US 52 Bus Rapid Transit Task 5 Technical Memo

Berkeley-Charleston-Dorchester Council of Governments

July 21, 2025

BCDCOG
BERKELEY-CHARLESTON-DORCHESTER COUNCIL OF GOVERNMENTS
PLANNING, PARTNERSHIP & PROSPERITY

US 52 BUS RAPID TRANSIT STUDY

CONTENTS

FIGURES

TABLES

INTRODUCTION

PROJECT OVERVIEW

The Berkeley-Charleston-Dorchester Council of Government (BCDCOG) is the government agency responsible for transportation planning in Berkeley, Charleston, and Dorchester counties along the coast of South Carolina. In response to regional growth and increasing mobility needs, BCDCOG completed the Regional Transit Framework Plan (RTFP) in 2018 to identify a multimodal transit vision for the region, priority transit corridors, and potential solutions to growing traffic volumes. The results of the RTFP[1] identified five priority corridors (US 52, Glenn McConnell Parkway/US 17, US 17, Dorchester Road, and Folly Road) within these three counties and recommended Bus Rapid Transit (BRT) systems to improve regional mobility and address growing traffic volumes.

BRT is a public transit mode that includes sections of dedicated bus lanes, off-board fare collection, level boarding, and signal priority at intersections to ensure faster and more reliable service. BRT systems are designed to provide efficient, high-capacity transit service options. The objective of the Feasibility Study is to investigate, analyze, and determine the feasibility of implementing BRT and associated bus service enhancements along the US 52 Corridor.

BASIS FOR THE PROJECT

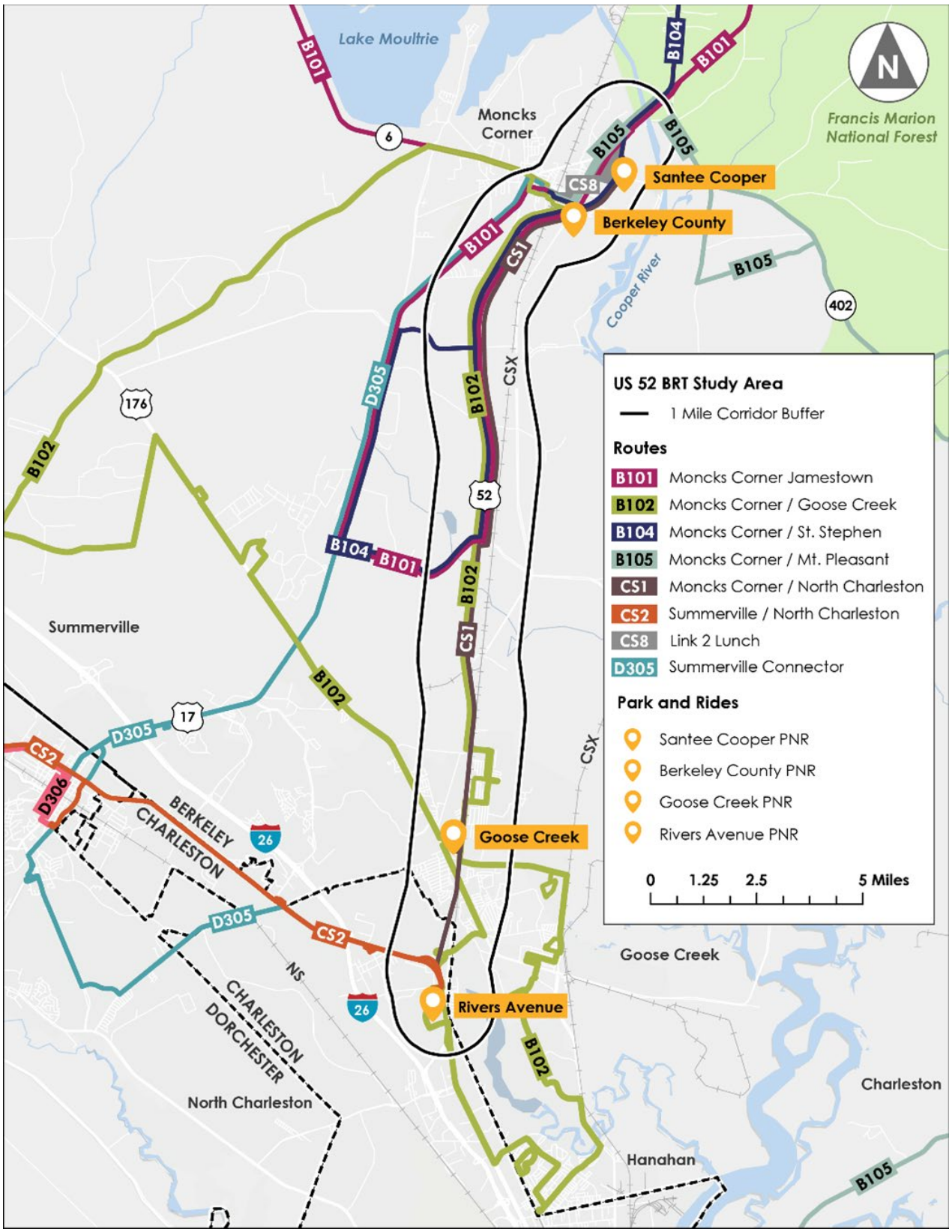
The potential for a BRT system was first documented as an essential component in BCDCOG's vision for the region in the 2012 plan, Our Region, Our Plan. The vision includes transit corridors collectively creating a premium transit system that could include BRT. Connectivity from the Charleston peninsula to Moncks Corner is specifically noted, with BRT highlighted for its flexibility to be modified to serve future developments and destinations.[2]

The US 52 Corridor is an important connection between North Charleston, Goose Creek, and Moncks Corner. Its proximity to Charleston and North Charleston makes it attractive for residential and employment development, increasing the demand for upgraded infrastructure and additional residences. Because of the anticipated growth, the US 52 Corridor was identified as one of the top five priority corridors for BRT in the RTFP. While US 52 was identified as a high-priority corridor that has experienced consistent growth that is anticipated to continue, TriCounty Link (TCL) remains the only public transit service in the area. TCL operates nine regular fixed routes and four commuter routes in rural areas of Berkeley, Charleston, and Dorchester counties. Figure 1 shows the existing TCL routes operating within or connecting to the US 52 Study Area, along with their service type and park-and-ride locations.

The 2024 BCDCOG US 52 Corridor Study: Final Draft integrated the vision and analysis from previous plans, finalizing the analysis of land use, travel trends, the transportation network, and traffic and safety. This resulted in a coordinated land use and transit-supportive development plan.[3]

[1] BCDCOG. Regional Transit Framework Plan. September 2018.
[2] BCDCOG. Our Plan, Our Future. December 2012.
[3] BCDCOG. US 52 Corridor Study Final Draft. August 2024.

Figure 1 US 52 Transit Overview



PROJECT PURPOSE

The BCDCOG US 52 Corridor Study identified Bus Rapid Transit (BRT) as the preferred future scenario for the corridor, recommending it for further evaluation. As identified in the 2022 BCDCOG US 52 Corridor Study: Preferred Scenario Report, the preferred scenario is based on Transit-Oriented Development (TOD). Through this report, recommendations are made for environmental resources, active transportation, BRT service, and traffic improvements in the Study Area.[4]

This memo describes the analysis that was conducted to determine the recommended BRT alignment for the US 52 Corridor. The analysis includes quantitative and qualitative data, operational considerations, as well as funding sources and a recommended timeline for phased implementation.

PURPOSE AND NEED

NEED

The population along the 18-mile US 52 corridor is projected to grow by 70 percent by 2040 from 2020. Employment is projected to grow by 42 percent during that same period. If the area's transportation network and infrastructure are not adapted to meet this increased demand, they will be over capacity.[5] The US 52 BRT project is the key to proactively planning for the future needs of the US 52 corridor.

PURPOSE

The following objectives define the purpose of assessing BRT feasibility along the US 52 Corridor:

- Develop a high-capacity transit corridor that can accommodate future population and employment growth
- Connect to Lowcountry Rapid Transit (LCRT) and collectively strengthen the region's transportation system
- Ensure long-term sustainability by planning around existing roadway characteristics, natural resources, and transit-supportive communities

Two additional considerations were added to these objectives to incorporate operating factors and planning-level costs into the screening of the alignment alternatives:

- Cost effectiveness
- Ridership

ALIGNMENT SCREENING

Two screening analyses were conducted to determine the recommended alignment for US 52 BRT:

1. US 52 alignment alternatives

[4] BCDCOG. Preferred Scenario Report. June 2022.
[5] BCDCOG. US 52 Corridor Study Final Draft. August 2024.

2. Southern terminus alternatives

US 52 ALIGNMENT ALTERNATIVES

The US 52 alignment alternatives screening assumes that BRT service would have a southern terminus at Rivers Avenue and Melnick Drive and evaluates northern terminus alternatives based on criteria developed in accordance with the identified project objectives.

Three potential northern termini alternatives were developed for providing BRT service along the US 52 Corridor. These alternatives span the corridor from Moncks Corner to Goose Creek. While each alignment alternative presents a different northern terminus, they are not mutually exclusive. There is potential to implement them incrementally, as demand grows, and funding becomes available. The routing and integration with LCRT for each alignment alternative are outlined in Table 1.

Table 1 US 52 Alignment Alternatives

Alignment Alternative	Moncks Corner	Strawberry	Goose Creek
Objective	Provide service from Moncks Corner to connect to LCRT	Begin service in Strawberry to serve areas with high projected population and employment growth	Begin service in Goose Creek to serve areas with high projected population and employment growth
Route	US 52 and Rivers Ave		
Northern Terminus	US 52 and Reid Hill Rd	US 52 and Cypress Gardens Rd	US 52 and Old Mt Holly Rd
Southern Terminus	Rivers Ave and Melnick Drive		
LCRT Alignment Integration	The southern terminus of US 52 BRT is the Rivers Ave & Melnick Drive LCRT station		
LCRT Service Integration	Transfer to the LCRT at Melnick Drive		

Moncks Corner

The Moncks Corner alignment alternative provides BRT service from Moncks Corner to North Charleston. The alternative begins at the intersection of US 52 and Reid Hill Road. It continues south along US 52 onto Rivers Avenue, ending at the intersection of Rivers Avenue and Melnick Drive. The southern terminus of the alternative connects to the LCRT at the Rivers & Melnick station. Service for this alternative can be coordinated to facilitate transfers between the US 52 BRT and the LCRT.

