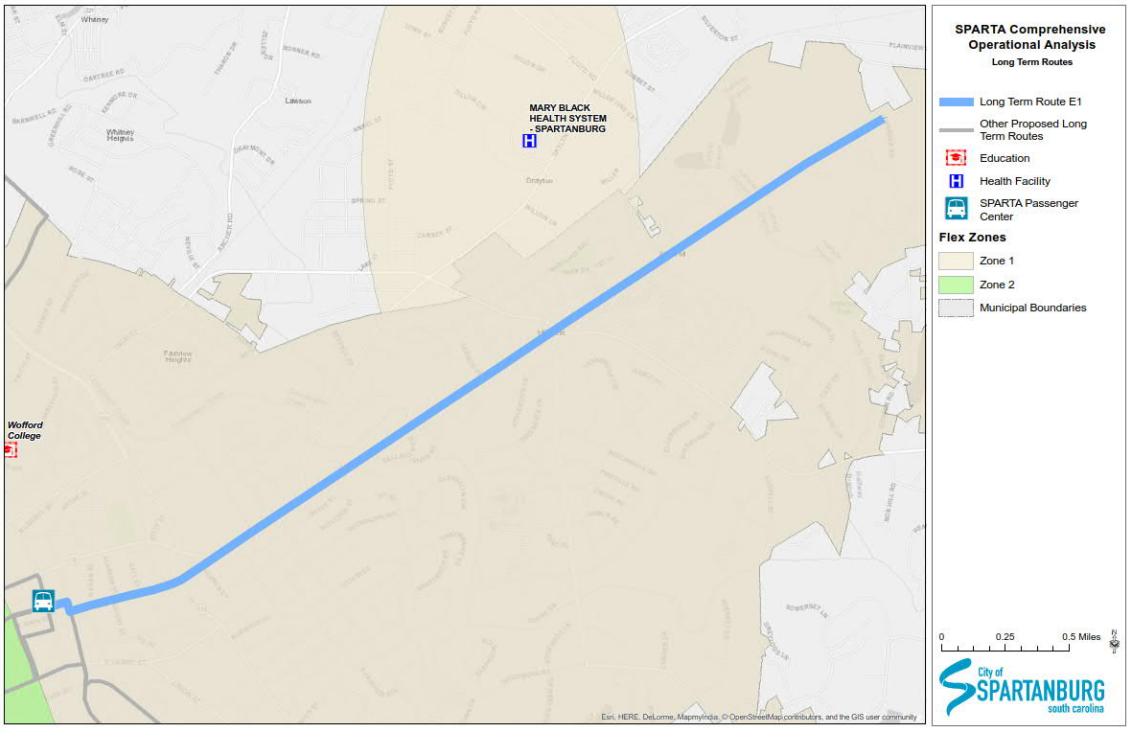

SPARTA Comprehensive Operational Analysis
Proposed Route 5
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Education
Retail
Health Facility
SPARTA Passenger Center
Municipal Boundaries
Spartanburg Community College
Spartanburg Methodist College
Wofford College
SPARTANBURG MEDICAL CENTER
SPARTANBURG HOSPITAL FOR RESTORATIVE CARE
Westgate Mall
Route 1
Route 3
Route 7
Route 8
0 0.25 0.5 Miles
City of SPARTANBURG south carolina

