THE

2045 LATS

LONG RANGE TRANSPORTATION PLAN

MAY 2022

2045 LATS
LONG RANGE TRANSPORTATION PLAN

RESOLUTION ADOPTING
THE 2045 LONG RANGE TRANPORTATION PLAN FOR THE
LOWCOUNTRY AREA TRANSPORTATION STUDY

WHEREAS, current federal regulations for metropolitan transportation planning, require that the Lowcountry Area Transportation Study in cooperation with participants in the planning process, develop and update the Long Range Transportation Plan (LRTP) every five years; and

WHEREAS, the Lowcountry Area Transportation Study (LATS) has been designated by the Governor as the Metropolitan Planning Organization (MPO) of the Lowcountry Urbanized Area; and

WHEREAS, the staff of the Lowcountry Council of Governments and the South Carolina Department of Transportation have reviewed the organization and activities of the planning process and found them to be in conformance with the requirements of law and regulations; and

WHEREAS, the locally developed and adopted process for public participation has been followed in the development of the Lowcountry Area Transportation Study 2045 LRTP; and

WHEREAS, the Lowcountry Area Transportation Study, in accordance with federal requirements for a Long Range Transportation Plan, has developed a twenty-plus year plan for federally-funded highway, transit and non-motorized projects for the Lowcountry urbanized area; and

WHEREAS, the Lowcountry Area Transportation Study 2045 LRTP is consistent with all plans, goals and objectives of the Lowcountry Area Transportation Study, and shall be updated at least every five years with revisions to reflect changes in program emphasis and anticipated funding availability; and

NOW, THEREFORE BE IT RESOLVED, that the Lowcountry Area Transportation Study Policy Committee adopts the attached LATS 2045 LRTP on this the 13th, day of May 2022.

CERTIFICATION

I hereby certify that the above is a true and correct copy of a Resolution adopted by the Lowcountry Area Transportation Study at the meeting held on May 13th, 2022.

Lisa Sulka, Chair

Stephanie Rossi, Planning Director

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Acknowledgements

The 2045 Lowcountry Area Transportation Plan Study (LATS) Metropolitan Planning Organization's Long Range Transportation Plan (*2045 LATS LRTP*) represents an essential step in successfully maintaining the region's transportation network by coordinating and prioritizing transportation investments. The LATS Policy and Technical Committees thank the participants whose input was invaluable in create a framework for the transportation system. The *2045 LATS LRTP* is the result of collaborative planning efforts between the cities of Beaufort, Bluffton, Hardeeville, Hilton Head Island, Port Royal, and surrounding areas of both Beaufort and Jasper Counites. The South Carolina Department of Transportation (SCDOT) and Federal Highway Administration (FHWA) provide support throughout the development of the plan. Thank you to the members of the public, local staff, and elected officials who participated in the planning process to guide the development of the *2045 LATS LRTP*.

Photo by Paul Nurnberg

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 1 | Purpose and Process

Introduction

Transportation is a key facet of everyday life and has lasting impacts on an area's built and natural environment. A crucial component to an area's success is to continuously evaluate the community's transportation needs. The 2045 Lowcountry Area Transportation Study (LATS) Metropolitan Planning Organization's Long Range Transportation Plan (LRTP) outlines the strategies for creating a resilient transportation system that accommodates current transportation needs and considers future opportunities to maximize resources.

LATS is the Metropolitan Planning Organization (MPO) that is responsible for facilitating the cooperative planning process in the Lowcountry region. An urbanized area with a population of 50,000 or more is designed as an MPO. LATS is responsible for identifying how to spend federal transportation funds for streets, bicycle and pedestrian facilities, public transportation, and bridges improvements. Using the long range plan, LATS can identify regional opportunities to invest its resources and address critical transportation needs. LATS is housed and administered by the Lowcountry Council of Governments (LCOG).

The *2045 LATS LRTP* is a financially constrained plan. A long range transportation plan not only identifies multimodal transportation projects but identifies projects that can reasonably be implemented through the plan's horizon year of 2045. The transportation projects that are not included in the financially constrained plan are not eligible for federal funding unless additional federal funding becomes available. The plan is responsive to federal and state mandates as well as the desires of local residents.

Background

The Lowcountry Area Transportation Study was established in 2013 as a result of the US Census Bureau designating Bluffton and Hilton Head Island as an urbanized area. As an MPO, LATS is responsible for continuously evaluating transportation planning in the designated urban area. The study area for the *2045 LATS LRTP* includes urban portions of Beaufort County and Jasper County. After each decennial US Census, MPOs are required to evaluate their boundary. With the completion of the 2020 decennial census, the next long range plan may revisit the boundary of LCOG to account for growth.

