

# Executive Summary of Restructuring SWRTA Fixed Bus Routes Study in the City of Sumter, South Carolina



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## **Background**

The Santee Wateree Regional Transportation Authority, commonly referred to as SWRTA, provides transit services in the Santee-Lynches region. The Santee-Lynches region covers four counties of Clarendon, Kershaw, Lee and Sumter. Additionally, SWRTA provides transit services for Lower Richland County, Calhoun and Orangeburg Counties. It operates approximately 107 vehicles to provide public transit and contract services to these areas.

In the urbanized area of Sumter, SWRTA operates 18 vehicles to provide public transit fixed bus routes, commuter services, complementary ADA paratransit services, "call in"—demand response services and special event services such as Iris Festival and Shaw Fest. Approximately 114,000 annual passenger trips were provided in FY 2010-FY2011. Additionally, approximately 40,000 annual passenger trips were provided under various human transportation service contracts and a brokerage contract to provide non-emergency medical transportation (NEMT) for the South Carolina Department of Health and Human Services.

Currently, seven (7) fixed bus routes run within the City of Sumter and two (2) fixed bus routes run between Sumter and Myrtle Beach and between Sumter and Columbia for commuters. One way fare for fixed bus routes within the City charges \$1 for each passenger and the Shaw Air Force Base route charges \$1.50 per passenger. Senior citizens (65 or above), handicapped or Medicare cardholders pay half fare and children under six are free. Transfer is free. Myrtle Beach commuter service charges are \$3.50 per person one way and the Eastover- Columbia service charges are \$2.50. However, starting in late 2010, the free fare Fridays was implemented in all City fixed bus routes so that passengers can ride for free within the City limit on Fridays.

In the early Spring of 2011, SWRTA received a financial warning from the Santee Lynches Regional Development Corporation, subsidiary of SLCOG, after the Corporation analyzed SWRTA's income and expenditure data. On December 19, 2011, a Staff report was drafted recommending the SWRTA Board of Directors to request the City of Sumter appropriate \$188,019 for six months until June 30, 2012 and \$376,038 for the next twelve month period for unspecified purposes.

## **Restructuring Fixed Bus Routes Study**

In February 2012, the SWRTA requested the Planning Department of Sumter to assist in restructuring the City of Sumter fixed bus routes as a possible way to reduce the costs. The staff, in cooperation with the staff of SLCOG, has conducted a preliminary study on all seven fixed bus routes. Findings and recommendations are made in this report.

## **Study Methodology**

Findings and recommendations of restructuring fixed bus routes are based upon an extensive research on collection of published data and field observations. After a careful analysis of data and discussions with the staff of SLCOG, the focus of the study becomes apparent on how to increase ridership on the fixed bus route services within the City of Sumter.

### Published Data Collection Approach

The Staff collected and analyzed various variables of transit data from the following sources:

- Transit Data Report by SCDOT Fiscal Year 2010-2011

- Santee Wateree Regional Transportation Authority Public Transportation Study, Sept 2010, by SLCOG
- SWRTA Business and Route Analysis by Profit Centers (Proforma: “As Is” Case) 12/31/2011 (cover 6-month period) data submitted by SWRTA (calculations by SLCOG)
- SWRTA Small Urban Fixed Route Trips (2001-2011 Fiscal Years and Includes Trips Through 1/31/12) submitted by SWRTA

### Field Survey Approach

The Staff observed and identified the locations of the following potential passenger trip generators along all seven fixed city bus routes:

- Public Housing residential area
- Apartment complex
- Public schools
- Super markets
- Commercial strips (banks, restaurants, retail stores)
- Hospitals and clinics
- Low income and high density residential area
- Major employment /industry
- Social Facility such as Iris Garden, Opera House, Hope Centers etc.

### **Objective of the Study**

The objectives of the restructuring the City fixed bus routes Study are to:

- Increase ridership
- Reduce costs
- Discover underserved areas
- Improve visibility and awareness of transit services
- Connectivity of bus services

One of the approaches to increase the ridership in the City is to serve the areas where there are high probabilities of using transit services. For example, car ownership is relatively low in low income and public housing residential areas. School buses do not pick up students within one mile radius of where schools are located. Blue collar workers need transportation for commuting to work places. Physical able retirees need to do grocery shopping in the nearby super market.