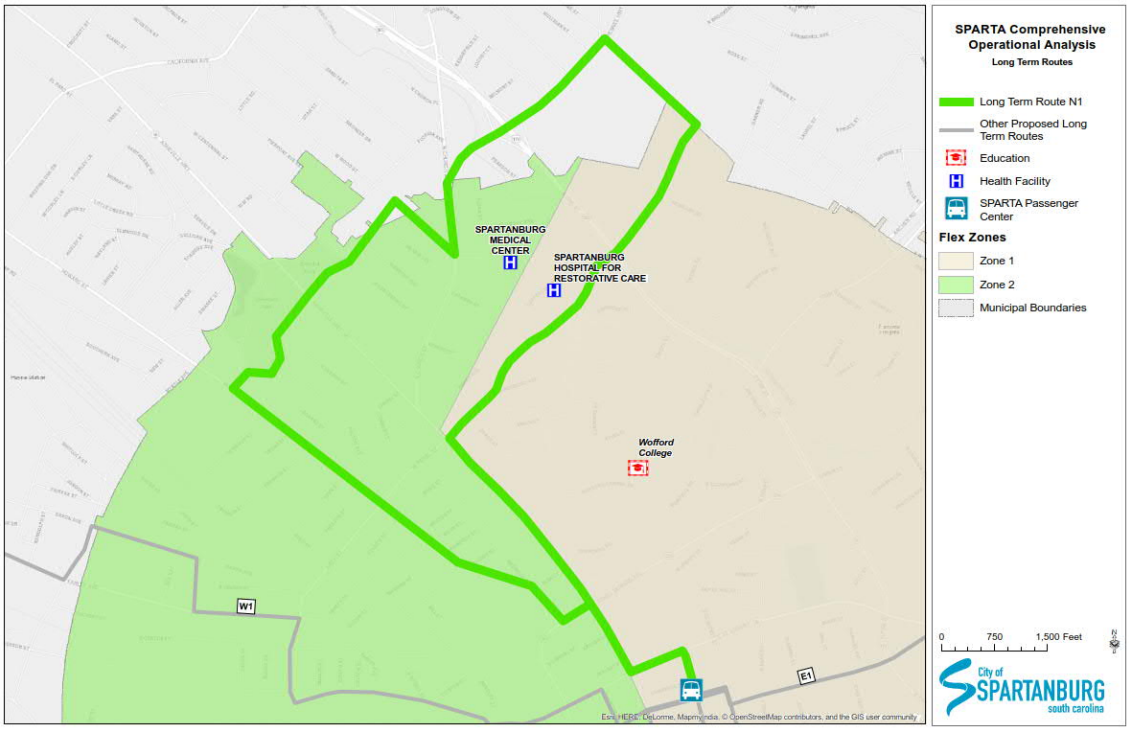

SPARTA Comprehensive Operational Analysis
Proposed Route 6
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Health Facility
SPARTA Passenger Center
Municipal Boundaries
Route 2
Route 4
Route 5
Route 7
Route 8
0 750 1,500 Feet
City of SPARTANBURG south carolina