Federal Planning Factors

Moving Ahead for Progress in the 21st Century Act—or MAP-21—was signed into law in July 2012. MAP-21 placed an emphasis on performance-based planning, and introduced a series of planning factors for consideration in long range planning:

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency
2. Increase the safety of the transportation system for motorized and non-motorized users
3. Increase the security of the transportation system for motorized and non-motorized users
4. Increase the accessibility and mobility of people and for freight
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
7. Promote efficient system management and operation

8. Emphasize the preservation of the existing transportation system

The Fixing America's Surface Transportation (FAST) Act was enacted on December 4, 2015. The FAST Act carried the planning factors established in MAP-21 forward and added two additional planning factors:

9. Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
10. Enhance travel and tourism

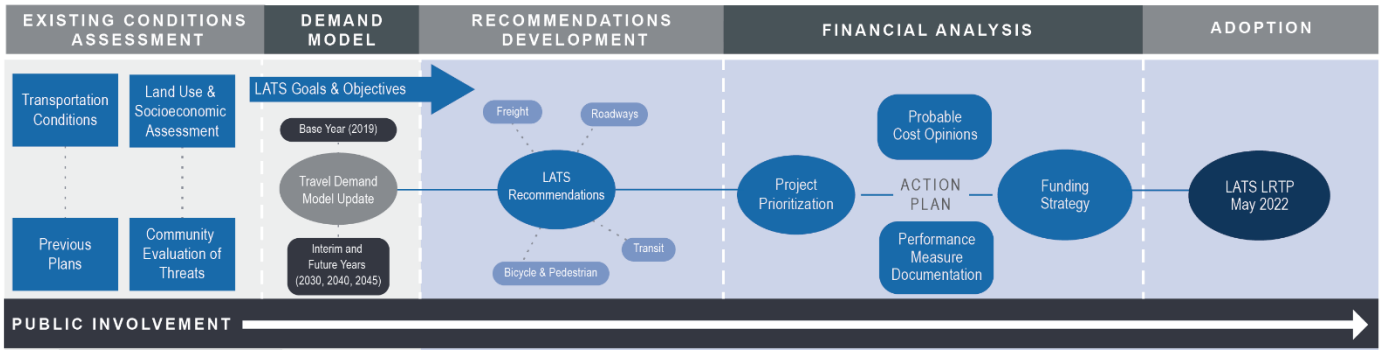
Recently, President Biden signed the Bipartisan Infrastructure Law (BIL, known also as the Infrastructure Investment and Jobs Act, IIJA) on November 15, 2021. This legislation will provide federal transportation funding through the life of this LRTP.

The *2045 LATS LRTP* has carried forward the planning factors set forth in MAP-21 and the FAST Act. These planning factors have been considered in the development of the LRTP's planning goals, as detailed in Chapter 2.

The Planning Process

The *2045 LATS LRTP* is the product of a coordinated, collaborative planning effort to establish the region's transportation vision and identify a group of multimodal projects to fulfil that vision. The planning process requires a collaborative process between stakeholders, municipalities, and LCOG staff to create a plan that reflects the values and needs of the region.

The process started with an assessment of the current transportation network, socioeconomic conditions, and existing planning efforts. A series of planning goals were developed and validated with stakeholders and members of the public in order to guide the development of the long range plan. A variety of multimodal recommendations were developed based on public input and needs identification. The recommendations were prioritized through the horizon year of the plan. A financially constrained plan provides the blueprint for the implementation of transportation projects over the next 25 years. By following this process, the *2045 LATS LRTP* ensures that the programming of transportation dollars will satisfy the interests of the region.



Community Outreach

A successful long range plan is built on a strong foundation of community engagement. Throughout the planning process, LCOG staff and the project team actively engaged the public in a variety of methods. The following sections outline how community engagement was pursued. The details of each outreach activity can be found in the Appendix.

Technical Advisory Committee

The LATS Technical Advisory Committee—or TAC—includes LCOG staff, local officials, and local and state agency representatives. As representatives of specific community needs, the TAC helped establish and inform the existing conditions, refine the plan's goals, and confirmed the direction for recommendations development. The following **Table 1** outlines a summary of the topics discussed at each TAC meeting.

LATS Policy Committee

The LATS Policy Committee is the decision-making body for the long range transportation plan. The Policy Committee consists of both voting and non-voting members. Similar to the Technical Committee, the Policy Committee provided guidance during the development of the plan's goals and

Table 1: Committee Meeting Topics and Schedule

Topics	Committee	Date
Work Plan Public Involvement Previous Planning Efforts Vision and Goals	Technical Committee	July 28, 2021
	Policy Committee	August 6, 2021
Draft Recommendations Prioritization Criteria Financial Assumptions	Technical Committee	February 2,2022
	Policy Committee	February 4, 2022
Financial Plan	Technical Committee	April 13, 2022
Final Plan Review	Technical Committee	May 6, 2022
Final Plan Adoption	Policy Committee	May 13, 2022

Stakeholder Interviews

Information was gathered through small group discussions with city and county staff, local elected officials, bicycle and pedestrian advocates, transit interests, and other special interest groups. A total of five stakeholder interview sessions were held on Tuesday, August 31st and Thursday, September 2nd. These meetings helped identify issues and needs of the current transportation system relative to each organization's interests. Each meeting summary is provided in the Appendix.