### **Findings**

#### Overall Transit System

In accordance with the SCDOT Transit Data Report, the Staff has compared the transit data of FY 2009- FY 2010 with the one in FY 2010- FY 2011 and found the FY 10- FY11 has decreased in revenue by \$121,661 and loss in the fare box recovery ratio by 7.2%. (See the Table below) However, the ridership (the number of passenger trips) has increased substantially by 16,076 for the free fare Friday implementation in late 2010.

	Transit Data Comparison		
	Urban Service Area Only*		
	FY 2009-FY 2010	FY 2010-FY 2011	Difference
Fleet size	18	18	0
Annual Pass. Trips	137,650	153,726	16,076
Annual Revenue Miles	371,652	366,435	-5,217
Annual Vehicle Revenue Hours	23,579	23,086	-493
Annual Operating Revenue	978,084	856,423	-121,661
Annual Operating Expenses	1,133,224	1,144,162	10,938
Cost per pass. Trip	8.23	7.44	-0.79
Cost per vehicle Revenue Mile	3.05	3.12	0.07
Fare box Recovery Ratio	29.60%	22.40%	decreased by 7.2%

\*Urban Service Area is not clearly defined by SWRTA; but the seven fixed routes are in Urban service area.

During the field survey, the Staff has found the following:

- 12 bus stop posts without bus schedules posted
- 7 bus shelters along all seven bus routes in the City
- The bus routes serve abandoned industrial areas
- Some social facilities such as parks and Sumter Aquatic Center and schools are not along the bus routes
- Some of the public housing residential areas are not along the bus routes
- Route 7 (Shaw shuttle) runs along Broad street instead of commercial/residential area on Carter Road.
- Lack of connectivity of bus services in shopping mall.
- No connectivity of bus service to Industrial Park where the major employers are located on Route 15 South.
- No school day fixed bus services to Sumter High School and Lakewood High School.
- Route 1 "on call" service runs through upper middle class in high number of vehicle ownership neighborhood
- Route 1 runs along McCrays Mill Road with minimal residential ridership.
- No bus stop service available to Swan Lake.
- No bus route runs along the North Pike frontage road to Dillon Park where significant residential neighborhood are in vicinity.
- No bus services to residential the Crosswell low income neighborhood
- Limited bus service area covers the vast number and area of trailers/mobile homes in Cherryvale area.

#### Individual Bus Route

In accordance with SWRTA business and Route Analysis by Profit Centers (Proforma "As Is" Case), all fixed bus routes including the commuter routes to Columbia and the Myrtle Beach operates in a loss. The following table reflects the profitability of each route based upon cost and revenue per passenger:

<b>Profit Analysis</b>			
<b>Route</b>	<b>Cost (\$)/ Passenger</b>	<b>Revenue (\$)/ Passenger</b>	<b>Difference</b>
<b>9</b>	5.89	3.50	(2.39)
<b>8</b>	12.91	12.49	(0.42)
<b>7</b>	8.79	7.63	(1.16)
<b>6</b>	6.41	4.23	(2.18)
<b>5</b>	6.15	3.86	(2.29)
<b>4</b>	6.17	3.91	(2.26)
<b>1</b>	6.16	3.86	(2.30)

<b>Columbia</b>	25.35	11.02	(14.33)
<b>Myrtle Beach</b>	17.06	15.56	(1.50)

## **Recommendations**

Based upon the above findings, the Staff recommends the following:

### Overall Transit System

- Active promotions of existing bus routes services by mass media advertisements, place bus schedules in public places such as shopping mall, schools, and grocery stores.
- Improve the “on call”-demand response service by restructuring system requiring 24 hour advance call in and provide pick up services along major roadway intersections.
- Assign one vehicle (mini- van or 15 passenger bus) for “ call in” –demand response services for reducing costs of operations.
- Designate a “at pulse” transfer point at the Wesmark Plaza by the Staples and Big Lots stores for Bus Route 7, and 9 and 4 for free transfer.
- Install more bus stop sign poles with bus schedules posted.
- Eliminate Bus Route 8 service which only carried 140 passengers in 6 months period, also the highest cost per passenger (\$12.91). Instead, assign another 15 passenger bus or mini-van to “on call” demand response system to transport customers to and fro the Vocational Rehabilitation Center on North Main.

