Lake Country Area Agency on Aging 2020-2029 Transit Development Plan

Counties of Mecklenburg, Halifax, and Brunswick, Virginia
July 2020

Prepared for the Lake Country Area Agency on Aging
and the Virginia Department of Rail and Public Transportation
by Connetics Transportation Group

Connetics Transportation Group

Under Contract to Kimley-Horn and Associates, Inc.

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DRPT
Virginia Department of Rail and Public Transportation

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1. Executive Summary

Virginia's Department of Rail and Public Transportation (DRPT) requires that all transit providers receiving state funding periodically submit a planning document called a Transportation Development Plan (TDP). The plan helps DRPT to strategically allocate future state funding for operations and capital costs to multiple transit service providers, which is partly based on the expected transit needs outlined in the document. In a more thorough sense, however the TDP is an examination of the past, present, and future of the transit service, detailed through six chapters and an appendix.

Lake Country Area Agency on Aging (LCAAA) is a public transit service that operates two on-demand services called Halifax Area Rural Transportation (HART) and Lake Area Bus (LAB). The origins, goals, and characteristics of the service are detailed in the second and third chapters. The fourth chapter is an analysis of how the service is currently performing by reviewing the most recent three years of data. The analysis revealed that ridership continues to increase for both services and that although operating costs are also increasing, service standards in terms of efficiency are largely being met. A survey of passenger characteristics and attitudes towards the service conducted in September 2019 revealed that most riders were adults or seniors, frequent users of the two services and used it to access employment. Most respondents also identified as having irregular access to private transportation, further highlighting the benefits the services provide. The survey also revealed high levels of satisfaction with the service and that the most desired service improvements were weekend and evening service, which is not currently provided, but would benefit those working service jobs that often operate outside of the typical 9-5 hours. The report then analyzes the current and projected demographic conditions of the service area, which revealed the senior population becoming a larger share of the county population and a group that will likely increase the demand for these services. Chapter 5 reviews other aspects of the county's demographics in greater detail.

The information gathered from the demographic analysis, field work, survey, and stakeholder interviews influenced the recommendations developed at the end of the fourth chapter and are described in greater financial and scheduling detail in chapters 6 & 7. These recommendations, which include fixed-route service and future service expansion were made with SMART criteria in mind (specific, measurable, attainable, relevant, and time-bound). Although the analysis in chapter 5 revealed a growing senior population, due to the rural nature of the county it is recommended for LAB and HART to continue focusing service in the towns these two services operate in.

This document should be considered as a reference and not as a fixed list of recommendations. As the TDP covers the next ten years, anything from finances to cultural attitudes toward transit use could alter the schedule or nature of the recommendations. It is hoped that this document will aid the two services in fulfilling its mission to provide the best service with the resources available.

2. Overview of the Transit System

This chapter provides a description of the characteristics and extent of the on-demand transit service provided by LCAAA. This includes detailing the history and purpose of the service, an overview of the service fleet and related infrastructure to show the resources required to provide the service. Data related to performance and its monitoring is also detailed. Lastly, a brief description of the limited transportation services in the town is also included to demonstrate the necessity of the system due to the lack of other private services.

2.1. History

Since its establishment in January 1976, LCAAA has provided human services and transportation to persons 60 years and older in the counties of Halifax, Mecklenburg, and Brunswick in Southside Virginia. Through DRPT, Federal Transit Administration (FTA) Section 5310 provided the initial funding for LCAAA to offer transportation services. Section 5310, which supports capital and operating costs for the transportation of seniors and persons with disabilities, funded vehicles for transportation services for elderly persons to nutrition sites, medical appointments, human service agencies, recreational activities and other essential activities. Figure 2-1 shows the extent of the LCAAA service area and its location relative to the State of Virginia.

In 1997, LCAAA launched LAB, which provides general public transportation for people of any age in the towns of South Hill, La Crosse, and Brodnax, which are shown in Figure 2-2. LAB receives funding through DRPT by FTA Section 5311, which supports operating and capital costs of transit operators in rural areas. LAB originally began operations as a fixed-route service, however, low productivity prompted LCAAA to change LAB into a demand-response service in 2008, which resulted in a ridership increase.

LCAAA's second public bus service, HART, began operating in 2005 and provides demand-response service in the towns of South Boston and Halifax, which are shown in Figure 2-3. HART began as a demonstration project and was initially supported by the Chastain Home Fund through the Community Foundation of the Dan River Region. Afterwards, HART was funded by DRPT's Demonstration Project Assistance program for a year before it became funded under the Section 5311 program. While LCAAA provides several transportation services, it should be noted that this TDP only covers the agency's two public transportation services, LAB and HART.

Although the focus of this TDP is on the public transportation services of LCAAA, In addition to LAB, HART, and senior transportation services, the agency provides non-emergency medical transportation as a contract provider to LogistiCare, Southeastrans, National Med Trans, Virginia Premier, and VEYO. LCAAA transports Medicaid-eligible persons to medical trips in the counties of Mecklenburg, Brunswick, and Halifax and to major medical facilities as far as Richmond, Virginia and Durham, North Carolina.

Figure 2-1: LCAAA Service Area

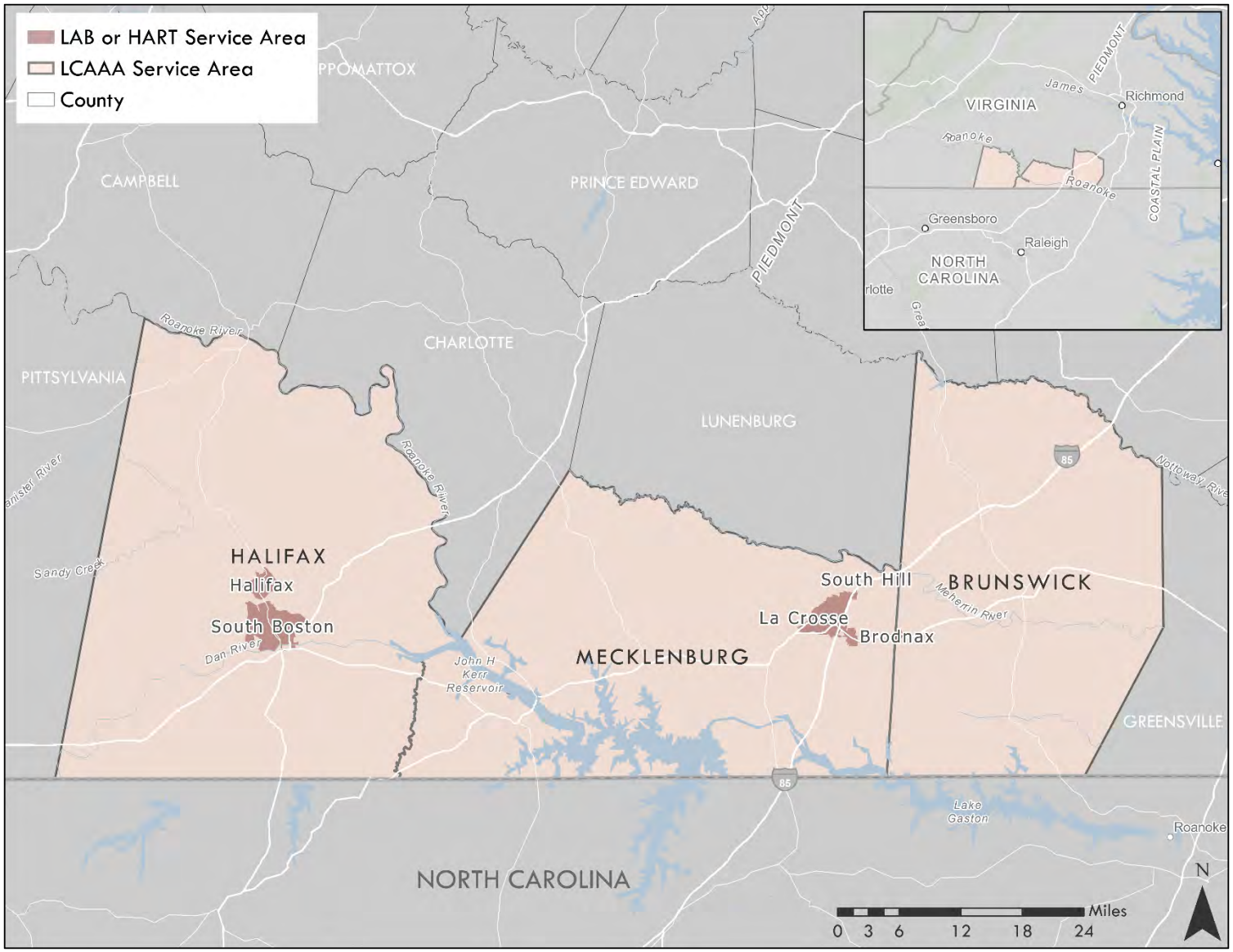


Figure 2-2: LAB Service Area

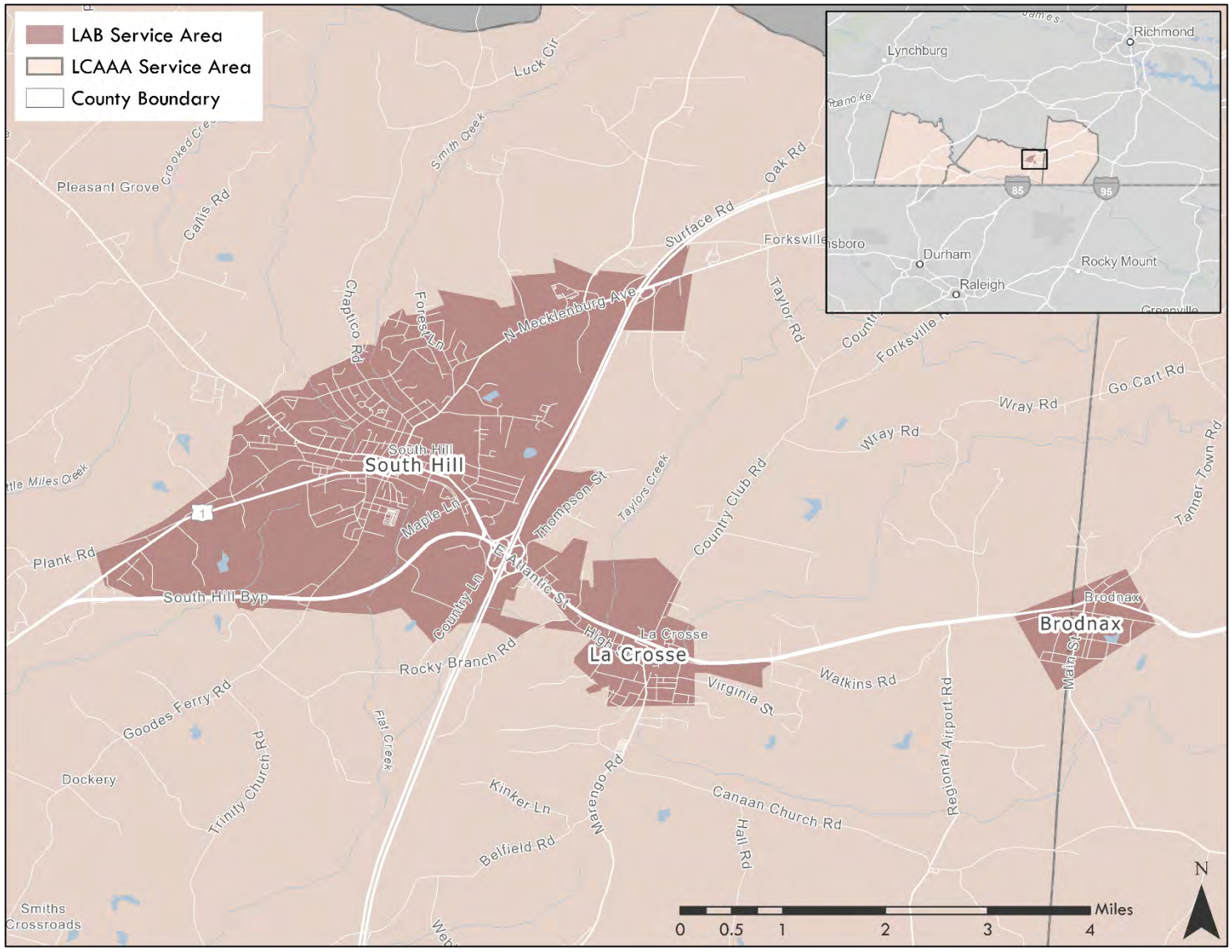
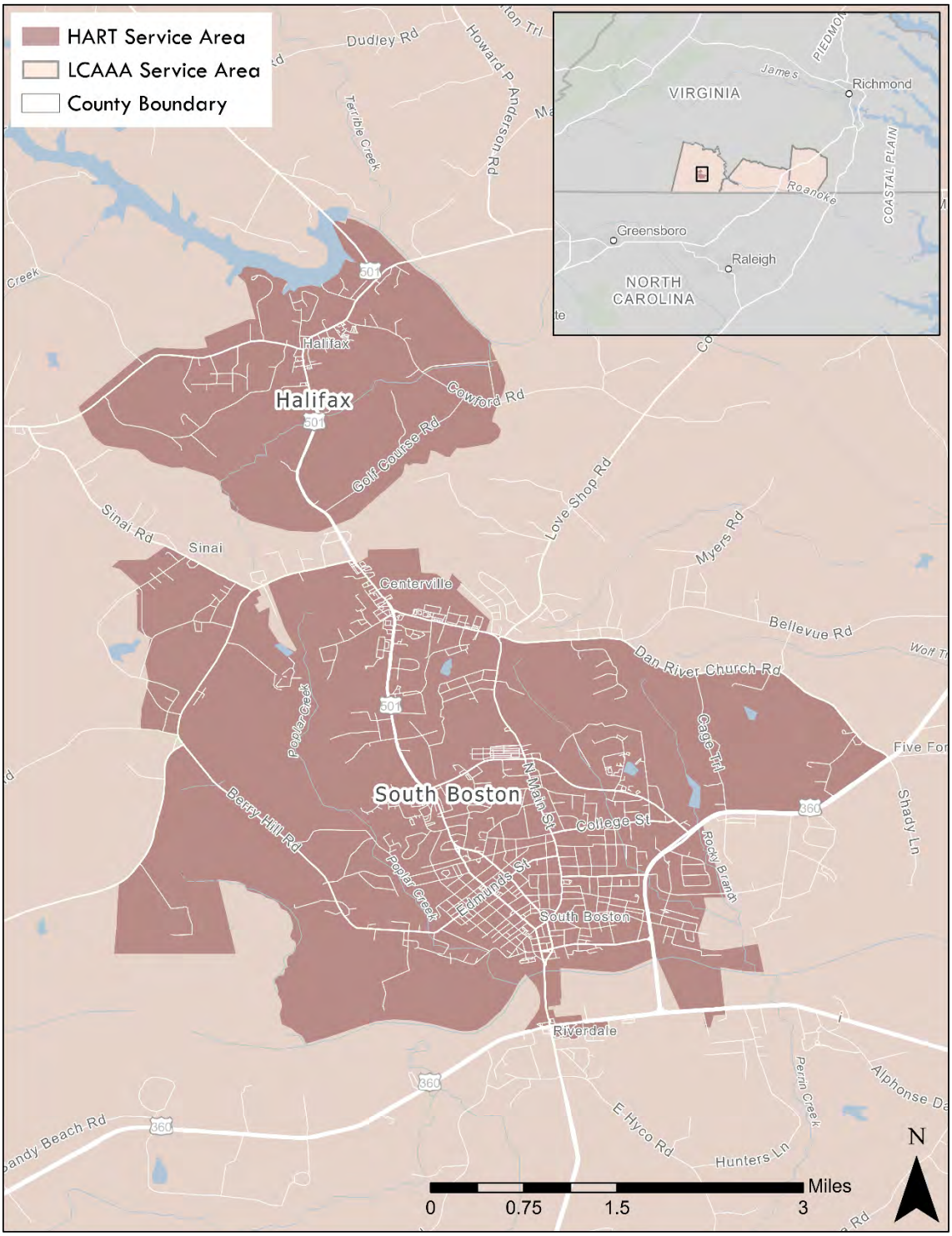


Figure 2-3: HART Service Area



2.2. Governance

LCAAA's transportation program is governed by a Board of Directors who represent the jurisdictions within the agency's service area. The Board meets at least four times a year and is composed of two members from Brunswick County, three members from Halifax County, three members from Mecklenburg County, and one member from the Town of South Hill. Each member, listed in Table 2-1, is appointed for a three-year term by their respective county Board of Supervisors or the South Hill City Council, with members often serving multiple terms. Once a member serves two terms, however, they are required to rotate off for one year before serving an additional term.

Table 2-1: LCAAA Board of Directors

Name	Position
Kim Clary	Chairman
Darleen Ferguson	Vice Chair
Ronnie Wells	Treasurer
Jennifer R. Bowen	Secretary
Martha Myers	Member
Angela Caison	Member
Hermione (Mona) White	Member
Alice Banks	Member

LCAAA also receives input from an Advisory Council composed of local officials, clients, and community members who represent the population and jurisdictions served by LCAAA. The Advisory Council members, listed in Table 2-2, each serve a six-year term before they leave or retire from the Council and must meet at least quarterly. Members are responsible for reviewing the agency's Area Plan for Aging and providing input on the plan to the Board of Directors. The Council also addresses transportation issues in meetings, which are attended by the Transportation Coordinator.

Table 2-2: LCAAA Advisory Council

Name	Position
Bruce R. Settle III	Chairperson
Lottie Chandler	Vice Chairperson
Betty Tanner	Secretary
Edith Hubbard	Halifax Meal Site
Pete Rudd, Jr.	Member
Dorothy Moore	Brunswick Meal Site
Waverly Brown	Member
Luvenia Williams	Chase City Meal Site
Magnolia Mullins	Clarksville Meal Site
Mary Thompson	South Hill Meal Site
Caroline Crews	Member
Katherine Talley	Member

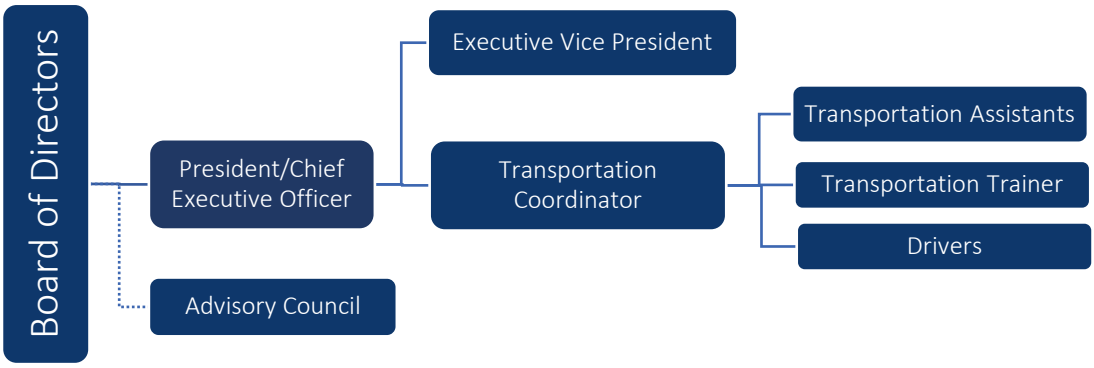
Shirley Wetherbee	Member
Charles Jones	Member
Beth Engelhorn	Member

2.3. Organizational Structure

Figure 1-4 shows the agency's organizational structure and highlights the roles responsible for transportation services. The President and CEO of LCAAA, Gwen Hinzman, reports to the Board of Directors, which receives input from the Advisory Council. The LCAAA Transportation Department is directed by the transportation coordinator, who reports to the president, and is headquartered in South Hill.

LCAAA's transportation assistants report to the transportation coordinator and are in both the South Hill and Halifax offices. The two transportation assistants are responsible for the administrative and dispatching functions of LAB and HART, respectively, in addition to handling congregate meal and Medicaid transportation in South Boston, Halifax, and the rural areas of Halifax County. All transportation assistants handle administrative tasks and recordkeeping related to vehicle maintenance. LCAAA's drivers are responsible for providing safe and timely transportation and performing daily pre-trip inspections as part of the agency's preventative vehicle maintenance system. Drivers also pack and deliver meals to congregate and homebound seniors and keep constant communication with the agency from the vehicles using a two-way radio system.

Figure 2-4: LCAAA Organizational Chart



2.4. Services Provided and Areas Served

The remainder of this document provides a focused review of LCAAA's two general public transportation services, LAB and HART. However, it is important to note that in addition to LAB and HART, the agency's transportation department offers several services, including services for seniors, adult day care clients, and Medicaid eligible individuals. The list below provides a summary of each transportation service available through LCAAA.

- **General public transportation.** LAB and HART are the demand-response services available to the general public. LAB provides service within the town limits of South Hill, La Crosse, and Brodnax and HART provides

service within the town limits of South Boston and Halifax. Both services operate Monday to Friday from 7:00 a.m. to 5:30 p.m. and require a 24-hour advance reservation.

- **Senior transportation.** LCAAA provides demand-response transportation services for senior citizens to and from nutrition sites, medical appointments, human service agencies, and recreational activities throughout the counties of Mecklenburg, Brunswick, and Halifax. Drivers also deliver meals to homebound and congregate seniors.
- **Non-emergency Medicaid transportation.** LCAAA provides wheelchair accessible transportation service for Medicaid-eligible persons to non-emergency medical trip purposes in the counties of Mecklenburg, Brunswick, and Halifax. Service is also provided to major medical facilities as far as Richmond, Virginia and Durham, North Carolina. Pickups require a 48-hour notice prior to the scheduled appointment time.
- **Adult day care transportation.** Transportation to Hazelwood House, a state-licensed adult day health care center, is arranged through LCAAA transportation department for Mecklenburg and Brunswick counties. LCAAA provides morning and afternoon return trips to and from the day care Monday through Friday.

2.5. Fare Structure, Payments, and Purchasing

The fare for both general public transportation services is $1.50 per pickup with free fare for children under the age of three. Customers pay for fare at the time of boarding by depositing cash with exact change into a metal farebox. The farebox is counted and reconciled with the ridership count at the end of each day.

2.6. Asset Management

In July 2016, the FTA published a Transit Asset Management (TAM) final rule requiring all grantees to develop asset management plans. In Virginia, DRPT has developed a group plan that gives transit providers the option to participate in a statewide transit asset management plan instead of submitting to FTA individually. Lake Country Area Agency on Aging participates in the DRPT group plan, which includes vehicles, facilities, equipment, and other infrastructure. A summary report of the DRPT TAM plan is available online on the DRPT website.

Fleet

Table 2-3 describes the six total LAB and HART vehicles, which are funded under Section 5311. Each system has one 2011 Ford BOC with 10-passenger capacity and two wheelchair positions and two 2006 Ford BOC buses, each with 12-passenger capacity and two wheelchair positions. Figure 2-5 and Figure 1-2-6 show photos of the interior and exterior of the LAB and HART buses and the HART bus wheelchair lift.

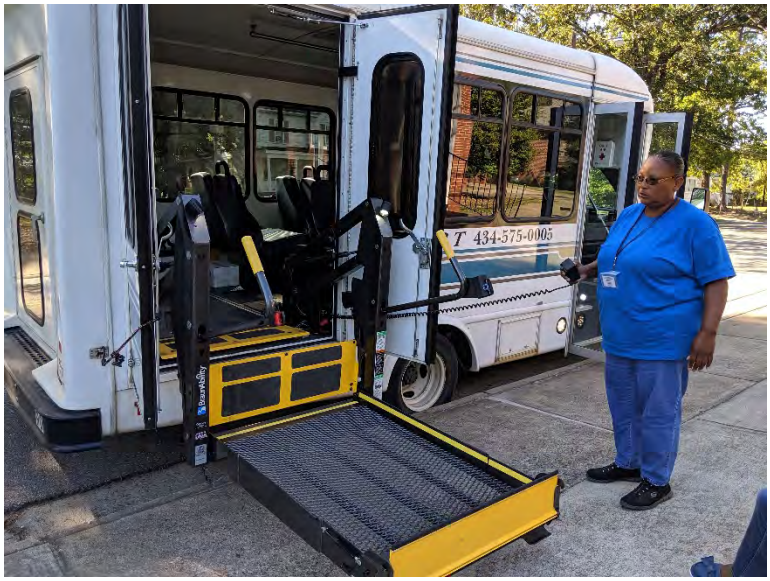
Table 2-3: Fleet Inventory

Year	Make	Model	Garage	Seating Capacity	Wheelchair Capacity	Replacement Cost[1]
2006	Ford	BOC	South Hill	10	2	$54,422
2006	Ford	BOC	Halifax	10	2	$54,422
2011	Ford	BOC	Halifax	12	2	$54,825
2011	Ford	BOC	South Hill	12	2	$54,825
2015	Ford	BOC	South Hill	12	2	$61,171
2016	Ford	BOC	Halifax	12	2	$61,171

[1] The replacement costs in the capital plan of Chapter 7 rely on slightly different estimates and inflation rates.