Public Workshop

The public workshop for the *2045 LATS LRTP* was held on September 8, 2021. This workshop was conducted both in-person and virtually, with similar content presented in each format. The in-person workshop was held at the Technical College of the Lowcountry. This workshop provided information on the long range transportation plan process, presented demographic and transportation existing conditions, and encourage participants to participate in activities. Each station of the public workshop closely mirrored the online survey to promote consistency during the initial planning efforts. More information about the public workshop can be found in the Appendix.

Online Survey

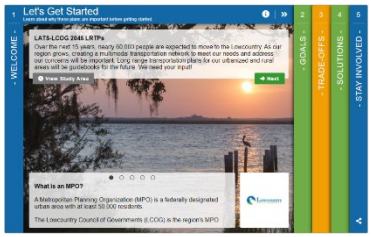
An interactive online survey was available on September 15, 2021 and was open until October 20, 2021. The survey was a joint survey for the Lowcountry Area Transportation Study and the LCOG Rural Area Long Range Transportation Plans. Over 820 participants offered input on community goals, investment priorities, and opportunities to identify multimodal transportation projects.

827	12,218	1,298
Total Responses	**Data Points**	**Written Comments**

The online survey used five interactive screens to educate the public about the long range transportation process and gather input on the plan's development. More information on the online survey can be found in the Appendix.

Screen 1 | Welcome

Provided an overview of the planning process of the LRTP.

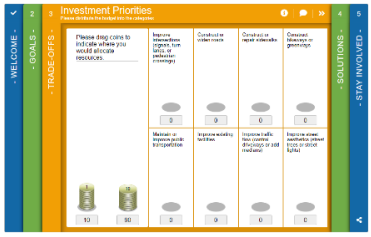


Screen 2 | Plan Goals

Rank the six draft plan goals.

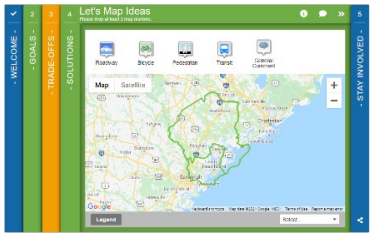
Screen 3 | Tradeoffs

Allocate funds to signify investment priorities.



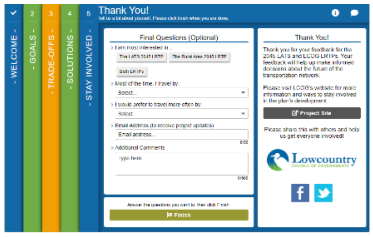
Screen 4 | Solutions

Identify multimodal solutions for vehicles, bicycles, pedestrians, and transit.



Screen 5 | Wrap Up

Answer a few additional questions.



Recommendation Development

Document Review

The summaries below are an inventory of the previous and recently completed planning efforts around the region. The document review is chronologically organized and includes comprehensive plans, corridor studies, bicycle and pedestrian plans, feasibility studies, and transit plans. The findings and relevant recommendations from these plans were evaluated and incorporated into the *2045 LATS LRTP*.

Beaufort County Connects: Bicycle and Pedestrian Plan (2021)

The Beaufort Bicycle and Pedestrian Plan—Beaufort County Connects—recognizes the existing network and growing culture of walking and biking in the county in addition to promoting the safe, equitable, and accessible expansion of active transportation throughout the region. The Beaufort County Connects plan was a regionally collaborative effort that included members from Beaufort County, the City of Beaufort, the Town of Port Royal, the Town of Bluffton, the Town of Hilton Head Island, the City of Hardeeville, Jasper County, and LCOG in addition to local bicycle advocacy groups and enthusiasts: Friends of the Spanish Moss Trail and East Cost Greenway, SC Costal Conservation League, Bike Walk Hilton Head Island, Lowcountry Bicycles, Sun City Cycles, and others. The plan outlines the routes, policies, programs, and funding sources to achieve the vision for the county.

- Formally adopt a Complete Streets policy that requires all streets to be planned, designed, operated, and maintained to enable safe access for all users, including pedestrians, bicyclists, and transit riders of all ages and abilities in partnering jurisdictions.
- Provide a bicycle- and walk-friendly community for everyone.
- Create safe and comfortable pedestrian and bicycle facilities.
- Develop an education program similar to Charleston's Bike Right, Drive Right Campaign to educate pedestrians, bicyclists, and motorists on safe and respectful sharing of the roads.
- Create a strong multimodal culture that welcomes and celebrates walking and biking.
- Plan for walking and bicycling as safe and viable transportation options.

City of Beaufort Comprehensive Plan (2021)

The City of Beaufort's Comprehensive Plan was previously updated in 2009. The new Comprehensive Plan guides decisions relevant to planning, zoning, and development. In the plan, the city acknowledges its desire to become a multimodal community. The Comprehensive Plan identifies strategic land use decisions to complement its transportation vision.

- Ensure street improvement projects give equal consideration to the needs of all users in roadway design including transit, automobiles, bicyclists, and pedestrians.
- Enact land use policies and Beaufort Code changes with the goal of reducing vehicle miles traveled (VMT).
- Support street design that moves traffic efficiently and safety and through our community.
- Recognize the Spanish Moss Trail as the backbone of our mobility infrastructure for non-motorized travel.
- Develop a public transportation system within the city in partnership with Palmetto Breeze or a private company.