Strawberry

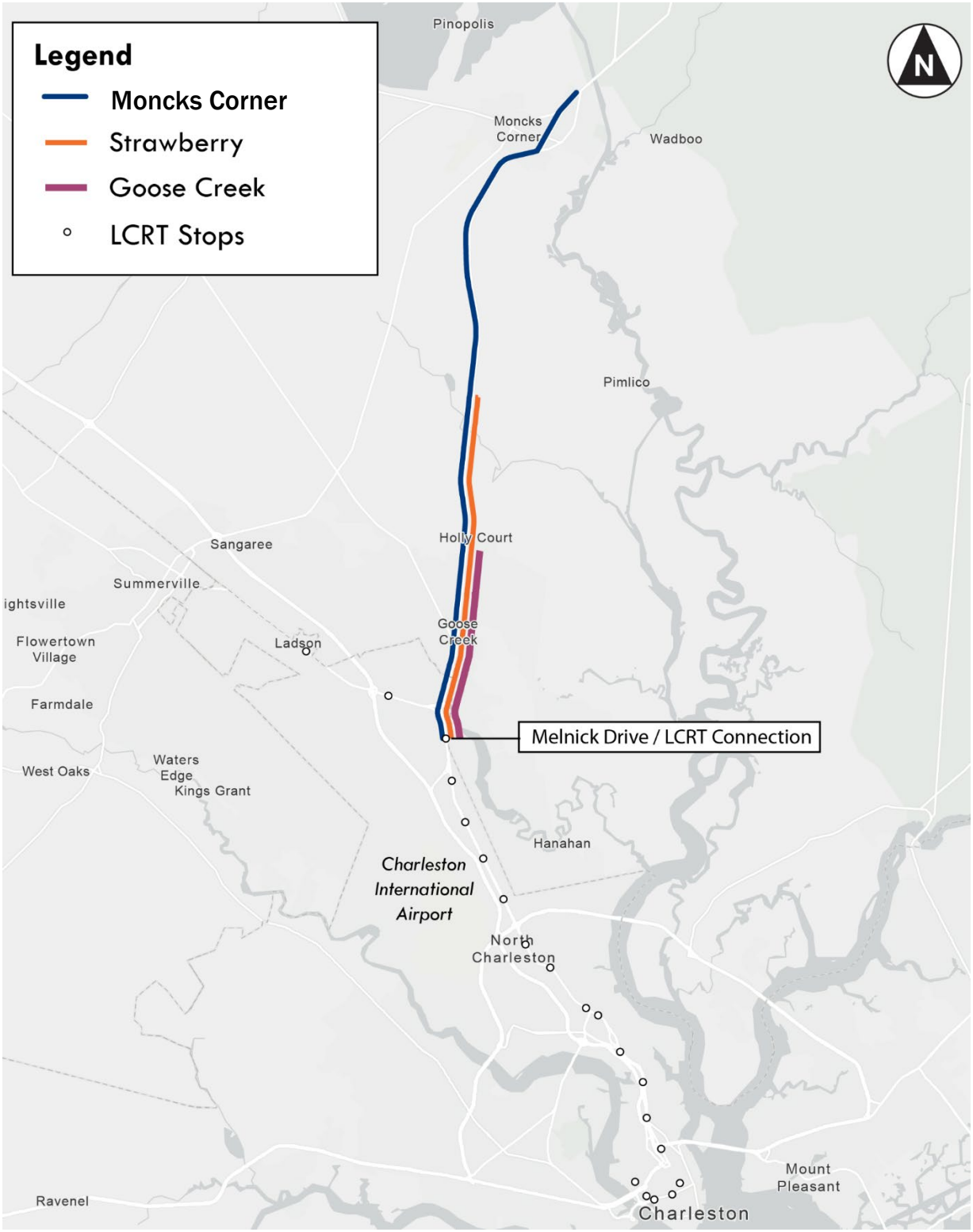
The Strawberry alignment alternative provides BRT service from Strawberry to North Charleston. The alternative begins at the intersection of US 52 and Cypress Gardens Road. The alternative extends south on US 52, ending at the intersection of Rivers Avenue and Melnick Drive. The southern terminus of the alternative connects to the LCRT at the Rivers & Melnick station. Service for this alternative can be coordinated to facilitate transfers between the US 52 BRT and the LCRT.

Goose Creek

The Goose Creek alignment alternative provides BRT service from Goose Creek to North Charleston. The alternative begins at the intersection of US 52 and Old Mount Holly Road. The alternative extends south on US 52, ending at the intersection of Rivers Avenue and Melnick Drive. The southern terminus of the alternative connects to the LCRT at the Rivers & Melnick station. Service for this alternative can be coordinated to facilitate transfers between the US 52 BRT and the LCRT.

The three US 52 alignment alternatives are shown in Figure 2.

Figure 2 US 52 Alignment Alternatives



US 52 ALIGNMENT ALTERNATIVES SCREENING CRITERIA AND PROCESS

A screening tool was developed to evaluate each of the US 52 alignment alternatives and establish a process to determine which alignments are most promising for BRT service. The tool is organized around the three objectives defined under the project purpose:

- Develop a high-capacity transit corridor that can accommodate future population and employment growth
- Connect to LCRT and collectively strengthen the region's transportation system
- Ensure long-term sustainability by planning around existing roadway characteristics, natural resources, and transit-supportive communities

In addition to these three objectives, measures of cost-effectiveness and ridership were considered in evaluating the three US 52 alignment alternatives.

The tool includes both quantitative and qualitative criteria that evaluate transit demand; existing and future corridor residential, household, and employment densities; compatibility with local and regional plans; existing transit services and infrastructure; ridership of adjacent transit routes; existing roadway geometry; existing and future traffic conditions; environmental and right-of-way (ROW) constraints; capital and operating costs per rider; and annual projected ridership. Data collected and analyzed as part of the corridor's existing conditions review and Tri-County Link (TCL) service assessment tasks of the US 52 BRT Feasibility Study were used for screening criteria where applicable. Maps for select screening criteria are included in the APPENDIX.

The screening criteria associated with each objective are described below

Objective: Develop a High-Capacity Transit Corridor that can Accommodate Future Population and Employment Growth

The following criteria are evaluated under this objective:

Transit Demand

This quantitative criterion is used to understand how demand for and potential use of transit service may differ between each alternative. The criterion is measured quantitatively using the Transit Propensity Index (TPI) that was developed for the Existing Conditions task of this study. Transit propensity is calculated for the area within a quarter-mile buffer of each alignment alternative. Each alignment alternative is scored based on the identified propensity for transit use. Factors informing the TPI include household density, percentage of population in poverty, zero to one vehicle households, population over 64, density of persons with disabilities, density of persons of color, density of total jobs, density of jobs earning less than $3,333 per month, and trip destinations. A map of TPI for the Study Area is provided in the APPENDIX.

Existing Residential, Household, and Employment Densities and Future Growth

This quantitative criterion evaluates the projected growth of the areas served by each alternative. The more growth that is projected for the area around each respective alternative, the greater the number of potential future riders. The criterion is measured quantitatively using HNTB's Community Intelligence Toolkit (CIT) and Traffic Analysis Zone (TAZ) data for the 2045 projected population and employment. The CIT is used to identify existing population, employment, and housing density, and the 2045 TAZ data is used to identify future population, employment, and housing density for the area within a half-mile buffer of each alignment alternative. Respective growth for each of these three measures is used to determine the score for each

alignment alternative. Maps of existing residential, household, and employment densities and future growth are provided in the APPENDIX.

Compatibility with Regional and Local Plans

This qualitative criterion assesses whether each alignment alternative is supported by BCDCOG planning documents that have been developed to guide growth in the Study Area. The following documents were reviewed for mention of the specific alignment alternative: WalkBike BCD; the RTFP; the Existing Conditions Report & Short-Term Recommendations; the Scenario Briefing Report; the Preferred Scenario Report; the US 52 Corridor Study; and the Charleston Area Transportation Study (CHATS) Long Range Transportation Plan.[6] Whether or not the alignment alternative is included in each plan determines the score for each alternative.

Objective: Connect to LCRT and Collectively Strengthen the Region's Transportation System

The following criteria are measured under this objective:

Existing Transit Services and Infrastructure

This quantitative criterion is used to demonstrate the number of adjacent transit routes that users of each BRT alignment alternative would have access to. The criterion is measured by identifying the number of TCL routes with stops that are within the quarter-mile buffer of each alignment alternative. The number of routes with stops within each respective alignment buffer determines the score for that alternative.

Ridership of Adjacent Routes

This quantitative criterion highlights the number of existing transit users near each alignment alternative. Depending on how service is planned and where stops are located, this criterion demonstrates the number of riders that could potentially transfer between existing transit routes and each alignment alternative. Each alternative is scored based on the historic ridership of each adjacent TCL and Charleston Area Regional Transportation Authority (CARTA) route.

Objective: Ensure Long-Term Sustainability by Planning Around Existing Roadway Characteristics, Natural Resources, and Transit-Supportive Communities

The following criteria are measured under this objective:

Existing Roadway Geometry

This quantitative criterion evaluates the degree to which existing roadway geometry supports each alignment alternative. The criterion is based on the width of existing traffic lanes. BRT-style service needs a minimum lane width of 11 feet to operate the vehicles. Lanes are measured at intersections, approximately every mile, in each direction, and the alternative is scored based on whether the entire alignment is wide enough for BRT.

Existing and Future Traffic Conditions

This quantitative criterion assesses the degree to which existing traffic volumes are favorable along each alignment alternative. For this criterion, a traffic volume to capacity ratio is used to determine the Level of Service (LOS) along each alignment alternative. This LOS is compared to ideal conditions for US 52 BRT,

[6] These plans were identified through the Existing Conditions portion of this study.

which would be lower levels of congestion for operation in mixed traffic, to determine a score for each alignment alternative.

ROW Characteristics

This quantitative criterion assesses the characteristics of the ROW for each alignment alternative. The following components were used to score each alignment alternative for this criterion: existing sidewalk, existing wetlands, and whether ROW, outside of travel lanes, for each alignment alternative is wide enough for BRT lanes. Existing sidewalk is measured in each direction, and total miles of existing sidewalk is divided by total length of each alignment alternative. Existing wetlands are identified within a 150-foot buffer of each alignment alternative. Roadway median is measured to determine if it is at least 22 feet and shoulders are measured to determine if they are at least 11 feet in each direction. Roadway median and shoulders are measured at intersections, approximately every mile, in each direction. The alignment score is calculated based on an average of these three measures. A map of these ROW characteristics is provided in the APPENDIX.

Cost Effectiveness

Capital Cost per Annual Rider

Capital costs are quantitatively estimated using the provided LCRT station and vehicle costs, peak vehicle needs based on operating inputs (including a 20% spare ratio), and assuming 2-mile station spacing. Estimated capital costs for each alternative were divided by estimated annual ridership to get the capital cost per annual rider. Costs that were not factored into this criterion include Transit Signal Priority (TSP), park-and-rides, and queue jump lanes.

Operating Cost per Annual Rider

Operating costs are quantitatively estimated assuming 365 days of operation, 15-minute headways, service from 5 am to 7 pm, and a bus speed of 18 mph. The annual revenue hours resulting from these inputs were multiplied by CARTA's National Transit Database (NTD) reported cost per revenue hour. These values for each alternative were divided by the estimated annual ridership to get the operating cost per annual rider. These operating costs are for planning purposes only. As the corridor and design continue to develop, the cost estimates will be refined to reflect real-time conditions.

Projected Ridership

Average Daily Ridership

The methodology for evaluation of ridership is based on several Transit Cooperative Research Program (TCRP) reports, including the Bus Rapid Transit Practitioner's Report. The methodology begins with identifying a transit route comparable to the anticipated characteristics of the US 52 BRT service. After reviewing both TCL and CARTA routes, CARTA Route 12 was selected as a representative route. Weekday boardings on a comparable local US 52 route were estimated based on scaling from Route 12's population density and route length and applying a frequency improvement elasticity factor. Then, additional time savings, frequency elasticities, and a BRT upgrade factor were applied to determine weekday boardings for a US 52 BRT route.

The methodology described above was identified as the best ridership estimation method for the purposes of this study. The BRT would be built off an existing route, beginning with the implementation of the US 52 TCL Short Term Recommendations.

Scoring, Rating, Ranking

For each criterion, alignment alternatives receive a raw score between 0 and 10 through various methods, such as normalization, quintile, and percentage-based scoring. This score is weighted by assigned screening criteria weights, allowing for a maximum score of ten for each alternative.

US 52 ALIGNMENT ALTERNATIVES SCREENING RESULTS

Through this alignment screening and evaluation, Moncks Corner is ranked as the most promising alignment alternative for BRT service along US 52. While the Moncks Corner alternative addresses each of the objectives most comprehensively, the Strawberry alternative scored higher for cost effectiveness, which drives competitiveness for federal grant funding. The US 52 alignment alternative screening results are provided in Table 2. Raw numbers for each criterion are included in the APPENDIX.

Table 2 Screening Criteria Results

Objective	Screening Criteria Description	Weight	Moncks Corner	Strawberry	Goose Creek
Develop a high-capacity transit corridor that can accommodate future population and employment growth	Transit Demand	10%	4.6	5.8	6.0
	Existing and future corridor densities (Population)	3%	6.5	7.2	7.3
	Existing and future corridor densities (Employment)	3%	6.4	6.1	5.7
	Existing and future corridor (Households)	3%	6.9	7.9	8.0
	Compatibility with regional and local plans	10%	8.6	8.6	8.6
Collectively strengthen the region's transportation system	Existing transit services and infrastructure	10%	4.1	1.8	1.8
	Ridership of adjacent routes	10%	4.5	2.0	2.0
Ensure long-term sustainability by planning around existing roadway characteristics, natural resources, and transit-supportive communities	Existing intersection geometries	5%	10.0	10.0	10.0
	Existing traffic conditions and travel flows	5%	5.6	4.6	4.8
	Sidewalks	5%	2.1	2.2	3.9
	Wetland impact	5%	0.6	0.6	0.4
	Intersection with median of 22 ft or shoulders of 11 ft each	5%	7.2	7.1	6.0
Cost effectiveness of alternative	Capital Cost per Annual Rider	8%	8.2	10.0	7.9
	Operating Cost per Annual Rider	8%	8.3	10.0	8.8
Ridership	Projected Daily Ridership	10%	10.0	5.9	2.9
		Total Score	**98.3**	**94.5**	**89.0**
		Total Weighted Score (Out of 10)	**6.4**	**5.8**	**5.3**

SOUTHERN TERMINUS ALTERNATIVES

The southern terminus alternatives screening assumes BRT service would have a northern terminus at US 52 and Reid Hill Road in Moncks Corner and evaluates southern terminus alternatives through some of the

same criteria that are used to conduct the US 52 alignment alternatives screening. Additionally, qualitative considerations that impact the operation of BRT related to the southern terminus alternatives are reviewed.