### Individual Route

An enlarged size individual bus route map is attached to this report. Each bus route map has a current bus route and a proposed new bus route for comparison of the changes. Also, a comparison of current and proposed revenue miles is shown below:

<b>Bus Route Revenue Mileage</b>		
<b>Route #</b>	<b>Current Revenue Miles</b>	<b>Proposed Revenue Miles</b>
<b>1</b>	8.15	12.94
<b>1 by Request</b>	3.85	-
<b>4</b>	10.71	33.16 *
<b>4 by Request</b>	0.48	0.48
<b>5</b>	9.47	9.26
<b>5 Peak Hour</b>	-	7.68
<b>6</b>	12.14	12.23
<b>6 by Request</b>	1.14	-
<b>7</b>	38.27	38.6
<b>7 by Request</b>	2.21	-
<b>8</b>	8.12	-
<b>9</b>	12.67	13.12
<b>Total</b>	<b>107.21</b>	<b>127.47</b>

\* Route 4 has two buses running simultaneously in opposite directions.

The total cost for all bus routes revenue miles is \$466.69 for one loop. The individual route proposed cost is shown in the table below:

<b>Proposed Revenue Mile Cost for One Loop (Terminal to Terminal)</b>			
<b>Route #</b>	<b>Proposed Revenue Miles</b>	<b>Cost per Revenue Mile *</b>	<b>Proposed Revenue Miles Cost</b>
<b>1</b>	12.94	4.03	\$ 52.15
<b>4 **</b>	33.16	3.99	\$ 132.31
<b>5</b>	9.26	4.03	\$ 37.32
<b>5 Peak</b>	7.68	4.03	\$ 30.95
<b>6</b>	12.23	3.83	\$ 46.84
<b>7</b>	38.27	2.91	\$ 111.37
<b>9</b>	13.12	4.25	\$ 55.76
		<b>Total Routes Cost</b>	<b>\$ 466.69</b>

\* SWRTA Business and Route Analysis by Profit Centers (Proforma 'AS IS' Case)

\*\* Two Buses Running Simultaneously in Opposite Directions

#### **Route 1 - West Liberty/ Guignard (See Figure 1, Page 9)**

- The “on-call” demand response service from Wise Drive, via Henderson Street and Phelps Street, to W. Liberty Street is eliminated.
- The “on-call” service route to Sumter High School will be changed to regular bus service route.
- Designate a bus stop in the shopping center at the Bi-Lo Supermarket.
- Eliminate the loop portion on McCrays Mill Road to Birnie Hope Center. Designate Pinewood Road as a return route and designate bus stops at Swan Lake and Civic Center. Right turn on Liberty Street eastbound to stop at low income apartment units right across from the Birnie Hope Center and northbound on Guignard Drive back to Liberty Street toward the Terminal.

#### **Route 4 - North Main/Sumter Mall & Wesmark Plaza (See Figure 2, Page 10)**

- Two buses running simultaneously on opposite directions. Both buses leave the bus terminal simultaneously, then one bus goes towards N. Main Street and the other go to N. Lafayette Drive to Loring and Croswell areas. Bus A goes toward Sumter Mall/Wesmark Plaza via Miller Road and Pullman Drive and stops at the Staples/Big Lots transfer point. Bus A waits for Bus B which heads towards the transfer points via N Lafayette Drive and North Pike Frontage Road, through Dillon Park, Wise Drive and loop into a retirement apartment complex and stops at the transfer point. (See the attached map Route 4).
- The connectivity point for bus A and bus B meet at the Staples/Big Lots (Wesmark Mall) transfer point.
- The transfer point is where Route 4, 7 and 9 meet.
- The Wall Street area “on call” services remains.

#### **Route 8 - North Main/Vocational Rehab**

- Eliminate the Route 8 and have one bus designated for “on call” services.
- The “on call” service requires at least minimum of 24 hours advance reservations. Designate pick up locations on major roadway intersections. This “on call” service MUST NOT provide door to door services. The door to door services may be provided through the FTA human services coordination program.

#### **Route 5 - South Main/Pilgrim’s Pride (See Figure 3, Page 11)**

- Route 5 will extend services to Pilgrim’s Pride industrial park during the morning and evening peak hours only. During off peak hours, bus will loop at S. Guignard Parkway and Pocalla Road for the returning trip.
- Bus will stop at the Bates Middle School and the Southside Park (public housing).