Beaufort County Comprehensive Plan (2021)

The "Envision Beaufort County" Comprehensive Plan identifies a group strategy for the next 20 years. The plan creates a more direct link between planning for prosperity, environmental and economic resilience, equitable community services and infrastructure, and preservation of the unique place that is the Lowcountry.

- Adopt a Complete Streets policy and develop corridor master plan to enable safe access for all users including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.
- Maintain and enhance a safe, efficient, and regional road network.
- Preserve and enhance network efficiency by adopting, applying, and enforcing policies to manage access and reduce VMT.
- Promote context sensitive transportation improvements that enhance the local environment.
- Prioritize bicycling and walking to connect residents with jobs, schools, and other destinations; provide safe facilities that benefit persons of all economic statuses, ages, and abilities.
- Support the development of bus rapid transit features in high demand corridors, such as off-board fare collection.
- Create platform level boarding, dedicated lanes, and stops sheltered for public transportation.
- Upgrade the Hilton Head Island Airport and the Beaufort Executive Airport.

Port Royal 2030 Comprehensive Plan (2021)

The Port Royal Comprehensive Plan is a planning documented to provide aspiration and strategic continuity across the town. The Comprehensive Plan supports a shared community vision and is reflective of a community-driven process. The vision of Port Royal hinges on two key ideas: balance and harmony with the natural environment and environmental responsibility. An important facet of the plan is transportation that supports community life. The following recommendations support that visions:

- Develop a comprehensive corridor master plan with design standards and regulations to improve Ribaut Road to a more safe, multi-modal, human scaled complete street.
- Create a town-wide mobility plan that defines the location of connections, bike and pedestrian infrastructure, alternative vehicles, parking, crossings, transit stops.
- Analyze existing streets and current street cross sections to determine necessary revisions to make them into complete streets.
- Analyze how Port Royal can best leverage connections to the Spanish Moss Trail and expand its influence and connectivity across town.
- Create bicycle and greenway connectivity to county and regional systems.
- Create consistent gateway landscapes, signage, and urban design plans for the entrances into town.
- Continue to update street tree requirements to increase the quantity and quality of street trees town-wide on all street types.

City of Hardeeville Transportation Study: Argent Boulevard Corridor (2021)

This study examines the morning and afternoon peak hour traffic conditions at the following intersections for 2021 base conditions, 2030 build out conditions, and 2040 build out conditions: US Highway 278 and Argent Boulevard; Argent Boulevard and New River Parkway; Argent Boulevard and Sergeant William Jasper Boulevard; Argent Boulevard and Jasper Station Road/Short Cut Road; SC 170 and Argent Boulevard.

- Here will be significant growth along the corridor over the next 20 years and roadway improvements will be needed.
- Shoulder improvements are needed on for safety on New River Parkway and Sergeant William Jasper Boulevard
- It is recommended to widen Argent to 4 lanes by 2040.
- Signalization of each intersection was evaluated and warrant noted.
- The City should discuss intersection sight distance with SCDOT and get their concurrence on allowing sight triangles to be cleared and maintained at the following intersections:
    - US Highway 278 and Argent Boulevard
    - Argent Boulevard and New River Parkway
    - Argent Boulevard and Sergeant William Jasper Boulevard
    - Argent Boulevard and Jasper Station Road/Short Cut Road
    - SC 170 and Argent Boulevard

Medical Center Drive and US 278: Improvements City of Hardeeville (2021)

Medical Drive intersection with US 278.

- Detailed designed level plans for Medical Center Drive at US 278.

2021 – 2027 Transportation Improvement Program – Lowcountry Area Transportation Study MPO (2020)

Adopted in August 2020, the Transportation Improvement Program (TIP) identifies the projects and programs of regional significance for the Lowcountry Area Transportation Study (LATS) MPO that have obligated federal funding. The TIP provides details on the structure of the MPO, supporting legislation, planned efforts of the MPO, the amendment process for the TIP, and the funding sources used in the development of the TIP.

- Widen US 17 (Georgia State Line to SC 315).
- Fund and program bridge improvements in Beaufort and County.
- Fund and program safety improvements in Beaufort and Jasper County.
- Fund and program public transportation improvements in Beaufort and Jasper County.
- Fund and program environmental sustainability projects in Beaufort and Jasper County.
- Fund and program pavement and reconstruction throughout the Lowcountry.

2021 – 2027 Rural Transportation Improvement Program – Lowcountry Council of Governments (2020)

Adopted in September 2020, the Rural Transportation Improvement Program (RTIP) is a multi-year program of proposed projects for federal, state, and local funding sources within the Lowcountry region. The RTIP must be financially constrained, meaning the amount of funding programed cannot exceed the amount of estimated funding. Typically, the RTIP is updated every four years.

- Widen US 17 (Georgia State Line to SC 315).
- Fund and program bridge improvements in Beaufort, Colleton, and Hampton County.
- Fund and program safety improvements in Beaufort, Colleton, and Jasper County.
- Fund and program public transportation improvements in Colleton, Hampton, and Jasper County.
- Fund and program pavement and reconstruction throughout the Lowcountry.