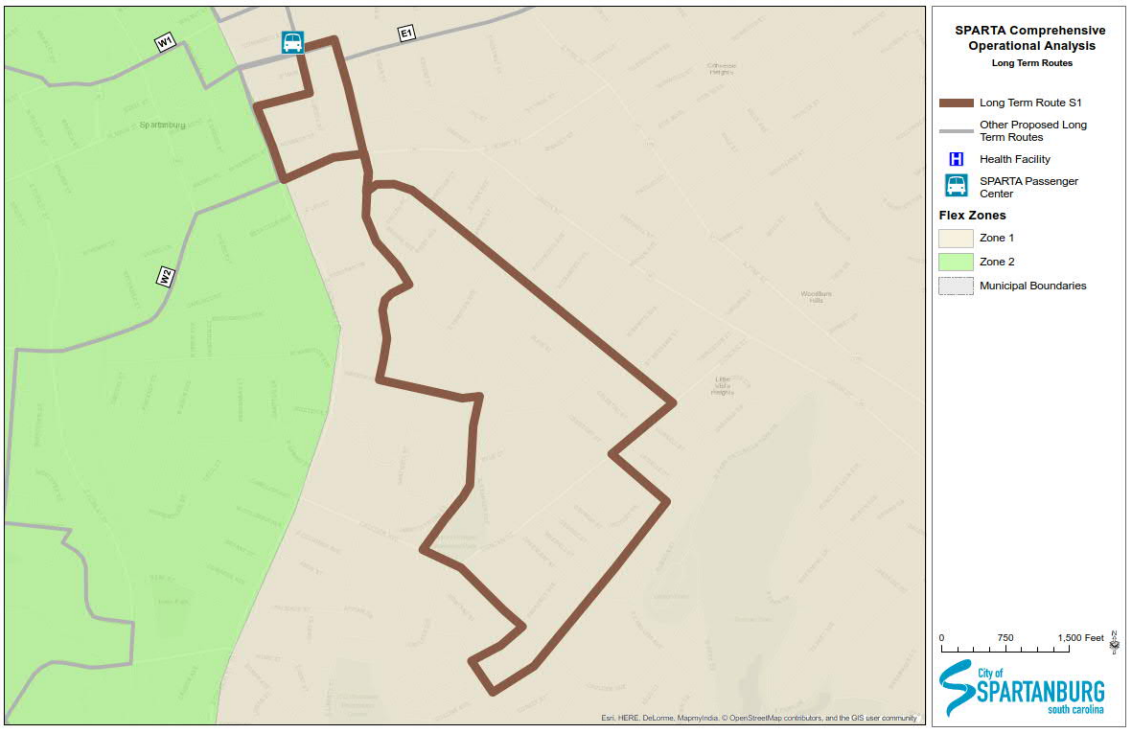

SPARTANBURG MEDICAL CENTER
SPARTANBURG HOSPITAL FOR RESTORATIVE CARE
Wofford College
Spartanburg Methodist College
Route 1
Route 3
Route 5
Route 4
Route 8
Spartanburg
Westgate Mall
Dorman Center
Crescent Hill Apartments
SPARTA Comprehensive Operational Analysis
Proposed Route 7
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Education
Residential
Retail
Health Facility
SPARTA Passenger Center
Municipal Boundaries
0 1,000 2,000 Feet
City of SPARTANBURG south carolina

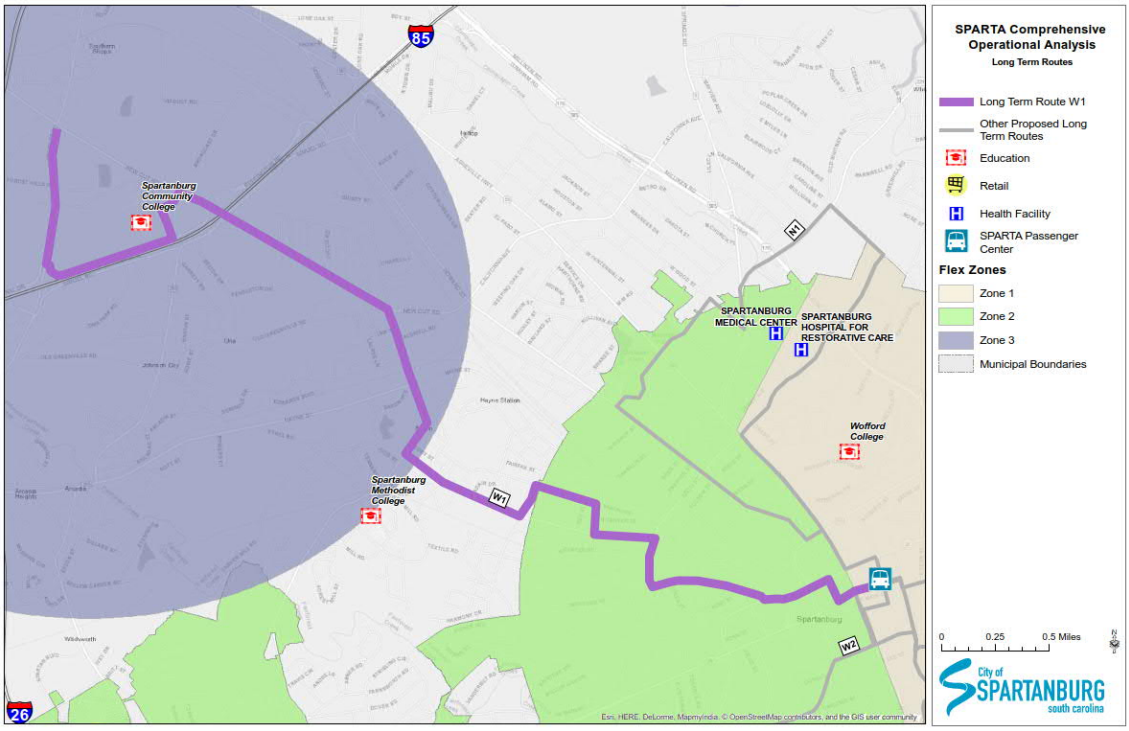

Route 5
Route 7
Route 4
Spartanburg
Westgate Mall
Dorman Center
Crescent Hill Apartments
Spartanburg Downtown Memorial Airport
SPARTA Comprehensive Operational Analysis
Proposed Route 8
Other Proposed Routes
High Activity SPARTA Bus Stop
Moderate Activity SPARTA Bus Stop
Low Activity SPARTA Bus Stop
Airport
Residential
Retail
Health Facility
SPARTA Passenger Center
Municipal Boundaries
0 1,250 2,500 Feet
City of SPARTANBURG south carolina