#### **Route 6 - East Liberty/ Aquatic Center (See Figure 4, Page 12)**

- Route 6 bus will provide service along S. Main St. to Fulton Park low income area.
- Route 6 “on call” service extends to DMV of SCDOT along Oswego Road.
- Bus stop pole must be erected at the Aquatic Center.

#### **Route 7 - Shaw Shuttle (See Figure 5, Page 13)**

- Bus will meet at the Transfer Point in the Wesmark Plaza for connectivity for Bus Route 9 and Route 4.
- Bus service area will expand at Cherryvale (See map).
- City bound bus route 7 will turn at Wilson Hall Road, down on Wesmark, up on Alice Drive, stops at Walmart before going to the Transfer point in Wesmark Plaza.

- Bus will go from Staples/Big Lot to Sumter Mall and then return to the bus terminal.

#### **Route 9 - Broad Street (See Figure 6, Page 14)**

- The diversion on Highland Avenue and Miller Road will be eliminated.
- Bus stop pole will be erected in front of the library.
- Bus will stop at K mart and the retirement apartment units behind such
- Bus will meet Route 4 and Route 7 buses at the Transfer point.
- Bus shelters are recommended on Broad street in front of Aldi and Piggly Wiggly.

#### **Conclusions**

By restructuring the current bus routes, the proposed total revenue miles will be increased to 127.47 miles from 107.21. Ridership is most likely to increase for significant percentage of the expanded service areas where passenger trip generators of grocery stores, schools, social facilities, and low percentage of vehicle ownerships residential. In addition, by improving the connectivity of bus services, passengers are more willing to use public transit for their choice of shopping malls, restaurants, clinics, and even employment places.