The People and the Economy (2020)

The report offers a snapshot of socioeconomic conditions unique to the Lowcountry region, with key indicators relevant to population, housing, education, economy, public health, and crime and safety. The People and the Economy also includes a special section focusing on the COVID-19 pandemic and other emerging issues in 2020.

- Provide a snapshot of regional and local demographic conditions and trends that help identify the need for transit services.

Town of Hilton Head Island Comprehensive Plan (2020)

The Town's Comprehensive Plan provides a baseline of existing conditions and outlines goals, strategies, and tactics for the community in the next 20 years. It focuses on economic development, a resilient built environment, and equitable social resources and investments.

- Maintain and improve the road network to provide safe and convenient access and connectivity to all areas of the Island and the corridor to the mainland for residents, workers, and visitors.
- Improve and expand transportation infrastructure to connect the Island's multi-modal system to the rest of the region.
- Consider diverse transportation options to meet current and future needs including public transit both marine-based and electric-based, multi-use pathway system, and infrastructure that supports these options.
- Right size the airport's capabilities and operations.
- Continue to educate and engage the public regarding transportation safety issues.

Town of Hilton Head Island Parks and Recreation Master Plan (2020)

Parks are an essential community resource. The Town of Hilton Head Island's parks highlight the island's culture and beautiful natural environment. The Parks and Recreation Master Plan provides recommendations for park and recreation facilities including programming, maintenance, staffing, and budget logistics.

- Search for opportunities to carry users away from vehicular traffic in the development of new pathways.
- Consider strategic widening of pathways in highly traveled sections to accommodate user groups and high volumes of non-motorized traffic.

- Look for locations to extend pathways to make connections from residential areas and vacation areas to major destinations, where feasible.
- Consider developing trailheads to support the network. Two potential locations include the northwest corner of Squire Pope and U.S. 278, and near Shelter Cove Community Park to support the Chaplin Linear Park.
- Consider delineating a beach biking route between Burkes Beach and Islander's Beach Park.

Whyte-Hardee Boulevard Master Plan: City of Hardeeville (2020)

Plan is to establish a strategy for the long-term revitalization of Whyte-Hardee Boulevard with a particular focus on creating a true downtown for the City of Hardeeville where Whyte-Hardee meets Main Street.

- Plan identifies three districts for the corridor: Gateway (visitor) District, Business Park District and the Downtown Hardeeville District.
- The plan identifies the implementation by short, mid and long term along with potential funding sources.

Palmetto Breeze Public Transportation Planning for Hilton Head Island (2020)

The plan focuses on a Transit Implementation Plan for the new transit services.

- Implement recommended service options and cost estimates.
- Implement marketing and engagement strategies - reaching the right audience, use of community and stakeholder resources, brand and promotional materials, promotion of trying/taking transit, and a long shelf-life for printed materials.

Beaufort County Rural and Critical Lands Preservation Program (2020)

In 2020, the program protected three properties, totaling 349 acres, and secured forested parks, farmland, river frontage, and a historic battlefield.

- Prioritize and assist with projects relevant to the "Greenprint" for each district.
- Streamline application process to improve efficiencies for landowners and the county to act quickly and urgently to meet program goals.
- Build support from the program and its investment to date.
- Increase community partnerships and invest regional land conservation to leverage all possible dollars and maximize partnerships.

Port Royal Transportation Study (2020)

With the pressures of new growth and development, the Town of Port Royal commissioned the Port Royal Transportation Study to consider transportation mobility, access, safety, and livability within and around the town. The study analyzes existing and future conditions to craft recommendations to address a holistic transportation network to provide transportation choices for people of all ages and abilities.

- Design streets to be safe for all mode users, especially active transportation users.
- Utilize traffic calming measures to create safer communities, particularly residential streets.
- Continue to expand the trail network.

City of Hardeeville Comprehensive Plan (2019)

The plan reflects the city's desire to develop a reputation as a growing, vibrant town with a desirable quality of life.

- Preserve, maintain, and enhance the existing transportation system – Exit 3, Palmetto Breeze, rail crossing, etc.
- Enhance the safety of the transportation system – US 278 at Argent Boulevard, US 17 at SC 315, Exit 8 master plan, rail crossing, etc.
- Improve the transportation network – traffic signal systems, LRTP project implementation efforts, shuttles along US 278.
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
- Increase collaboration between City staff, residents, and other organizations on transportation needs.
- Increase collaboration between City, SCDOT, SOLOCO, Beaufort County, Jasper County, LATS, and Palmetto Breeze on future project planning and implementation.

SC 170 Corridor Access Management Study (2019)

The study develops policies for a safe and efficient roadway system for all users with strategies necessary to improve the flow of people and freight on a 4.4-mile segment of SC 170 from Okatie Center Boulevard South to SC 462 (Lowcountry Drive).