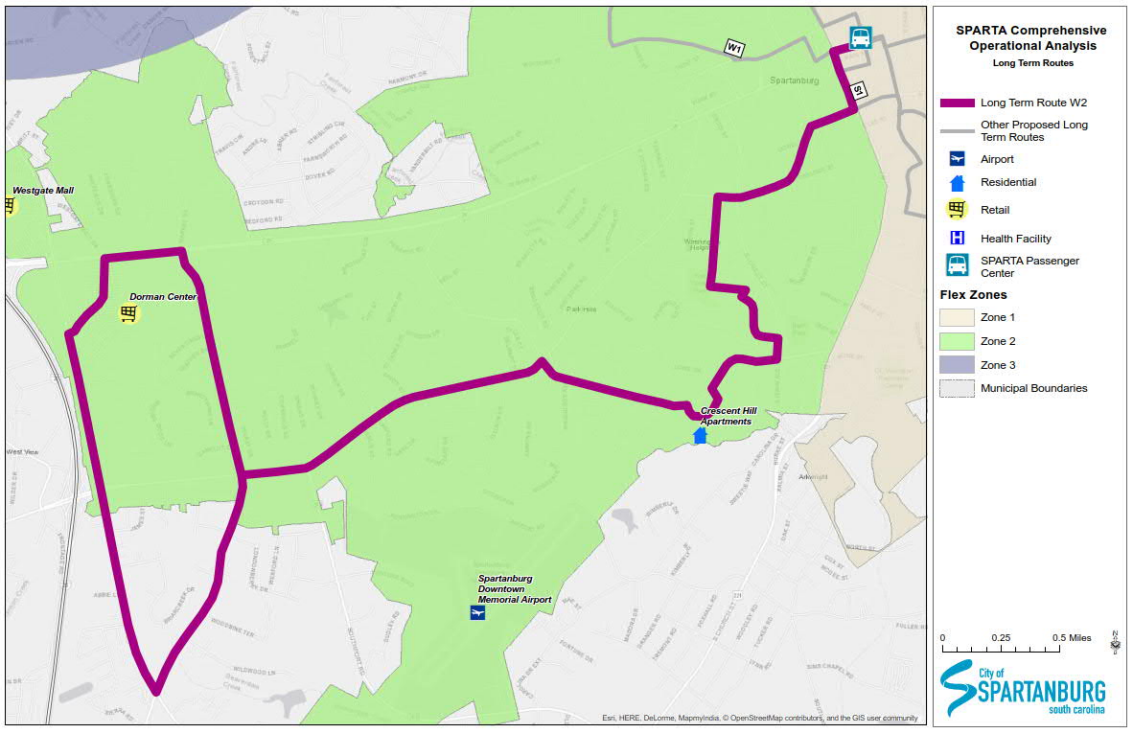
Long-Term Route Maps






W1
E1
W2
SPARTA Comprehensive Operational Analysis
Long Term Routes
Long Term Route S1
Other Proposed Long Term Routes
Health Facility
SPARTA Passenger Center
Flex Zones
Zone 1
Zone 2
Municipal Boundaries
0 750 1,500 Feet
City of SPARTANBURG south carolina


85
26
W1
W2
H1
Spartanburg Community College
Spartanburg Methodist College
SPARTANBURG MEDICAL CENTER
SPARTANBURG HOSPITAL FOR RESTORATIVE CARE
Wofford College
SPARTA Comprehensive Operational Analysis
Long Term Routes
Long Term Route W1
Other Proposed Long Term Routes
Education
Retail
Health Facility
SPARTA Passenger Center
Flex Zones
Zone 1
Zone 2
Zone 3
Municipal Boundaries
0 0.25 0.5 Miles
City of SPARTANBURG south carolina


SPARTA Comprehensive Operational Analysis
Long Term Routes
Long Term Route W2
Other Proposed Long Term Routes
Airport
Residential
Retail
Health Facility
SPARTA Passenger Center
Flex Zones
Zone 1
Zone 2
Zone 3
Municipal Boundaries
0
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0.5 Miles
City of SPARTANBURG south carolina
Westgate Mall
Dorman Center
Crescent Hill Apartments
Spartanburg Downtown Memorial Airport
Spartanburg
W1
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Appendix B Turn-by-Turn Short-Term Recommendations

#1 Spartanburg Community College via Asheville Hwy

Outbound from Passenger Center

Right on to Dunbar St. follow to Church St.

Turn Right on to Church follow to College St across from Wofford College

Turn Left on to College St. follow to Howard St.

Turn Right on to Howard St. follow to Swanee St

Turn Right onto Swanee St to N. Cleveland Park Dr.

Turn Right onto N. Cleveland Park Dr. to Asheville Hwy

Turn Left onto Asheville Hwy to Heron Circle

Note: Concerned about traffic back-up at Heron Circle in afternoon

Take 4th exit to stay on Asheville Hwy to Fairforest Rd.

Turn Left onto Fairforest Rd. New Cut Rd.