Two potential southern terminus alternatives have been developed for the US 52 corridor. These alternatives span the corridor from Goose Creek to Downtown Charleston. The routing and integration with LCRT for each alignment alternative are outlined in Table 3.

Table 3 Southern Terminus Alternatives

Alignment Alternative	Baseline (Melnick Drive)	Southern Extension: Downtown Charleston
Objective	Provide service from Moncks Corner to connect to the LCRT	Extend service to Charleston, connect to the LCRT, and provide more frequent LCRT service
Southern Terminus	Rivers Ave and Melnick Dr	Line St and Westedge St
LCRT Alignment Integration	Southern terminus of US 52 BRT is the Rivers Ave & Melnick Dr station on the LCRT	Beginning at the Rivers Ave & Melnick Dr LCRT station, combining service with the LCRT going south; options for northern truncation[7]
LCRT Service Integration	Transfer to the LCRT at Melnick Dr	Through-running on the LCRT

Baseline (Melnick Drive)

The Baseline (Melnick Drive) southern terminus alternative provides BRT service from Moncks Corner to North Charleston. The alternative begins at the intersection of US 52 and Reid Hill Road. It continues south along US 52 onto Rivers Avenue, ending at the intersection of Rivers Avenue and Melnick Drive. The southern terminus of the alternative connects to the LCRT at the Rivers & Melnick station. Service for this alternative can be coordinated to facilitate transfers between the US 52 BRT and the LCRT.

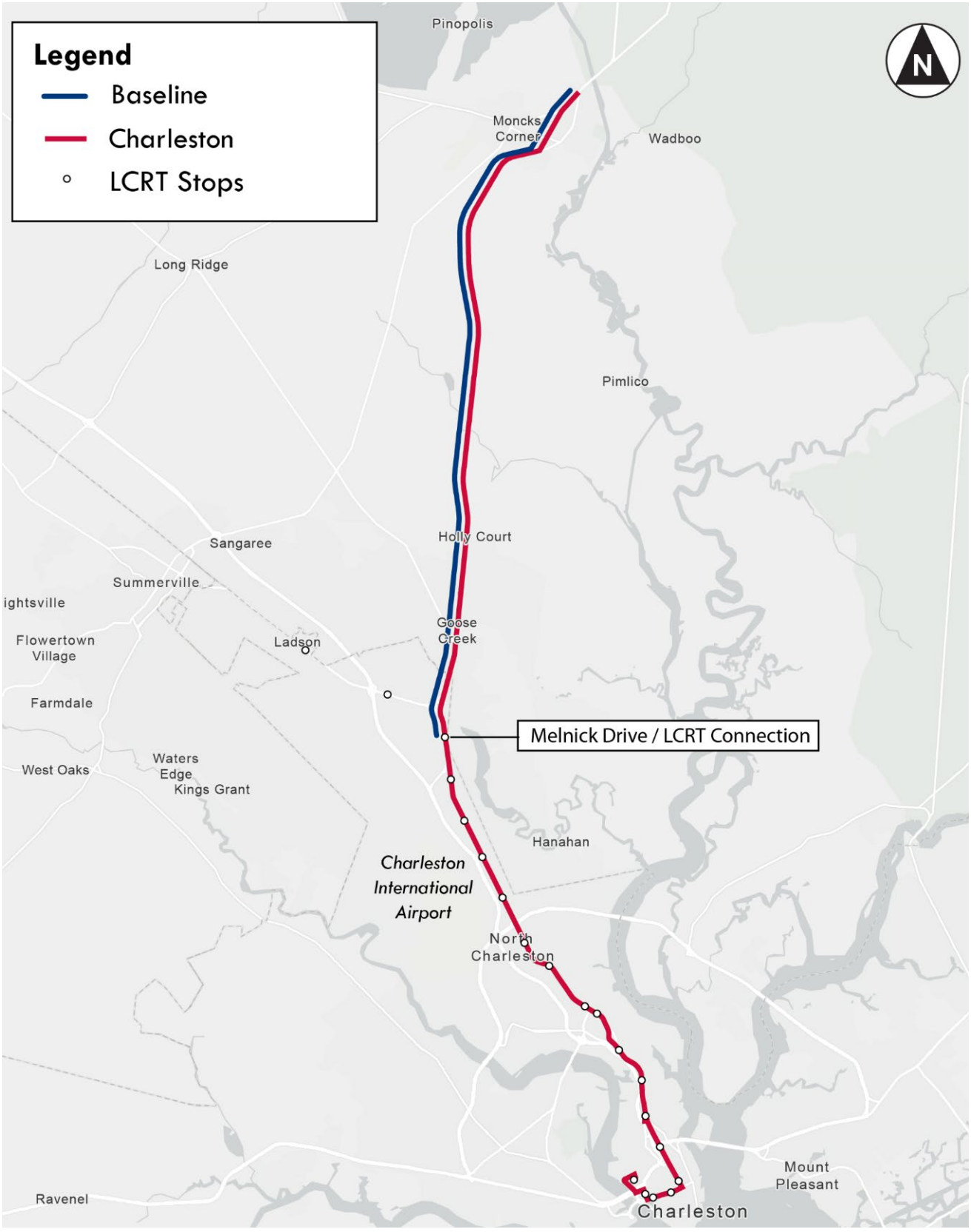
Downtown Charleston

The Downtown Charleston southern terminus alternative provides BRT service from Moncks Corner to Downtown Charleston. The alternative begins at the intersection of US 52 and Reid Hill Road. It continues south along US 52 onto Rivers Avenue into North Charleston and Charleston via the King Street Extension, Meeting Street, and eventually Calhoun Street. This alternative ends at the intersection of Line Street and Westedge Street in Downtown Charleston. Beginning at the Rivers & Melnick station going south, the alternative interlines with the LCRT, combining service through the rest of the LCRT's alignment. Service for this alignment would be planned to double the frequency of BRT service at stations shared with the LCRT.

The two southern terminus alternatives are shown in Figure 3.

[7] Truncation refers to the shortening of a route.

Figure 3 Southern Terminus Alternatives



SOUTHERN TERMINUS ALTERNATIVES SCREENING CRITERIA AND PROCESS

As described earlier, the southern terminus alternatives are evaluated using a subset of the criteria that are used to evaluate US 52 alignment alternatives. The screening of the southern terminus alternatives is also organized around the objective defined under the project purpose, "develop a high-capacity transit corridor that can accommodate future population and employment growth". In addition to this objective, measures of cost-effectiveness and ridership were considered in evaluating the two southern terminus alternatives.

The criteria that are used to evaluate the southern terminus alternatives are summarized in Table 4. Each criterion is described in greater detail in US 52 Alignment Alternatives Screening Criteria and Process.

Table 4 Southern Terminus Alternatives Screening Criteria

Objective	Screening Criteria	Screening Criteria Description
Develop a high-capacity transit corridor that can accommodate future population and employment growth	Existing and future transit demand	Average of Transit Propensity Index
	Existing and future corridor residential and employment densities (population)	Population density
		Population growth
	Existing and future corridor residential and employment densities (employment)	Employment density
		Employment growth
	Existing and future corridor residential and employment densities (households)	Household density
		Household growth
Cost-effectiveness of alternative	Capital cost	
	Annual operating cost	
	Annual fare revenue	
	Capital cost per annual rider	
	Operating cost per annual rider	
Ridership	Annual ridership	
	Average weekday ridership	

Additional Operating Considerations

For the Downtown Charleston southern terminus alternative, the longer travel time from Moncks Corner to Downtown Charleston presents operational challenges related to reliability and operator schedules.

Reliability

The Downtown Charleston alternative has a roundtrip distance of 70 miles, compared to a 37-mile round-trip distance for the Baseline alternative. The longer the route, the greater the opportunity for it to get off schedule. Along the Downtown Charleston alternative, there are more opportunities for traffic conditions to impact the schedule by delaying the bus.

Operator Schedules

One roundtrip on the Downtown Charleston alternative, from Moncks Corner to Downtown Charleston, with recovery time, is estimated to take four hours. Compared to the 2.25-hour roundtrip run time of the Baseline alternative, four hours represents a much greater percentage of an operator's scheduled drive time. There would be limited opportunities for the operator to take a break. The Downtown Charleston alternative would require significantly more resources to maintain the recommended 15-minute trip frequency.

Scoring, Rating, Ranking

For each criterion, alignment alternatives recieve a raw score between zero and one. That score is then multiplied by ten to get a final score for each alignment alternative.

SOUTHERN TERMINUS ALTERNATIVES SCREENING RESULTS

While the two alternatives score similarly, the Downtown Charleston southern terminus alternative would only be cost-effective if coordinated with the LCRT as a branch of that service. The southern terminus alternative screening results are provided in Table 5. Raw numbers for each criterion are included in the APPENDIX.

Table 5 Southern Terminus Alternative Screening Results

Objective	Screening Criteria Description	Weight	Baseline	Charleston
Develop a high-capacity transit corridor that can accommodate future population and employment growth	Transit Demand	10%	4.6	5.5
	Existing and future corridor densities (Population)	10%	6.5	7.7
	Existing and future corridor densities (Employment)	10%	6.4	7.8
	Existing and future corridor (Households)	10%	7.4	8.2
	Compatibility with regional and local plans	10%	8.6	2.9
	Existing traffic conditions and travel flows	10%	5.6	5.6
	Environmental Justice	10%	4.3	4.1
Cost-effectiveness of alternative	Capital Cost per Annual Rider	8%	10.0	2.2
	Operating Cost per Annual Rider	8%	3.3	10.0
Ridership	Projected Daily Ridership	15%	10.0	10.8
		Total Score	66.6	64.8
		Total Weighted Score (Out of 10)	6.8	6.7

RECOMMENDATIONS AND NEXT STEPS

NEAR-TERM OPPORTUNITIES

The lack of existing transit service along the US 52 corridor means that there is a lack of demonstrated demand for more transit service, which is needed to justify BRT service. Expanding existing transit service and supportive infrastructure through the short- and long-term recommendations for TCL routes will help to build this needed transit market.

Expanding existing transit service depends on having transit-supportive development patterns, specifically, land use and density levels that support service expansion. Concentrating growth around existing and future transit stations makes it easier for people to incorporate transit into their daily routines. By promoting transit-supportive land uses in the Study Area, the corridor can better position itself for expanded and more effective transit service in the future.

The lack of sidewalks along the US 52 corridor is a significant challenge. If potential transit users cannot safely access bus stations, they will not choose to use transit to make their trip. This is especially an issue in the portion of the corridor north of Goose Creek. Complete Street elements, including bicycle and pedestrian infrastructure, should be incorporated into any planned roadway improvements and development projects. Concentrating these elements adjacent to key nodes and linking ROW to destinations will build the connectivity needed to support more robust transit service along the corridor.

The near-term potential for expanded transit service is strongest at the southern end of the US 52 corridor, near the planned Lowcountry Rapid Transit (LCRT) line. This effort begins with enhancing TriCounty Link (TCL) services to strengthen the local transit network. Once LCRT is operational, opportunities can be explored to connect TCL routes to the LCRT system via the Goose Creek park-and-ride facility. To support this, implementing transit-supportive development policies and improving bicycle and pedestrian infrastructure, as outlined in the US 52 Corridor Study, will be essential.

LONG-TERM OPPORTUNITIES

Once transit demand warrants rapid service, the corridor could be suited for BRT operating in mixed traffic, with upgraded side platform stations and rapid features such as TSP and queue jump lanes. These transit priority treatments can enhance service reliability. As other infrastructure projects are implemented along the corridor, these priority features should be incorporated to improve future service. Since dedicated lanes are not required, service can be implemented more quickly and phased incrementally. The following describes the BRT elements recommended for US 52 once demand is in place.

BRT ELEMENTS

To ensure riders can maximize the transit service offered in the US 52 service area, technology implemented for the US 52 BRT should align with what is planned for the LCRT, where feasible.