Figure 1 – SWRTA Bus Route 1 – West Liberty

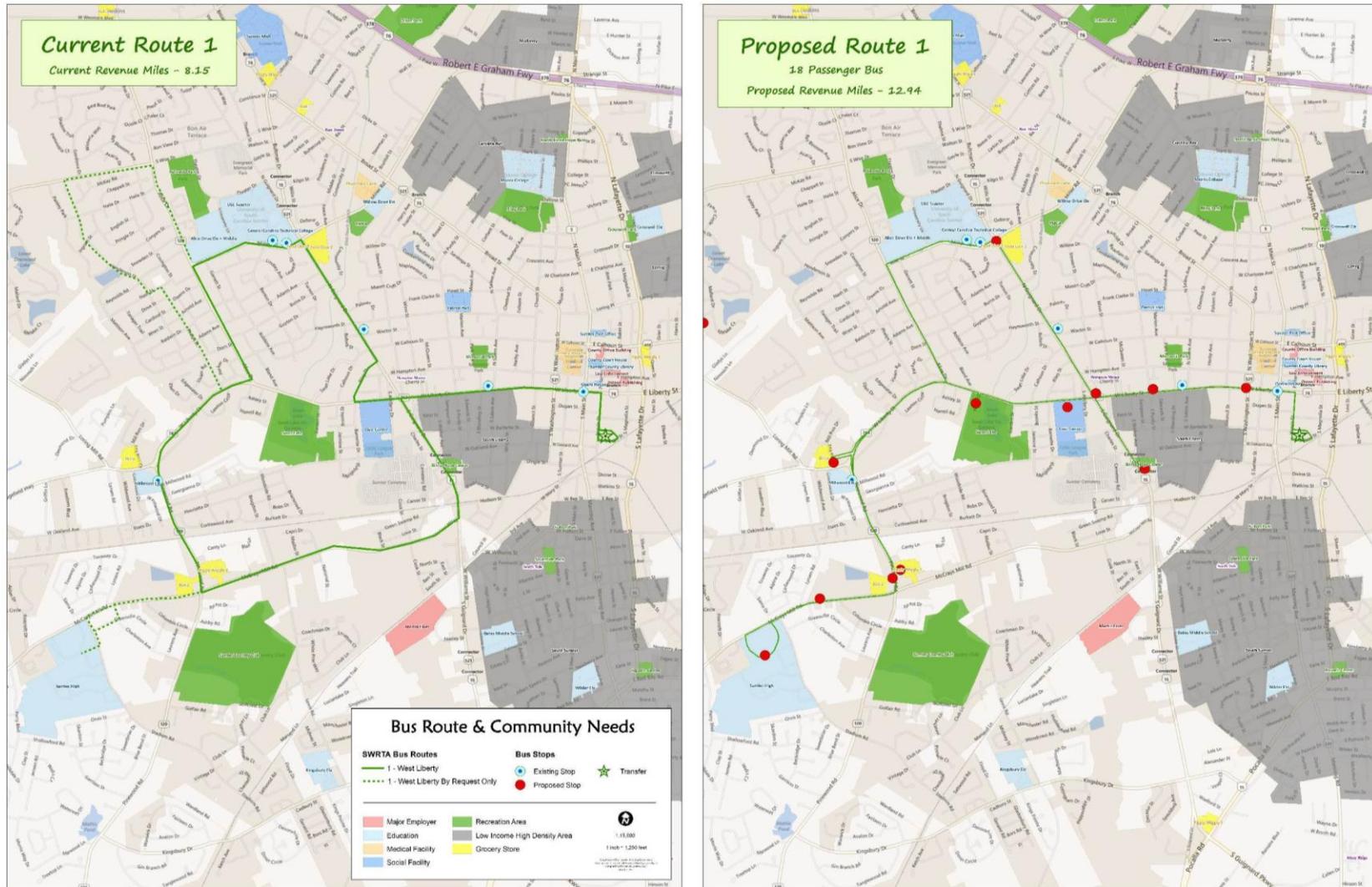


Figure 2 – SWRTA Bus Route 4 – North Main