Turn Left onto New Cut Rd. to front entrance of SCC follow road to the right take the left after the parking lots on the right.

Inbound to Passenger Center

Continue to the stop sign turn right onto the frontage road.

Turn Right onto Brisack RD follow to Fairforest Rd

Turn Right onto Fairforest Rd. follow to Asheville Hwy.

Turn Right onto Asheville Hwy follow to Valley Falls Rd.

Turn Left onto Valley Falls Rd. follow to North Campus Rd.

Turn Right onto North Campus Rd. follow to Gramling Dr. (end of the line)

Turn Right on Gramling Dr and follow all the way around back to red light.

Turn Left back onto Valley Falls Rd. follow to Asheville Hwy.

Turn Left on to Asheville Hwy follow to Heron Circle.

Go around circle get off on 56 (3rd exit) follow to Cleveland Park Dr.

Turn Right onto Cleveland Park Dr. follow around pond

Bear to left on Swayne follow to Howard St.

Left onto Howard St. follow to Magnolia St. (yield sign)

Turn Right onto Magnolia St.

Immediate Left onto Alba Ct. Follow to Church St.

Turn Right onto Church St. follow to St. John St.

Turn Left onto St. John St. Follow to Liberty St.

Turn Right onto Liberty St. follow to Passenger Center

#2 Hillcrest Route

Outbound from Passenger Center

Right on to Dunbar St. to Church St.

Left on to Church St. to Broad St.

Left on to Broad St. follow all the way to Fernwood-Glendale Rd.

Go straight across Main St follow to Fernwood-Glendale Rd.

Right on to Fernwood-Glendale Rd. Pass Jessie Boyd School follow to Webber Rd.

Turn Left on to Webber Rd. Follow to red light on Main St.

Turn Left on to Main St. follow to signal after entrance to Walmart.

Turn Left in to shopping plaza, turn left at stop sign follow to stop behind the Wendy's. (end of the line)

Follow the road to the second stop sign and turn left come back out to the light

Turn Left Back on to Main St. turn right on to Drayton Rd. follow to Skyln Dr.

Right on to Skyln Dr. follow to Dillon Dr.

Left on to Dillon Dr. follow all the way to the circle at end of Dillon go back to Skyln Dr.

Inbound to Passenger Center

Right on to Skyln Dr. follow to Doctors Park.

Right on to Doctors Park follow to stop sign.

Turn Left follow around to Hospital turn Left in the front of Hospital turn Left

follow back down to the same road and left at stop sign going back to Skyln Dr.

Turn Right on to Skyln Dr. Follow to Drayton Rd.

Turn Left on to Drayton Rd. Follow to Main St.

Right onto Main St. and follow all the way Back to Commerce St.

Turn Right on to Commerce St. follow to Dunbar St.

Turn Left on to Dunbar St. follow to Passenger Center.

#3 North Church St.

Right on to Dunbar follow to Church St.

Right on to Church St. Bear to the right toward Spartanburg Regional

Bear to right toward Whitney under 176 to Beaumont Ave. (end of the line)

Turn Right onto Beaumont Ave. Follow to McCravy Dr.

Turn Right on to McCravy Dr. follow over Pine St. to Pearl St to Church St.

Turn Left onto Church St. follow to St. John St.

Turn Left on to St. John St. Follow to Liberty St.

Turn Right onto Liberty St. to the Passenger Center.

#4 South Church St.

Right on to Dunbar to Church St.

Turn Left on to Church St follow to South Ave. (end of the line)

Turn Left on to South Ave. follow to Arkwright Dr.

Turn Left on to Arkwright Dr. Follow to North St.(stop sign)

Turn Left On to North follow to Oak St.

Turn Right onto Oak St. follow to Bomar Ave

Turn Left on to Bomar Ave. follow to Church St

Turn Right onto Church St. follow to St. John St.

Turn Right onto St. John St. Follow to Liberty St

Turn Right onto Liberty St. to Passenger Center.

#5 Spartanburg Community College via New Cut Road

Outbound from Passenger Center

Turn Right from Passenger Center on to Dunbar follow to Magnolia St.

Turn Right on to Churchr St. follow to St. John St.

Turn Left on St. John St. follow to Wofford St.

Turn Right on to Wofford St. to Arch St.

Turn Right on to Arch St. to Farley St.

Turn Left on to Farley St. to Hugh St.

Turn Right on to Hugh St. Follow to Saxon St.

Turn Left on to Saxon St. to Williams St.

Turn Left on to Williams St. to Farley St.