Figure 2-5: LAB Vehicle

Figure 2-6: HART Vehicle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Facilities

LCAAA's transportation program operates out of two facilities. LAB vehicles are dispatched from the LCAAA office in South Hill at 1105 West Danville Street. HART vehicles are dispatched from the LCAAA office in Halifax, which is located at 5037 Halifax Road. LAB and HART vehicles are stored at the South Hill and Halifax locations, respectively. Figure 2-7 shows the garage in South Hill where LAB vehicles undergo maintenance and repairs.

Figure 2-7: LAB South Hill Maintenance Facility

2.7. Transit Security Program

LAB and HART drivers are responsible for completing daily pre-trip vehicle inspections paper forms in addition to other checks at the end of the business day as part of the agency's preventative vehicle maintenance system. Drivers must pass a pre-hire road test and are trained in Adult CPR, first aid, wheelchair securement, and defensive driving. In case of security breaches, drivers are advised on radio and cellphone protocol. In the event of an emergency, such as severe weather, LCAAA and its vehicles are included in emergency preparedness plans as an available resource for evacuation purposes.

2.8. Intelligent Transportation Systems (ITS) Programs

LAB and HART do not use ITS technology that many larger transit systems have. Drivers and dispatch currently utilize the two-way radio system for communications.

2.9. Data Collection and Ridership/Reporting Methodology

Rides are reserved over the phone and are scheduled by hand with the agency estimating each trip to take 15 minutes. As a result, the scheduler will not schedule another trip within that 15-minute window unless the origin and destination of the two riders are convenient for both the rider and driver. A schedule is then created that provides the driver with key information for the trip, including customer's name, pickup and drop off addresses, and whether wheelchair assistance is needed. Throughout the day, many riders who have been dropped off call the LCAAA office again to request a return trip. The office notifies the driver of the new pickup requests via the two-way radio, and the driver determines when the request will be fulfilled based on the vehicle's current location, their

knowledge of the road network, and current passenger load to serve all ride requests in the most efficient manner. At the end of each day, the driver transcribes the schedule, noting any cancellations or additional requests, to reflect the actual number of rides provided.

2.10. Coordination with Other Transportation Service Providers

There are few transportation services in the surrounding area, including the Blackstone Area Bus System and a Greyhound route. Though neither LAB nor HART coordinates with these services, the Greyhound bus stop in South Hill is located within the LAB service area, and LAB service may be used to connect riders to Greyhound service.

Taxi Companies

There are no private taxi operators in the service area. Transportation Network Companies (TNCs) such as Uber and Lyft are also unavailable.

Intercity Bus Service in the LCAAA Region

A Greyhound bus stop is in South Hill, providing access to a Greyhound Express route that connects New York and Atlanta. The bus stop is located at the Slip-In Food Mart at 1011 E Atlantic Street, South Hill, VA 23970. The schedules that serve this bus stop are Schedule 1051, which travels southbound from New York to Atlanta, and Schedule 1076, which travels northbound from Atlanta to New York. The southbound trip to Atlanta has a scheduled stop in South Hill at 1:35 p.m. From there, the trip continues south to Henderson, NC. The northbound trip to New York stops in South Hill at 11:15 p.m. and continues north to Richmond, VA.

Blackstone Area Bus System (BABS): Brunswick Express

BABS is a public transportation agency that provides service to a multi-county area in Southside Virginia. All routes deviate up to ¾ of a mile from the regular route given that individuals request pickup or drop off 24 hours in advance. The Brunswick Express Bus operates the closest to the LCAAA service area. The Brunswick service operates in the towns of Blackstone, Lawrenceville, and Alberta in Brunswick County. The route operates Tuesday through Friday from 8:00 a.m. to 4:17 p.m. Fares for the Brunswick Express are 50 cents, and BABS buses are ADA accessible and equipped with wheelchair lifts and securement systems. Brunswick Express operates from the Blackstone Food Lion to Southside Virginia Community College (SVCC) and Southside Community Health Center in Alberta. From here, it travels to Saint Paul's College, Post Office, Brunswick Social Services, and Brunswick Food Lion, then returns to Alberta where it travels to the Alberta Town Office, then back to SVCC and the Blackstone Food Lion.

2.11. Public Outreach, Engagement, and Involvement

LCAAA provides a summary of its transportation services on the agency website, as well as information about operation hours, fares, and service areas for both LAB and HART. Contact information including email address, office address, and phone numbers are posted on the website for visitors who are seeking more detailed information.

LAB also participates in South Hills "Picnic in the Park", a local 4th of July event that culminates in a large fireworks display. LAB provides vehicles and drivers to transport, free of charge, festival attendees from the baseball parking lot to the 4th of July fireworks display in Parker Park. Both LAB vehicles are used during this event as regularly scheduled demand-response service is not conducted on major holidays.

As part of this TDP's public input process, LCAAA distributed surveys to gather information about trips taken on LAB and HART and feedback on the current service. Paper surveys were distributed to riders onboard the vehicles. An online version of the survey was also posted on the agency webs

3. Goals, Objectives, and Service Standards

This chapter addresses the goals, objectives, and service standards necessary to guide LCAAA in providing effective and efficient general transit services. This chapter also details the process for reviewing and updating these goals, objectives, and standards so that they remain current to the evolving needs of the transit service and its users.

3.1. Introduction

Goals are broad statements and are defined with a long-term view of the desired ends of the general transportation program. Objectives are the intermediate steps toward a goal and are specific and measurable. Service standards provide established thresholds that allow an agency to determine quantitatively whether an objective or goal has been met. As recommended by DRPT, goals, objectives, and service design standards should be based on SMART principles, that is – Specific, Measurable, Agreed, Realistic, and Time-bound.

Before the previous TDP, LCAAA did not have established goals or objectives specific to its transportation program, though it did have broad goals pertaining to the organization as a whole. LCAAA based its standards for general public transportation on the basic standards used by the Virginia Department for the Aging Transportation Services (VDRPT). The 2011 TDP proposed a set of goals, objectives, and standards specific to the agency's general transit service. These have not been revised since 2011 and can be found in the previous TDP.

3.2. Goals and Objectives

Below are the recommended goals for LCAAA's general public transportation services. This list builds and expands upon the agency's goals from the 2011 TDP. In addition to each goal, the list below provides associated objectives and their measures and strategies, which detail the metrics and actions necessary to achieve each objective. Specific service standards that match each goal are

Goal 1: Provide safe and reliable transportation services to the community

Objective 1.1 Maximize adherence to scheduled pickup times

Measure	Fulfillment of all advance reservations within an hour of the requested times
Strategy	Monitor and evaluate fulfillment of reservations

Objective 1.2 Minimize accidents on transit vehicles

Measure	Incident rate per 100,000 vehicle miles
Strategy	Monitor safety incidents per 100,000 vehicle miles for systematic safety issues; Implement safety improvements as necessary.

Goal 2: Manage and maintain the existing transportation service and resources in an efficient and effective manner

Objective 2.1 Minimize total operating expenditure

Measure	Cost per revenue mile, cost per revenue hour
Strategy	Collect and analyze data and monitor operating cost per unit

Objective 2.2 Maximize cost-effectiveness

Measure	Cost per trip, net cost per trip
Strategy	Collect and analyze data and monitor cost per unit

Goal 3: Transport as many persons as possible given the available resources and the rural and small town nature of the service area.

Objective 3.1 Maximize ridership productivity

Measure	Boardings per revenue mile, boardings per revenue hour
Strategy	Collect and analyze ridership data

Goal 4: Improve public awareness of general transit services

Objective 4.1 Distribute information on services to as many potential riders as possible

Measure	Annual distribution of brochures
Strategy	Provide updated brochures to businesses, organizations, and hotels in service area annually

3.3. Service Standards

Proposed service standards, described below, fall into six categories related to the above goals and objectives, and are based on data from fiscal year 2018:

Table 3-1: Proposed Service Standards

Category	Metric	Standard
Schedule Adherence	Percent of advance reservations fulfilled within an hour of the scheduled time	90% of pickups within an hour of scheduled rides that were booked at least a day in advance
Safety	Incident rate per 100,000 vehicle miles	No more than 0.1 reportable incidents per 100,000 vehicle miles
Cost Efficiency	Cost per revenue mile Cost per revenue hour	Annual cost per revenue mile shall be under $2.26 Annual cost per revenue hour shall be under $26.49
Cost Effectiveness	Cost per passenger trip Net cost per passenger trip	Annual cost per trip shall be under $10.08 Annual net cost per trip shall be under $8.55
Productivity	Boardings per revenue mile Boardings per revenue hour	Annual boardings per revenue mile shall be above 0.2 Annual boardings per revenue hour shall be above 2.5

Public Information	Annual distribution of brochures	Provide updated brochures to at least 5 businesses and organizations, including grocery stores, medical centers, and pharmacies

Note: FY18 service productivity and financial performance statistics are used as the thresholds for the above service standards associated with cost efficiency, cost effectiveness, and productivity.

3.4. Procedures for Reviewing and Updating Goals and Objectives

LCAAA's Advisory Council is responsible for reviewing and providing input to the agency's annual plan for senior services, but this plan is not specific to the agency's general transit services. LCAAA has an opportunity to update its TDP goals and objectives through annual update letters to DRPT. The previous TDP suggested the creation of a Transportation Subcommittee within the Advisory Council to be responsible for reviewing and updating goals and objectives. However, the agency did not follow through on this suggestion.

4. Service and System Evaluation

The previous two chapters having presented the history and goals of LCAAA, this section assesses how effectively the service currently operates. The first part of this chapter will evaluate how the LAB/HART services are performing fiscally and operationally, which, to glean trends, also includes an analysis of a few performance measures over the last three fiscal years in. The second part of the chapter will evaluate the service through community feedback via on-board ridership surveys and stakeholder meetings that were held in the fall of 2019.

4.1. Current Fiscal Year Data

Table 4-1 below shows LAB and HART service data for the most recent fiscal year, 2019[2]. Neither LAB nor HART are particularly dense, with each service area population density less than 600 residents per square mile. This is much smaller when comparing to major transit systems in the state, such as Greater Richmond Transit Company (GRTC), which has roughly four times as many residents per square mile (1,980). As a result, LAB and HART do not offer fixed-route service, but rather demand response service, which can be both more efficient for LCAAA to provide and more convenient for the rider. Both services offer identical service in terms of revenue hours and vehicles available for service. They also have similar ridership, although the revenue miles are slightly higher for HART due to that service's larger service area. Most of these statistics and their relation to productivity are discussed in the next section of this chapter.

Table 4-1: LAB & HART FY19 Service Data

Category	LAB Metric	HART Metric
Service Area	11.7 Square Miles, or 7,514 Acres	17 Square Miles, or 10,869 Acres
Service Area Population	5,215	9,384
Service Area Population Density	446 per Square Mile, or 0.7 per Acre	552 per Square Mile, or 0.8 per Acre
Operating Cost	$60,661	$82,101
Fare Revenue	$10,835	$9,896
Farebox Recovery Ratio	17.9%	12.1%
Subsidy per Rider	$6.97	$11.21
Vehicles	Peak: 1 Total available: 2	Peak: 1 Total available: 2
Ridership	7,149	6,439
Revenue Hours	2,607	2,607
Revenue Miles	28,675	32,341
Days in Operation	Monday-Friday	Monday-Friday
Trips per Day	Varies, Maximum 4 per hour	Varies, Maximum 4 per hour

4.2. Three-Year Trend Analysis

This section of the chapter examines service performance over the past three fiscal years, from 2017 through 2019. By evaluating service on several measures over a three-year time span, it is possible to glean trends in service

[2] LCAAA's fiscal year runs from October 1st through September 30th.

performance and assess whether there are deviations from the adopted service standards created for the 2011 TDP. Table 4-2 and Table 4-3 below show operating statistics that are used to generate performance measures, which are discussed in Table 4-4 and Table 4-5. For example, farebox recovery ratio, a measure used to assess how much fares cover the costs of running the service, can be determined by dividing the total fare revenue by the total operating costs, or cost per rider can be assessed by dividing the total operating cost by the total number of riders for the fiscal year.

Table 4-2: LAB Operating Statistics 3-Year Trend

Fiscal Year	Operating Costs	Riders	Revenue Hours	Revenue Miles	Fare Revenue
2017	$58,608	6,624	2,604	27,320	$9,941
2018	$62,074	6,800	2,569	28,914	$10,163
2019	$60,661	7,149	2,607	28,675	$10,835

Table 4-3: HART Operating Statistics 3-Year Trend

Fiscal Year	Operating Costs	Riders	Revenue Hours	Revenue Miles	Fare Revenue
2017	$67,153	5,961	2,604	30,336	$8,929
2018	$73,173	5,940	2,569	30,517	$9,100
2019	$82,101	6,439	2,607	32,341	$9,896

The performance measures in Table 4-4 and Table 4-5 on the following page are derived from the performance standards outlined and adopted in the 2011 TDP and primarily focus on productivity and cost. The specific standards that the service aims to meet each year are detailed in the last row of the two tables. In terms of productivity, represented by riders per revenue mile and revenue hour, FY19 levels for both services are currently above the threshold for corrective action, although this was not the case for LAB in FY18. Cost effectiveness is represented in terms of cost per revenue hour, per mile, per rider, and subsidy per rider. Concerning LAB costs have improved from FY18 figures, and the figures in FY19 meet the service standards set in the 2011 TDP. Regarding HART, FY19 costs have increased since FY18, although only costs per revenue mile fail to meet the service standards set in Chapter 3. This is due to the higher relative increase in operating costs with a smaller relative increase in revenue miles served that year.

Table 4-4: LAB Performance Measures 3-Year Trend

Fiscal Year	Cost per Revenue Hour	Cost per Revenue Mile	Cost per Rider	Subsidy per Rider	Farebox Recovery Ratio	Riders per Revenue Hour	Riders per Revenue Mile
2017	$22.51	$2.15	$8.85	$7.35	17.0%	2.5	0.24
2018	$24.17	$2.15	$9.13	$7.63	16.4%	2.6	0.24
2019	$23.27	$2.12	$8.49	$6.97	17.9%	2.7	0.25
2011 Service Standard	<$35.00	<$2.50	<$15.00	<$13.50		>2.5	>.18

Table 4-5: HART Performance Measures 3-Year Trend

Fiscal Year	Cost per Revenue Hour	Cost per Revenue Mile	Cost per Rider	Subsidy per Rider	Farebox Recovery Ratio	Riders per Revenue Hour	Riders per Revenue Mile
2017	$25.79	$2.21	$11.27	$9.77	13.3%	2.3	0.20
2018	$28.49	$2.40	$12.32	$10.79	12.4%	2.3	0.19
2019	$31.50	$2.54	$12.75	$11.21	12.1%	2.5	0.20
2011 Service Standard	<$35.00	<$2.50	<$15.00	<$13.50		>2.5	>.18

It is also useful to view these statistics linearly in a series of charts that show related metrics, often with dual y-axis'. In Figure 4-1 and Figure 4-2, operating costs and ridership are shown for LAB and HART, respectively. The two services diverge in this regard, with costs increasing significantly (22%) for HART from FY17 to FY19, accompanied with an 8% increase in ridership. Conversely, LAB operating costs have increased roughly 4% with an 8% increase in ridership over the same period.

Figure 4-3 and Figure 4-4 show revenue hours and revenue miles for LAB and HART. Since both services have largely offered the same service span the past three fiscal years, it is more useful to look at revenue miles. Whereas LAB revenue miles have been consistent, HART increased revenue miles by 6% in FY19. This is likely due to the increase in ridership over the same period and not necessarily the larger service area offered by HART.