Global Elements

Similar to what is planned for LCRT, US 52 is assumed to utilize 60-foot articulated diesel vehicles. Fares would be collected off-board utilizing Ticket Vending Machines (TVM) at BRT stations.

Additional Elements

Running Ways

Running ways determine where in the ROW BRT vehicles operate, as well as how exclusively BRT operates. As noted, based on the projected ridership and existing conditions of the US 52 corridor, US 52 BRT is assumed to operate in mixed traffic, with the potential to utilize queue jumps and Transit Signal Priority (TSP) to provide more rapid and reliable service.

Stations

Stations determine where and how passengers board and alight BRT vehicles. US 52 BRT would utilize similar station features as LCRT, including covered shelter or canopy, level boarding, detectable warning surface, wind screen, safety railing, benches, trash receptacles, bollards, lighting, sloped walkway, WiFi, CCTV cameras, TVMs, wayfinding signage, and real-time arrival information. Station size will likely vary based on location. A rendering of LCRT's side platform station is provided in Figure 4.

US 52 BRT station locations were proposed in the US 52 Corridor Study between Moncks Corner and North Charleston. Through that report, bicycle and pedestrian infrastructure recommendations were made for the area around each potential location. Once the corridor is ready for BRT to be implemented, sufficient pedestrian and bicycle infrastructure will be a requirement for finalized station locations.

Figure 4 LCRT Side Platform Station rendering

Intelligent Transportation Systems (ITS)

Like LCRT, US 52 BRT would utilize TSP technology to maintain schedule adherence. TSP would also give BRT vehicles utilizing queue jump lanes a green light ahead of adjacent vehicles.

Service planning for US 52 BRT would factor in existing schedules of adjacent TCL and LCRT transit services to facilitate seamless transfers between each service. This would extend the US 52 BRT service area for riders, giving them transit-based access to a wider area of resources, activity centers, and jobs. The coordinated service would ensure these individual transit options collectively operate as a unified network.

Examples of Similar BRT Projects

Dixie Rapid: Louisville, KY

The Dixie Rapid is an enhanced bus service in Louisville, KY that serves the 15-mile Dixie Highway corridor between Downtown Louisville and Valley Station, an outlying suburb.[8] The system utilizes 40-foot diesel low-floor buses and the route includes queue jump lanes, dedicated stations with shelters and signage, and TSP at select intersections. Construction of queue jump lanes, sidewalks, stations, signals, and landscaping were part of a larger $34 million Dixie Highway corridor redesign project. Eight buses were purchased to provide 15-minute headways during peak periods and 20-minute headways for non-peak weekday periods and weekdays, from 4:00 am to 11:30 pm.[9] A photo of the Dixie Rapid is provided in Figure 5. [10]

Figure 5 Dixie Rapid

[8] Commonwealth of Kentucky. Construction Begins to Create New Dixie Highway. December 2017.
[9] Ride TARC. Dixie Rapid. 2025.
[10] Louisville Public Media. Dixie Rapid. January 2020.

IndyGO Red Line: Indianapolis, IN

The IndyGO Red Line is a BRT service in Indianapolis, IN that runs 13 miles north-to-south through downtown Indianapolis. The Red Line features some BRT elements, including level boarding, off-board fare payment, dedicated bus lanes, and 60-foot battery-electric buses. Select Red Line runs continue past the BRT corridor to serve local stops. The $96.3 million project included $75 million of FTA Small Starts Grant funds, and extensions are planned. A photo of the IndyGO Red Line is provided in Figure 6.[11]

Figure 6 IndyGo Red Line[12]

US 52 BRT COSTS

CAPITAL COSTS

The US 52 BRT Moncks Corner alignment has a total capital cost of $23,437,000 in 2025$. Capital expenditures include vehicles and stations. The alignment would require 12 vehicles, which is 10 peak vehicles and 2 spare vehicles. Stations would be built every 2 miles, but stations would not be needed at the southern terminus of the route because the LCRT Rivers & Melnick station would serve as the southernmost station on the route. 17 stations would be needed. Based on the capital planning for LCRT,

[11] IndyGO. Red Line.
[12] IndyGO. Red Line.

capital costs were developed assuming US 52 BRT would utilize New Flyer 60' buses which are $1,130,000 each and stations would cost $581,000. Based on these assumptions, Table 6 outlines US 52 BRT capital costs. If service for the US 52 BRT was planned to begin in 2036, capital costs would likely be incurred in the years prior beginning roughly in 2034. In 2034$, US 52 BRT has a capital cost of $30,580,000.

Table 6 US 52 BRT Moncks Corner Alignment Capital Cost[13]

Vehicles	Length (miles)	Miles Between Stations	Total Stations	Station Cost	Vehicle Cost	Total Cost
12	18.6	2	17	$9,877,000	$13,560,000	$23,437,000

OPERATING COSTS

The US 52 BRT Moncks Corner alignment has a total annual operating cost of $5,477,000 in 2025$. Operating costs were calculated assuming the route would run every 15 minutes from 5am to 7pm daily at a speed of 18 MPH and factoring in a 10% layover. The cost per vehicle revenue hour was taken from CARTA's NTD reported cost per revenue hour for 2023 and escalated to 2025$ assuming a 3% inflation rate. Operating cost is outlined in Table 7.

Table 7 US 52 BRT Moncks Corner Alignment Annual Operating Cost

Frequency (mins)	One-Way Running Times (mins)	Peak Cycle Time (mins)	Revenue Hours	Total Hours	Revenue Miles	Peak Vehicles	Operating Cost
15	62	150	46,392	48,712	759,142	10	$5,477,000

[13] US BRT capital costs include stations and vehicles only. Costs for TSP, queue-jumps, and park-n-rides are not included. The LCRT Rivers & Melnick station would be the southernmost station used by the US 52 BRT and the only station that would be in Charleston County. All other stations would be built in Berkeley County. 91% of the US 52 BRT Moncks Corner alignment would run in Berkeley County and 9% would run in Charleston County.

IMPLEMENTATION PLAN

FUNDING

Funding Sources

Funding sources available for short-term recommendations, long-term recommendations, and the US 52 BRT alignment alternative recommendation are listed in Table 8 and local funding sources and strategies are listed in Table 9. Routes within the Study Area are eligible for both urban and rural federal funding, determined by whether routes fall into census designated urban or rural areas. Figure 5 displays which routes fall into these designated urban and rural areas.

TCL is currently funded through the Federal Transit Administration's (FTA) Urbanized Area Formula Grant (5307); FTA's Rural Area Formula Grant (5311); FTA's Bus and Bus Facilities Program (5339); Berkeley, Charleston, and Dorchester Counties; state mass transit funds; advertising income; contracts; farebox revenue; as well as some miscellaneous income.

Table 8 Funding Sources

Funding Source	Description	Operating	Capital	Notes
5307 Urbanized Area Formula Grants	Program Purpose: Formula funding for urbanized areas for transit capital and operating assistance and for transportation-related planning. Eligible Recipients: For urbanized areas with a population of 200,000 or more, governors, responsible local officials and providers of publicly owned public transportation service shall select a designated recipient to receive and apportion funds to eligible projects and recipients within the urbanized area. Funding for urbanized areas with a population of between 50,000 and 199,999 is made available to a State's or territory's governor or governor's designee. For urbanized areas with a population of less than 200,000, the governor or governor's designee is responsible for receiving and apportioning funds to eligible projects and recipients. Eligible Projects: Planning, engineering, design and evaluation of transit projects and other technical transportation-related studies; capital investments in bus and bus-related activities such as replacement, overhaul and rebuilding of buses, crime prevention and security equipment and construction of maintenance and passenger facilities; and capital investments in new and existing fixed guideway systems including rolling stock, overhaul and rebuilding of vehicles, station infrastructure, track, signals, communications, and computer hardware and software. For urbanized areas with populations less than 200,000, operating assistance is an eligible expense. Urbanized areas of 200,000 or more may not use funds for operating assistance unless identified by FTA as eligible under 49 U.S.C. 5307(a)(2) and (3). $3,257,010,123 is apportioned for FY 2025 (partial year).[14]	X	X	This source is currently utilized by BCDCOG.

[14] FTA. Urbanized Area Formula Grants – 5307.

Funding Source	Description	Operating	Capital	Notes
5311 Rural Area Formula Grants	Program Purpose: Capital, planning, and operating assistance to states and federally recognized Indian tribes to support public transportation in rural areas with populations less than 50,000. Eligible Recipients: States and federally recognized Indian tribes. Subrecipients may include state or local government authorities, nonprofit organizations, or operators of public transportation or intercity bus service that receive funds indirectly through a recipient. Eligible Projects: Planning, public transportation capital projects; operating costs of equipment and facilities for use in public transportation; job access and reverse commute projects; and acquisition of public transportation services, including service agreements with private providers of public transportation. $835,000,000 is apportioned for FY 2025 and $856,000,000 is apportioned for FY 2026.[15]	X	X	This source is currently utilized by BCDCOG.

[15] FTA. Fact Sheet: Formula Grants for Rural Areas. April 2025.

Funding Source	Description	Operating	Capital	Notes
5310 Seniors and Individuals with Disabilities Formula Grants	Program Purpose: Formula funding to states to meet the special needs of seniors and individuals with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. Eligible Recipients: Funding is made available to direct recipients. For rural and small urbanized areas (small UZAs), the state is the direct recipient. For large, urbanized areas (large UZAs), the governor of the state chooses a designated recipient. State or local governmental entities that operate a public transportation service are also eligible recipients. Administrators of funding can include states or local government authorities, private nonprofit organizations, operators of public transportation, or regional planning councils. Eligible Projects: Both traditional capital investment to meet the special needs of seniors and individuals with disabilities and nontraditional investment beyond the Americans with Disabilities Act (ADA) complementary paratransit services. Examples of eligible projects include wheelchair lifts; ramps; information technology; building an accessible path to bus stops including curb-cuts, sidewalks, accessible pedestrian signals; and improved signage. $447,000,000 is apportioned for FY 2025 and $457,000,000 is apportioned for FY 2026.[16]		X	This source of funding could specifically be used to ensure pedestrian infrastructure for accessing transit services is accessible.

[16] FTA. Fact Sheet: Enhanced Mobility for Seniors and Individuals with Disabilities. April 2025.

Funding Source	Description	Operating	Capital	Notes
5339(a) Buses and Bus Facilities Formula Grants	Program Purpose: Funding to states and transit agencies through a statutory formula to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities. Eligible Recipients: Designated recipients that operate fixed route bus service or that allocate funding to fixed route bus operators; and State or local governmental entities that operate fixed route bus service that are eligible to receive direct grants under 5307 and 5311. Eligible Projects: Capital projects to replace, rehabilitate, and purchase buses, vans, and related equipment, and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.[17] $662,000,000 total is apportioned for FY 2026 for the Grants for Bus and Bus Facilities.[18]		X	This source is currently utilized by BCDCOG.

[17] FTA. Grants for Buses and Bus Facilities Formula Program - 5339(a).
[18] FTA. Fact Sheet: Buses and Bus Facilities Program. April 2025.

Funding Source	Description	Operating	Capital	Notes
5339(b) Buses and Bus Facilities Formula and Competitive Grants	Program Purpose: Funding for states and direct recipients to replace, rehabilitate and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities. Funding is provided through formula allocations and competitive grants. Eligible Recipients: Designated recipients that allocate funds to fixed-route bus operators, states (including territories and Washington D.C.) or local governmental entities that operate fixed route bus service, and Indian tribes. Eligible subrecipients include all otherwise eligible applicants and also private nonprofit organizations engaged in public transportation. Eligible Projects: Capital projects to replace, rehabilitate and purchase buses, vans, and related equipment, and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities. On May 14, 2025, the FTA announced the availability of approximately $398,000,000 for this program.[19]		X	This source is currently utilized by BCDCOG.

[19] FTA. Grants for Buses and Bus Facilities Program. May 2025.