Turn Right on to Farley St. Continue Cleveland St.

Follow to stop sign on Front St.

Turn Right on to Front St. to Sibley St.

Turn Left on to Sibley St. to New Cut Rd. to

Turn Left on to New Cut Rd. to follow to Spartanburg Community College

Inbound to Passenger Center

Exit Spartanburg Community College to New Cut Rd.

Turn Right on to New Cut Rd. to Sibley Rd.

Turn Right on to Sibley Rd. to Front St.

Turn Right on to Front St. to Cleveland St.

Turn Left on to Cleveland St. Continue Farley St. to Williams St.

Turn Left on to Williams St. to Saxon Ave.

Turn Right on to Saxon Ave. to Hugh St.

Turn Right on to Hugh St. to Farley St.

Turn Left on to Farley St. to Arch St.

Turn Right on to Arch St. to Wofford St.

Turn Left on to Wofford St. to Walker St.

Turn Right on to Walker St. to St. John St.

Turn Right on to St. John St. to W. Main St.

Turn Left on to W. Main St. to W. St. John St.

Turn Left on to W. St. John St. to E. St. John St.

Turn Right on to E. St. John St. to Liberty St.

Turn Right on to Liberty St. to Passenger Center

#6 South Liberty St.

Turn Right on Commerce go straight through 4 way stop sign to Converse St.

Turn Right on to Converse St. follow to South Converse St.

Turn Left on South Converse St. follow all the way to Duncan St.

Turn Right on to Duncan St. follow to Hanover Place.

Turn Left on Hanover Place follow to Collins Ave.

Turn Right on to Collins Ave. follow to Reverend W.L. Wilson

Turn Right on to Reverend W.L. Wilson follow to Prospect (end of the line)

Turn Right on to Prospect follow to Caulder Ave.

Turn Left on to Caulder Ave. follow to Hudson-Barksdale Blvd.

Turn Right on to Hudson-Barksdale Blvd. follow to Marion Ave.

Turn Left on to Marion follow to Ernest L. Collins Ave.

Turn Right on to Ernest L. Collins Ave follow to Hudson- Barksdale Blvd.

Turn Left on to Hudson- Barksdale Blvd. follow to Henry St.

Turn Left on to Henry St. follow to Church St.

Turn Right on to Church St. follow to St. John St.

Turn Right on St. John St. follow to Liberty St.

Turn Right on Liberty St. follow to Passenger Center

#7 Westgate

Outbound from Passenger Center

Turn Right on to Liberty St. Turn Right on Dunbar Follow to Church St.

Turn Right on to Church St. follow to St. John St.

Turn Left on St. John St. to W. Main St.

Turn Right on to W. Main St. to Baltimore St.

Turn Right on to Baltimore St. to Vanderbilt Rd. (City install bus turn here?)

Turn Left on to Vanderbilt Rd. to Textile Rd.

Turn Right on to Textile Rd. to Powell Mill Rd.

Turn Right on to Powell Mill Rd. to Ezell Blvd.

Turn Right on to Ezell Blvd. to Blackstock Rd.

Turn Right on to Blackstock Rd. to Westgate Mall

Turn Left in to Westgate Mall

(Stop is between Belk and Dillards). Turn around go out the way came in.

Inbound to Passenger Center

Turn Right on to Blackstock Rd to Ezell Blvd.

Turn Left on to Ezell Blvd. to Powell Mill Rd.

Turn Left on to Powell Mill Rd. to Textile Rd.

Turn Left on to Textile Rd. Follow to stop sign on Vanderbilt Rd.

Turn Left on to Vanderbilt Rd. Follow to yield sign on Baltimore St.

Turn Right on to Baltimore St. follow to W. Main St.

Turn Left on to W. Main St. to W. St. John St.

Turn Left on to St. John St. Liberty St.

Turn Right on to Liberty St. and Right into the Passenger Center

#8 Dorman Center

Outbound from Passenger Center

Turn Right on to Liberty St. Turn Right on Dunbar Follow to Church St.

Turn Left on to Church St. follow to Henry St.

Turn Right on Henry St. follow to Daniel Morgan Ave.

Turn Left on to Daniel Morgan Ave. follow to Highland Ave.

Turn Left on to Highland Ave. follow to Gibson St.

Turn Left on to Gibson St. follow to Westover Dr.

Turn Right onto Westover Dr. to Prince Hall Ln.

Turn Left onto Prince Hall Ln. follow to Forest St.

Turn Right onto Forest St. to Crescent Ave.