Figure 4-1: LAB Operating Costs and Ridership 3-Year Trend

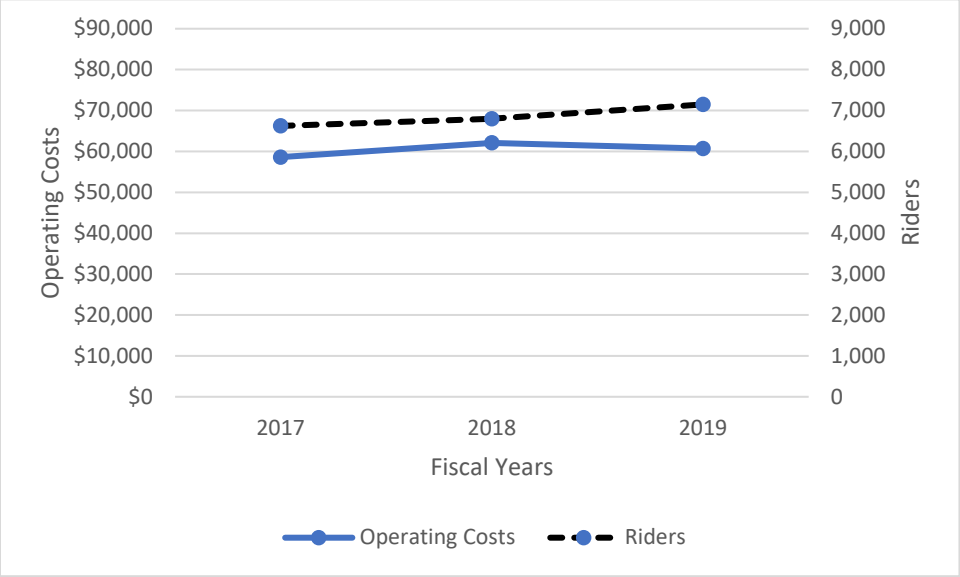


Figure 4-2: HART Operating Costs and Ridership 3-Year Trend

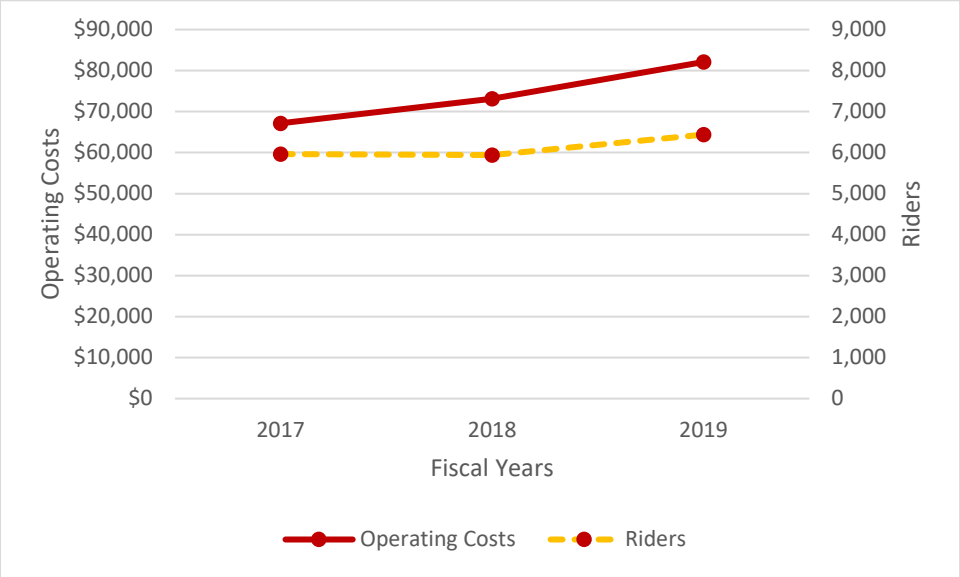


Figure 4-3: LAB Revenue Hours and Revenue Miles 3-Year Trend

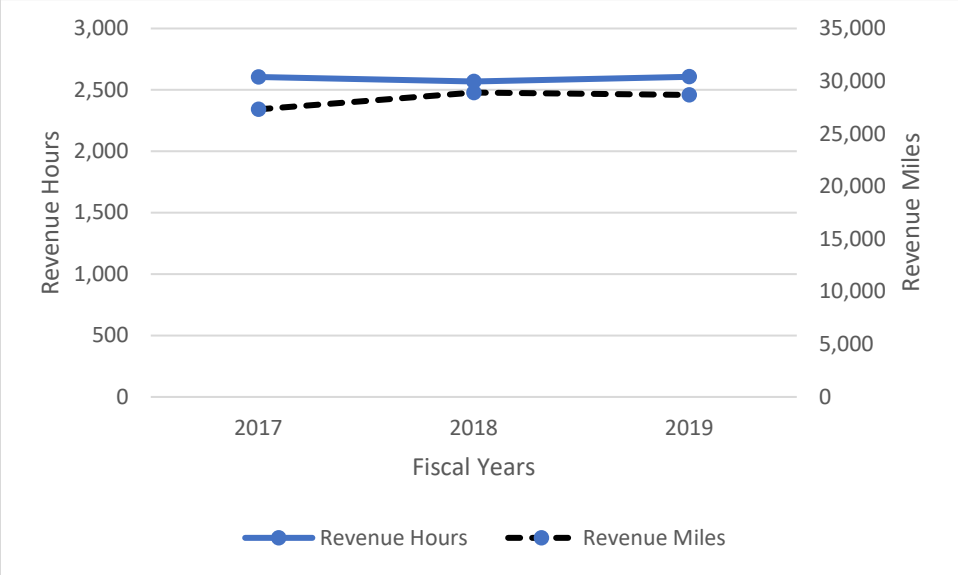


Figure 4-4: HART Revenue Hours and Revenue Miles 3-Year Trend

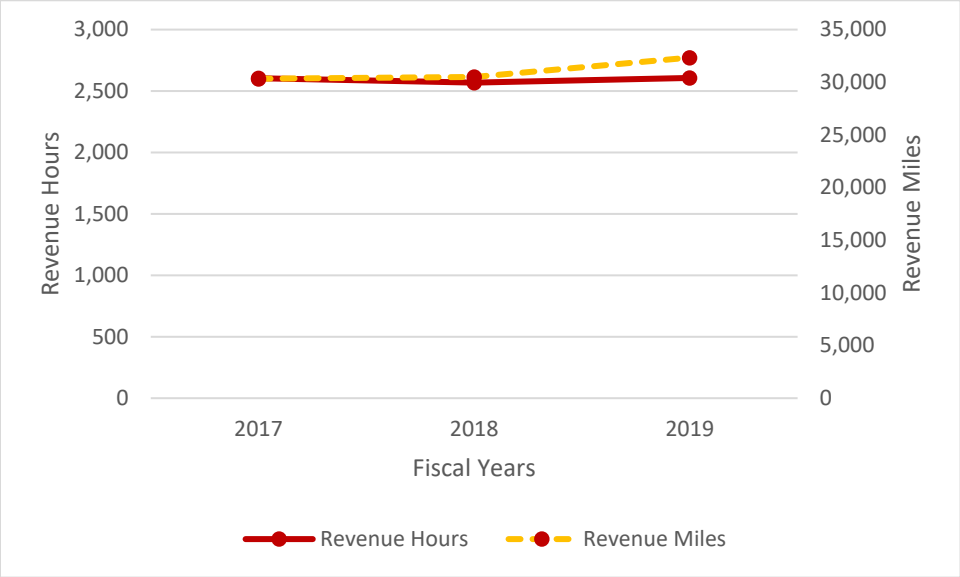


Figure 4-5: Cost and Subsidy per Passenger 3-Year Trend

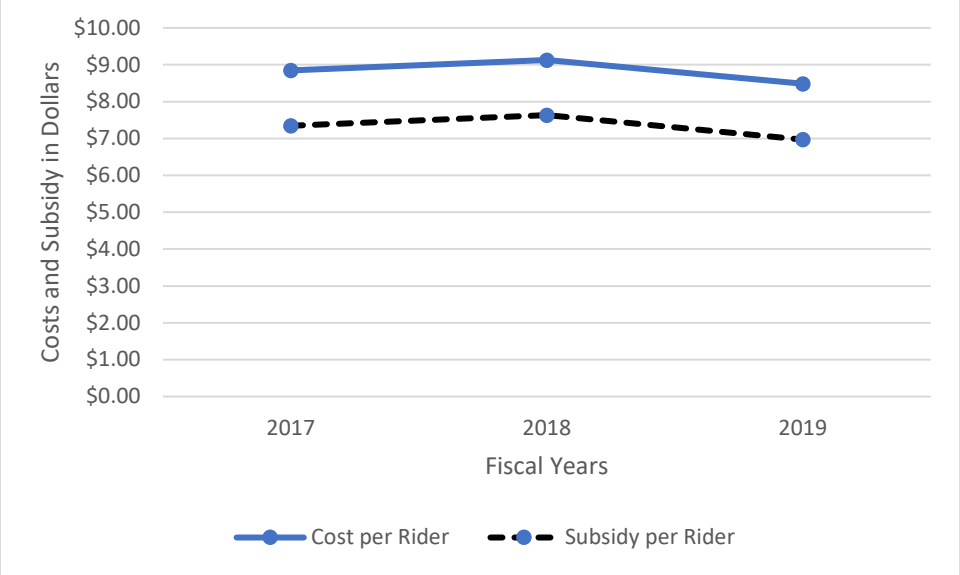


Figure 4-6: Cost and Subsidy per Passenger 3-Year Trend

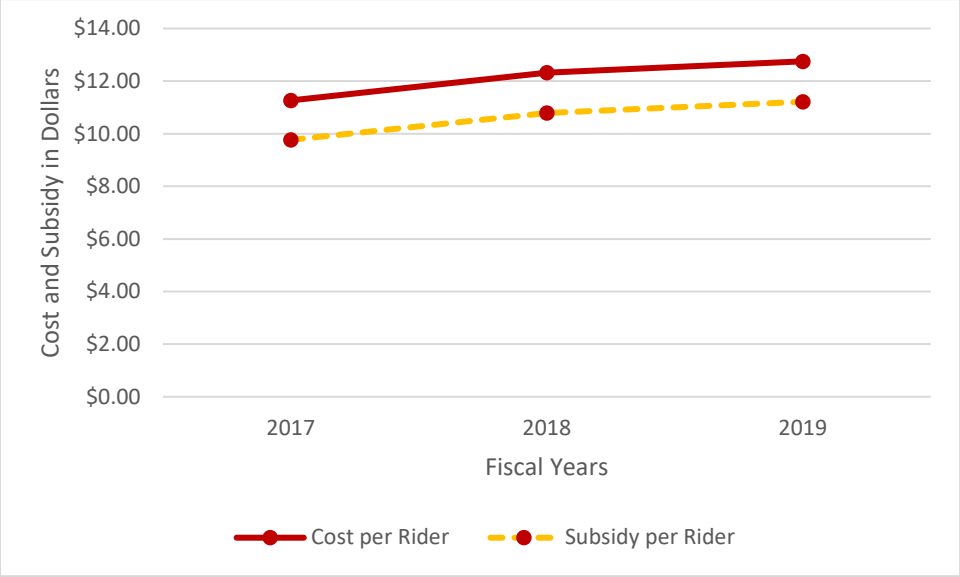


Figure 4-7: LAB Riders per Revenue Hour & per Revenue Mile 3-Year Trend

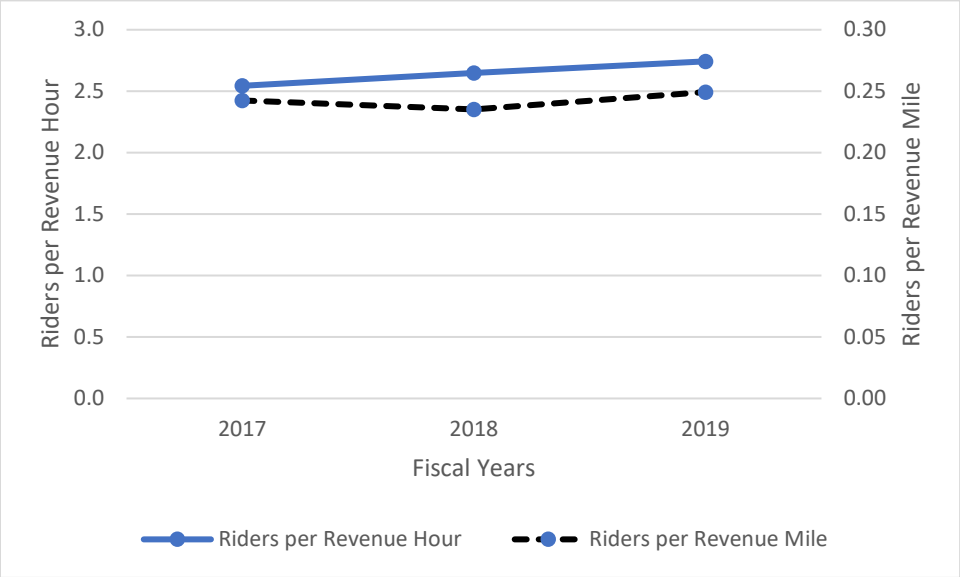
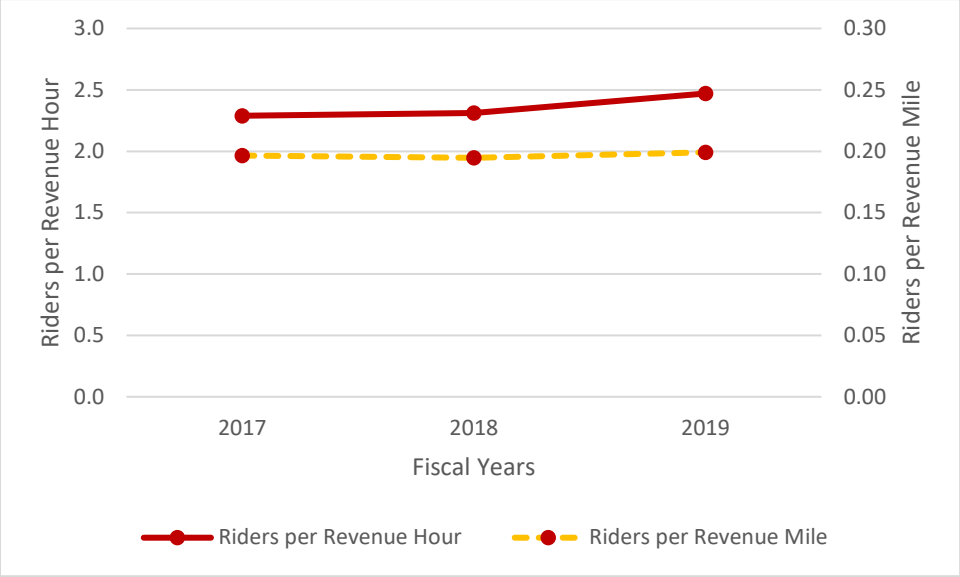


Figure 4-5 and Figure 4-6 show cost and subsidy per rider, and the gap between the two represents the amount covered by the fare, which is set at $1.50 for both services. The comparative costs per rider between LAB and HART have increased, with HART having 21% higher costs per rider in FY17, with the disparity increasing to 33% in FY19. The larger service area of the HART service can explain some of the higher costs per rider, resulting in fewer passengers per revenue mile. However, other factors appear to be contributing to the disparity in cost per rider. Conversely, LAB has decreased its cost per rider since FY18. It appears both services are performing well in enforcing fare policy, as the fare per rider, represented by the difference between the cost and subsidy, is consistent at roughly $1.50 per rider for each fiscal year.

Figure 4-8: HART Riders per Revenue Hour & per Revenue Mile 3-Year Trend



Lastly, Figure 4-7 and Figure 4-8 represent the relationship between riders per revenue hour and revenue mile. As both services have offered, for the most part, the same service hours the past three fiscal years, changes in the solid lines will show increases or decreases in efficiency. For the past three years, both LAB and HART have been able to serve a greater number of riders per revenue hour, with both services increasing by 7% from FY17 to FY19. The riders per revenue mile metric may reveal the length of the trips involved. As HART is a larger service area than LAB, one would expect to see fewer riders per revenue hour, which is what the data confirm. HART has remained mostly unchanged, at roughly 0.20 riders per revenue mile, whereas LAB has fluctuated slightly the past three fiscal years, at 0.25 riders per revenue mile. With riders per revenue mile at roughly the same level the past three fiscal years, it shows that the trip distances of the riders in both LAB and HART are most likely the same, even as ridership increases.

4.3. Ridership Survey

Although an analysis of how the LAB/HART services are performing in terms of finances and productivity is important, it does not answer more nuanced questions such as who is riding, why they're riding, or how people feel about the service. Tis section details the results of two on-board surveys and two stakeholder meetings that were held in the HART and LAB service areas to help understand who is using the service and why.

In late September 2019, an on-board ridership survey was conducted to capture a typical day of service on both the LAB and HART buses. This effort yielded 26 surveys from LAB riders and 16 surveys from HART riders. The questions were identical for both LAB and HART, and covered four topics: rider demographics, how riders use the service, where they are going on their current trip, and how they feel about the service. Questions about income were excluded because this is sensitive information not always answered by the rider, although this can be inferred through other questions on the survey. The survey was also made available online with a QR code and web address on the physical survey, although none were completed this way. The complete, one-page survey is shown in Figure 4-9. The survey did reveal similarities and differences in rider characteristics and impressions of the two services. This section will examine seven of the most salient findings, with the complete survey results located in the Appendix.

As shown in Figure 4-10, over half of LAB riders use the service at least twice a week, with nearly 40% using the service almost daily. This result is indicative of commuter patterns and is validated in one of the subsequent questions about trip purpose. This consistent use of the service is higher proportionally with HART riders, where 9 out of 16 riders use it four or more days a week. When asking about education level (shown in Figure 4-11), the survey revealed that for both HART and LAB, the education level of the ridership typically stops at a high school diploma or GED. However, six riders for LAB answered they had earned a college degree or other professional training beyond high school. Six riders, three for each service, did not complete high school.

Perhaps the most salient question is understanding why riders choose LCAAA services. In Figure 4-12, the survey results show that by far the most common reason riders took LAB or HART was that they had unreliable access to a vehicle. This was followed by convenience, which is understandable considering that it is essentially door-to-door service. The third most common reason was disability, which was more prevalent with HART than LAB riders. A related question on the survey asked how riders would get around if LCAAA did not offer these services. The answers, interpreted by viewing Figure 4-13, show that most riders would be able to get a ride from others with access to a vehicle, but that does not show how convenient or reliable that ride would be. Some riders indicated that they would walk, particularly in South Hill, but very few would drive, while four riders would not be able to make the trip at all.

Figure 4-14 and Figure 4-15 detail the trip purposes of the riders. Although the survey asked for detailed addresses, most respondents did not answer that question. Nevertheless, the pairing of trip purposes can be ascertained. For LAB, the strongest connection was between home and work, which shows the importance of LAB for South Hill residents to hold a job or to seek work. The second most common trip purpose for LAB riders was for medical care. For HART, the trips were less work oriented, as it only appeared six times as either a trip start or end. Conversely, medical trips were more common for HART riders. General shopping trips were relatively uncommon, occurring only twice out of 16 surveys.

When rating the service (Figure 4-16), riders were extremely satisfied across all measures in LAB and only slightly less so for HART. Every measure scored an average of at least 4 out of 5, with many measures for LAB receiving unanimous top ratings. Perhaps one area of improvement for HART would be the areas served by the service, which received the lowest rating of 4.08. Discussions with riders revealed that there were areas beyond the service boundary that riders would like to access but cannot. These areas may overlap with the areas discussed in the stakeholder meeting, detailed later in this chapter. Additionally, some riders expressed concern over security, which is a bit unclear considering that drivers pick up and deliver riders from their homes and to their destinations.

Lastly, riders were asked to pick three areas of improvement they would most like to see, and the results differed slightly between LAB and HART. In Figure 4-17, one can see that for HART riders, the most important improvement was to expand service to unserved areas, which explains the relatively low rating discussed in the previous paragraph. This was followed by a desire for weekend service, then evening service. The least in demand was for fixed-route service. This is understandable as HART riders rated the ability to arrange a ride highly, and door-to-door service is in many ways more convenient than walking to and from a designated stop. Conversely for LAB, weekend service had the highest number of requests for improvement, with half of all surveys indicating that desire. This was followed by evening service and then more vehicles. This may explain the discussion in the stakeholder meetings section where LCAAA's transportation director stated that the service was nearing capacity. The least desired improvement was connections to other services.

Figure 4-9: Sample Survey

Lake Country Area Agency on Aging (LCAAA) Survey / September 2019

Dear Rider: LCAAA is evaluating existing and future transit service. Thank you for your help by filling out this survey.

HOW DO YOU USE LAKE AREA BUS (LAB) OR HALIFAX AREA RURAL TRANSIT (HART)?

How often do you typically ride LAB/HART?

☐ Never ☐ Less than once a month ☐ Once or twice a month ☐ Once a week
☐ 2-3 days a week ☐ 4 or more days a week

Age
☐18 and under ☐19 – 64 ☐65 and above

Gender
☐Male ☐Female

Race (select all that apply, optional)
☐White ☐Black ☐Asian ☐Native/Pacific ☐Other

Education (select most recently completed)
☐ Did not complete high school
☐ High school diploma/GED
☐ College degree or higher
☐ Other professional training

Why do you choose to ride LAB/HART instead of another mode of transportation? (select all that apply)
☐ Disability ☐ Unreliable access to a vehicle ☐ Dislike driving
☐ Financial reasons ☐ Convenience ☐ Other _____

How do you typically get around without LAB/HART? (select all that apply)
☐ Walk ☐ Drive ☐ Get a ride ☐ Not make the trip ☐Other _____

ABOUT YOUR TRIP TODAY

The following questions are about the trip you are taking right now.

Where did your trip begin?
☐ Home ☐ Work
☐ School ☐ Shopping
☐ Medical ☐ Other _____
Please give an address, intersection, or landmark (optional):

Where does your trip end?
☐ Home ☐ Work
☐ School ☐ Shopping
☐ Medical ☐ Other _____
Please give an address, intersection, or landmark (optional):

How frequently do you make this specific trip?
☐Less than once a month ☐ Once or twice a month ☐ Once a week ☐ More than once a week

RATING LAB/HART SERVICE & IDENTIFYING FUTURE TRANSIT NEEDS

Please rate LAB/HART service on a scale from 1 (Very Poor) to 5 (Great).

		1	2	3	4	5
A.	Ability to reserve a ride	☐	☐	☐	☐	☐
B.	Areas served by the route	☐	☐	☐	☐	☐
C.	Bus arriving on-time	☐	☐	☐	☐	☐
D.	Hours of bus service	☐	☐	☐	☐	☐
E.	Availability of information	☐	☐	☐	☐	☐
F.	Cost of bus fare	☐	☐	☐	☐	☐
G.	Security on bus and at stops	☐	☐	☐	☐	☐
H.	Cleanliness of bus and stops	☐	☐	☐	☐	☐
I.	Friendliness of drivers	☐	☐	☐	☐	☐
J.	Overall service	☐	☐	☐	☐	☐

Select three improvements you would want most.

A. Fixed-route service ☐
B. Demand response weekend service ☐
C. Demand response evening service ☐
D. More demand response vehicles ☐
E. Connections to other transit systems ☐
F. Expanding service to unserved areas ☐
Where would those places be?
Please describe in the space below.

Survey Link: https://www.surveymonkey.com/r/lcaaa_transit_survey_2019. Survey will be open through September 30th.

Figure 4-10: Trip Frequency Survey Results

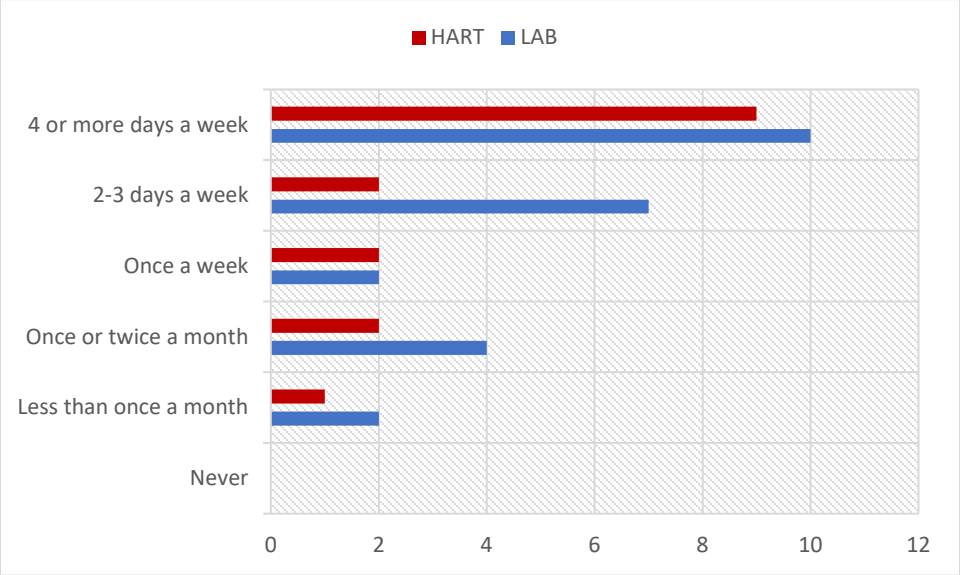


Figure 4-11: Education Survey Results

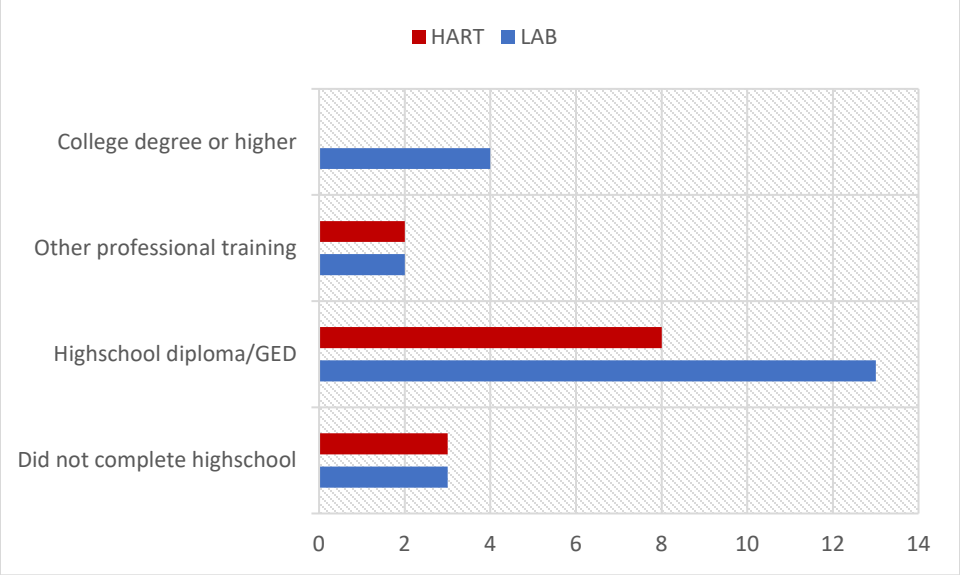


Figure 4-12: Reasons for Riding Survey Results

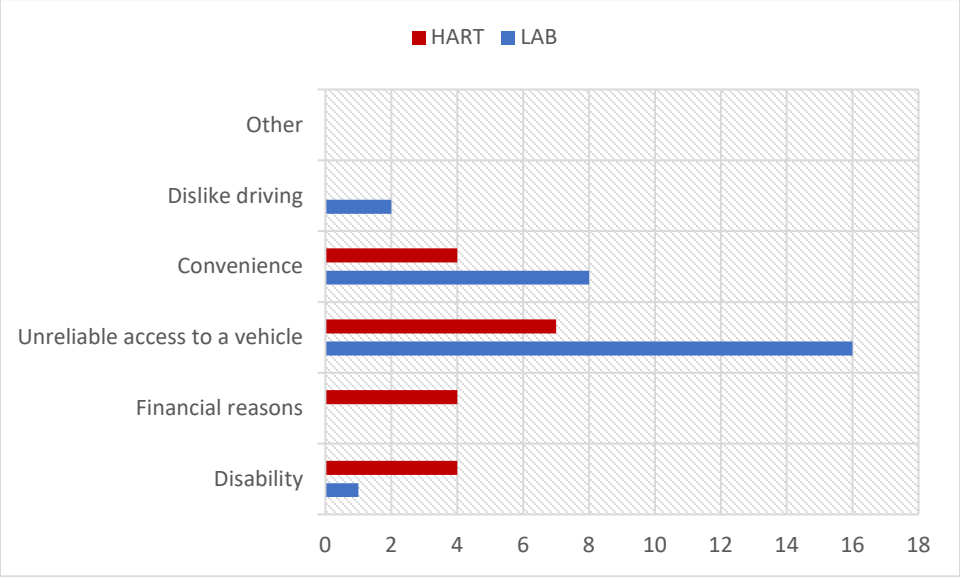


Figure 4-13: Mode Choice if LAB/HART Not Available Survey Results

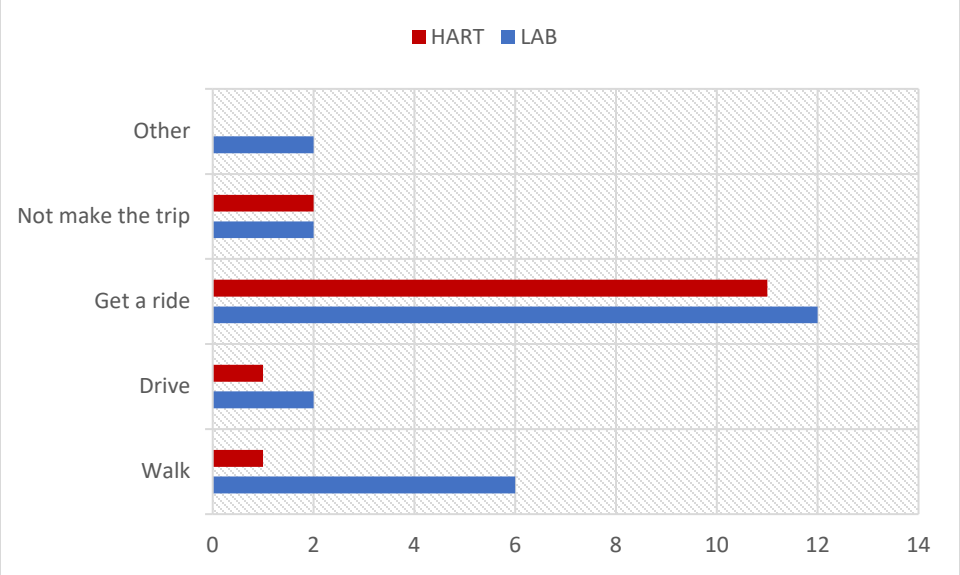


Figure 4-14: LAB Trip Purpose Survey Results

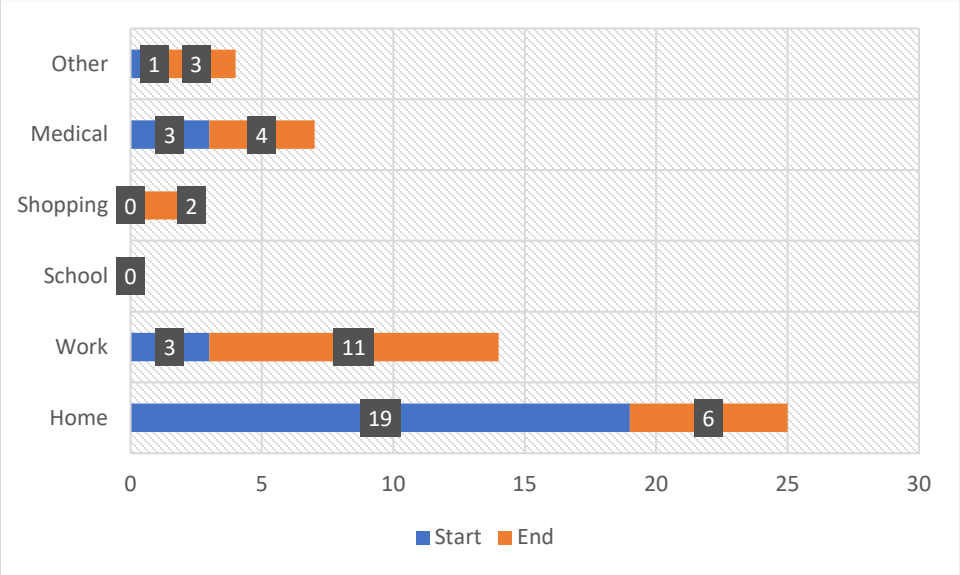


Figure 4-15: HART Trip Purpose Survey Results

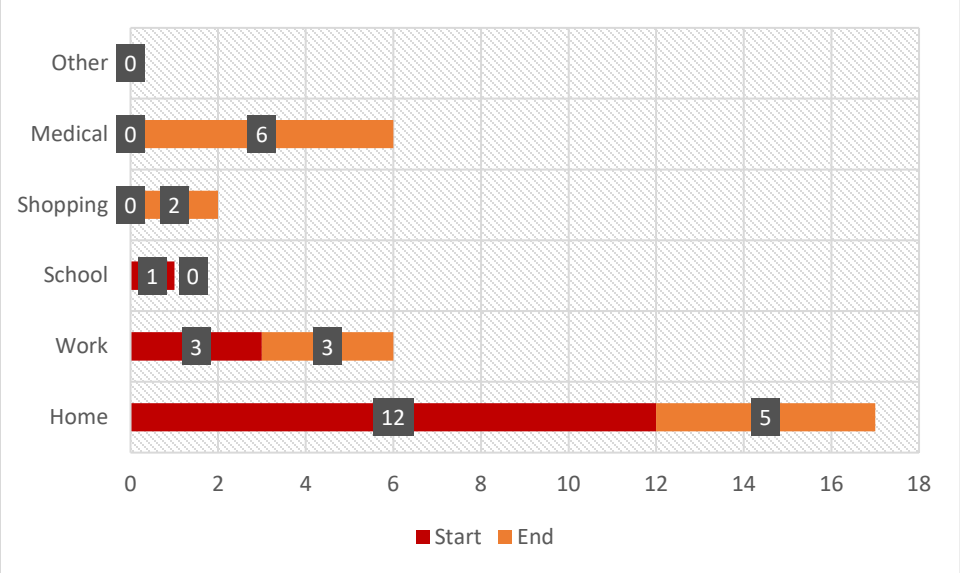


Figure 4-16: Rating the Service Survey Results

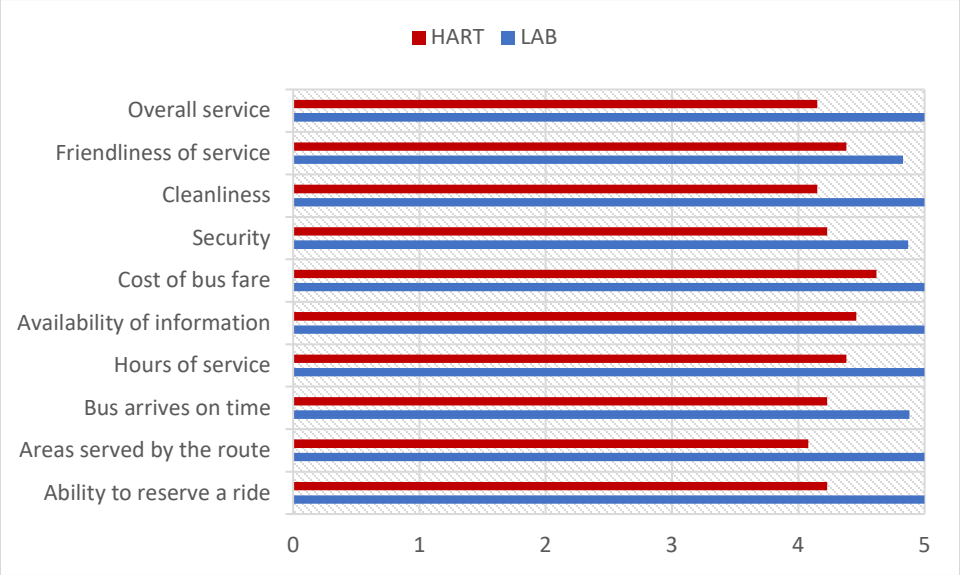
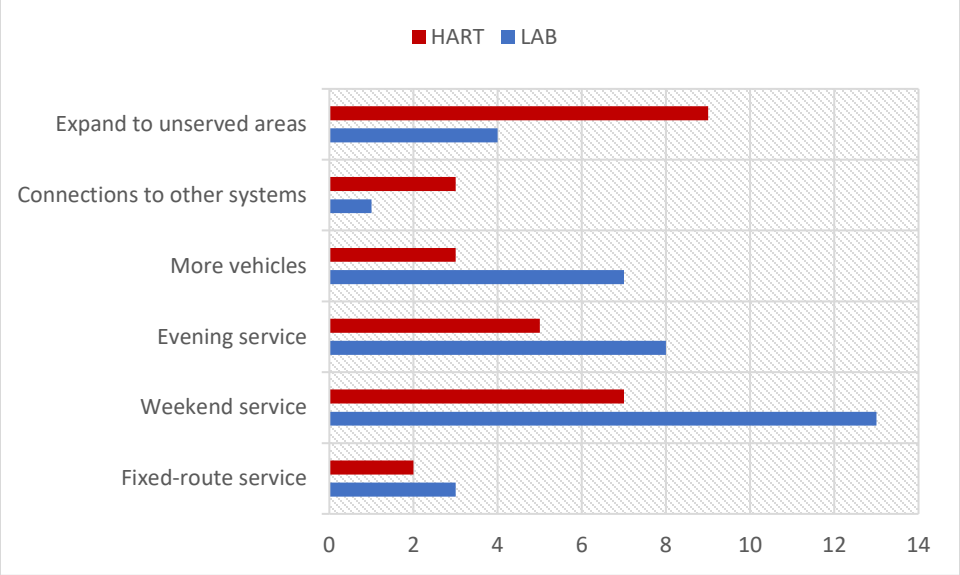