Funding Source	Description	Operating	Capital	Notes
5339(c) Buses and Bus Facilities Competitive Grants	Program Purpose: Competitive funding to state and local governmental authorities for the purchase or lease of zero-emission and low-emission transit buses as well as acquisition, construction, and leasing of required supporting facilities. Eligible Recipients: Eligible applicants include direct or designated recipients of FTA grants; States; local governmental authorities; and Indian Tribes. Except for projects proposed by Indian Tribes, proposals for funding eligible projects in rural (non-urbanized) areas must be submitted as part of a consolidated state proposal. States and other eligible applicants also may submit consolidated proposals for projects in urbanized areas. Eligible Projects: The purchase or lease of zero-emission or low-emission transit buses, including acquisition, construction, and leasing of supporting facilities. On May 14, 2025, the FTA announced the availability of approximately $1,100,000,000 for this program.[20]		X	If zero or low-emission buses are available for TCL service expansion or BRT buses, this funding source could be used.

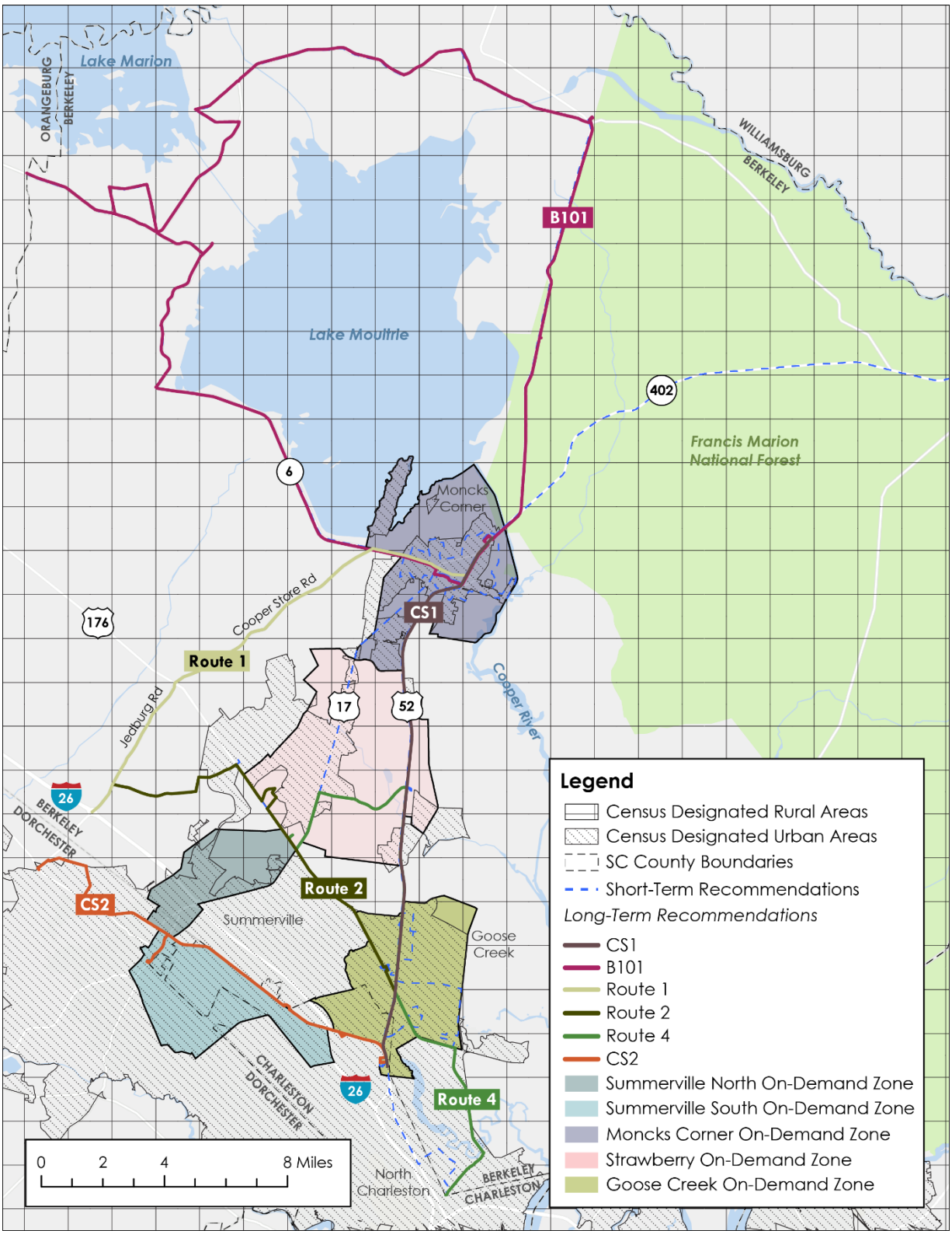
[20] FTA. Low or No Emission Grant Program - 5339(c). May 2025.

United States Department of Transportation (USDOT) Discretionary Grants	Program Purpose: A range of USDOT grant programs for transportation infrastructure. Eligible Recipients: State and local governments; federally recognized tribes and affiliated groups; planning and project organizations; transportation providers and operators; academic and research institutions; job training applicants; private-sector applicants; non-profits; and US territories. Eligible Projects: Planning; construction; equipment and materials; operations and maintenance; technology demonstrations and deployment; technical assistance, workforce development, and training/education; research and development; climate and sustainability; accessibility; and sustainability.[21] $7,500,000,000 was apportioned through USDOT's discretionary grant program for the 5-year period from 2022 to 2026.[22]	X	X	The application cycle begins with pre-award, during which applicants apply for applicable grants and USDOT reviews applications. Then during the award period, applicants are notified of award decisions, USDOT disburses funds, and projects are implemented. During the post-award period, USDOT monitors the project progress via grantee-submitted progress reports, and finally grantees complete closeout requirements and submit final reports to USDOT.[23] Example grant programs include the Areas of Persistent Poverty Program and

Funding Source	Description	Operating	Capital	Notes
				Capital Investment Grants program.
Federal Highway Administration (FHWA) Transportation Alternatives Program	Program Purpose: The Transportation Alternatives (TA) Set-Aside from the Surface Transportation Block Grant (STBG) Program provides funding for a variety of generally smaller-scale transportation projects. Eligible Recipients: A Metropolitan Planning Organization (MPO) that represents an area with a population of 200,000 of fewer, any nonprofit entity responsible for the administration of local safety programs, and states (at the request of another eligible entity. Eligible Projects: Pedestrian and bicycle facilities; construction of turnouts, overlooks, and viewing areas; community improvements such as historic preservation and vegetation management; environmental mitigation related to stormwater and habitat connectivity; recreational trails; safe routes to school projects; and vulnerable road user safety assessments. $1,468,224,182 is available for FY 2025 and $1,497,558,662 is available for FY 2026.[24]		X	This funding source could be used to fund the pedestrian facilities needed to access transit.

[21] USDOT. DOT Competitive Grants Dashboard.
[22] CHATS. Long Range Transportation Plan: Implementation and Funding. February 2024.
[23] USDOT. Grant Application Roadmap. March 2025.
[24] FHWA. Transportation Alternatives.

Figure 7 Census Designated Urban and Rural Areas



Local Funding

Table 9 Local Funding Sources and Strategies

Source	Applicability
Berkeley County One-Cent Sales Tax	The Berkeley County One Cent Sales Tax Program, approved by voters in 2008, 2014, and 2022, is earmarked to finance the costs of bridges, intersection improvements, roadway resurfacing, roadway widening, stormwater, sewer, greenbelt, and other transportation-related projects within Berkeley County. Funds generated from this sales tax are anticipated to be $587 million over seven years (2022-2029).[25] Funding for transit is eligible under this tax program.
2004 Charleston Half-Cent Sales Tax	In the fall of 2004, Charleston County voters approved a half-cent sales tax on purchases made within the County for twenty-five (25) years, or until $1.3 billion is collected. The intent of the sales tax is to fund the costs of highways, roads, streets, bridges, and other transportation-related projects and drainage facilities. 18% of revenue from this tax program goes to capital and operations funding for CARTA and TCL in Charleston County.[26]
2016 Charleston County Half-Cent Sales Tax	The second half-cent sales tax referendum, passed in November 2016, includes $ 1.89 billion collected for transportation-related projects and mass transit.[27]
Public-Private Partnership (P3)	A Public-Private Partnership is formed through collaboration between a government agency and private-sector organizations, leveraging both public and private funding for projects.[28]
Tax Increment Financing District (TIF)	When a TIF district is created, the property tax base is frozen at predevelopment levels, and the portion of property tax revenues derived from increases in assessed values is applied to a special fund.
Municipal Improvement District (MID)	Authorized in South Carolina by the Municipal Improvements Act of 1999, a MID can be created by any municipal government with the approval of property owners in the improvement district. Funds assessed from property owners' part of the MID can be used for infrastructure improvements, streetscape projects, transit station improvements, etc.
Developer Contributions to Mobility Fund	Direct contributions (fees) from developers to a fund intended to support infrastructure investment in the immediate area. This is a common practice nationally and was identified in the One Berkeley Comprehensive Plan as necessary to assure adequate infrastructure and services to accompany growth.
Direct Business Contributions	Contractual agreements between transit agencies and local businesses to enhance and/or maintain transit service through a contribution of funding.

[25] Berkeley County. Ordinance No. 22-08-48. 2022.
[26] Charleston County. Charleston County Ordinance No. 1324. August 2004.
[27] Charleston County. An Ordinance. August 2016.
[28] USDOT. Overview of Funding and Financing at USDOT. March 2025.

Source	Applicability
Municipal Contributions	Municipalities can contribute funding to transit projects with a significant local impact.

IMPLEMENTATION OF TCL SERVICE AND BRT FEASIBILITY RECOMMENDATIONS

Implementation begins with short-term route recommendations, long-term route recommendations, as well as improvements to pedestrian infrastructure needed to safely access transit. Annual operating costs for short-term recommendations, long-term recommendations, and the US 52 BRT alignment alternative recommendation have been projected out based on the following assumed timeframe for implementation:

- Short-Term Recommendations – 1 to 5 years: Begin with short-term recommendations that are relatively cost-neutral and the implementation of development policies that support the addition of transit-supportive infrastructure. Explore funding tools, such as developer contributions to a mobility fund, and continue implementing short-term recommendations as funding is identified. Pilot the expanded CS8 on-demand zone while monitoring ridership changes.

- Long-Term Recommendations – 5 to 10 years: Identify sustainable long-term sources of transit funding to support operations, capital needs, and local match for federal funds. Implement long-term recommendations holistically to optimize the connectivity and usefulness of each route. Base implementation on the pace of development in the Study Area.

- US 52 BRT – 10+ years: Monitor transit ridership, market demand, TOD patterns, and pedestrian infrastructure to determine when to implement US 52 BRT service.

Costs in tables 10 through 13 are projected from 2025$ to 2045$ using an inflation rate of 3% and have been rounded. Operating and capital costs for TCL short-term recommendations are provided in Table 10. Operating and capital costs for TCL long-term recommendations are split into US 52 routes and additional adjacent routes. Costs for US 52 routes are provided in Table 11 and costs for additional adjacent routes are provided in Table 12. Operating costs for US 52 BRT Moncks Corner alternative are provided in Table 13. Operating and capital costs for short-term recommendations, long-term recommendations, and US 52 BRT Moncks Corner alternative are summarized in Table 14 for the total 20-year operating period.

Table 10 TCL Short-Term Recommendations Costs

US 52 Corridor Routes	Year	Operating Costs	Total Capital Costs Bus Stops (2025$)[29]
B101 B102 B104 CS1 CS8 Zone	2026	$1,393,000	$105,000
	2027	$1,435,000	
	2028	$1,478,000	
	2029	$1,522,000	
	2030	$1,568,000	

[29] No new vehicles are needed to implement short-term recommendations. Short-term capital costs include bus stops only.