- Create a system-wide solution, including a 4- to 6-lane "superstreet," to help reduce conflict intersections, improve signal coordination, and reduce delays with shorter cycles.
- Plan includes specific improvements for near/mid/long term along with cost estimates.
- Beaufort County is funding near term project recommendations.

Jasper County Comprehensive Plan (2018)

The Jasper County Comprehensive Plan—Jasper's Journey—is a long range planning document that streamlines the vision for the community and provides the strategies to achieve the community vision. Despite the ever-changing demographic characteristics, Jasper County possesses a rural character with a beautiful natural environment. The Comprehensive Plan includes an inventory of existing conditions, statement of needs and goals, and implementation strategies to address the nine elements of the community: population, economic development, natural resources, cultural resources, community facilities, housing, land use, transportation, and priority investments.

- Expand transportation infrastructure, including expansion of runways to accommodate jets and connecting existing rail lines to more transportation opportunities.
- Establish the Jasper port.
- Preserve, maintain, and enhance the existing transportation system and enhance connections between modes of transportation.
- Improve the operational efficiency of the transportation network.
- Support the economic vitality of the region by improving access to freight facilities and prioritizing transportation programs that retain existing businesses and attract new businesses.

- Protect and enhance the environment by minimizing direct and indirect environment impacts of transportation system.
- Enhance the safety of the transportation system.

Palmetto Breeze Small Urban Area Transit Development Plan (2018)

The plan helps to determine the most feasible new public transportation services in the Hilton Head Small Urbanized Area linking residents and visitors to the area's major employers, shopping areas, health care services, recreational and tourist attractions, and educational facilities.

- Propose service options grouping in four categories: Trolley service, Connector route service, Flex route service, and Inter-state service.
- Allow for vehicles to operate complementary paratransit service for urban routes.
- Continue a relationship with LRTA and LCOG in the form of an on-call agreement to assist with project implementation and planning activities.

Hardeeville Citywide Bicycle & Pedestrian Trails Master Plan (2017)

The plan envisions a connected, safe network of on and off-street trails for cyclist and pedestrian of all ages and abilities throughout the city. The trail network will complement ongoing and future community and economic development efforts and will strengthen physical and economic connection between the city's historic downtown, parks, cultural and educational resources and residential district and neighborhood. Additionally, the Hardeeville trail network will connect to the other regional and national trail efforts such as those in Bluffton, Hilton Head Island and the East Coast Greenway.

- Connect existing residents via shared use pathway.
- Cultivate a stronger sense of community
- Focus on Safety.
- Ensure implementation.
- Emphasis on East Coast Greenway, Sergeant Jasper trail and Sand Shark Trail.

Beaufort Joint Land Use Study: SLR and Infrastructure (2017)

The study examines the effects of SLR on the built and green infrastructure by documenting the vulnerability of infrastructure within the greater Northern Beaufort area to potential increased sea levels in the future that also supports the MCAS Beaufort and MCRD Parris Island bases.

- Incorporate housing/structure information to improve the ability to assess infrastructure at a localized level and to provide information to the towns and citizens.
- Incorporate natural or green infrastructure to respond to the changes in the coastal environments.
- Improve information (tides, GIS databases) to better assess the potential infrastructure at risk and the associated costs involved.
- Improve bridge information in case they are affected by increases in sea level.

2040 LATS Long Range Transportation Plan (2015)

The 2040 Long Range Transportation Plan (LRTP) for the Lowcountry urbanized area was completed in December 2015. In 2012, the Census Bureau designated the Bluffton-Hilton Head Island area an urbanized area with a population exceeding 50,000 people. As a result, the Lowcountry Area Transportation Study (LATS) was established so the MPO could coordinate the transportation planning process for Beaufort and Jasper Counties. The 2040 LRTP aimed to identify the current and future transportation needs of the region and provide the vision for the next twenty-five years.

- Assesses existing conditions and future projects of the Lowcountry region
- Proposes multimodal recommendations and provides programmatic policy recommendations to further supplement proposed improvements
- Evaluates potential funding sources and include action plan for project implementation

MCAS Beaufort JLUS (2015)

The study helps military communities collaborate with military installations on land use issues. The result provides a mutual benefit to both groups by helping to protect the mission of the installation and by ensuring that the installation's impacts on the surrounding communities are as minimal as possible.

- Continue policy and technical input, as well as extensive citizen participation.
- Monitor off-base impacts and to evaluate the need to update the Joint Land Use Study.
- Address land use planning and environmental resources to integrate "military planning" with the community's overarching planning efforts.
- Establish military-local government coordination to fulfill the requirements of the state's Federal Defense Facilities Utilization Integrity Protection Act.
- Amend existing overlay boundaries to reflect the impacts of the F-35B, and educate and enforce existing real estate disclosure.
- Implement the Transferable Development Rights program.

MCRD Parris Island JLUS (2015)

The study helps military communities collaborate with military installations on land use issues. The result provides a mutual benefit to both groups by helping to protect the mission of the installation and by ensuring that the installation's impacts on the surrounding communities are as minimal as possible.