Figure 4-17: Top Three Improvement Requests Survey Results



4.4. Stakeholder Meetings

It is also important to hear from members of the community who might benefit from the LAB and HART service even if they did not use it directly. Two stakeholder meetings were held in mid-November 2019. The first meeting was held at the Southern Virginia Higher Education Center (SVHEC) in South Boston to discuss HART service. The second meeting was held at the Hazelwood House in South Hill, to discuss LAB service. Through these meetings, the following needs or concerns were identified. A list of participants are identified in Table 4-6 and Table 4-7.

HART Stakeholder Meeting

Table 4-6: HART Participants

Attendee	Organization
Joel Fescharek	LCAAA
Donnell Stephens	LCAAA
Betty Adams	SVHEC
Mike Dolianiti,	VECL Virginia Career Works
Garland Ricketts	Halifax County Board of Supervisors
Joni Henderson	Sentara Halifax Regional Hospital
Kathy Andrews	Halifax County DSS
Tom Raab	South Boston Town Manager
Carl Espy IV	Halifax Town Manager
Alice Banks	LCAAA
Scott Simpson	Halifax County Administrator

Southern Virginia Regional Transportation Project

- Much of the conversation revolved around SVHEC's involvement with DRPT to try to implement an inter-city bus service that would link cities such as Danville and South Boston, with the aim of connecting individuals with transportation issues to educational opportunities. This is distinct from the proposed inter-city bus service operating between Martinsville and Richmond (Capital Connector), or Danville and Washington, D.C. (Piedmont Express).
- The buses have already been purchased, but Danville Transit has a driver shortage which has made it difficult to start the service. There was discussion about LCAAA providing drivers, but this would be radically different from the existing service provided by LCAAA.
    - One obstacle to this would simply be finding drivers with CDL's, as none are required for current LCAAA service.
- The idea was raised that LCAAA should coordinate with the operators of the future bus route to find out the following:
    - Where the stop location will be
    - When service will start
    - How existing riders and non-riders can be educated to take HART to the future bus stop.

Hospital Visits

- Joni, the representative from Sentara Halifax Regional Hospital, said that they have 5,000 missed appointments annually, due to transportation issues. She mentioned a $45,000 grant to offset the costs of transportation for uninsured patients.

- Joni works with several different private transportation providers, but apparently many of her clients are not aware of the HART service, so there could be improvement in outreach.

Future Service

- There needs to be more promotional material at the hospitals and at SVHEC for the students.
  - Joel talked about developing new brochures and the need to increase the capacity of the service.
- Discussed the possibility of extending service to two call centers on US 58 West Industrial Park, which is the south side of the service area. The 2nd shifts there need transit support. There is also a Dollar General distribution center in the area.
- The town managers discussed if there was enough travel to warrant fixed-route service between Halifax and South Boston.
- Overall, the town managers are supportive and pleased with the service.

LAB Stakeholder Meeting

Table 4-7: LAB Participants

Attendee	Organization
Joel Fescharek	LCAAA
Evan D. Tanner, Jr.	Mecklenburg County Board of Supervisors
Linda Bowman	Southside Community Services Board
Kim Callis	South Hill Town Manager
Gwen Hinzman	LCAAA
Katrina Pearson	Southside Community Services Board

Existing Service

- Kim stated that the service is well-liked, and that he receives few complaints from residents and riders. He believes that LAB is a great partner for many of the town's events.
- When asked about the possibility that people interpret the bus as a private service provider, or that it has some other form of restricted access, the consensus was that knowing the bus is open to the public comes mostly by word of mouth, in addition to the brochure and website.
- Nearby Chase City wanted service but did not want to pay for it.
- Joel mentioned that the service is nearing or at full capacity.
- DRPT has been supportive of service expansion, but the local match is what is needed. South Hill is paying for most of the local match, roughly 86%, with the other two towns of La Crosse and Brodnax contributing the rest. The local match is 30% of the total operating costs, according to FY20 figures.

Future Service

- Linda wondered whether additional buses could be gained through sharing between her organization's fleet and LCAAA
- Kim asked if the economic benefit of purchasing another vehicle, and its associated costs, would result in an economic impact that would recoup the costs. It was noted that doubling of service would not result in a doubling of ridership, with an expected increase in ridership of about 50%.

- Kim thinks that the recommendation should be to explore the possibility of another fixed-route and study its economic impact.
- The consensus was that Saturday service is the most realistic if any service is to be added, but even extending either morning and/or extra evening hours during the weekday is also problematic. Currently, the same driver covers the entire daily shift, 7:00-17:30, but if the service span is extended beyond that, it would mean a lot more costs than just the hours, because there would have to be another dispatcher, driver, and backup driver hours.
- Fixed-route was tried in the past, with disappointing results. One of the hurdles with operating fixed route is access to bus stops; many of the riders currently using the LAB service cannot walk long distances or have some type of disability. Thus, the door-to-door service is attractive and beneficial to many of these riders.
- Kim asked whether $1.50 was a fair fare. The consultants stated that it seemed to be the case according to the survey results and knowledge of other rural services operating in Virginia, but it probably can't be raised any more considering the rider demographics.

4.5. Solutions to Current Deficiencies

It is noteworthy that the performance of LAB and HART from the most recent fiscal year (FY19) is, in most cases, above the service standards that were adopted in 2011. That said, this analysis revealed the need for changes that could help alleviate some of the issues raised in the stakeholder meetings and the on-board rider survey:

- Additional coordination with the operators responsible for the two proposed routes that will serve South Boston in 2020 – the SVHEC route from Danville, and the Martinsville-Richmond inter-city bus route. Sharing and providing information, such as schedules and services offered to the riders of both services, would be mutually beneficial.
- As both services are near capacity in terms of service all rides requested, it will be helpful to understand how many trip requests are denied and at what times. While the standard policy is that trips should be made 24-hours in advance, the analysis could also look at how many trips are denied within two hours on the day of request. Understanding day-of denials would help the analysis better gauge demand and the best service to provide this demand.
- Promotion of HART service to health care providers in South Boston and Halifax would benefit patients with transportation needs.

5. Service and Capital Improvement Plan

This chapter formulates the near and long-term service improvements for the two demand response services provided by LCAAA, LAB and HART. Three key areas are assessed here. One is the analysis of both existing demographic conditions as well as future population projections to determine future demand and potential service changes. Beyond the demographic analysis, additional needs were identified in the stakeholder meetings and rider surveys, as detailed in the previous chapter.

A second part of this chapter is the recommended service improvements for both LAB and HART. A third part of this chapter is the projected capital and operating costs of these plans, assignment of priority to each project, and a timeline of implementation for the next 10 years.

5.1. Service Improvements and Needs Identification

When evaluating and planning service improvements to LAB and HART, it is useful to examine what the characteristics of the existing population is now and what it may be in the future. The data examined in this section consists of U.S. Census 2017 American Community Survey (ACS) 5-year estimates, U.S. Census Longitudinal Employer Household Dynamics (LEHD) data from 2017, as well as the University of Virginia Weldon Cooper Center for Public Research population projections through 2040. The data sources and their relevance are discussed in greater detail in the following sections.

2017 Demographics

This section looks at five demographic characteristics from 2017, which is the most recent data available to represent existing conditions in the three counties that constitute the LCAAA service area; Brunswick, Halifax, and Mecklenburg, although it should be noted that demand response service is currently restricted to the towns of South Boston and Halifax for HART, and South Hill, La Crosse, and Brodnax for LAB. Four of the demographics are derived from 2017 ACS 5-Year estimates[3], and are used because they correlate with a higher propensity to take transit; low-income households, households without access to a vehicle, minorities, and seniors. The fifth demographic used here is service area jobs, which is derived from U.S. Census LEHD data. This identified job locations in the service area as well as provide information about trends in employment for different wage brackets over the past five years. Lastly, this section also examines home to work movement to evaluate the strength and direction of commuting patterns in the three-county service area.

Much of this work consisted of GIS analysis to map the above demographics at the census block group level and to identify and distinguish the block groups with transit needs. Due to low densities in much of the LCAAA service area, evaluating service areas solely by density per acre would produce values significantly less than one person per acre for nearly all block groups[4].

As a result, this analysis used an approach that compared the share of a demographic in a block group to the average share of that demographic in the three-county service area. For example, if the senior population in the entire service area was 20% of the overall population then the maps sought to distinguish and highlight the block

3 ACS 5-Year estimates represents the average of data collected over the previous five years. This is more precise than the 1-Year and 3-Year estimates (the latter has been discontinued), particularly on smaller geographic levels of analysis.

[4] Density per acre is used instead of density per mile due to the possibility of some block groups being under one square mile and the greater tangibility of envisioning one square acre instead of one square mile.

groups that had shares higher than 20%. These block groups are represented in darker shades of green in five percent increments in the following maps. As it is possible that a block group showing a high proportion of seniors could in fact, be representing only a few people, it is useful to also consider the total number of seniors within the block group. To remove ambiguity, the raw figures of the demographic population are included in red inside their respective block groups. A careful analysis should include an examination of both the ratio and the raw figures.

Figure 5-1: Senior Population Share

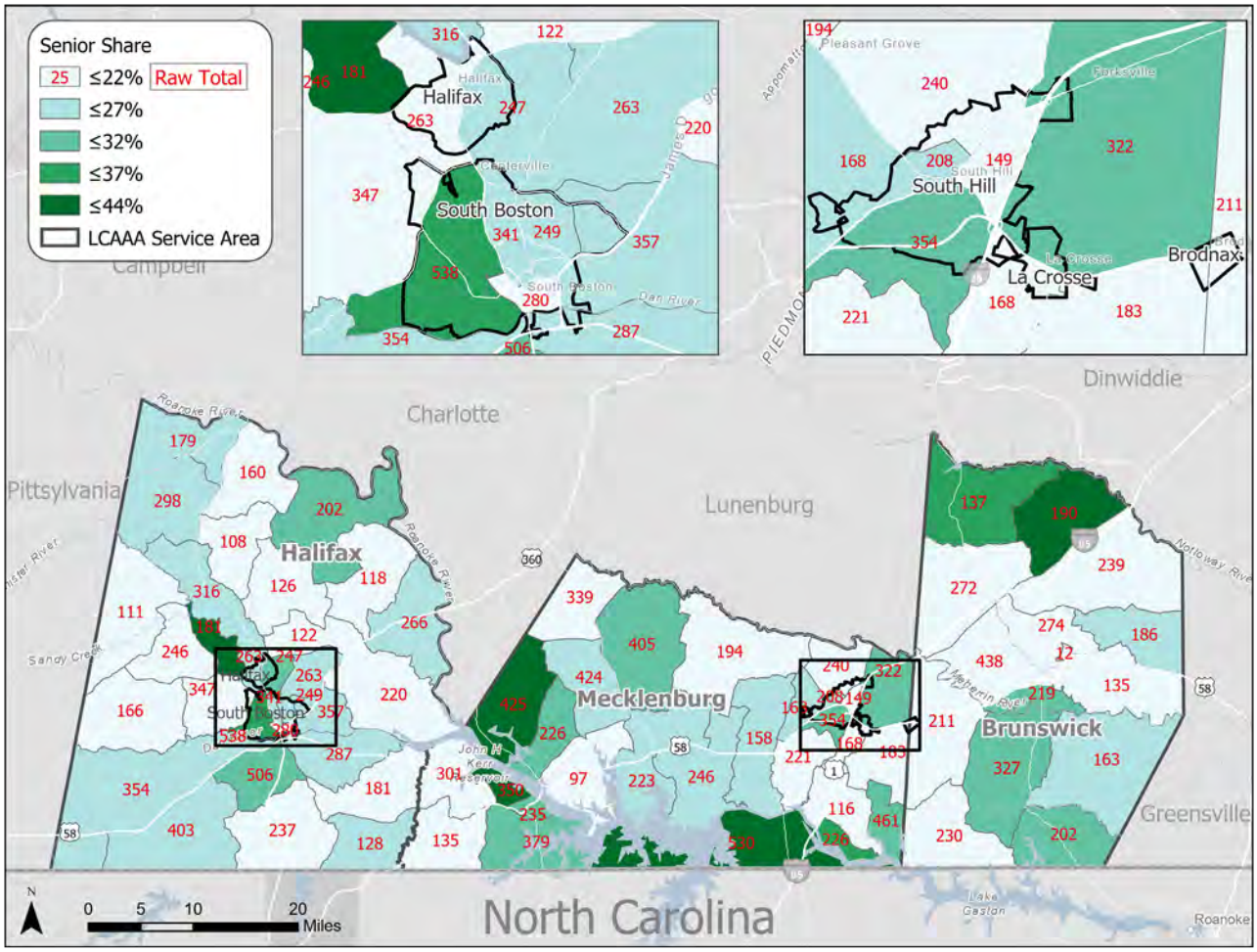


Figure 5-1, for example, shows the share of senior residents (aged 65 and older) in the three-county area. The block groups that were at or below the county average (22%), are shown to be in the lightest shade of green, with darker shades representing block groups with a share of senior residents at increasingly higher ratios than the average. As seen in the two map insets, which show the five towns that LAB and HART operate, block groups exhibiting higher than the average are present in the western parts of South Boston and South Hill. At the county level, Mecklenburg block groups exhibit high ratios of seniors. Brunswick and Halifax each contain only one block group exceeding 37%. An analysis of the raw figures, shown in red, reveals a higher number of seniors south of US-1 in South Hill. In the HART service area, the west side of South Boston contains over 500 senior residents, with at least 1,000 in the town limits.

Figure 5-2: Low-Income Household Share

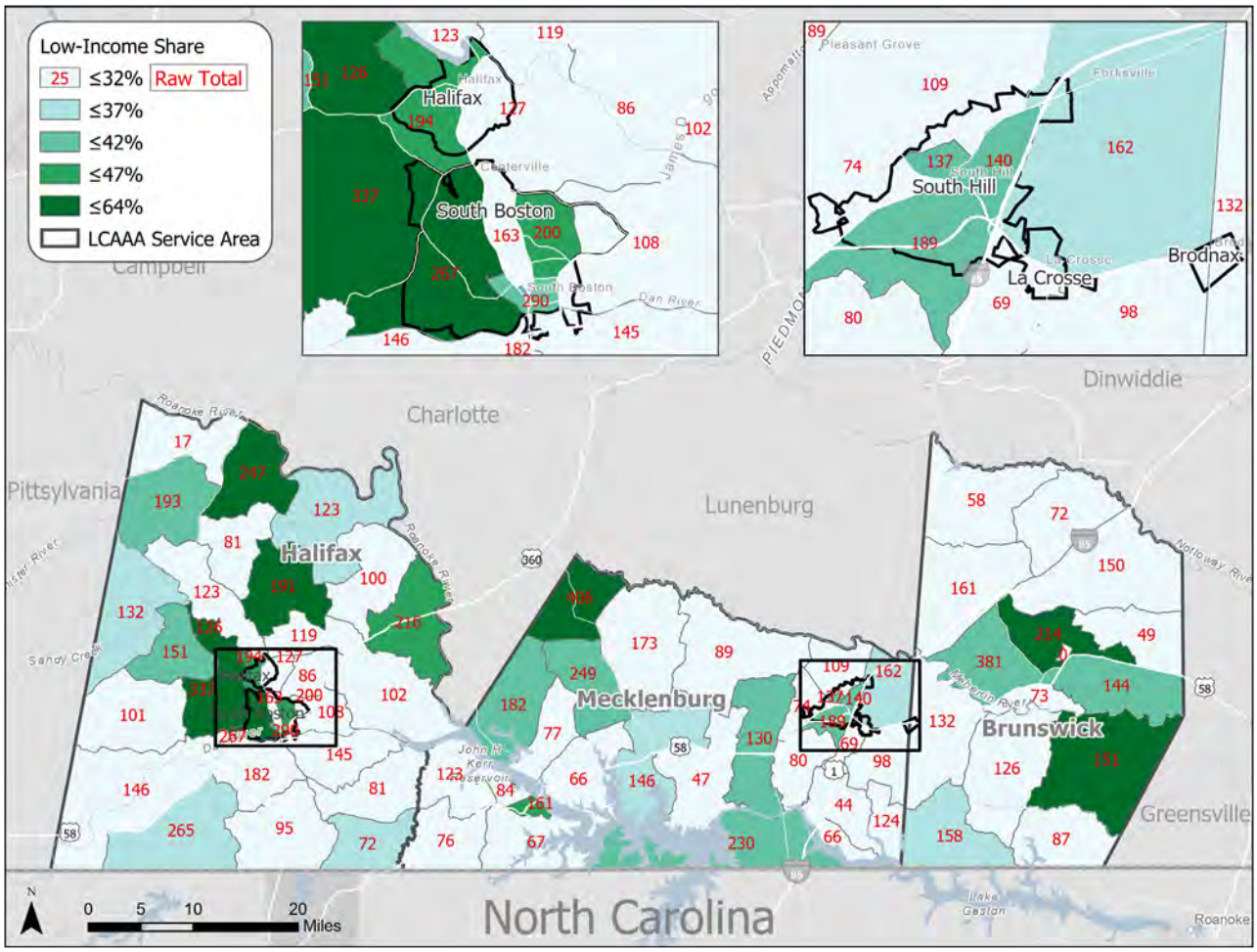


Figure 5-2 shows the share of low-income households, defined as households earning less than $25,000 per year in FY17$. In the LCAAA service area this is 32%. However, it must be noted that federal poverty guidelines identify poverty on a sliding scale based on income and household size, but this data is unavailable at the block group level in this area for 2017 5-Year ACS estimates, thereby diminishing the accuracy of this analysis.

The FY17 federal poverty level for a family of four under these guidelines is $24,600. A one-person household earning $24,600, while still poor by most measures, would not be considered in poverty according to federal guidelines, but would show up in this analysis because it is less than $25,000 in annual income. Conversely, a household of five earning less than $28,780 is considered living in poverty under federal guidelines, but would not show up in this analysis because it earned more than $25,000.

Another interesting note is that households are eligible for Medicaid (a federal health care program for the poor) at 138% of the federal poverty level. Thus, some households are above the federal poverty line are still quite poor and would likely still benefit from alternative transportation options. Nevertheless, the data shows higher ratios of block group poverty in northern Halifax and Mecklenburg counties, whereas in Brunswick it occurs primarily in the eastern part, bordering Greensville County. HART has a higher ratio of low-income households than the LAB service area,

with several block groups exhibiting low-income ratios greater than 47%. The HART service area, in raw figures, has over 600 households with low-income earnings with roughly 450 for LAB. Due to the low-density of the LCAAA service area, few block groups exhibit a significant number of low-income households, with the exception of northwest Mecklenburg which contains Chase City, and over 400 low-income households.

Figure 5-3: Minority Population Share

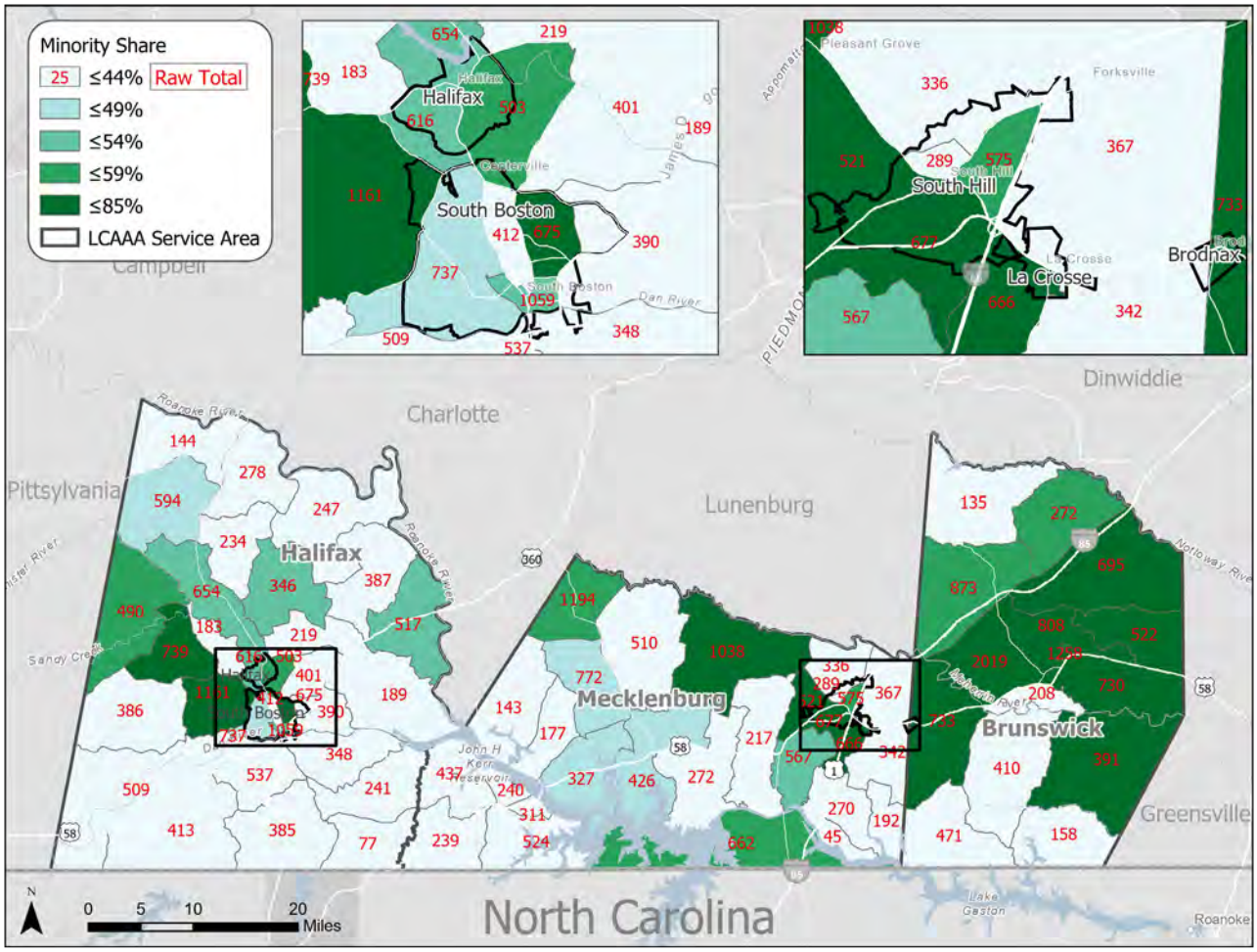


Figure 5-3 shows the minority population share in the LCAAA service area, which is roughly 44% of the total population. In this analysis, minority includes all populations that are not non-Hispanic white. Similar to the low-income household map, the northern parts of Halifax and Mecklenburg have higher concentrations of minorities than the county average, whereas Brunswick county is significantly more diverse, with nearly all block groups exhibiting high minority rates. The HART service area has a higher minority share relative to Halifax County, particularly in the eastern part of South Boston and all of Halifax, although nearly all block groups in the service area exhibit minority rates above the county average of 44%. Nearly all of South Hill's block groups have minority rates exceeding the service area average and, in many cases, exceeding 59%. In examining the raw figures, over 3,000 persons in the HART service area is identified as minority with over 1,000 in South Hill.