Table 11 TCL US 52 Corridor Routes Long-Term Recommendations Costs

Routes	Year	Operating Costs	Capital Costs Vehicles (2025$)	Capital Costs Bus Stops (2025$)
B101 Route 1 Route 4 CS1 Moncks Corner Zone Strawberry Zone Goose Creek Zone	2031	$6,904,000	$7,365,000	$1,765,000
	2032	$7,111,000		
	2033	$7,325,000		
	2034	$7,544,000		
	2035	$7,771,000		
	2036	$8,004,000		
	2037	$8,244,000		
	2038	$8,491,000		
	2039	$8,746,000		
	2040	$9,008,000		
	2041	$9,278,000		
	2042	$9,557,000		
	2043	$9,843,000		
	2044	$10,139,000		
	2045	$10,443,000		

Table 12 TCL Additional Adjacent Routes Long-Term Recommendations Costs

Routes	Year	Operating Costs	Capital Costs Vehicles (2025$)	Capital Costs Bus Stops (2025$)
Route 2 CS2 Summerville N Zone Summerville S Zone	2031	$2,735,000	$3,306,000	$1,278,000
	2032	$2,817,000		
	2033	$2,901,000		
	2034	$2,988,000		
	2035	$3,078,000		
	2036	$3,170,000		
	2037	$3,265,000		
	2038	$3,363,000		
	2039	$3,464,000		
	2040	$3,568,000		
	2041	$3,675,000		
	2042	$3,785,000		
	2043	$3,899,000		
	2044	$4,016,000		
	2045	$4,136,000		

Table 13 US 52 BRT Moncks Corner Operating Costs

Year	Implementation Time Frame	Annual Operating Costs
2036	US 52 BRT Moncks Corner Alignment (10+ years)	$7,582,000
2037		$7,809,000
2038		$8,043,000
2039		$8,285,000
2040		$8,533,000
2041		$8,789,000
2042		$9,053,000
2043		$9,324,000
2044		$9,604,000
2045		$9,892,000

Table 14 Summary of 20-Year Total Operating and Capital Costs

	Short-Term	Long-Term	US 52 BRT	Total Costs
Operating Costs	$7,396,000	$179,268,000	$86,914,000	$273,578,000
Capital Costs	$105,000	$13,714,000	$23,437,000*	$37,256,000

*Before the US BRT can begin operation, vehicles would need to be purchased, and stations would need to be built. Assuming US 52 BRT would begin operation in 2036, capital construction and vehicle procurement would need to occur in the years leading up to this. The total capital cost estimated for the US 52 BRT in 2025$ is $23,437,000. The final capital cost for US 52 BRT will be determined based on the year of implementation, refined design specifications, and related inflation.

APPENDIX

Appendix 1: US 52 Alignment Alternative Screening Results

Objective	Screening Criteria	Screening Criteria Description	Moncks Corner	Strawberry	Goose Creek	Units
Develop a high-capacity transit corridor that can accommodate future population and employment growth	Existing and future transit demand	Average of TPI (1, 2, 3, 4, or 5)	2.30	2.88	2.99	score (out of 5)
	Existing and future corridor residential and employment densities	Population Density	3.25	3.90	4.06	persons/acre
		Population Growth	0.79	0.98	1.12	% growth between 2025-204
		Employment Density	1.42	1.59	1.68	jobs/acre
		Employment Growth	0.57	0.23	0.11	% growth between 2025-204
		Household Density	1.24	1.50	1.56	households/acre
		Household Growth	0.80	0.95	1.07	% growth between 2025-204
	Compatibility with regional and local plans	Plans that include alignment	6.00	6.00	6.00	number of plans
		Total number of plans reviewed	7.00	7.00	7.00	number of plans
Collectively strengthen the region's transportation system	Existing transit services and infrastructure	TCL routes with stops within 1/4-mile buffer of alignment	7	3	3	routes
	Ridership of adjacent routes	Total monthly (April 2024) ridership of intersecting TCL routes	2,360	1,039	1,039	riders
Ensure long-term sustainability by planning around existing roadway characteristics, natural resources, and transit-supportive communities	Existing roadway geometry	Number of intersections with lanes wide enough for BRT	18	7	5	intersections
		Total number of intersections	18	7	5	intersections
	Existing traffic conditions and travel flows	Average future LOS throughout corridor	C	D	D	future LOS (2045)
	Sidewalks	Miles of existing sidewalk (bi-directional)	7.63	4.00	4.00	miles
		Total miles of alignment (bi-directional)	37.14	18.34	10.14	miles
	Wetland impact	Square acres of wetlands within 150 ft buffer of alignment	37.54	18.53	8.20	square acres
		Total square acres within 150 ft buffer of alignment	676.90	335.07	186.07	square acres

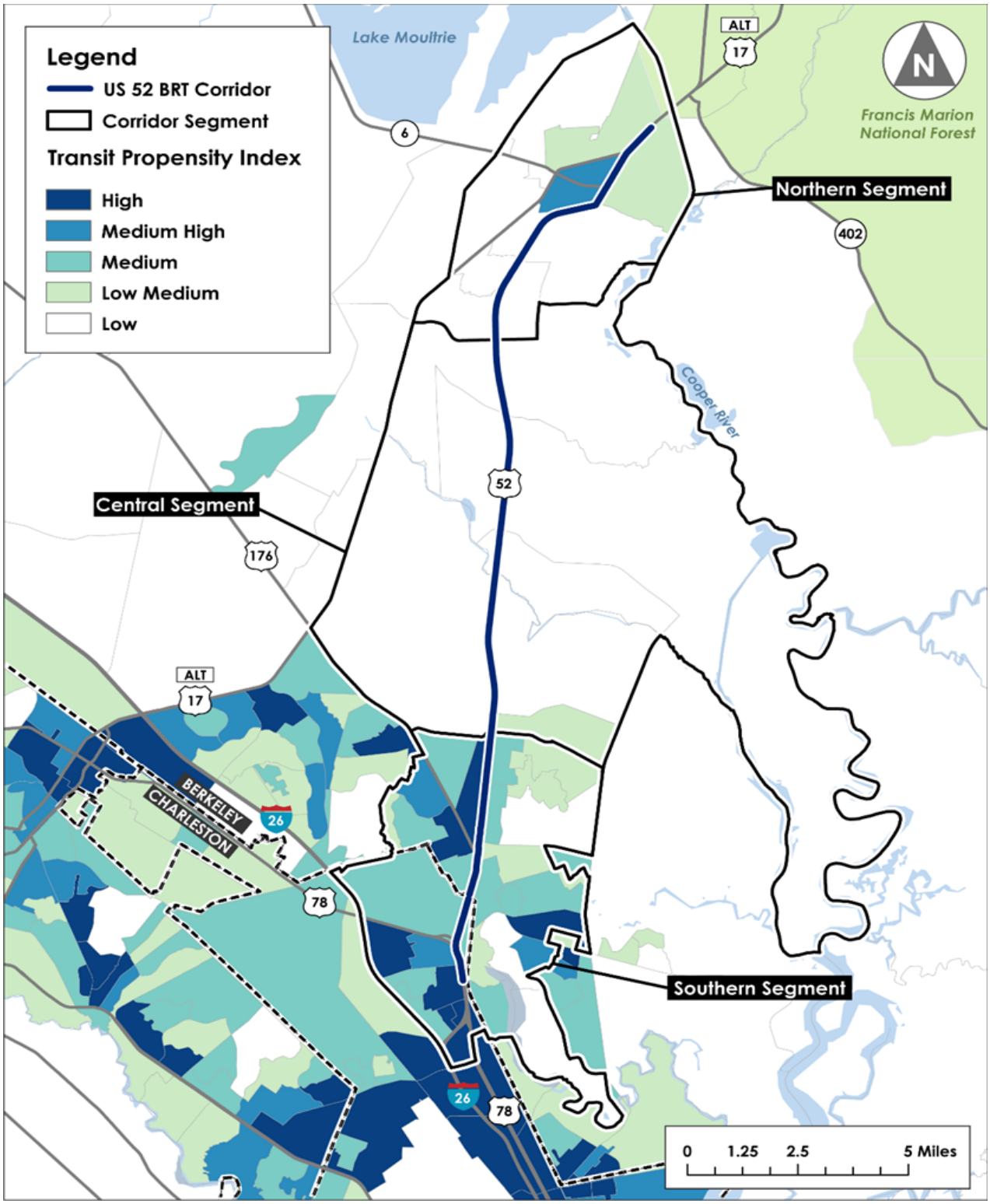
Objective	Screening Criteria	Screening Criteria Description	Moncks Corner	Strawberry	Goose Creek	Units
	Intersections with median of 22 ft or shoulders (bi-directional) 11 ft	Roadway median and shoulders measured for BRT-required width; score determined by percentage of alternative alignment with median or shoulders that are BRT supportive	13.00	5.00	3.00	number of intersections
		Total number of intersections	18.00	7.00	5.00	number of intersections
Cost effectiveness of alternative	Capital Cost		23,437,000	10,847,000	6,2630,000	$
	Annual Operating Cost		5,476,847	2,704,507	1,495,294	$
	Annual Fare Revenue		449,232	266,561	130,291	$
	Capital Cost per Annual Rider		104.34	81.38	96.14	$
	Operating Cost per Annual Rider		24.38	20.29	22.95	$
Ridership	Annual Ridership		224,616	133,280	65,146	riders
	Average Weekday Ridership		749	444	217	riders

Appendix 2: Southern Terminus Alternatives Screening Results

Objective	Screening Criteria	Screening Criteria Description	Moncks Corner	Charleston	Units
Develop a high-capacity transit corridor that can accommodate future population and employment growth	Existing and future transit demand	Average of TPI (1, 2, 3, 4, or 5)	2.30	2.75	score (out of 5)
	Existing and future corridor residential and employment densities	Population Density	3.25	7.67	persons/acre
		Population Growth	0.79	2.12	% growth between 2025-2045
		Employment Density	1.42	6.95	jobs/acre
		Employment Growth	0.57	0.20	% growth between 2025-2045
		Household Density	1.24	3.15	households/acre
		Household Growth	0.80	3.53	% growth between 2025-2045
Cost effectiveness of alternative	Capital Cost		23,437,000	34,737,000	$
	Annual Operating Cost		5,476,847	10,293,052	$
	Annual Fare Revenue		449,232	485,170	$
	Capital Cost per Annual Rider		104.34	143.20	$
	Operating Cost per Annual Rider		24.38	42.43	$

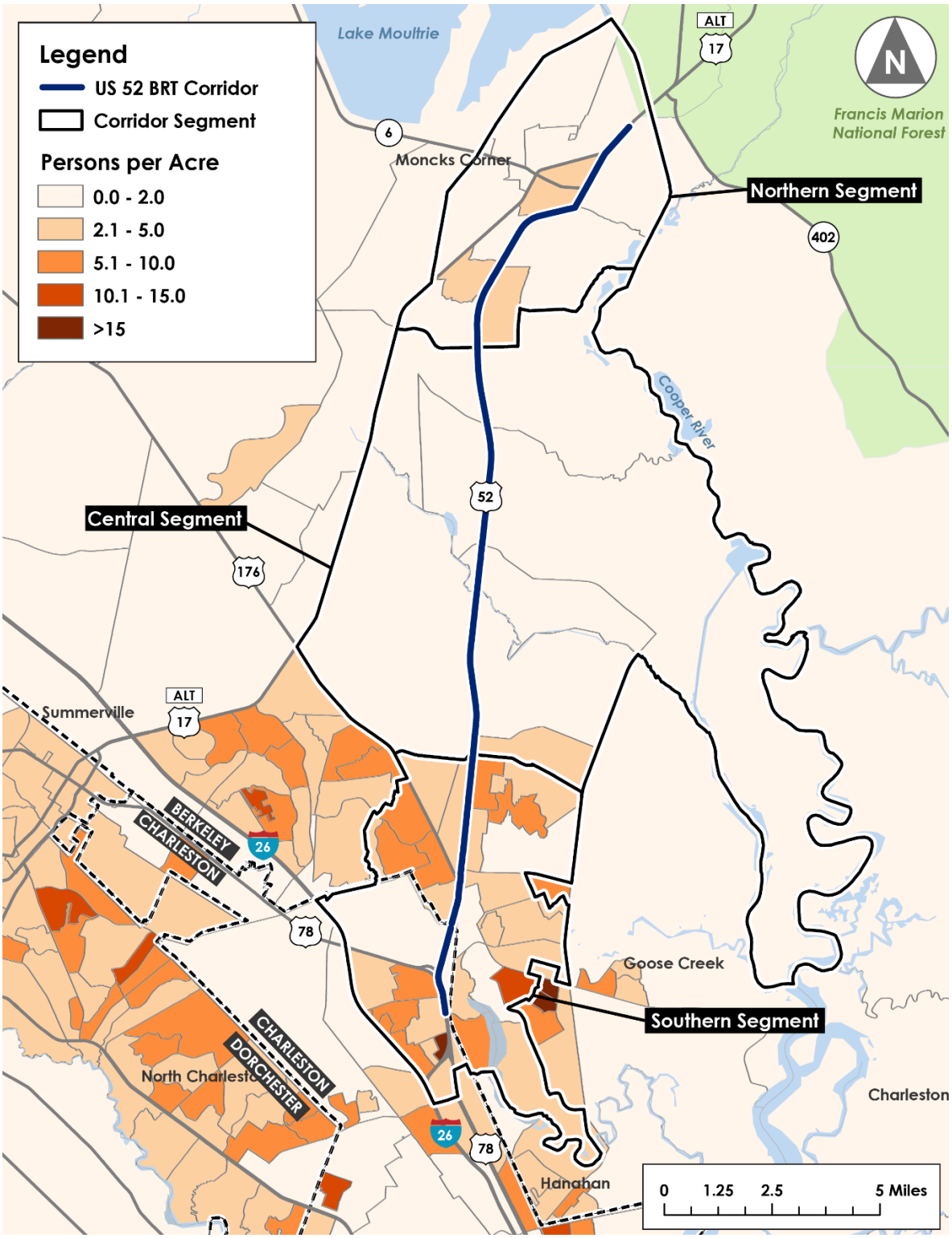
Objective	Screening Criteria	Screening Criteria Description	Moncks Corner	Charleston	Units
Ridership	Annual Ridership		224,616	242,585	riders
	Average Weekday Ridership		749	809	riders