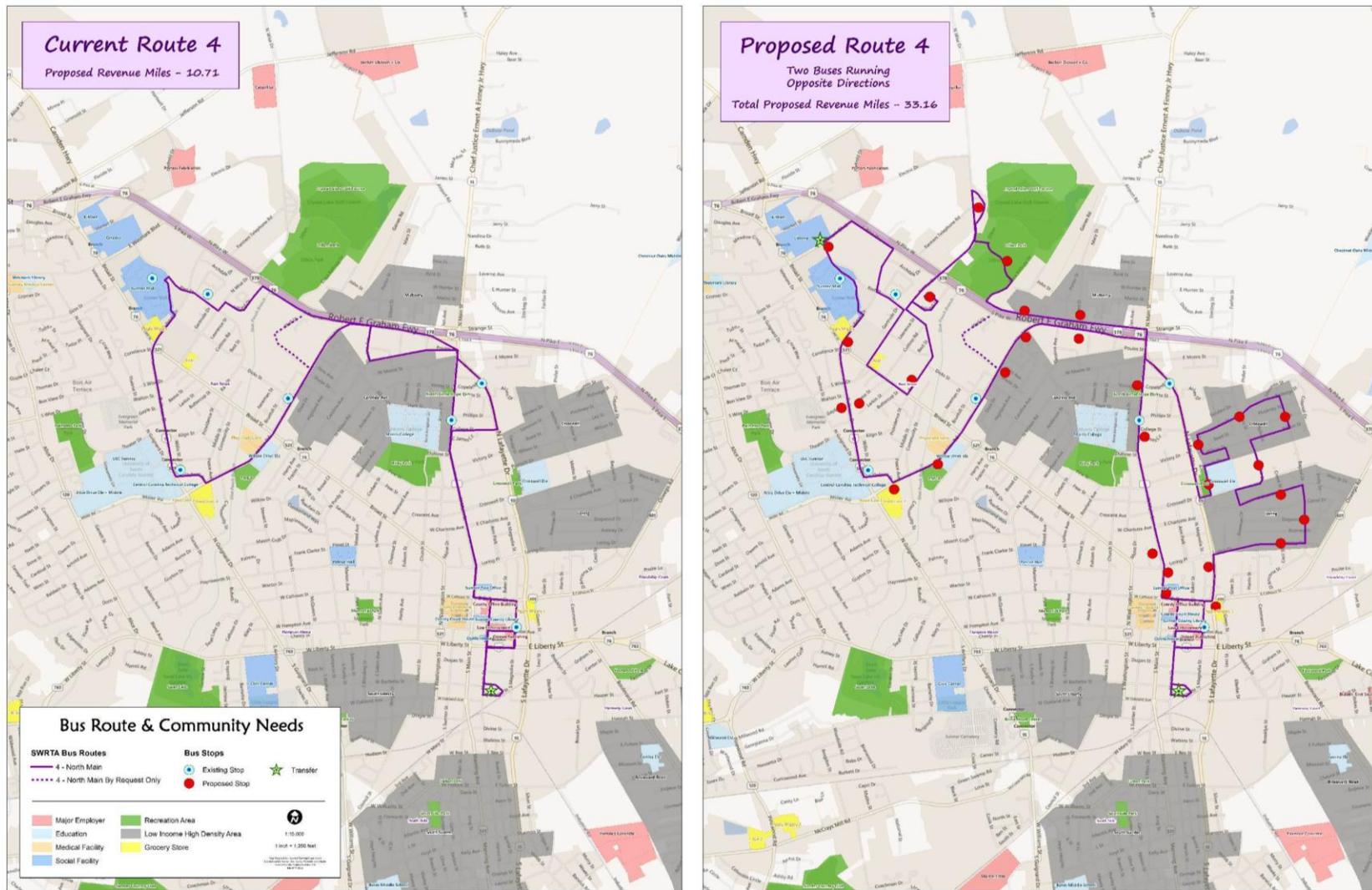


Figure 3 – SWRTA Bus Route 5 – South Main

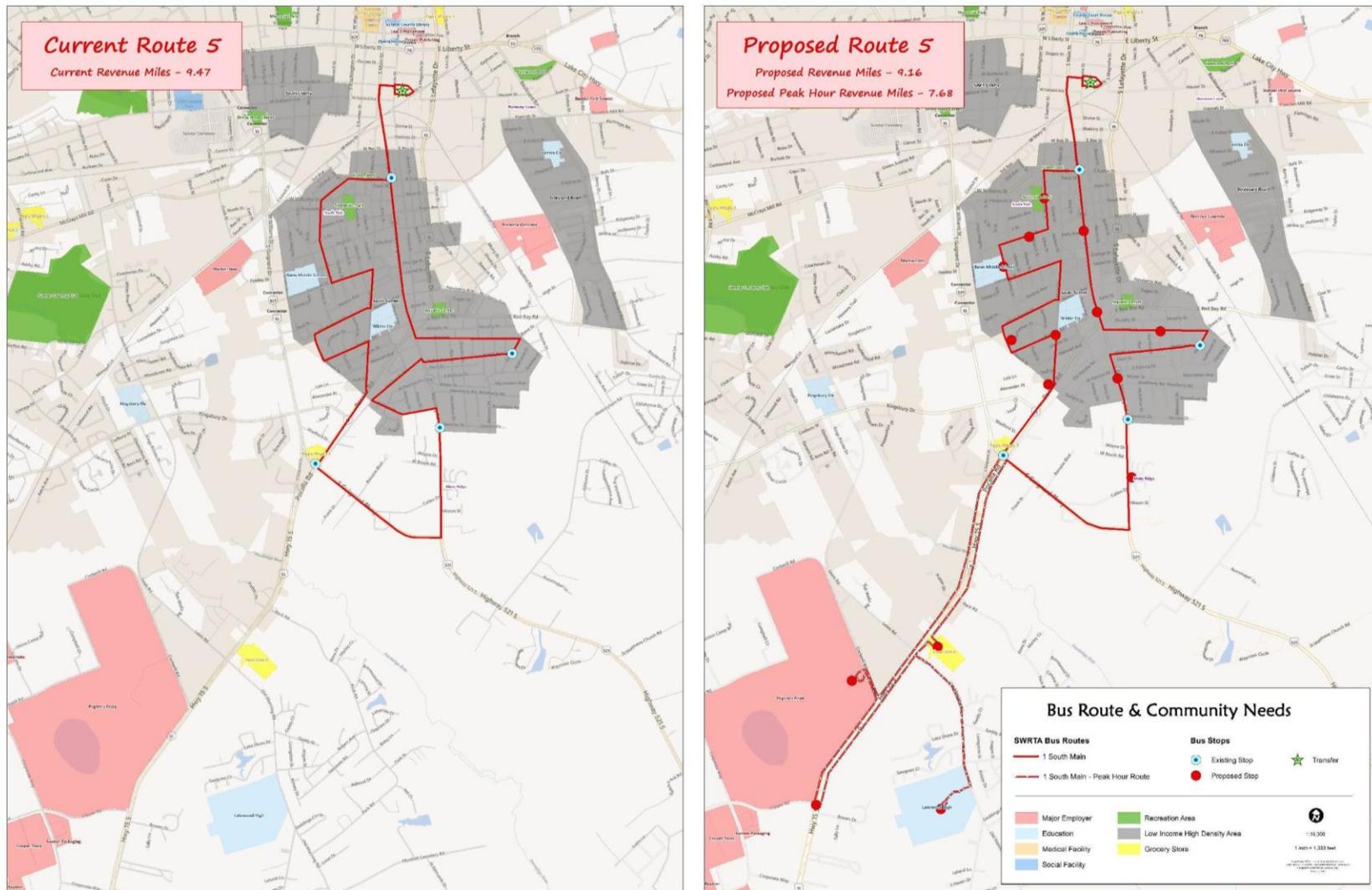