Figure 5-4: Autoless Household Share

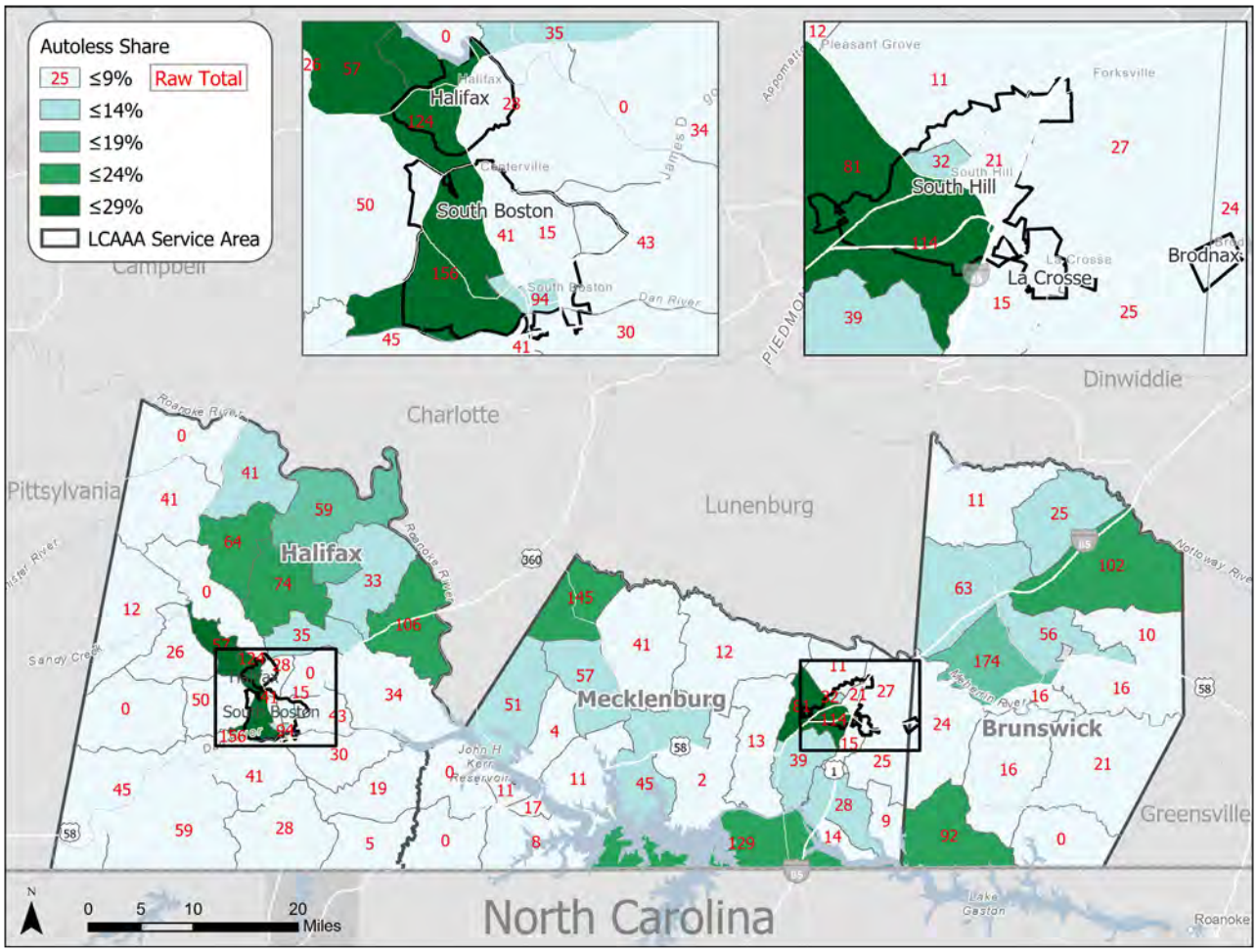


Figure 5-4 shows the households without regular access to a private automobile, which is nearly 10% of all households in the three-county area. The block groups in northern Halifax and Brunswick Counties exhibit higher rates of autoless households, whereas in Mecklenburg it is more diffuse, with a southern and northern block group (Chase City), showing rates between 19-24%. However, it is in the block groups within the HART and LAB service areas that exhibit the highest rates of autoless households, ranging from 24-29%, with several hundred autoless households in the HART service area and roughly 150 in the LAB service area. While this is most likely due to low income households, it should be noted that each town exhibits a higher density and walkability which makes not having an automobile slightly more tolerable than more rural parts of each county.

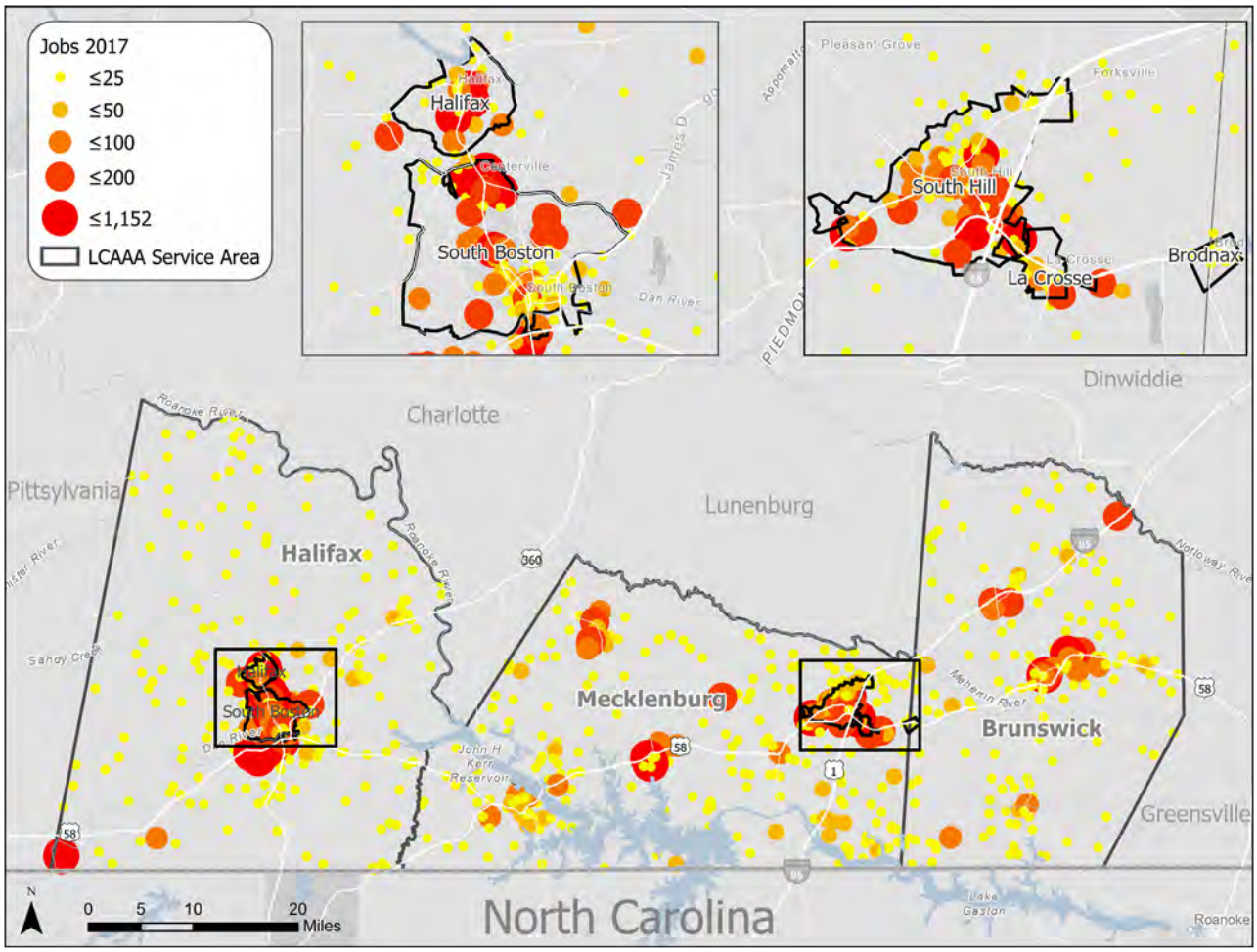
Overall, the four demographics examined from the ACS data reveal that concentrations of each metric are located within the existing service boundaries of HART and LAB, along with Chase City in northern Mecklenburg County. The block groups external to these areas do not exhibit particularly high concentrations of those demographics, according to the most recent data available.

Figure 5-5 on the following page shows job locations in 2017 as reported by employers. This map uses LEHD data, which synthesizes U.S. Census data, surveys, and administrative records to account for workplace characteristics

across a geographic area. Information such as home and work location, job type, wage range, and education level, among other employee characteristics are included in the data. A main weakness of the LEHD data is that job locations are reported through administrative records, which can be flawed. For example, a large organization such as a county public school system may report all employees under a single headquarters address instead of dispersed within their respective schools. It is therefore important to pair the data with local knowledge of the economic landscape.

An examination of the jobs in the LCAAA service area reveals five significant concentrations of employment; South Boston, South Hill, Lawrenceville, Chase City, and Clarksville. South Hill's employment is centered either around US-1 or the I-85 access ramps, where several businesses related to the hospitality and services industry are located. In South Boston, several smaller businesses, as evident by the yellow dots, are located in the historic downtown, whereas higher job concentrations are located in the northern part of South Boston which contain the regional hospital, several strip malls and big-box retail, such as Wal-Mart. Halifax also contains a significant number of jobs although this may be slightly inflated due to Halifax also serving as the county seat, where administrative records may list jobs there that are actually performed elsewhere in the county. Clarksville, Chase City and Lawrenceville are currently outside of the LAB and HART service area. Lawrenceville, however, is currently served by the Blackstone Area Bus System (BABS) Brunswick Express route a few times a day. Clarksville and Chase City, however, are not served by demand response or fixed-route services.

Figure 5-5: Job Locations



Whereas the maps combined the data from all three counties to produce a service area average, Table 5-1 shows the total raw count, by county, for each of the demographics. This provides more context to the scale of the populations and households at the county-level. It is also important to understand that there is likely significant cross-over between these demographics as the maps demonstrated that the distribution of one demographic was often correlated with another. As an example, there is a degree of overlap between low-income households and autoless households. In terms of shares between the three counties, Mecklenburg and Halifax are similar with a population that is 40% minority, 22% to 24% senior, and 12& to14% low-income. Brunswick county has a significantly higher ratio of minorities (although with half the population of the other two counties), the lowest rate of seniors, but also the highest rate of autoless households at 32%.

Table 5-1: 2017 ACS 5-Year Estimates, Total Count

Geography	Population	Minority	Senior	Households	Less than $25,000 Households	Autoless Households
Brunswick	16,435	9,683	3,235	6,048	1,956	626
Share	-	59%	20%	-	12%	32%
Halifax	35,030	14,071	7,800	14,084	4,780	1,360
Share	-	40%	22%	-	14%	28%
Mecklenburg	30,959	12,336	7,483	11,785	3,598	962
Share	-	40%	24%	-	12%	27%

Table 5-2, Table 5-3, and Table 5-4 shows a five-year retrospective analysis of total jobs and the wage earnings per month across three brackets for each of the three counties from 2013 to 2017. A monthly wage of $1,250 is $15,000 annually, above the federal poverty level for a one-person household but below a two-person household. Comparatively, the highest bracket of $3,333 can be annualized to nearly $40,000 and is outside the poverty threshold for nearly all households. The charts report three figures for each data type: the total count for that year, the share in relation to the total jobs that year, and the percent change from the base year (2013).

From 2013 to 2017 Brunswick County has lost roughly 500 jobs (14%) with nearly all the job loss occurring in the two lower income brackets. As a result, jobs with wages greater than $3,333 increased their share slightly although the growth overall from 2013 was minimal. In Halifax County, jobs grew 2% from 2013 to 2017, despite job losses of 9% and 6% in the two lower income brackets. It is unclear if this is due to increasing wages or if lower income jobs were replaced with higher income jobs. However, Virginia did not increase its minimum wage between 2013 and 2017, meaning the prevailing rate is $7.25 (the federal minimum wage). Mecklenburg County jobs declined 4% from 2013 to 2017 but the share of jobs in the highest income bracket increased by 14% from 2013. It appears that overall, the trend in the LCAAA service area is a decline in jobs with a net loss of 835 jobs and most of these losses were jobs earning $3,333 or less per month.

Table 5-5 shows the number of employed persons in each county and their destination for work. The table shows that only a quarter of the Brunswick residents with jobs work in the county, with nearly 8% of them commuting to South Hill for work. Conversely, over half of Halifax residents with jobs, work in their own county. It is interesting to note that only 182 residents of Halifax County commute to South Hill and 245 residents of Mecklenburg County commute to South Boston, hampering the viability of potential transit connections between the two largest towns in the service area. The number of commuters traveling between Brunswick and Halifax counties is negligible, which is understandable due to roughly 65 miles between South Boston and Lawrenceville.

Table 5-2: 2017 LEHD Jobs, Brunswick County

Year	Jobs	<$1,250	$1,250 - $3,333	>$3,333
2017	3,659	1,006	1,604	1,049
Share	-	27%	44%	29%
% Change	-12%	-16%	-19%	4%
2016	3,865	1,020	1,739	1,106
Share	-	26%	45%	29%
% Change	-8%	-14%	-12%	10%
2015	3,930	1,028	1,684	1,218
Share	-	26%	43%	31%
% Change	-6%	-14%	-15%	21%
2014	4,002	1,023	1,899	1,080
Share	-	26%	47%	27%
% Change	-4%	-14%	-4%	7%
2013	4,180	1,192	1,980	1,008
Share	-	29%	47%	24%

Table 5-3: 2017 LEHD Jobs, Halifax County

Year	Jobs	<$1,250	$1,250 - $3,333	>$3,333
2017	11,686	3,258	4,938	3,490
Share	-	28%	42%	30%
% Change	2%	-9%	-6%	29%
2016	11,655	3,476	5,046	3,133
Share	-	30%	43%	27%
% Change	1%	-3%	-3%	16%
2015	12,174	3,497	5,365	3,312
Share	-	29%	44%	27%
% Change	6%	-2%	3%	23%
2014	12,087	3,570	5,354	3,163
Share	-	30%	44%	26%
% Change	5%	0%	2%	17%
2013	11,511	3,585	5,228	2,698
Share	-	31%	45%	23%

Table 5-4: 2017 LEHD Jobs, Mecklenburg County

Year	Jobs	<$1,250	$1,250 - $3,333	>$3,333
2017	10,467	3,283	4,624	2,560
Share	-	31%	44%	24%
% Change	-4%	-10%	-9%	14%
2016	10,606	2,322	5,310	2,974
Share	-	22%	50%	28%
% Change	-3%	-36%	5%	32%
2015	10,787	3,467	4,841	2,479
Share	-	32%	45%	23%
% Change	-2%	-5%	-4%	10%
2014	11,131	3,475	5,088	2,568
Share	-	31%	46%	23%
% Change	2%	-5%	1%	14%
2013	10,956	3,648	5,060	2,248
Share	-	33%	46%	21%

Table 5-5: 2017 Employed Persons: Home to Job Locations

Area	Brunswick	Halifax	Mecklenburg
County	6,690	12,706	19,696
Brunswick	1,694	-	473
Halifax	-	6,760	512
Mecklenburg	813	482	5,069
Other	4,183	5,464	13,642
Town	-	-	-
South Hill	543	182	2,267
South Boston/Halifax	-	4,133	245
Lawrenceville	607	-	-
Boydton	-	-	813
Chase City	-	-	328
Other	5,840	8,391	16,043

Demographic Projections

The previous section examined existing populations; however, long-term service improvements typically involve more ambitious plans with higher potential costs. Therefore, it is important to review growth patterns and translate that into an analysis of where transit usage may increase in each of the three counties. This section utilizes population projections developed by the Weldon Cooper Center for Public Research. The projections are based on a collection of U.S. Census data and estimates developed by the Weldon Cooper Center to create population estimates for 2020, 2030, and 2040. These projections are further disaggregated by age and sex for all 133 Virginian localities.[5]

Table 5-6 through Table 5-8 show several population projections across the three counties in the LCAAA service area, including total population, youth population (<19 years), and senior population (>64 years). Table 5-6, showing total population, has all three counties projecting population decline by 2030 with the rate in decline increasing slightly by 2040. Brunswick County is projected to lose population at the highest rate of 17%. Mecklenburg will also lose residents but at a slower rate of 9%. Overall, the LCAAA service area will decline by 12%, or roughly 9,600 residents. The projected youth population, shown in Table 5-7, tells a similar story of the overall population in terms of declining population rates. The overall share of the youth population is similar across all three counties, ranging from 19% to 23%.

Lastly and perhaps more salient than changes in the youth population is the projected change to senior population, shown in Table 5-8. Across all three counties and in contrast to the overall and youth population projections, the senior population is forecast to increase significantly from 2020 to 2030. This is most likely due to the younger end of the "Baby Boomer" generation reaching retirement age by 2030.[6] An examination of the raw figures in 2030 show an increase of roughly 1,700 more residents over the age of 64. As a result, most counties will see the senior share of the population increase roughly 4%. This increase in the senior population, however, is projected to return to 2020 levels by 2040, as the Baby Boomer generation declines in number. The future for the LCAAA service area is projected to show both a declining population that is also increasingly and proportionally older. Therefore, it is highly likely that the need for transit will increase and although LAB and HART are open to all residents within the service area, a significant share of the ridership are and will likely continue to be seniors.

Table 5-6: Total Population Projections

Geography	2020 Population	2030 Population	2040 Population
Brunswick	16,320	15,045	13,617
% Change from 2020	-	-8%	-17%
Halifax	34,389	32,457	30,176
% Change from 2020	-	-6%	-12%
Mecklenburg	30,691	29,527	28,030
% Change from 2020	-	-4%	-9%

[5] A full explanation of the methodology can be found in the link. https://demographics.coopercenter.org/sites/demographics/files/2019-08/VAPopProj%20Methodology_2019_Updated.pdf

[6] Baby Boomer defined as those born between 1946 and 1964

Table 5-7: Youth Population Projections

Geography	2020 Youth Population[7]	2030 Youth Population	2040 Youth Population
Brunswick	3,514	3,196	2,962
% Change from 2020	-	-9%	-16%
Share	22%	21%	22%
Halifax	7,789	7,245	6,913
% Change from 2020	-	-7%	-11%
Share	23%	22%	23%
Mecklenburg	6,008	5,668	5,508
% Change from 2020	-	-6%	-8%
Share	20%	19%	20%

Table 5-8: Senior Population Projections

Geography	2020 Senior Population[8]	2030 Senior Population	2040 Senior Population
Campbell	3,363	3,639	3,163
% Change	-	8%	-6%
Share	21%	24%	23%
Pittsylvania	8,367	8,972	8,174
% Change from 2020	-	7%	-2%
Share	24%	28%	27%
Mecklenburg	8,207	9,046	8,262
% Change from 2020	-	10%	1%
Share	27%	31%	29%

5.2. Service Needs

An examination of the present and future residential and employment characteristics of the LCAAA service area indicates a need to expand service. How this develops, however, will differ in both service type and extent. Some of the existing challenges will continue to present themselves, such as how to serve areas outside of the major population centers. Establishing a demand-response service that extends hundreds of square miles is prohibitively expensive, inefficient, and difficult to schedule.

Further compounding efforts to expand service is that all three counties, like many rural parts of the U.S., are projected to lose anywhere from 9% to 17% of their respective populations by 2040. Paradoxically, the projected decrease in population within the three-county area may result in an increase in transit demand because of the corresponding increase in the count and share of the senior population. Demand may also increase because population decline means fewer relatives, friends, and neighbors that would ordinarily provide transportation for those in need. An increase in demand for demand-response services could be met with additional demand-response

[7] Youth defined as 19 years of age or younger
[8] Senior defined as 65 years of age or older

vehicles, extended service hours, or weekend service. In the most populated center in the service area, South Boston, a deviated fixed-route service could also be warranted. In addition to these service improvements, other transit services are being introduced in the service area that should coordinate the LAB and HART service, namely the potential implementation of two Inter-City Bus (ICB) services.

This following section identifies and describes potential projects that are needed to improve the HART and LBA services for both current and future riders.

Project A: Improved Data Collection

Due to the high volume of requests and a policy of allocating 15-minute blocks of time for each pick-up, there are occurrences where a LAB/HART trip request is modified to a different time or denied. In some cases, the person may simply travel on another day or not at all. Chapter 3 service standards calls for LCAAA to fulfill 90% of service requests within one hour of the requested time. As a result, it would be useful to review trip denials to understand how and where service requests are denied, and where service expansion could be added to both LAB and HART services.

Current LCAAA practice is to keep paper records of service requests, transcribing them (with the name, time, and address) onto a daily schedule sheet that is delivered to the driver before the shift begins. Paper records makes the analysis of trips difficult. Converting this record keeping to a computer system will improve both the accuracy and consistency of the requested trips. This will allow LCAAA understand the scope of demand within the service area and the potential need for additional funding for capital and operating expenses. Further, a computer record keeping will improve the speed at which addresses are entered and categorized, which can help assess the viability of fixed-route service should the need arise.

Project A recommends LCAAA organize trips in three ways:

- Trips that are accommodated within one hour of the requested time
- Trips that are accommodated but more than one hour removed from the requested time
- Trips that are unable to be accommodated on the day of request or not at all

Failure to meet same-day service requests should not be considered a failure on part of LCAAA as policy dictates requests should be made 24-hours in advance. A future analysis of the data over the period of several months will determine if LAB or HART meet their service standard of 90%, whether there is sufficient space in their daily schedule log, and whether the expansion of the service span or an acquisition of an additional vehicle and driver is warranted.

Project B: Supplemental South Hill Service

Expected increase in demand in South Hill means LAB should plan for supplemental service by adding another service vehicle and driver. It is unclear whether there is enough demand for a second vehicle to operate throughout the entire day. Therefore, Project B could initially be restricted to peak periods and/or could be expanded beyond the LAB service area.

Project C: Expand Weekday Service

Both LAB and HART currently operate on weekdays from 7:15 am to 5:30 pm. Feedback from the rider survey showed that extending service into the evening was the second most popular service improvement request. Conversations with riders during the planning process also revealed that it is not uncommon for them or others to secure other means of transportation in the evening due to service ending at 5:30 pm. It may also be difficult to arrange a ride at the end of the day due to a congested schedule at that time in returning riders to their homes.

Project C recommends extending weekday service by one and a half hours to provide 12 hours of daily service. The difficulty with this recommendation, however, is that the weekday shift is typically operated by one driver. Any extension of the service span would require an additional driver, and potentially, additional staff hours for dispatch.

Project D: Expand Service to Saturday

The rider survey revealed that extending service to the weekend was the most popular service recommendation. Many service industry employees do not follow a typical Monday through Friday, 9a-5p work schedule, and weekends are often the busiest and longest shift for service employees. We also note that several LAB riders work at the hotels located in South Hill along the I-85 exit ramps.

Project D recommends expanding service to the weekends to open possibilities for these workers to either work these shifts or obviate the need to seek alternative transportation to and from work. This project recommends that Saturday service match the service hours provided during weekday service. This recommendation would require one driver and one dispatch coordinator.

Project E: Expand Service to Sunday

Similar to Project D, Project E recommends the addition of Sunday service. This service should match weekday service in both span and hours provided. This recommendation would require one driver and one dispatch coordinator.