Turn Right onto Crescent Ave. to Pineneedle Dr.

Turn Left onto Pineneedle Dr to Crescent Ave.

Turn Left onto Crescent Ave. to John B. White Sr. Blvd.

Turn Left onto John B. White Sr. Blvd. to Hidden Hills Rd.

Turn Left onto Hidden Hills Rd. to Blackstock Rd..

Turn Right on to Blacktock Rd. to Dorman Centre Dr.

Turn Right on to Dorman Center Dr. Bus Stop

Inbound to Passenger Center

Continue Dorman Centre Dr. to W. O. Ezell Blvd.

Turn Right onto W. O. Ezell Blvd. to Camelot Dr.

Turn Right on to Camelot Dr. to John B. White Sr. Blvd.

Turn Left onto John B. White Sr. Blvd. to Crescent Ave. (issue with pole and lanes)

Alternative Routing:

Turn Left onto John B. White Sr. Blvd. to Ammons Rd.

Turn Right on to Ammons Rd. to Barbara St.

Turn Left on to Barbara St. to Charlesworth Ave.

Turn Left on to Charlesworth Ave. to Crescent Ave.

Turn Right onto Crescent Ave. to Pineneedle Dr.

Turn Right onto Pineneedle Dr to Crescent Ave.

Turn Right onto Crescent Ave. to Forest St.

Turn Left onto Forest St. to Prince Hall Ln.

Turn Left onto Prince Hall Ln. to Westover Dr.

Turn Right onto Westover Dr. to Gibson St.

Turn Left onto Gibson St. to Highland Ave.

Turn Right onto Highland Ave. to Daniel Morgan Ave.

Turn Right onto Daniel Morgan Ave. to Henry St.

Turn Right onto Henry St. to Church St.

Turn Left onto Church St. to Dunbar St. to Liberty St.

Turn Left onto Liberty St. to Passenger Center

Appendix C Pedestrian and Bicycle Policies

Policy Recommendations for Better Pedestrian and Bicycle Connections to Transit Stops/Stations

Transit systems provide a myriad of benefits, including: reducing the necessity of automobile trips; providing important access for people with physical disabilities or other limitations; increasing incidental physical activity; and reducing automobile emissions. Adequately connecting pedestrian and bicycle infrastructure to transit stops and stations is important for a variety of reasons, the most basic of which is access; transit riders often bookend their trips to employment, recreation, education, and shopping destinations, by walking or bicycling a notable distance. Well-maintained, continuous sidewalk, multi-use trail, and bicycle lane infrastructure has the additional benefit of expanding the transit market by increasing the perception of safety and ease of access to bus routes. Ultimately, increased transit usage promotes more investment in the transit system and its supporting infrastructure.

Policy Recommendations

Policy recommendations to improve pedestrian and bicycle connections to transit stops and stations fall into three broad categories: 1) Access; 2) Safety; and 3) Education. Coordination among departments within the City, as well as with partner agencies and private-sector third parties will be necessary for successful implementation.

Access

- Provide a clear, ADA accessible sidewalk connection from bus stops to the nearest signalized intersection or midblock crossing.
- Prioritize construction of continuous sidewalks along both sides of transit corridors. Where/when possible, the City should encourage developers to construct sidewalks as part of development/redevelopment.
- Prioritize regular maintenance of sidewalks along transit corridors.
- Provide secure bicycle storage and/or parking at stops serving major destinations, including, but not limited to, hospitals, schools, shopping centers, and employment centers.
- Equip all new transit buses with front-loading bicycle racks and provide bicycle racks on-board buses for routes upon which bicycle racks are routinely fully occupied.
- Coordinate with Spartanburg BCycle bike-share and other micro-mobility providers (i.e., as they come online) to co-locate bus stops with these services.
- Coordinate with City of Spartanburg departments and partner agencies in regular activities related to assessing, planning, enhancing, and maintaining pedestrian and bicycle infrastructure.

Safety

- Ensure adequate lighting is provided at intersections and bus stops along transit corridors.
- Conduct a biannual assessment of safety hazards for pedestrians and cyclists within a two-mile buffer of transit corridors.

Education

- Provide printed, web-based, and on-bus educational materials demonstrating how to safely and securely load bicycles onto bus racks.
- Include pedestrian and bicycle network access information in bus routing maps.