- Use community-wide coordination to reflect policy level, technical level, and citizen level input. Engage LCOG to help with the coordination efforts on a regional scale as needed.
- Increase communication between the installation and the surrounding communities to enhance relationship of mutual respect and sensitivity between them.
- Address land use planning and environment resources to ensure that they are compatible with the mission at MCRD Parris Island.
- Establish military-local government coordination fulfill the requirements of the state's Federal Defense Facilities Utilization Integrity Protection Act.

Buck Island Neighborhood Plan – Bluffton (2009)

The plan serves as a long-term, comprehensive policy guide for the development of the Buck Island Simmonsville (BIS) neighborhood and demonstrates the need for community development.

- Create better street signage for roads.
- Provide streetscaped entry ways into the BIS Neighborhood.
- Enforce maintenance standards for private roads to ensure EMS efficient access and proper stormwater management.
- Monitor traffic changes resulting from school, traffic calming, and other road improvements.
- Ensure interconnectivity by extending Box Elder between Hidden Lakes and Red Cedar Elementary.
- Determine a pathway phasing plan in conjunction with sewer and school project.
- Establish an annual maintenance budget for pathways.
- Install a roundabout or signal at Buck Island Rd and May River Rd intersection and Buck Island Rd and Simmonsville Rd intersection.
- Adopt an interconnectivity ordinance to address pathway easement acquisition and vehicular connections.
- Restrict truck traffic on Buck Island and Simmonsville.

Lowcountry Long Range Regional Transportation Plan (2007)

The Lowcountry Long Range Transportation Plan is a comprehensive planning document for Beaufort, Colleton, Hampton, and Jasper counties in the Lowcountry region of South Carolina. The LRTP sets the vision and goals for transportation in the region for the next twenty-five years. The plan uses the anticipated funding to financially constrain the recommendations of the LRTP.

- Improve and expand the existing transportation system to better accommodate non-motorized traffic.
- Include freight transportation planning as an integral part of all transportation planning in the Lowcountry.
- Improve bicycle and pedestrian system maintenance to ensure safety to users.
- Provide services for as many segments of the Lowcountry population as possible.
- Facilitate the development of public-private partnerships in the transit service delivery.
- Adopted level-of-service (LOS) standard for state roadways shall be “C” based on SCDOT adopted capacities.

Document Overview

The *2045 LATS LRTP* is divided into the following chapters.

Chapter 1 ***Purpose and Process***

Provides an overview of the long range transportation development process

Chapter 2 ***Plan Goals***

Describes the six goals that provided direction for the LRTP

Chapter 3 ***Social and Environmental Resource***

Examines the social, demographic, and environmental conditions to be referenced during the development process of multimodal recommendations

Chapter 4 ***Roadway***

Identifies the existing and projected roadway conditions and proposes recommendations

Chapter 5 ***Safety and Security***

Focuses on critical infrastructure and outlines the existing safety concerns across the network

Chapter 6 ***Bicycle and Pedestrian***

Evaluates the existing bicycle and pedestrian network and outlines the various types of facilities to be considered in the study area

Chapter 7 ***Public Transportation***

Inventories the existing public transportation system and leverages

Chapter 8 ***Freight and Aviation***

Reviews relevant data and inventories existing facilities to address intermodal connectivity gaps

Chapter 9 ***Financial Plan***

Evaluates the potential funding priorities and describes the implementation methods for recommendations

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 2 | Plan Goals

Introduction

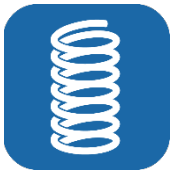
The first step in developing a long range transportation plan is to establish a set of goals to provide direction for the plan. The *2045 LATS LRTP*'s guiding statements reflect the community's vision for the transportation system.

Goals

The goals were developed to address the regional transportation needs and align with the federal planning factors. The goals are not mutually exclusive of each other and often overlap with one another. The combined impact of each project on the plan's goals must prove to be significantly beneficial before it is incorporated into the long range transportation plan. The *2045 LATS LRTP* goals are listed below.

Access and Mobility

Promote an efficient, interconnected, multimodal, and accessible transportation network for people, goods, and the delivery of services.



Resiliency

Encourage improvements to the transportation network that prevent interruptions, endure damages, and quickly recover from disturbances.

Culture and Environment

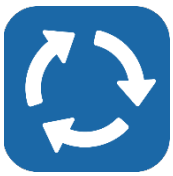
Coordinate decisions for transportation and land use in ways that protect the region's treasured natural resources, promote the Lowcountry quality of life, and provide predictability for future growth and development.

Safety and Security

Improve safety for all users as they move around the region, protect the region's infrastructure from threats, and provide for efficient emergency evacuation.

Economic Vitality

Encourage economic development through targeted transportation investments that enable competitiveness, productivity, and efficiency.