Appendix 3:Transit Propensity Index Map[30]



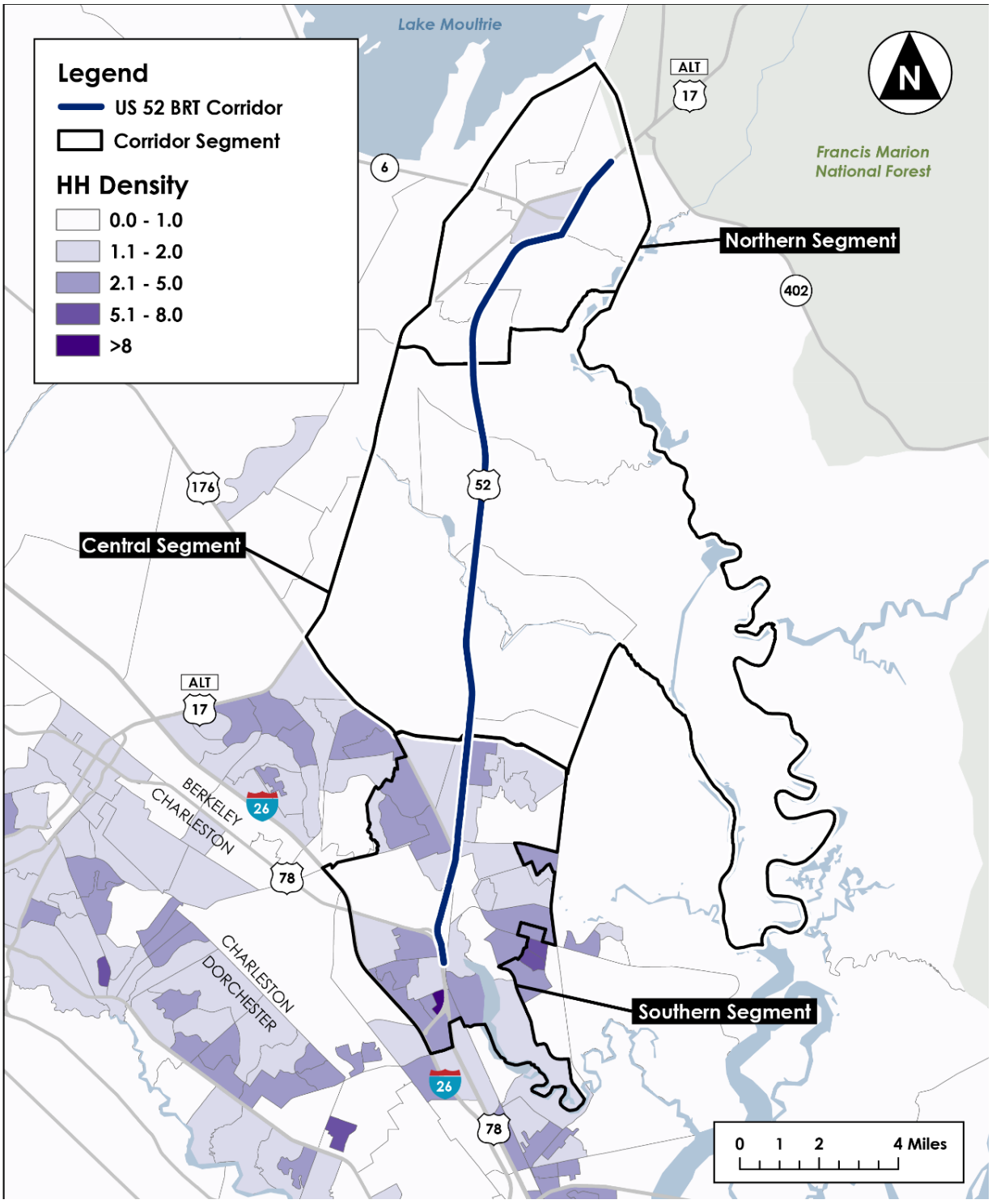
[30] US Census Bureau. American Community Survey 5-Year Estimates. 2021.

Appendix 4: Population Density (2021)[31]



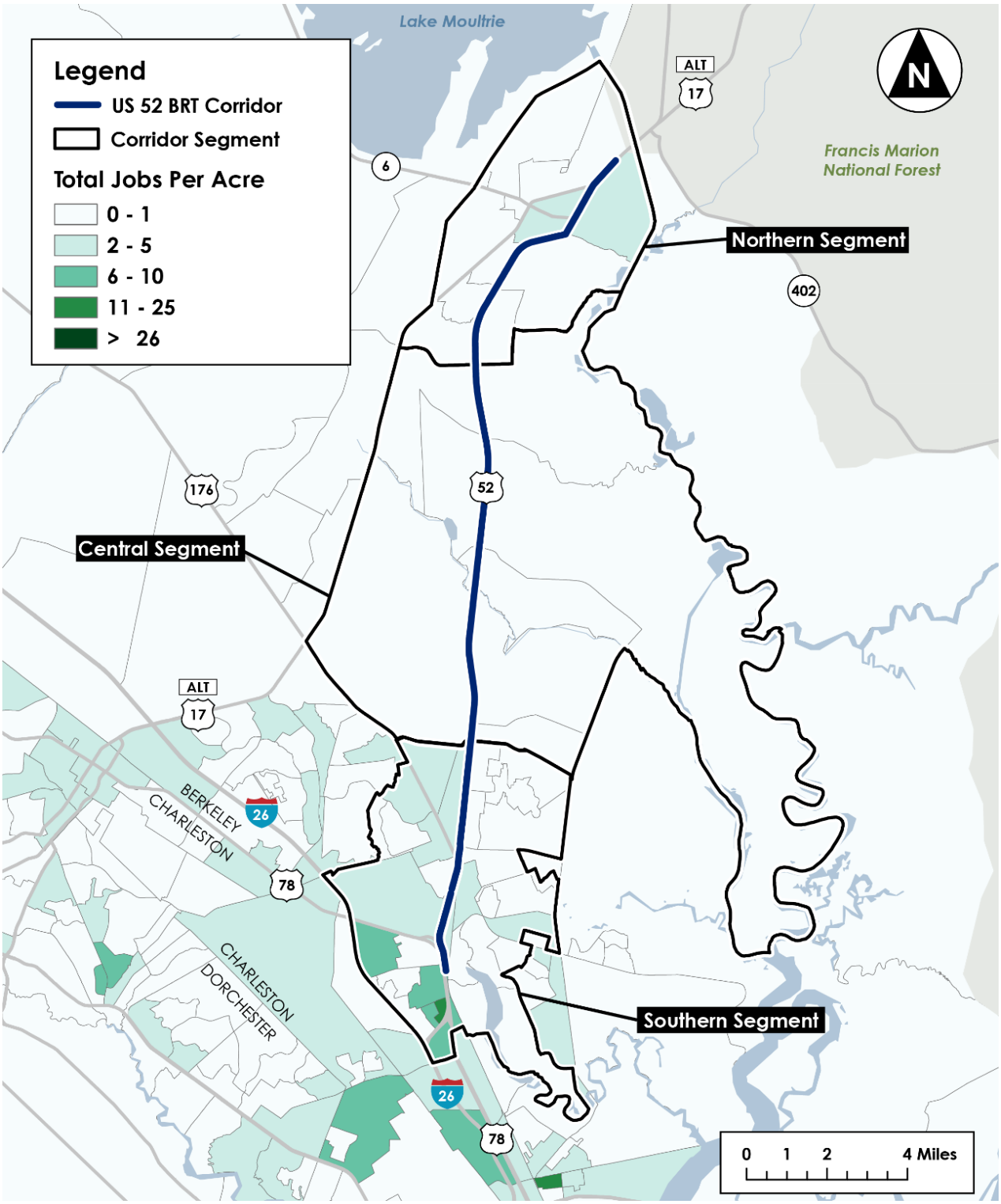
[31] US Census Bureau. American Community Survey 5-Year Estimates. 2021.

Appendix 5: Household Density (2021)[32]



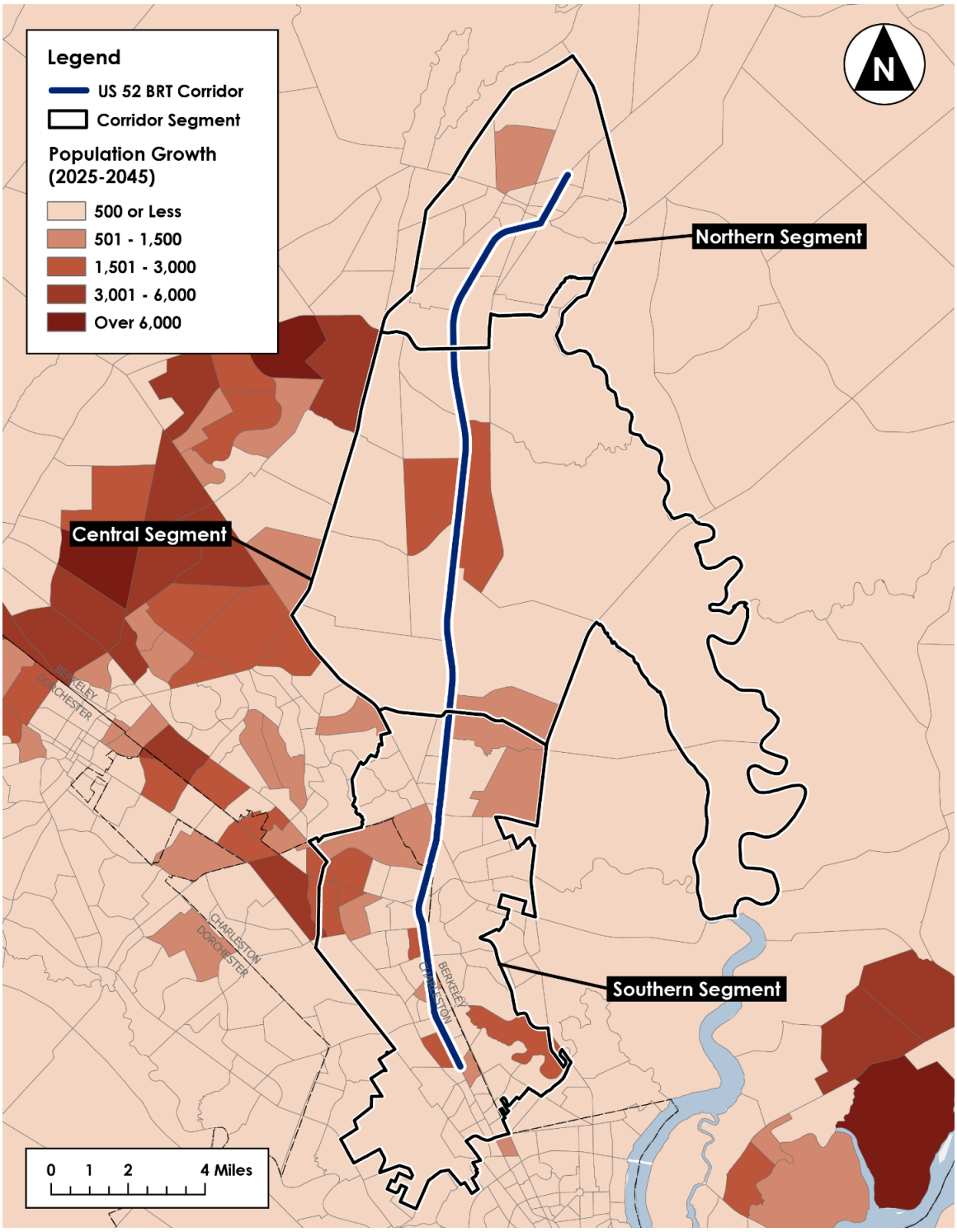
[32] US Census Bureau. American Community Survey 5-Year Estimates. 2021.