Figure 4 – SWRTA Bus Route 6 – East Liberty

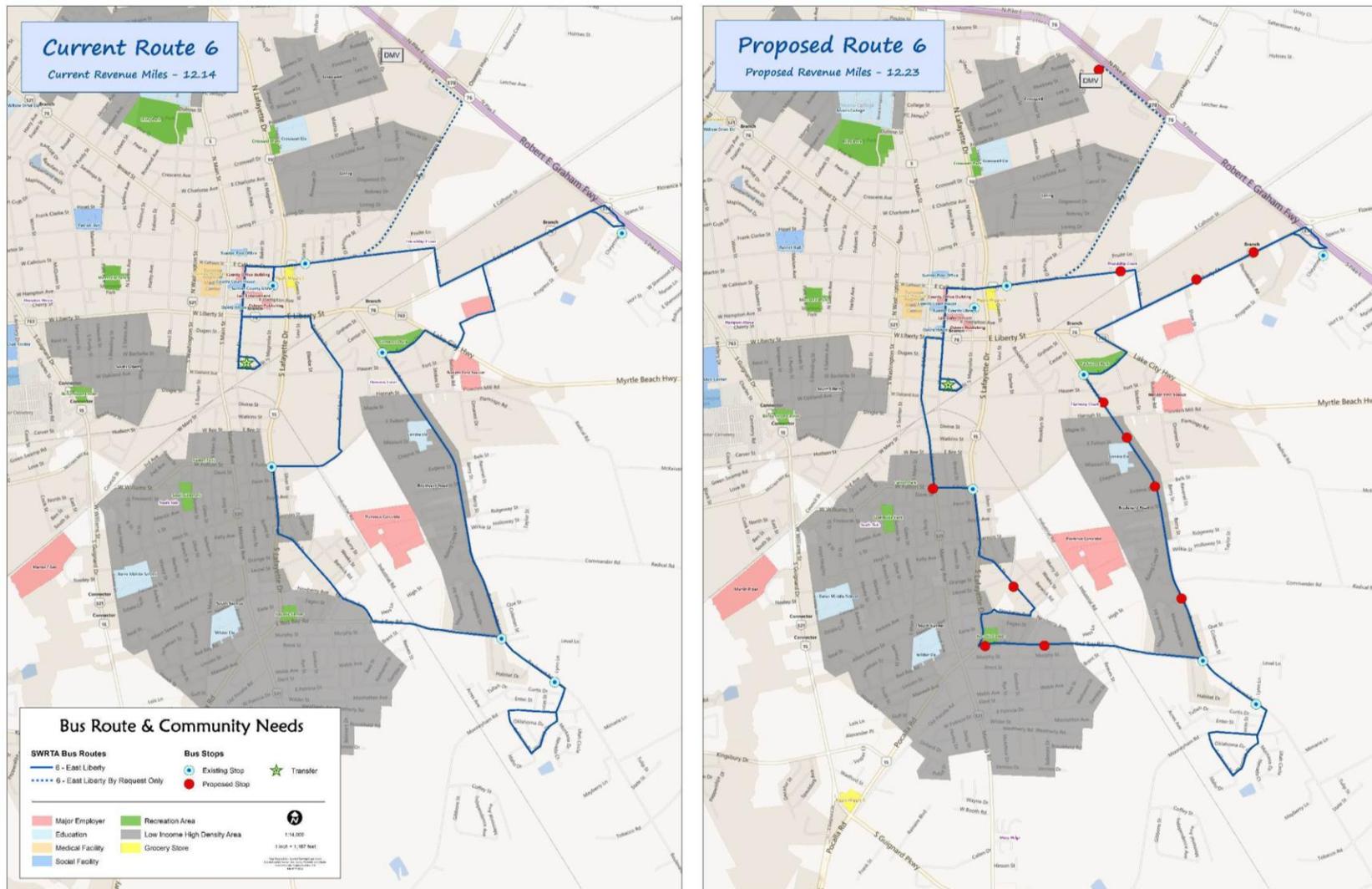