Appendix D Operating Statistics

Near Term Cost Estimates		
Totals		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	8	8
Fleet Vehicles	10	10
Annual Vehicle Revenue Hours	20,400	1,680
Annual Vehicle Revenue Miles	223,500	45,400
O&M Cost	**$1,311,720**	**$108,024**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*
Estimated Cost per Revenue Hour	$64.30	

Route 1 - Spartanburg Community College via Asheville Hwy

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	30,600	6,200
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 2 - Hillcrest Route (same as current Rt 2)

	Weekday	**Saturday**
Annual Service Statistics [1]		
Peak Vehicles	1	1
Vehicle Revenue Hours	2,550	210
Vehicle Revenue Miles	30,600	6,200
Annual O&M Cost [5]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 3 - North Church St. (same as current Rt 3)

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	25,500	5,200
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 4 - South Church St. (same as current Rt 4)

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	24,000	4,900
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 5 - Spartanburg Community College via New Cut Road		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	28,100	5,700
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 6 - South Liberty St.		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	23,000	4,700
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 7 - Westgate		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	31,100	6,300
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 8 - Dorman Center		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	2,550	210
Annual Vehicle Revenue Miles	30,600	6,200
O&M Cost [1]	**$163,965**	**$13,503**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Mid-Term Cost Estimates				
Totals				
	Weekday	**Saturday**	**Sunday (Same as Saturday)**	**30 Minute Frequency on Productive**
Service Statistics				
Peak Vehicles	8	8	8	2
Fleet Vehicles	10	10	10	n/a
Annual Vehicle Revenue Hours	28,560	5,840	5,840	7,140
Annual Vehicle Revenue Miles	312,700	63,700	63,700	85,700
O&M Cost	**$1,836,408**	**$375,512**	**$375,512**	**$459,102**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*	*$64.30*	*$64.30*

Route 1 - Spartanburg Community College via Asheville Hwy

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	42,800	8,700
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 2 - Hillcrest Route (same as current Rt 2)

	Weekday	**Saturday**
Annual Service Statistics [1]		
Peak Vehicles	1	1
Vehicle Revenue Hours	3,570	730
Vehicle Revenue Miles	42,800	8,700
Annual O&M Cost [5]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 3 - North Church St. (same as current Rt 3)

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	35,700	7,300
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 4 - South Church St. (same as current Rt 4)

	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	33,600	6,800
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 5 - Spartanburg Community College via New Cut Road

	Weekday	Saturday
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	39,300	8,000
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 6 - South Liberty St.

	Weekday	Saturday
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	32,100	6,600
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 7 - Westgate

	Weekday	Saturday
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	43,600	8,900
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route 8 - Dorman Center

	Weekday	Saturday
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	42,800	8,700
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Long-Term Cost Estimates

Totals

	Weekday	Saturday
Service Statistics		
Peak Vehicles	11	8
Fleet Vehicles	14	10
Annual Vehicle Revenue Hours	39,270	5,840
Annual Vehicle Revenue Miles	454,100	67,700
Estimated Low Ridership [2]	**117,810**	**17,520**
Estimated Moderate Ridership	**196,350**	**29,200**
Estimated High Ridership	**314,160**	**46,720**
O&M Cost	**$2,525,061**	**$375,512**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route E1

	Weekday	Saturday
Service Statistics		
Peak Vehicles	2	1
Annual Vehicle Revenue Hours	7,140	730
Annual Vehicle Revenue Miles	85,700	8,700
O&M Cost [1]	**$459,102**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route N1

	Weekday	Saturday
Annual Service Statistics [1]		
Peak Vehicles	1	1
Vehicle Revenue Hours	3,570	730
Vehicle Revenue Miles	42,800	8,700
Annual O&M Cost [5]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route W1

	Weekday	Saturday
Service Statistics		
Peak Vehicles	2	1
Annual Vehicle Revenue Hours	7,140	730
Annual Vehicle Revenue Miles	72,800	7,400
O&M Cost [1]	**$459,102**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route S1

	Weekday	Saturday
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	32,100	6,600
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Route W2

	Weekday	Saturday
Service Statistics		
Peak Vehicles	2	1
Annual Vehicle Revenue Hours	7,140	730
Annual Vehicle Revenue Miles	85,700	8,700
O&M Cost [1]	**$459,102**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Zone 1		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	45,000	9,200
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Zone 2		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	45,000	9,200
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*

Zone 3 (County)		
	Weekday	**Saturday**
Service Statistics		
Peak Vehicles	1	1
Annual Vehicle Revenue Hours	3,570	730
Annual Vehicle Revenue Miles	45,000	9,200
O&M Cost [1]	**$229,551**	**$46,939**
Estimated Cost per Revenue Hour	*$64.30*	*$64.30*