Project F: Coordinating with DRPT Inter-City Bus (ICB)

DRPT has proposed to launch two additional ICB routes after the success of the Virginia Breeze route that travels between Blacksburg and Washington, D.C. After service elimination from private ICB operators to many rural towns and small cities, DRPT sought to reconnect these municipalities with these services. As a result, one of the two proposed routes traverses southern Virginia from Martinsville to Richmond via South Boston. The most likely route through South Boston will be via US-360. Ahead of the launch, Project F recommends HART work with DRPT to establish a stop in South Boston. Criteria established by DRPT for an ICB stop includes (among others) providing a local transit connection, ease of access for coach buses, overnight parking, and pedestrian amenities.

To facilitate Project F, HART should determine an appropriate location for the stop that is accessible to both over-the-coach buses and HART vehicles. When the ICB route is established, HART is recommended to promote the service on its website, update its brochure, and provide ICB schedule information on-board vehicles.

Project G: HART Coordination with SVHEC Route

In 2016 SVHEC and DRPT commissioned a feasibility study about connecting students or prospective students with education and employment opportunities. One of the proposed routes would connect Danville to South Boston's SVHEC and Sentara Halifax Regional Hospital. When this route launches (planned for Fall 2020), HART is recommended to coordinate with SVHEC and enhance the awareness of this service to residents in South Hill and Halifax, thereby providing access to Danville.

Project H: South Boston – Halifax Route

South Boston is the densest and most populated town in the LCAAA service area at roughly one person per acre. This density means there is potential to institute a deviated fixed-route to replace the current demand response service. Conversations from the stakeholder meetings with the town managers of South Boston and Halifax revealed a desire to explore deviated fixed-route service connecting the two towns. The proposed routing should consider low-income and autoless populations that predominate the west and eastern parts of the town discussed previously in Figure 5-2 and Figure 5-4.

The advantages of a deviated fixed-route service is that the system can carry more passengers per hour than demand-response. Although the seated capacity in the HART service vehicle is a dozen passengers, the necessity of picking up and dropping off passengers in a reasonable amount of time makes it unlikely that the bus is ever at capacity unless a significant number of passengers are boarding and alighting at the same two places. Therefore, it is not the seated capacity, but the scheduling capacity (each service request is given a 15-minute window) that is currently the restraint.

Another advantage to adding Project H is that passengers that are able-bodied and within walking distance of the fixed-route will no longer be a need to arrange a ride. Furthermore, passengers will continue to be able to request deviations provided it is within ¾ mile of the route. The drawback to transitioning to a deviated fixed-route system is that passengers may have longer travel times to their destination once on the bus, depending on how far their destination is located from the route. However, passengers will no longer be hindered by the inability to gain a ride due to schedule crowding despite several seats available on the bus.

As seen in Figure 5-6, the route is proposed to operate in a clock-wise loop and measures 18.2 miles for one roundtrip. In Halifax, the route provides access to government services and travel down Main St towards South Boston, before turning onto Greens Folly and Berry Hill roads to serve the residential population on the west side of South Boston. The route then serves downtown South Boston via Wilborn Ave, serving SVHEC and crossing the river to serve the commercial retail and jobs along US-58. The route then traverses the river again via US-360, before re-entering downtown via Seymour Dr. The route then follows N Main St to serve the local businesses and residential neighborhoods before routing toward Sentara Halifax Regional Hospital. The hospital is to be served directly so that riders are not forced to walk to the entrance from Wilborn Ave. The route will then continue east on Hamilton Blvd, then left on Old Halifax Rd to serve the Walmart, then continuing north on Halifax Rd toward the beginning of the route. With an accepted deviation of ¾ mile from the fixed-route, 80% of the existing HART service area is covered by the route, although this constitutes more than 80% of the resident population.

Table 5-9 shows the operating statistics of a single trip. At 18.2 miles and an estimated travel speed of 15 mph, the route is estimated to take 73 minutes to complete one roundtrip.[9] However, due to the possibility of deviation requests, it is essential to provide enough layover time to both honor these requests, while maintaining schedule adherence. Accordingly, Project H recommends a cycle time of 90 minutes and with a service span of 12 hours, resulting in 8 daily roundtrips with the last trip beginning at 6:00 pm. This recommendation also assumes that this route would operate with one bus and one driver per shift. Deviation requests would still be required at least 24 hours in advance with the demand response service currently available to residents removed entirely. The installation of shelters (4) and stop signage (12) is also recommended under Project H to improve the comprehension, safety, and comfort of the passengers using the new route. Costs associated with this project are presented in Chapter 7.

Table 5-9: Deviated Fixed-Route Operating Statistics

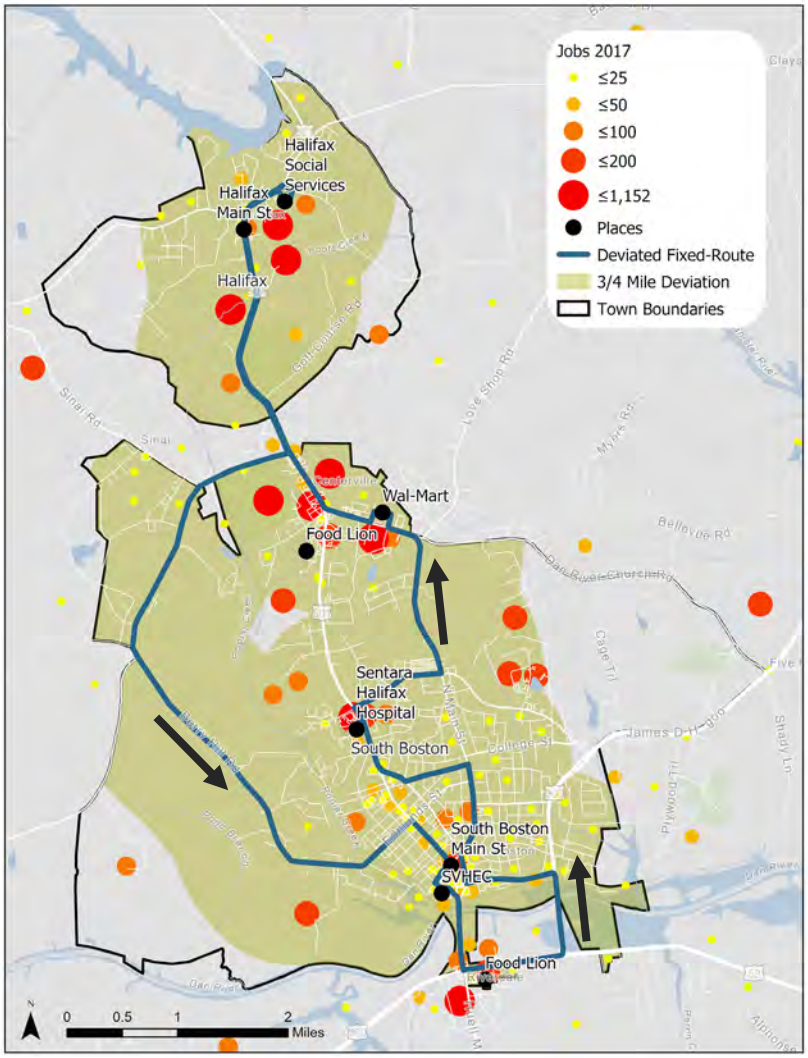
	Service Span	Miles	Frequency	Speed	Travel Time	Cycle Time	Layover/ Deviation	Daily Trips
Deviated Route	7:30 am – 7:30 pm	18.2	60	15 mph	73 min	90	17 min	8

[9] The average speed from 2019 was 12.5 mph, which was derived by diving the service miles by the service hours. However, the actual travel speed is likely higher as the service hours reported was the time the bus was available for service, but not necessarily in operation, whereas the service miles reported was the actual miles of the vehicle. ACTS, which operates a similar deviated fixed-route service in Altavista, averages 14 mph and which this calculation also includes the layover time.

Project I: Route optimization Software

Many on-demand services utilize software that automates the most efficient schedule for the driver based on the addresses provided. By arranging the schedule in a way that reduces service miles, costs are reduced and additional trips could be provided due to increased efficiency. However, as LAB and HART only operate one bus at a time and due to the relatively small service area, the cost savings by utilizing the software may not outweigh the costs of the software itself. Currently, driver schedules are arranged manually, which has worked well for LCAAA as only one driver is on route at any given time. However, if LAB or HART were to increase service to a point where multiple drivers are operating in the same service area (Project B), then deciding which driver conducts which trip may become more complicated and prone to an inefficient allocation of resources. As a result, this recommendation is contingent on the expansion of peak service and would likely not occur until much later over the horizon of the TDP.

Figure 5-6: South Boston Deviated-Fixed Route



5.3. Service Prioritization

This section outlines the projects recommended in the previous section and their associated service characteristics, shown in Table 5-10. Additional columns further distinguish the projects with ridership projections from the improvement and the priority of the project.

Additional costs for service assume the individual FY19 cost per revenue mile figure for LAB and HART. Additionally, annualized figures were based on 255 Weekdays, 52 Saturdays and 52 Sundays. Ridership forecasts were calculated based on FY19 ridership per revenue hour provided and multiplied with a ratio that lowers the additional ridership gained because the relationship of ridership to revenue hours is not linear in nature. For example, it is highly unlikely that doubling service will double ridership if the ridership per hour. With other projects, such as Project A, improved data collection, the effects are simply too ambiguous to quantify.

It is also worth mentioning that the projects listed below are not mutually exclusive and can be combined for added benefit. For example, Project F, working with ICB providers, would benefit if Project H was implemented by ensuring that a shared stop is timed with the arrival of the ICB service. Furthermore, projects can be scaled back, increased, or otherwise modified to fit the needs and finances of the present. Project E, for example, could be reduced to limiting Sunday service to a few hours, instead of matching Weekday service hours. Project H could also be modified so the cycle time is 60 minutes instead of 90 minutes to ensure people are not waiting longer than an hour at any bus stop.

Table 5-10: Estimated Service Costs and Service Prioritization

Project	Description	Annual Revenue Hours	Annual Revenue Miles	Annual Operating Cost	Capital Cost	Ridership	Priority
A	Improved Data Collection	NA	NA	NA	NA	NA	High
B	Supplemental South Hill Service Vehicle	7,821	68,185	$157,927	$50,000	15,375[10]	Low
C	Expanded Weekday Hours	5,979	69,945	$163,564	$0	15,576[11]	High
D	Saturday Service	1,066	9,950	$23,290	$0	2,217[12]	High
E	Sunday Service	1,066	7,466	$17,467	$0	1,663[13]	Medium
F	ICB Bus Coordination	NA	NA	NA	NA	Marginal	Medium
G	SVHEC Bus Coordination	NA	NA	NA	NA	Marginal	Medium

[10] Estimated 25% of 2019 LAB ridership
[11] Estimated 80% of 2019 riders per day
[12] Estimated 80% of 2019 riders per day
[13] Estimated 60% of 2019 riders per day

H	South Boston – Halifax Route	3,060	37,128	$94,305	$30,400	7,560[14]	Low
I	Route Software	NA	NA	$1,750	$4,608	Marginal	Low

5.4. Service Development

Table 5-11 shows the progression of service implementation over the course of the TDP, showing the incremental change in revenue hours, revenue miles, and their associated costs. The projects are also delineated by time frame, with short-term projects expected to occur between FY20 and FY22, whereas medium-term projects occur between FY23 and FY29 (the end of this TDP). Long-term projects are expected to occur beyond the horizon of this TDP but offers a vision for the future.

Some of the projects, such as Project A, are intended to be performed annually and last the life of this TDP. The two projects with the highest additional operating costs (E & D) are staggered to allow LCAAA administrators to assess the benefits of an expanded service span for LAB and HART. Although ridership per hour should not be expected to match weekday levels, it should meet modified service standards before Sunday service is applied. The costs listed below are in FY19 dollars and will likely change in future years due to both inflation and the likelihood that costs per revenue hour will change in future years. The timeframes and progression of projects is simply an example and is open to modification to best suit the financial and political realities of the system in the future.

Table 5-11: Service Development Annual Incremental Changes

Time Frame	Fiscal Year	Project	Description	Additional Revenue Hours	Additional Revenue Miles	Additional Operating Costs	Capital Costs
Short	2020-2029	A	Improved Data Collection	NA	NA	NA	NA
	2020	F	ICB Bus Coordination	NA	NA	NA	NA
	2021	G	SVHEC Bus Coordination	NA	NA	NA	NA
Medium	2023	C	Expanded Weekday Hours	765	8,929	$20,892	$0
	2024	H	South Boston – Halifax Route	453	4,787	$12,204	$30,400
	2028	D	Saturday Service	1,066	9,950	$23,290	$0
Long	2029	E	Sunday Service	1,066	7,466	$17,467	$0
	2029	B	Supplemental South Hill Service Vehicle	2,607	7,167	$15,165	$50,000
	2029	I	Route Optimization Software	NA	NA	$1,750	$4,608

[14] Estimated using 100% of 2019 riders per revenue hour

6. Implementation Plan

This chapter presents the implementation plan that corresponds with the prioritized recommendations detailed in Chapter 5. Assets are presented here in five main sections, including rolling stock, systems, passenger amenities, technology, and continued marketing. The costs for these additions and upgrades are assumed and identified, using a 3% annual inflation rate with FY20 as the base year.

6.1. Rolling Stock Utilization

As outlined in the Chapter 2 of the TDP, LCAAA maintains three revenue service vehicles for HART and three revenue service vehicles for LAB. The six revenue vehicles are 10 to 12-passenger Ford and Dodge BOC vehicles. As these vehicles are purchased, in large part, with federal funds, the ability to replace these vehicles with additional federal grants is contingent on existing Federal Transportation Administration (FTA) guidelines. Although LCAAA participates as a member of a Tier II group Transit Asset Management Plan (TAMP), which identifies the Useful Life Benchmark (ULB), a standard for how long vehicles are expected to last at eight years for LCAAA's revenue vehicles, decisions regarding vehicle replacement largely relies on the FTA minimum ULB when applying for FTA grant funds, which establishes the ULB for Light Duty Vehicles, at either four service years or 100,000 miles, shown in the fifth column of Table 6-1. As of January 2020, five of the six service vehicles exceeded both minimum standards set forth in the FTA grant guidelines.

Table 6-1: Existing Fleet Useful Life

Vehicle	Type	Agency	In-Service Year	ULB for FTA Grants Years/Miles	Current Service Years/Miles	Projected Replacement Year
BOC	Van	HART	2006	4/100,000	13/139,486	FY22
BOC	Van	HART	2010	4/100,000	9/138,077	FY24
BOC	Van	HART	2016	4/100,000	4/85,113	FY27
BOC	Van	LAB	2010	4/100,000	9/112,962	FY25
BOC	Van	LAB	2006	4/100,000	13/179,688	FY23
BOC	Van	LAB	2014	4/100,000	5/104,108	FY26

The agency's replacement schedule is outlined in Table 6-2, with the first replacement occurring during in FY22. The first vehicle to be replaced is assumed to be the HART vehicle purchased in 2006 and will roughly 16 years old by FY22. The cost for the replacement vehicle is based on the purchase price of the last acquired vehicle, which was $47,873 in 2014. Assuming a 3% inflation rate, this same vehicle would cost $58,902 in FY22. The subsequent replacement vehicles will alternate between LAB and HART, with LAB scheduled for a replacement in FY23 of the vehicle purchased in 2006.

Table 6-2: LCAAA Existing Fleet Replacement Schedule

Item	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Service Vehicle	-	-	1	1	1	1	1	1	-	
Total Cost	-	-	$58,902	$60,669	$62,490	~~$64,364~~	$66,295	$68,284	-	

6.2. Major System Maintenance and Operations Facilities

LCAAA's transportation program operates out of two facilities. LAB vehicles are dispatched from the LCAAA office in South Hill at 1105 West Danville Street. HART vehicles are dispatched from the LCAAA Senior Center in Halifax, which is located at 5037 Halifax Road. LAB and HART vehicles are stored at the South Hill and Halifax locations, respectively. Maintenance work is conducted at a local garage in each location. No expansion or additional facilities are anticipated in the TDP, as this arrangement is not expected to change in the next ten years.

6.3. Passenger Amenities

As the service exists today, both LAB and HART operate demand-response service where passengers are picked up and dropped off directly at their origin and destinations, and there are no fixed stops. Project H recommends a deviated-fixed route operating between South Boston and Halifax to replace the current demand response service. Although a route such as this will likely operate on a flag-stop system, similar to the nearby service of BABS in Southside Virginia, shelters at high frequency stops near commercial nodes or hospitals may be warranted.

As a result, four passenger shelters are recommended as part of Project H and are budgeted throughout the 10-year TDP timeline. The first two shelter locations should be determined by existing on-call reservation data, which would reveal the two locations with the most common destinations, if not origins. The second two shelters would come consecutively after analyzing the ridership of the service after a year of ridership data is collected. Shelters are estimated to cost $7,000 in FY20 and with an inflation rate of 3%, the first two shelters would cost $7,879 each in FY24.

In addition to the shelters there would also need to be bus benches for each shelter, as well as signs along the route that could serve as designated timepoints. All stop signage should be purchased and placed before the route begins operations. Like the shelters, historical on-call reservation data should be utilized to identify stop locations. Signage costs are based on a $200 price in FY20 with a 3% inflation rate to FY24. Bus benches are assumed to cost $800 in FY20 with a 3% inflation rate to FY24, resulting in price of $900. The total price for purchasing and installing stop infrastructure with the deviated fixed-route recommendation is $38,613 between FY24 and FY26.

Table 6-3: Passenger Amenity Acquisition Schedule

Item	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Shelter	-	-	-	0	2	1	1	0	0	0
Signage	-	-	-	-	12	-	-	-	-	-
Unit Cost										
Shelter	-	-	-	-	$7,879	$8,115	$8,358	-	-	-
Signage	-	-	-	-	$225	-	-	-	-	-
Total Cost										
Shelter	-	-	-	-	$15,758	$8,115	$8,358	-	-	-
Signage	-	-	-	-	$2,700	-	-	-	-	-
Total	-	-	-	-	$18,458	$8,115	$8,358	-	-	-

6.4. Technology Systems

Although the use of real-time information technology via a vehicle locator system has become inexpensive and near ubiquitous in larger systems, the technology is still cost prohibitive for smaller systems because the scale is too small to realize a cost savings. The existing two-way radio system has, and will continue to connect dispatch, driver, and passenger to communicate and clarify pickup or drop off instructions.

There is also route optimization software as discussed in Project I. As LCAAA currently operates, this service is not necessary as the areas of both LAB and HART are relatively small and the fastest routes are likely already known by the drivers. However, If on-demand services expand in either peak vehicles or area as recommended in Project B, it would be beneficial to purchase this software to more easily pair trips and reduce unnecessary mileage and wait times, particularly when two vehicles are operating at once. These costs, which include data plans, and monthly service fees are detailed in Table 6-4.

Table 6-4: Route Optimization Software Pricing for LAB

Item	Units	One-Time Cost	Monthly Cost	Annual Cost[15]
Users	2	-	$100	$1,200
Vehicles	2	-	$144	$1,728
Training Sessions	5	$750	-	-
Tablet	2	$1,000	-	-
Data Plan	2	-	$140	$1,680
Total Cost	-	**$1,750**	-	**$4,608**

6.5. Marketing

LAB and HART are well-known throughout their respective communities, which demonstrates the effectiveness of the marketing spent by LCAAA to advertise each service. This budget, currently $1,000 in FY20, should remain at existing levels. Future marketing efforts could include information on new schedules and brochures to address rerouting, schedule changes, and links to new services, such as the planned route connecting Martinsville to Richmond via South Boston or route planned between Danville and SVHEC.

It should be noted that the implementation of Project H (deviated fixed-route in Halifax) would likely require an increase in the marketing budget to inform passengers of the changes, increase ridership, and ensure a proper return on the investment. This increase is included in FY24, the projected year for Project H to be implemented. The rest of the marketing budget is recommended to increase with an inflation rate of 3%.

Table 6-5: Service Marketing Schedule

Item	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Marketing Funds	$1,000	$1,030	$1,061	$1,093	$2,252[16]	$1,159	$1,194	$1,230	$1,267	$1,305

[15] Calculated in FY20 dollars

[16] Marketing funding doubled for increased outreach efforts to inform passengers of the change to deviated-fixed route service.

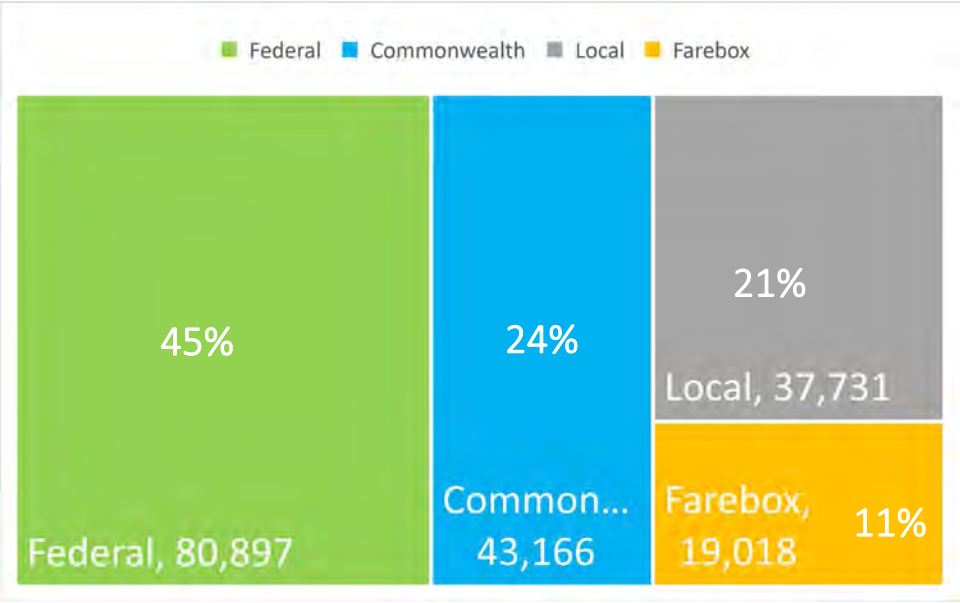
7. Financial Plan

Whereas the previous chapter detailed the funding required to implement service over the next ten years, this chapter details the estimated LCAAA budget and federal, state, local, and farebox funding streams to achieve the recommendations in the plan. Budget estimation requires an assumption of funding sources, with different formulas between operating and capital budgets, which in turn is projected over the horizon of the TDP. Operating and maintenance costs are discussed first with the following section discussing the capital costs and funding sources associated with the recommendations from Chapter 6. Although FY21 projected funding has recently become available, the budgets discussed in Chapter 7 use FY20 as a base year.

7.1. Operating and Maintenance Costs and Funding Sources

To better understand the future funding trend, it is first helpful to review current LCAAA funding sources. In FY21, LCAAA is budgeted with an operating cost of $180,811, with funds coming from four distinct sources. The distribution of these sources is shown in Figure 7-1, which reveals Federal funding accounting for a plurality of operating and maintenance costs at 45% (the limit of federal contributions to operating costs is 50%). The next largest contributor is state/commonwealth funds at 24%, followed by local funding of 21%. Farebox revenue is expected to contribute the final 11%

Figure 7-1: FY21 Funding Sources



Future Funding Years

Federal Funding

The source of federal funding primarily comes from FTA 5311 grants, which provides both operations and capital funding for rural transportation programs. From FY16 though FY21, the projected federal contributions to LAB and HART's operations and maintenance costs have been consistent, at roughly 44.5%. This is expected to continue for the horizon of this TDP but is not to exceed 50% due to federal guidelines.

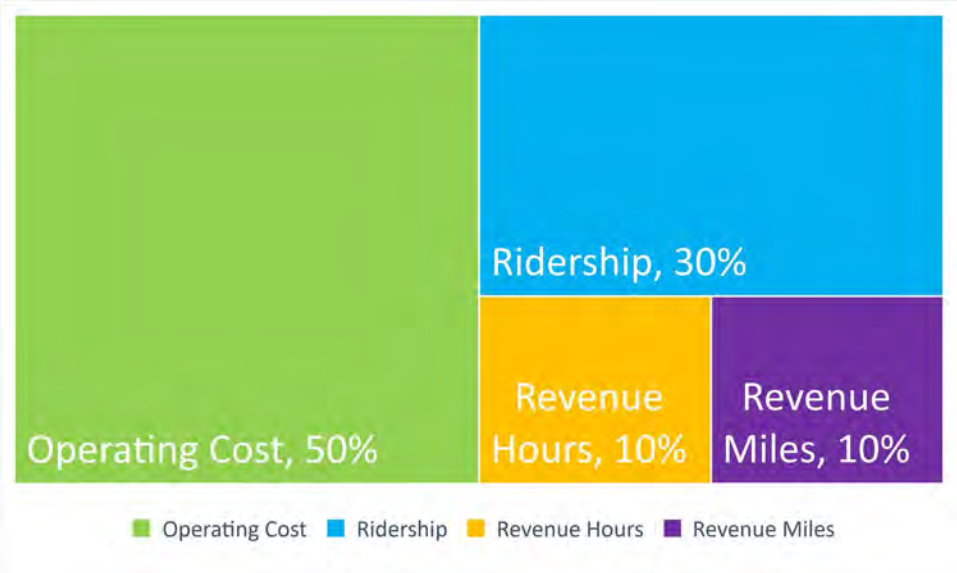
Commonwealth Funding

The allocation of commonwealth funding for LCAAA operations and maintenance costs have varied widely from FY16 to FY19, ranging from 12.6% to 20.1% of projected costs. However, the state's share increased in FY20 with state funding projected to cover 21.8% of the projected costs. This increase was due to the change in how the state allocates operating assistance. In 2018 the Virginia General Assembly passed House Bill 1539, which required the allocation of state funding based on performance metrics, rather than the relative size of the operating costs between agencies as had been done previously. Funding will continue to incorporate the size of the agency (operating cost), but with revised weighting of three service characteristics: ridership, revenue hours, and revenue miles provided. These weights are then applied to five performance metrics and evaluated over the most recent three-year average relative to other state agencies. The performance metrics are;

- Passengers per Revenue Mile and Revenue Hour
- Operating Cost per Revenue Mile and Revenue Hour
- Operating Cost per Passenger

The new formula took effect in FY20, but with greater emphasis on operating costs (60%) and less emphasis on ridership (20%) to reduce any significant changes in state assistance that may arise with the new formulas. In FY21 the distribution shown in Figure 7-2 took effect.