Figure 5 – SWRTA Bus Route 7 – Shaw Shuttle

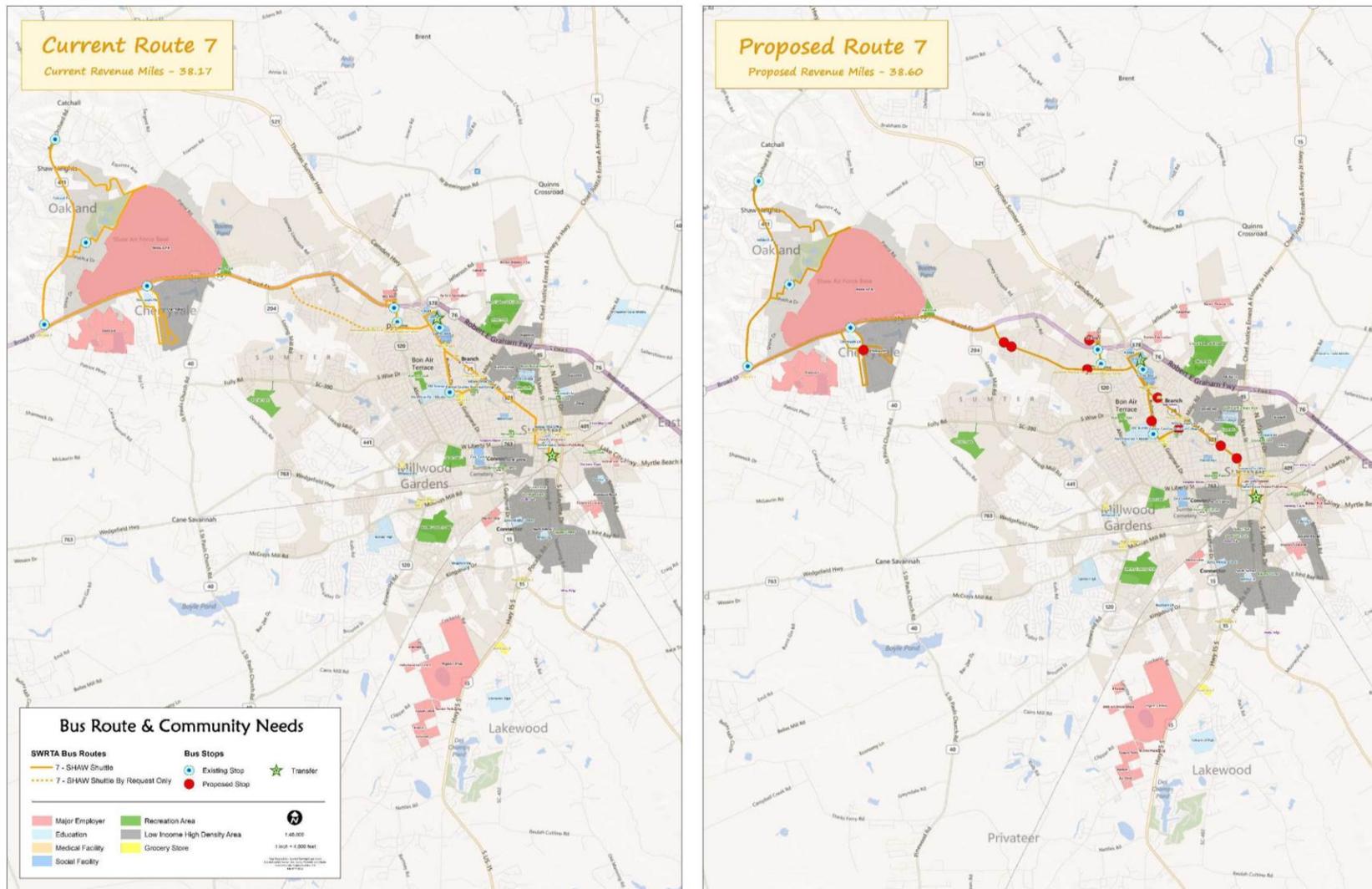


Figure 6 – SWRTA Bus Route 9 – Broad Street