Appendix 6: Job Density (2021)[33]



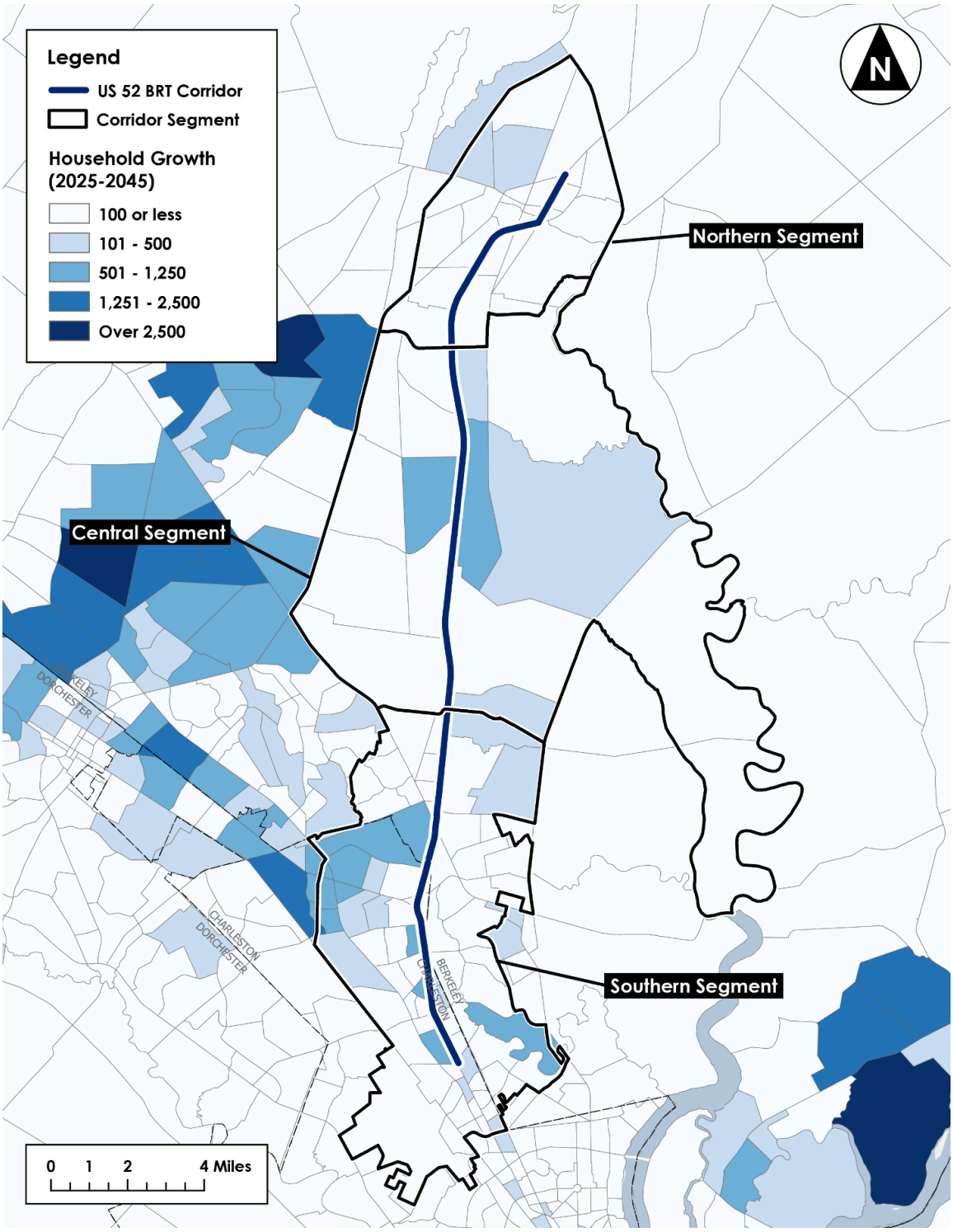
[33] US Census Bureau. American Community Survey 5-Year Estimates. 2021.

Appendix 7:Population Growth (2025 – 2045)[34]



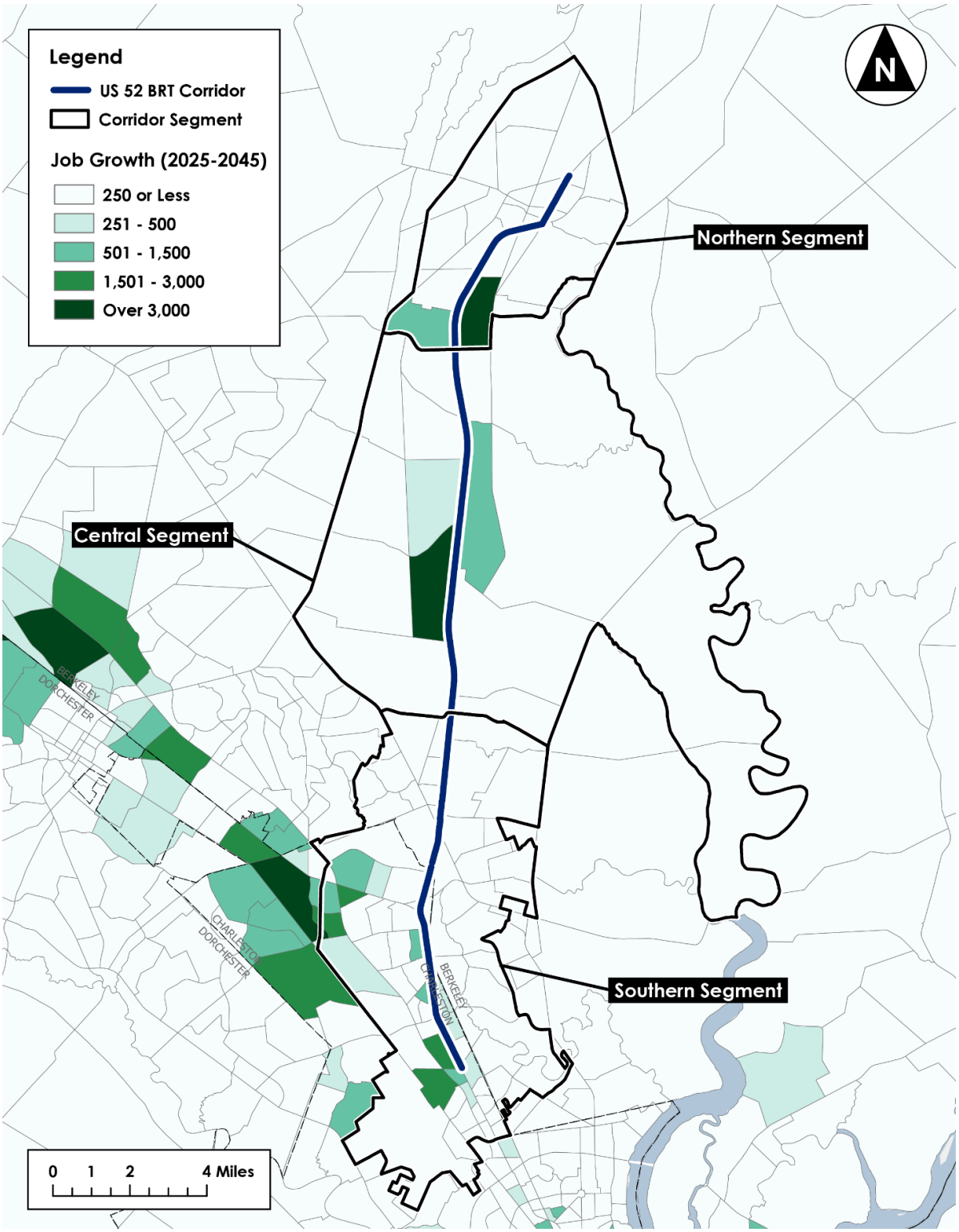
[34] CHATS 2045.

Appendix 8: Household Growth (2025 – 2045) [35]



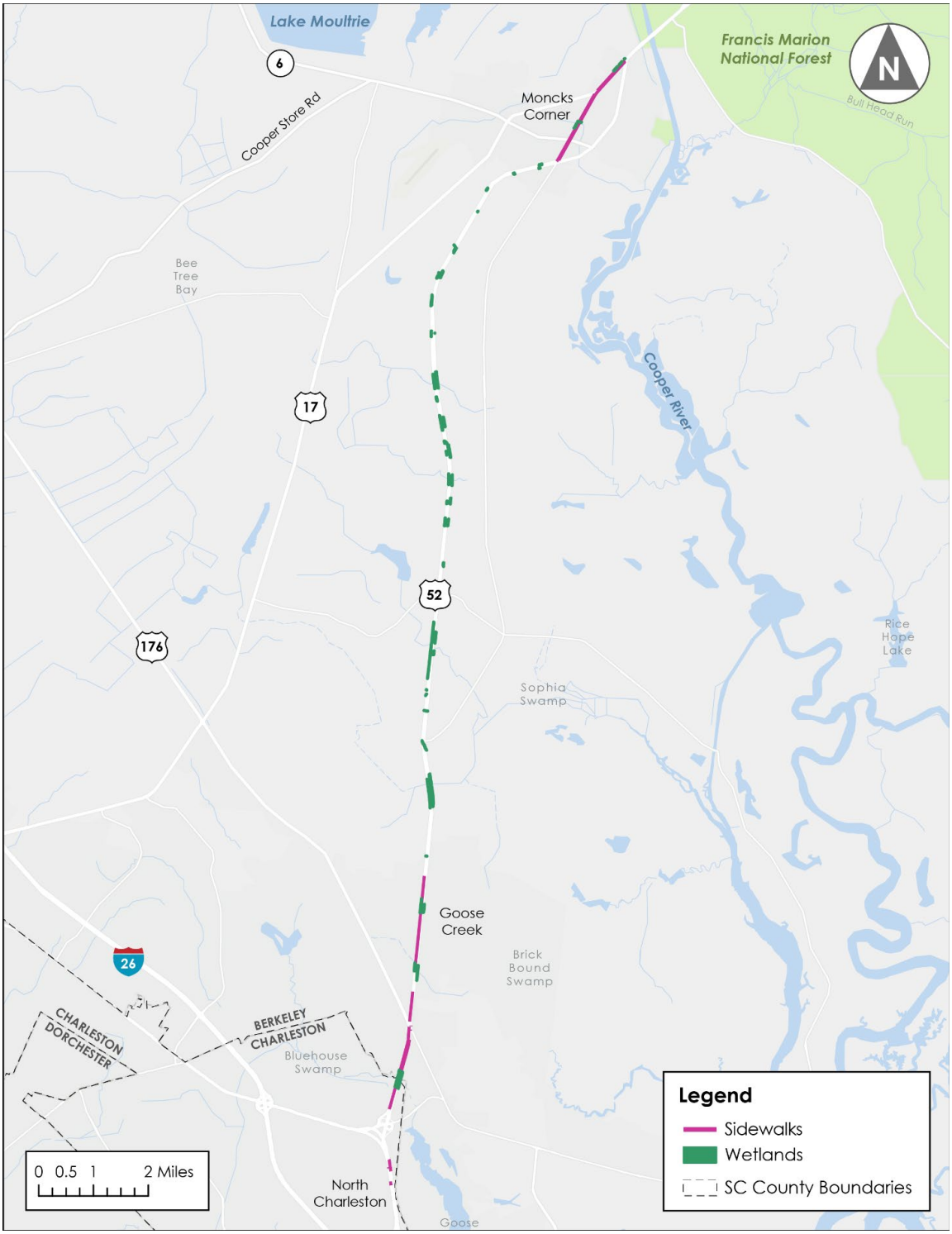
[35] CHATS 2045.

Appendix 9:Job Growth (2025 – 2045) [36]



[36] CHATS 2045.

Appendix 10: ROW Characteristics[37]



[37] US Fish & Wildlife Service. Wetlands Data. May 2024.; BCDCOG. Sidewalk Data. May 2024.; Google Maps. [Sidewalk measurements]. March 2025.