Figure 7-2: New State Funding Performance Formula



Farebox Revenue

The existing fare of $1.50 per one-way trip is expected to be maintained through FY29. However, to maintain the current farebox recovery ratio with rising operating costs, it is expected that ridership should increase to cover these costs. As a result, it is assumed that fares will increase with inflation at 3% a year from $19,018 as a base year in FY20.

Local Funding

The remainder of the operating costs is to be filled by local funding. In the past five fiscal years, the percentage of local funding ranged from 23.9% to 32.3%. Due to the new funding formula the share of local funding is projected to decrease to 20.9% in FY21. This will change slightly, depending on the scenarios implemented, as some of the

recommendations called for additional revenue hours and miles. These scenarios are discussed in the following two sub-sections.

No Changes to Service

Under this scenario, the existing service is assumed to be the same through the horizon of the TDP. The service hours assumed are based on a three-year average from FY17 through FY19. The allocation of operations and maintenance funding is also assumed to be the same as the projected allocations in FY20. Of course, funding, particularly from the state, can change depending on how LAB and HART performs in terms of the performance measures that are now being used to factor state support, although in this TDP, the state contribution percentage is assumed to be the same throughout the TDP horizon. Operating costs are assumed to increase at 3% per annum using FY20 projected operating costs and the specific projected amounts are seen in Table 7-1.

Implementation of Recommendations

In this scenario, LAB and HART service is assumed to incorporate the Chapter 6 recommendations impacting service operations. These changes include converting HART into a deviated-fixed route service as well as extending LAB weekday service hours, weekend service, and the introduction of a second service vehicle, most of which occurs much later in the planning horizon. The disaggregated funding sources are detailed in Table 7-2.

Table 7-1: Operations Funding Breakdown (Continuation of Existing Service Scenario)

Item	FY20[17]	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Revenue Hours	5,187[18]	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187	5,187
Projected Cost	$175,005	$182,504	$187,208	$192,824	$208,550	$214,806	$221,250	$227,888	$234,724	$266,411
Funding Sources										
Federal (44.6%)	$77,994	$81,336	$83,432	$85,935	$92,944	$95,732	$98,604	$101,562	$104,609	$118,731
State (21.8%)	$38,096	$39,728	$40,752	$41,975	$45,398	$46,760	$48,163	$49,608	$51,096	$57,994
Local (22.8%)	$39,897	$41,607	$42,679	$43,959	$47,544	$48,971	$50,440	$51,953	$53,512	$60,735
Fares (10.9%)	$19,018	$19,833	$20,344	$20,954	$22,663	$23,343	$24,044	$24,765	$25,508	$28,951

Table 7-2: Operations Funding Breakdown (Recommended Plan Scenario)

Item	FY20	FY21	FY22	FY23[19]	FY24[20]	FY25	FY26[21]	FY27	FY28[22]	FY29[23]
Revenue Hours	5,187	5,187	5,187	5,952	6,405	6,405	7,471	7,471	8,537	11,144
Projected Cost	$175,005	$182,504	$187,208	$216,338	$236,564	$243,661	$279,614	$288,003	$319,433	$349,439
Funding Sources										
Federal (44.6%)	$77,994	$81,336	$83,432	$96,415	$105,429	$108,592	$124,615	$128,353	$142,361	$155,733
State (21.8%)	$38,096	$39,728	$40,752	$47,094	$51,496	$53,041	$60,868	$62,694	$69,536	$76,068
Local (22.8%)	$39,897	$41,607	$42,679	$49,320	$53,931	$55,549	$63,745	$65,658	$72,823	$79,664
Fares (10.9%)	$19,018	$19,833	$20,344	$23,510	$25,708	$26,479	$30,386	$31,298	$34,713	$37,974

[17] FY20 Projected allocations will serve as the base year for future operations and maintenance allocations
[18] The average of the past three fiscal years
[19] Project C: Expansion of Weekday hours
[20] Project H: Converting HART to deviated fixed-route
[21] Project D: LAB Saturday service
[22] Project E: LAB Sunday service
[23] Project B: Supplemental LAB Vehicle

7.2. Capital Costs and Funding Sources

This section details the assumed capital costs over the horizon of the TDP and are derived from the recommendations made in Chapter 5 and implementation recommendations from the previous chapter. Two tables are detailed below, with Table 7-3 showing capital costs if LCAAA were to not introduce the recommendations, and Table 7-4, assuming that all the recommendations are implemented. The primary differences between the two scenarios is that the capital costs are primarily driven by the acquisition of an additional vehicle, followed by the costs of setting installing the stop infrastructure in preparation of the deviated-fixed route. Regardless, these capital acquisitions are still largely covered by FTA 5311 money, which defrays a significant portion of the associated costs. The cost allocation for both scenarios assumes 80% federal funding, 16% state funding, with the final 4% provided by the local municipalities served by LCAAA. It is assumed that FTA 5311 funds will continue through the horizon of the TDP and that the funding allocation remains the same.

Table 7-3: Capital Cost Distribution (Continuation of Existing Service Scenario)

Item	FY20[24]	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Service Vehicles	-	-	$58,902	$60,669	$62,490	$64,364	$66,295	$68,284	-	-
Marketing	$1,000	$1,030	$1,061	$1,093	$1,126	$1,159	$1,194	$1,230	$1,267	$1,305
Total Costs	$1,000	$1,030	$59,963	$61,762	$63,616	$65,523	$67,489	$69,514	$1,267	$1,305
Sources										
Federal (80%)	$800	$824	$47,970	$49,410	$50,893	$52,418	$53,991	$55,611	$1,014	$1,044
State (16%)	$160	$165	$9,594	$9,882	$10,179	$10,484	$10,798	$11,122	$203	$209
Local (4%)	$40	$41	$2,399	$2,470	$2,545	$2,621	$2,700	$2,781	$51	$52

Table 7-4: Capital Cost Distribution (Recommended Plan Scenario)

Item	FY20	FY21	FY22	FY23	FY24[25]	FY25	FY26	FY27	FY28	FY29[26]
Service Vehicles	-	-	$58,902	$60,669	$62,490	$64,364	$66,295	$68,284	-	-
Shelters	-	-	-	-	$15,758	$8,115	$8,358	-	-	-
Signage	-	-	-	-	$2,700	-	-	-	-	-
Software	-	-	-	-	-	-	-	-	-	$2,283[27]
Marketing	$1,000	$1,030	$1,061	$1,093	$2,252	$1,159	$1,194	$1,230	$1,267	$1,305
Total Costs	$1,000	$1,030	$59,963	$61,762	$83,200	$73,638	$75,847	$69,514	$1,267	$3,588
Sources										
Federal (80%)	$800	$824	$47,970	$49,410	$66,560	$58,910	$60,678	$55,611	$1,014	$2,870
State (16%)	$160	$165	$9,594	$9,882	$13,312	$11,782	$12,136	$11,122	$203	$574
Local (4%)	$40	$41	$2,399	$2,470	$3,328	$2,946	$3,034	$2,781	$51	$144

[24] FY20 Projected allocations will serve as the base year for future operations and maintenance allocations
[25] Project H: Converting HART to deviated fixed-route requires stop infrastructure and additional marketing funds
[26] Project B: Supplemental LAB Vehicle and route optimization and scheduling software
[27] This includes the training sessions and purchase of tablets. It excludes the annual cost of maintaining the software

8. Appendix

8.1. Three-Year Financial Retrospective

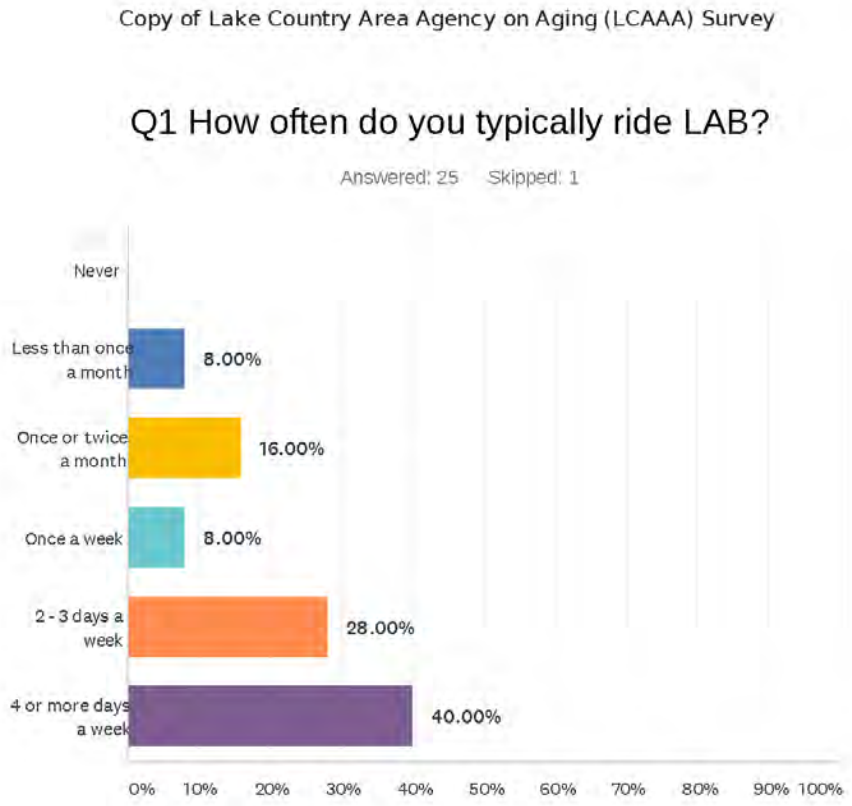
Table 8-1: Operations & Maintenance Actual Costs for LAB & HART

Item	FY17	FY18	FY19
Expenditures			
Operations & Maintenance	$125,761	$135,247	$142,762
Funding Sources			
Farebox	$19,154	$19,263	$20,080
Federal	$53,303	$58,114	$61,341
State	$35,143	$26,602	$21,998
Local	$18,160	$31,512	$39,343

Table 8-2: Capital Actual Costs for LAB & HART

Item	FY17	FY18	FY19
Expenditures			
Capital	$0	$0	$37,315
Funding Sources			
Federal	$0	$0	$29,852
State	$0	$0	$5,970
Local	$0	$0	$1,493

8.2. LAB Survey Results

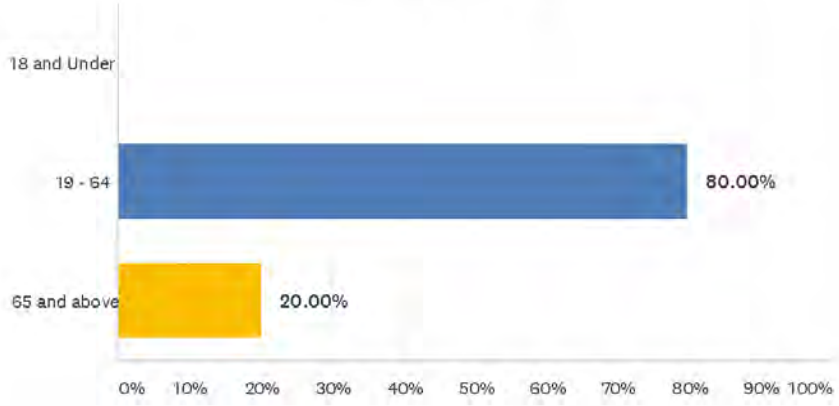


ANSWER CHOICES	RESPONSES	
Never	0.00%	0
Less than once a month	8.00%	2
Once or twice a month	16.00%	4
Once a week	8.00%	2
2 - 3 days a week	28.00%	7
4 or more days a week	40.00%	10
TOTAL		25

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q2 What is your age?

Answered: 25 Skipped: 1

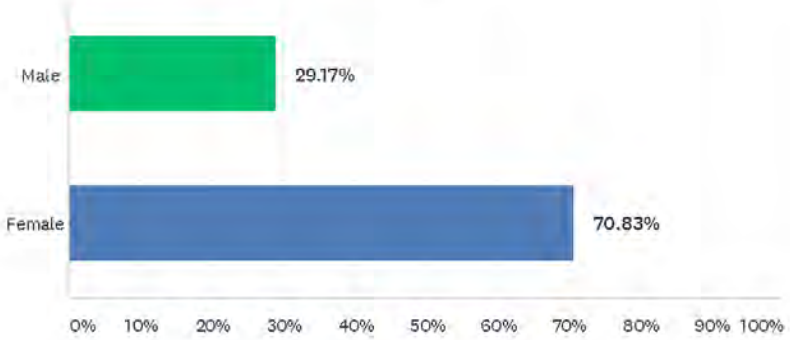


ANSWER CHOICES	RESPONSES	
18 and Under	0.00%	0
19 - 64	80.00%	20
65 and above	20.00%	5
TOTAL		25

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q3 What is your gender?

Answered: 24 Skipped: 2

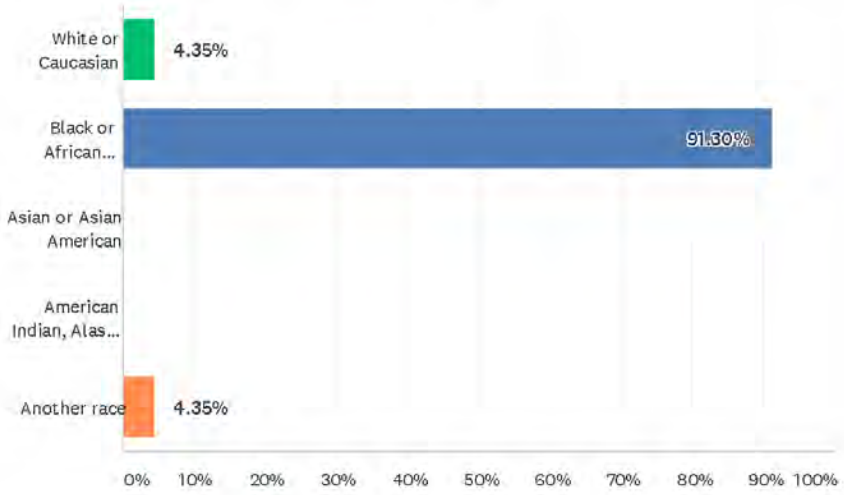


ANSWER CHOICES	RESPONSES	
Male	29.17%	7
Female	70.83%	17
TOTAL		24

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q4 What is your race? (Select all that apply, optional)

Answered: 23 Skipped: 3

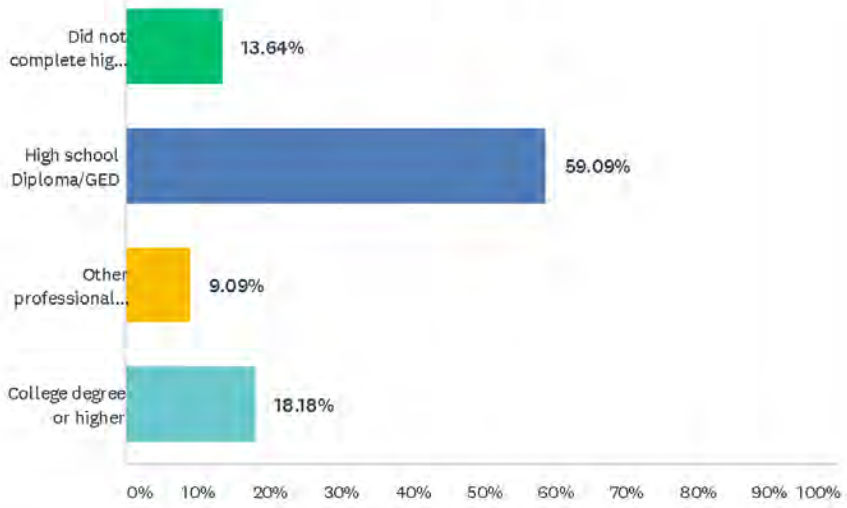


ANSWER CHOICES	RESPONSES	
White or Caucasian	4.35%	1
Black or African American	91.30%	21
Asian or Asian American	0.00%	0
American Indian, Alaska Native or Pacific Islander	0.00%	0
Another race	4.35%	1
Total Respondents: 23		

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q5 What is your education level? (select the most recent you have completed)

Answered: 22 Skipped: 4

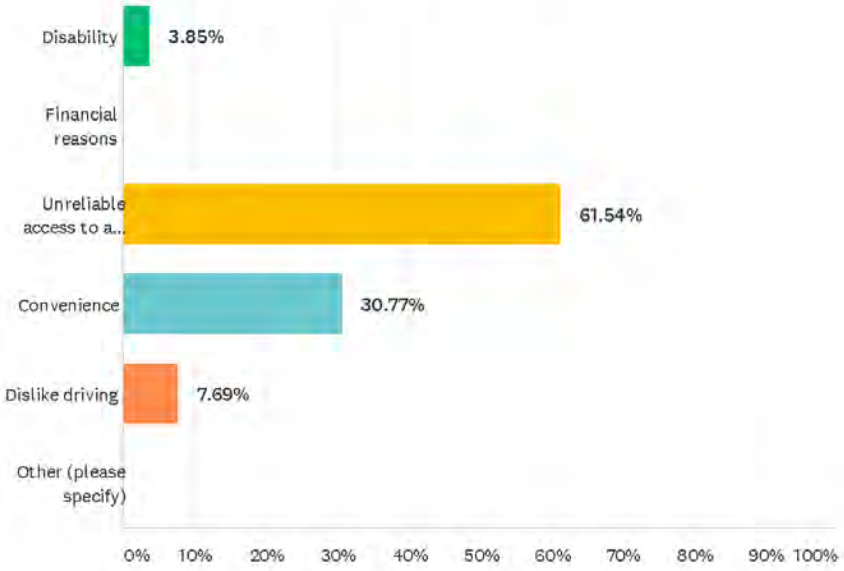


ANSWER CHOICES	RESPONSES	
Did not complete high school	13.64%	3
High school Diploma/GED	59.09%	13
Other professional training	9.09%	2
College degree or higher	18.18%	4
TOTAL		22

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q6 Why do you choose to ride LAB instead of using another mode of transportation? Select all that apply

Answered: 26 Skipped: 0

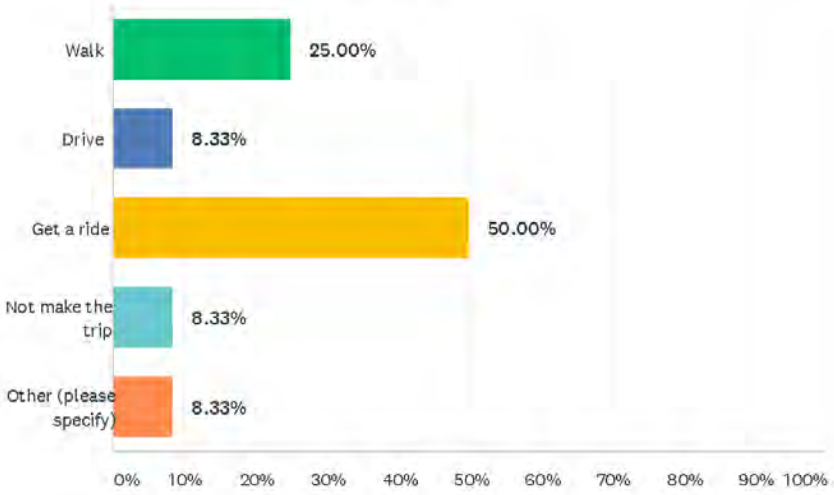


ANSWER CHOICES	RESPONSES	
Disability	3.85%	1
Financial reasons	0.00%	0
Unreliable access to a vehicle	61.54%	16
Convenience	30.77%	8
Dislike driving	7.69%	2
Other (please specify)	0.00%	0
Total Respondents: 26		

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q7 How do you typically get around without LAB?

Answered: 24 Skipped: 2

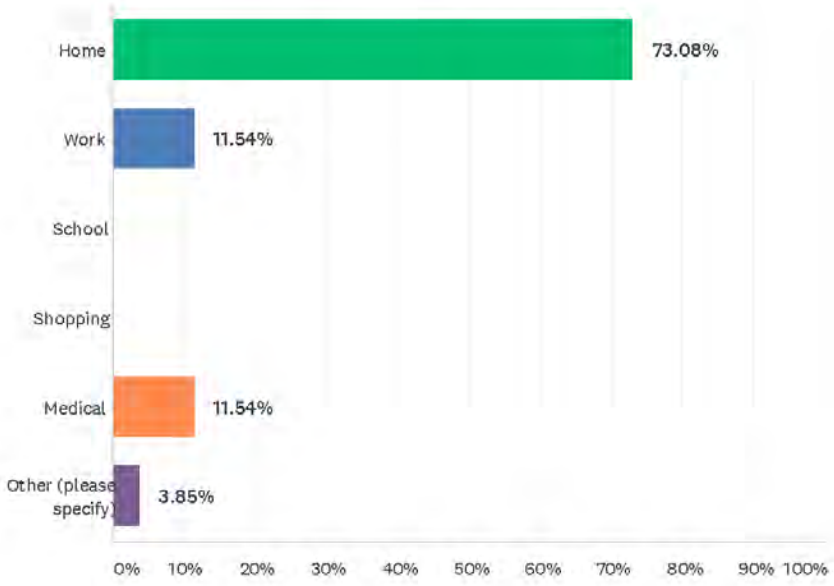


ANSWER CHOICES	RESPONSES	
Walk	25.00%	6
Drive	8.33%	2
Get a ride	50.00%	12
Not make the trip	8.33%	2
Other (please specify)	8.33%	2
TOTAL		24

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q8 Where did your trip begin?

Answered: 26 Skipped: 0

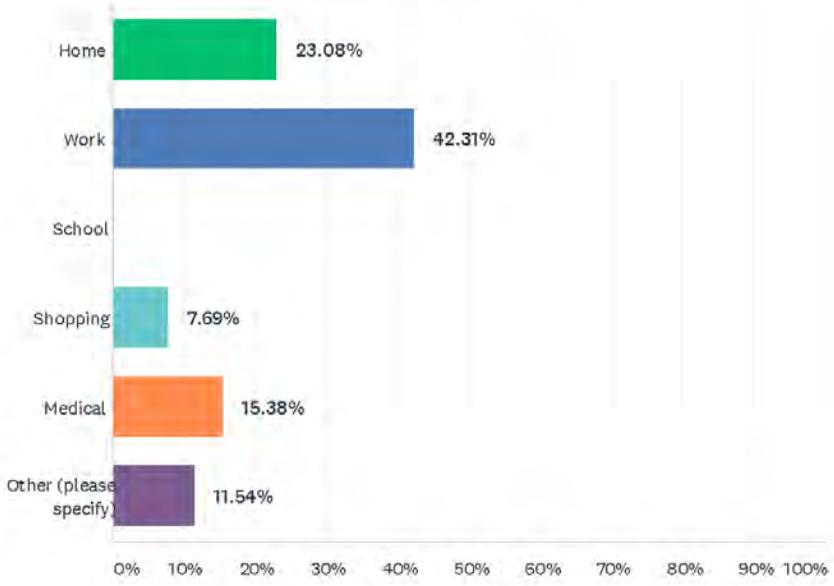


ANSWER CHOICES	RESPONSES	
Home	73.08%	19
Work	11.54%	3
School	0.00%	0
Shopping	0.00%	0
Medical	11.54%	3
Other (please specify)	3.85%	1
TOTAL		26

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q10 Where did your trip end?

Answered: 26 Skipped: 0

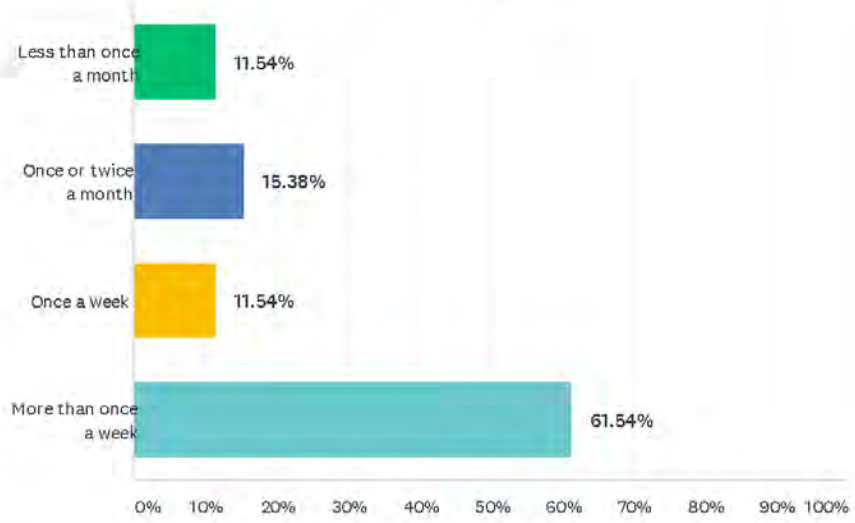


ANSWER CHOICES	RESPONSES	
Home	23.08%	6
Work	42.31%	11
School	0.00%	0
Shopping	7.69%	2
Medical	15.38%	4
Other (please specify)	11.54%	3
TOTAL		26

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q12 How frequently do you make this trip?

Answered: 26 Skipped: 0



ANSWER CHOICES	RESPONSES	
Less than once a month	11.54%	3
Once or twice a month	15.38%	4
Once a week	11.54%	3
More than once a week	61.54%	16
TOTAL		26

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q13 Ability to reserve a ride

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q14 Areas served by the route

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q15 Bus arriving on-time

Answered: 24 Skipped: 2

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	4.17% 1	0.00% 0	0.00% 0	95.83% 23	24	4.88

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q16 Hours of bus service

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q17 Availability of information

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q18 Cost of bus fare

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q19 Security on bus and at stops

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	4.35% 1	0.00% 0	0.00% 0	95.65% 22	23	4.87

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q20 Cleanliness of bus and stops

Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q21 Friendliness of drivers

Answered: 24 Skipped: 2

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	4.17% 1	0.00% 0	0.00% 0	0.00% 0	95.83% 23	24	4.83

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q22 Overall service

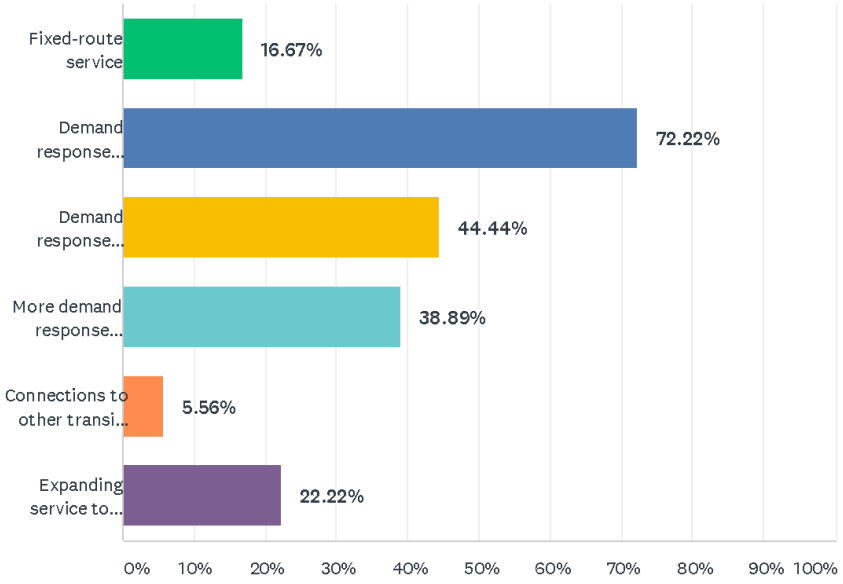
Answered: 23 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 23	23	5.00

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

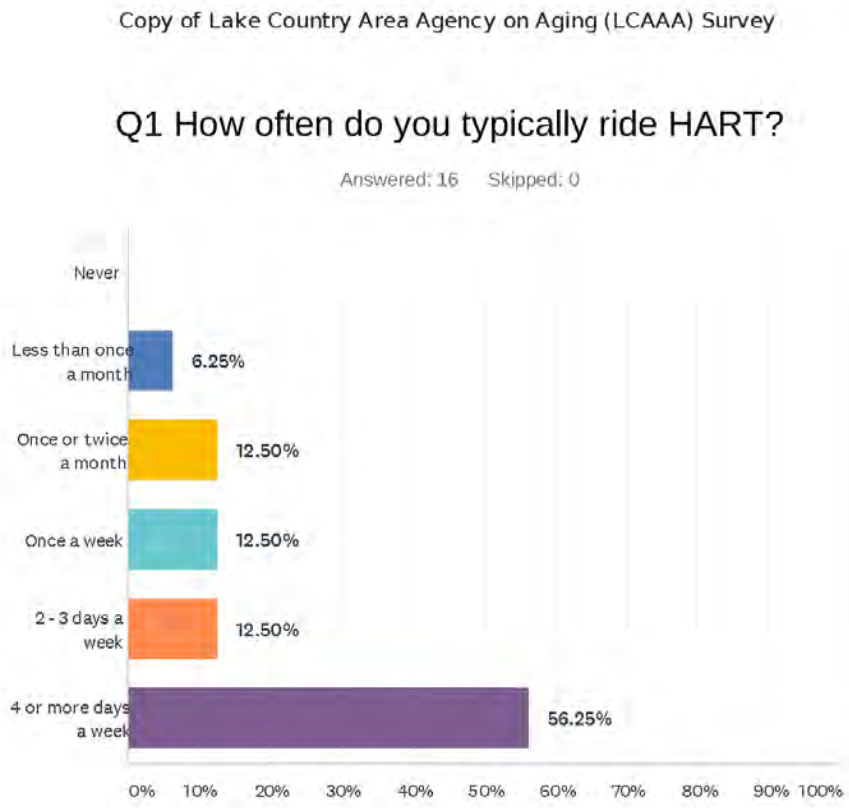
Q23 Please select three improvements you would want most

Answered: 18 Skipped: 8



ANSWER CHOICES	RESPONSES	
Fixed-route service	16.67%	3
Demand response weekend service	72.22%	13
Demand response evening service	44.44%	8
More demand response vehicles	38.89%	7
Connections to other transit systems	5.56%	1
Expanding service to unserved areas (please name these areas below)	22.22%	4
Total Respondents: 18		

8.3. HART Survey Results

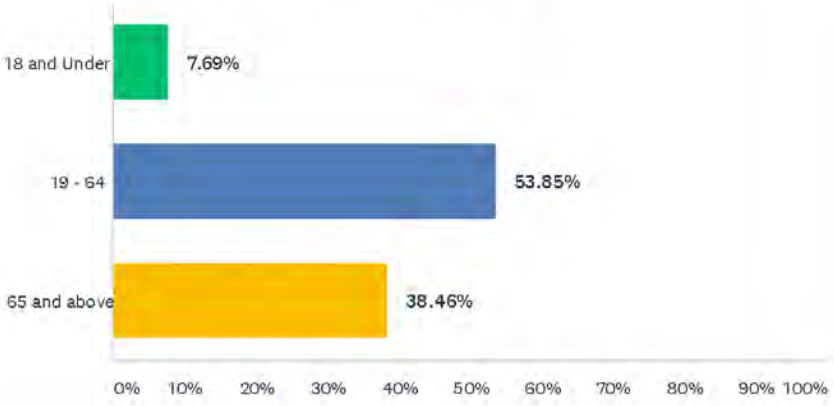


ANSWER CHOICES	RESPONSES	
Never	0.00%	0
Less than once a month	6.25%	1
Once or twice a month	12.50%	2
Once a week	12.50%	2
2 - 3 days a week	12.50%	2
4 or more days a week	56.25%	9
TOTAL		16

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q2 What is your age?

Answered: 13 Skipped: 3

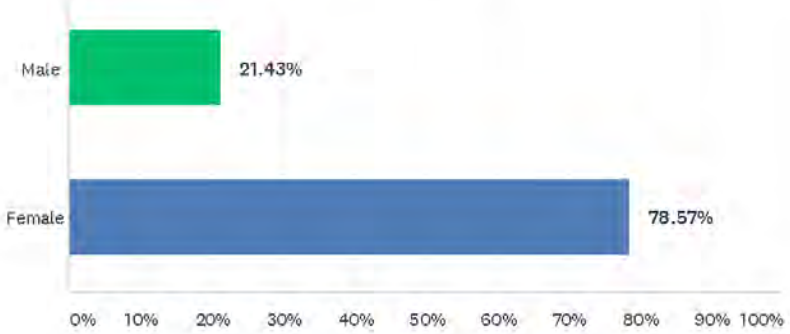


ANSWER CHOICES	RESPONSES	
18 and Under	7.69%	1
19 - 64	53.85%	7
65 and above	38.46%	5
TOTAL		13

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q3 What is your gender?

Answered: 14 Skipped: 2

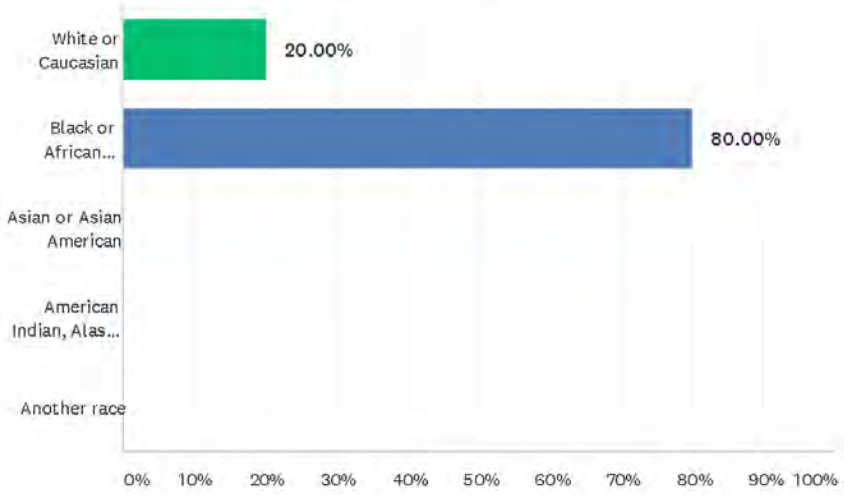


ANSWER CHOICES	RESPONSES	
Male	21.43%	3
Female	78.57%	11
TOTAL		14

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q4 What is your race? (Select all that apply, optional)

Answered: 15 Skipped: 1

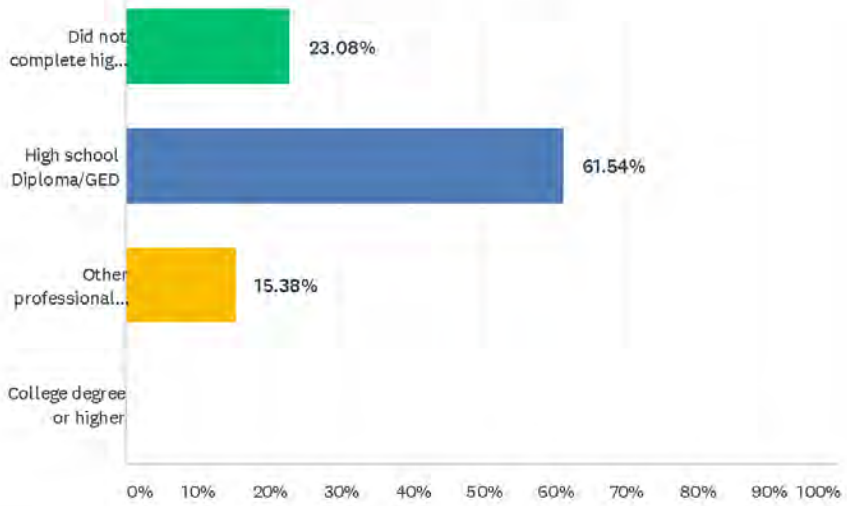


ANSWER CHOICES	RESPONSES	
White or Caucasian	20.00%	3
Black or African American	80.00%	12
Asian or Asian American	0.00%	0
American Indian, Alaska Native or Pacific Islander	0.00%	0
Another race	0.00%	0
Total Respondents: 15		

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q5 What is your education level? (select the most recent you have completed)

Answered: 13 Skipped: 3

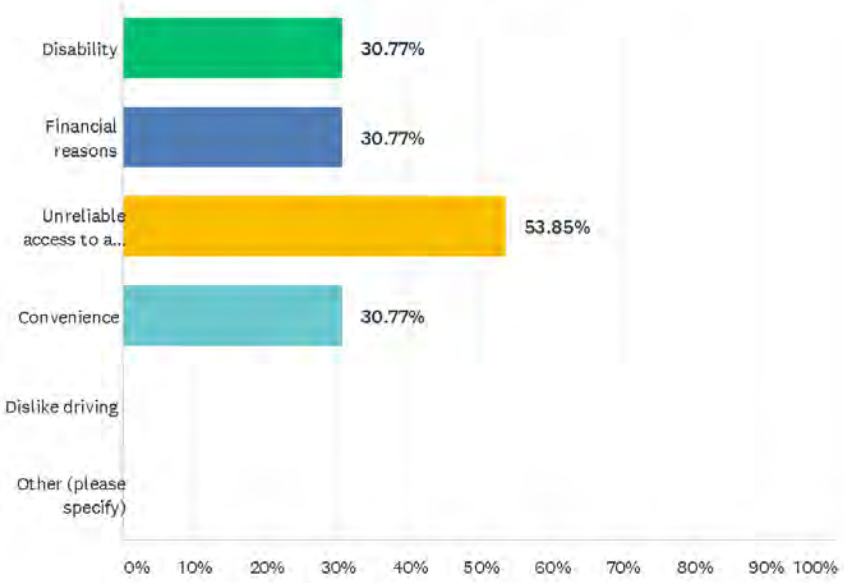


ANSWER CHOICES	RESPONSES	
Did not complete high school	23.08%	3
High school Diploma/GED	61.54%	8
Other professional training	15.38%	2
College degree or higher	0.00%	0
TOTAL		13

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q6 Why do you choose to ride HART instead of using another mode of transportation? Select all that apply

Answered: 13 Skipped: 3

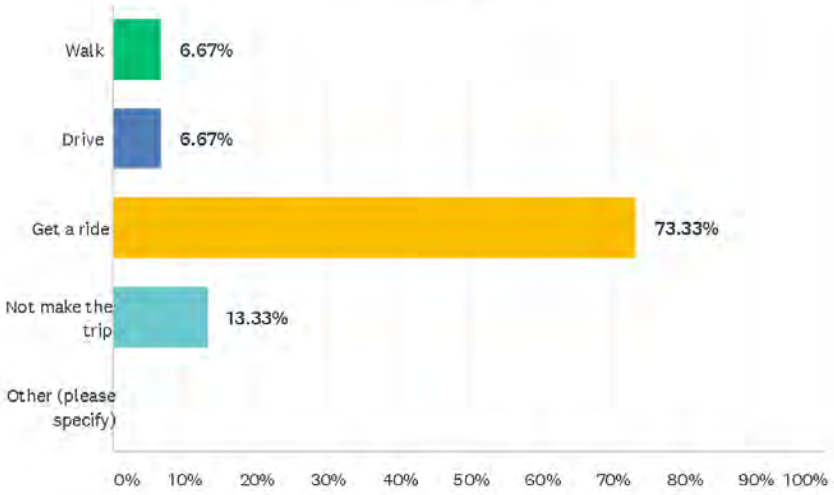


ANSWER CHOICES	RESPONSES	
Disability	30.77%	4
Financial reasons	30.77%	4
Unreliable access to a vehicle	53.85%	7
Convenience	30.77%	4
Dislike driving	0.00%	0
Other (please specify)	0.00%	0
Total Respondents: 13		

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q7 How do you typically get around without HART?

Answered: 15 Skipped: 1

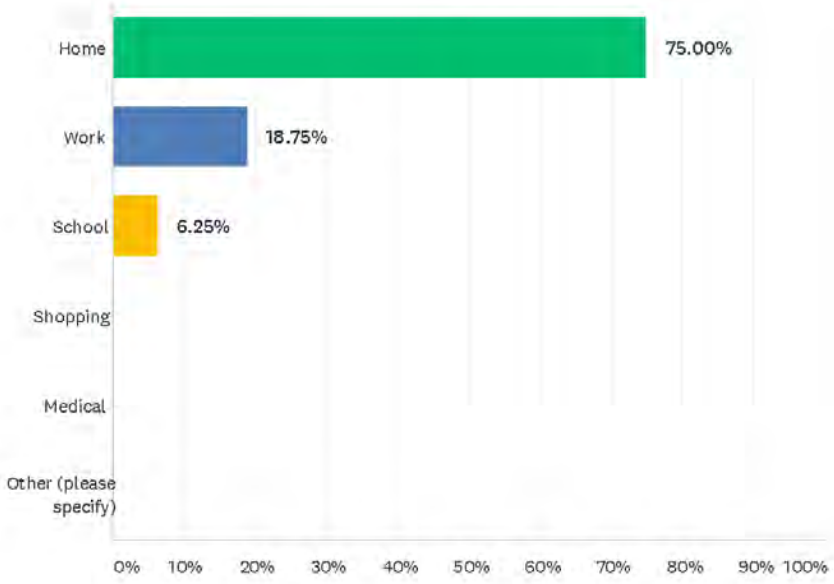


ANSWER CHOICES	RESPONSES	
Walk	6.67%	1
Drive	6.67%	1
Get a ride	73.33%	11
Not make the trip	13.33%	2
Other (please specify)	0.00%	0
TOTAL		15

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q8 Where did your trip begin?

Answered: 16 Skipped: 0

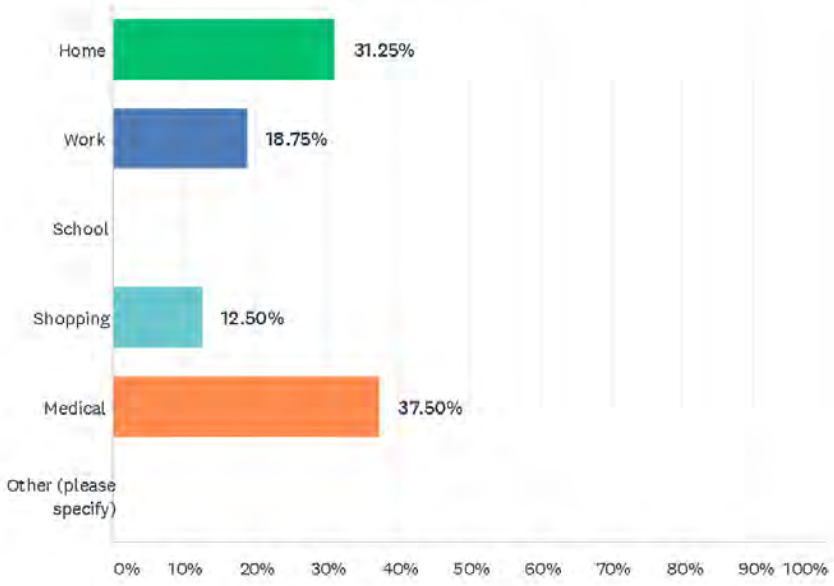


ANSWER CHOICES	RESPONSES	
Home	75.00%	12
Work	18.75%	3
School	6.25%	1
Shopping	0.00%	0
Medical	0.00%	0
Other (please specify)	0.00%	0
TOTAL		16

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q10 Where did your trip end?

Answered: 16 Skipped: 0

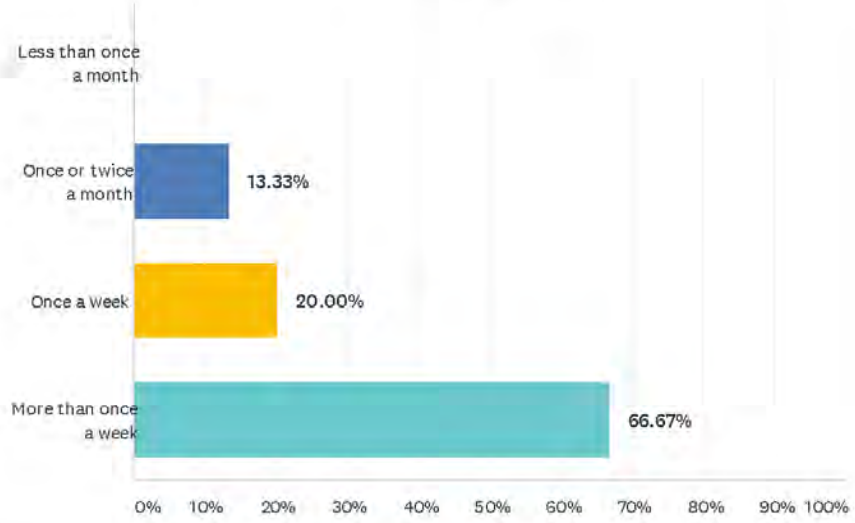


ANSWER CHOICES	RESPONSES	
Home	31.25%	5
Work	18.75%	3
School	0.00%	0
Shopping	12.50%	2
Medical	37.50%	6
Other (please specify)	0.00%	0
TOTAL		16

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q12 How frequently do you make this trip?

Answered: 15 Skipped: 1



ANSWER CHOICES	RESPONSES	
Less than once a month	0.00%	0
Once or twice a month	13.33%	2
Once a week	20.00%	3
More than once a week	66.67%	10
TOTAL		15

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q13 Ability to reserve a ride

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	15.38% 2	0.00% 0	0.00% 0	15.38% 2	69.23% 9	13	4.23

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q14 Areas served by the route

Answered: 12 Skipped: 4

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	8.33% 1	8.33% 1	0.00% 0	33.33% 4	50.00% 6	12	4.08

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q15 Bus arriving on-time

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	7.69% 1	0.00% 0	15.38% 2	15.38% 2	61.54% 8	13	4.23

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q16 Hours of bus service

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	7.69% 1	7.69% 1	23.08% 3	61.54% 8	13	4.38

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q17 Availability of information

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	7.69% 1	0.00% 0	0.00% 0	23.08% 3	69.23% 9	13	4.46

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q18 Cost of bus fare

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	7.69% 1	0.00% 0	0.00% 0	7.69% 1	84.62% 11	13	4.62

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q19 Security on bus and at stops

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	15.38% 2	0.00% 0	0.00% 0	15.38% 2	69.23% 9	13	4.23

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q20 Cleanliness of bus and stops

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	15.38% 2	0.00% 0	0.00% 0	23.08% 3	61.54% 8	13	4.15

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q21 Friendliness of drivers

Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	15.38% 2	0.00% 0	0.00% 0	0.00% 0	84.62% 11	13	4.38

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q22 Overall service

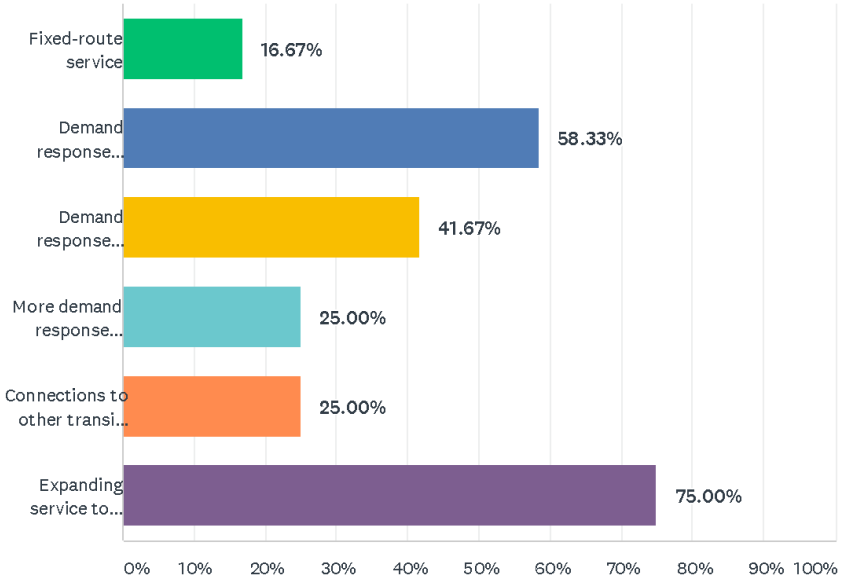
Answered: 13 Skipped: 3

	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	15.38% 2	0.00% 0	0.00% 0	23.08% 3	61.54% 8	13	4.15

Copy of Lake Country Area Agency on Aging (LCAAA) Survey

Q23 Please select three improvements you would want most

Answered: 12 Skipped: 4



ANSWER CHOICES	RESPONSES	
Fixed-route service	16.67%	2
Demand response weekend service	58.33%	7
Demand response evening service	41.67%	5
More demand response vehicles	25.00%	3
Connections to other transit systems	25.00%	3
Expanding service to unserved areas (please name these areas below)	75.00%	9
Total Respondents: 12		