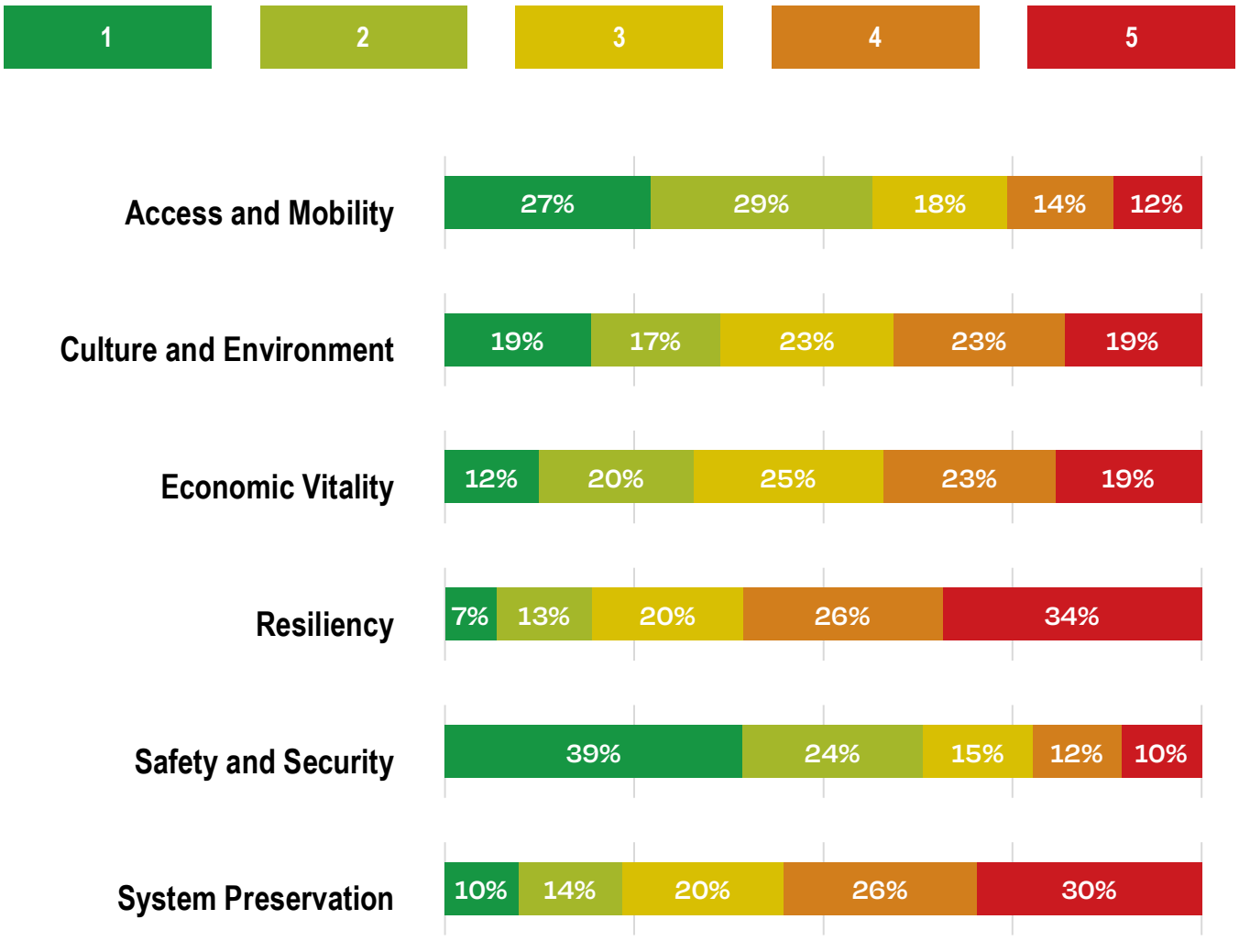


System Preservation

Support and strengthen the current transportation network in ways that extend the functional life of transportation facilities, embrace current and emerging technologies, and make travel more efficient.

Online Outreach

A critical first step of engagement and outreach was to verify the goals of the long range transportation plan with the public. Survey participants were asked to rank their top goal for the *2045 LATS LRTP*. While all of the goals are individually and collectively important, understanding the public priorities is an essential part of developing recommendations and identifying programmatic solutions. The summary below shows the percentage that each goal was ranked one (top priority) through five (lower priority).



Federal Planning Factors

The LRTP goals consider the recent planning efforts and emerging transportation needs in the region. Since the LRTP is a federally-required plan, it is also important to reflect the linkage between these regional considerations and federal planning priorities. The table below shows how the goals address the federal planning factors established in the Fixing America's Surface Transportation (FAST) Act. These goals also address federal performance measurement areas.

Table 2: 2045 LATS LRTP and Federal Planning Factors

	2045 LATS LRTP Goals					
Federal Planning Factors	Access and Mobility	Culture and Environment	Economic Vitality	Resiliency	Safety and Security	System Preservation
Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	✓		✓			
Increase the safety of the transportation system for motorized and non-motorized users					✓	
Increase the security of the transportation system for motorized and non-motorized users				✓	✓	
Increase the accessibility and mobility of people and for freight	✓	✓	✓			
Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation		✓	✓			
Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight	✓	✓				
Promote efficient system management and operation			✓		✓	✓
Emphasize the preservation of the existing transportation system				✓		✓
Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation				✓		✓
Enhance travel and tourism	✓	✓	✓			

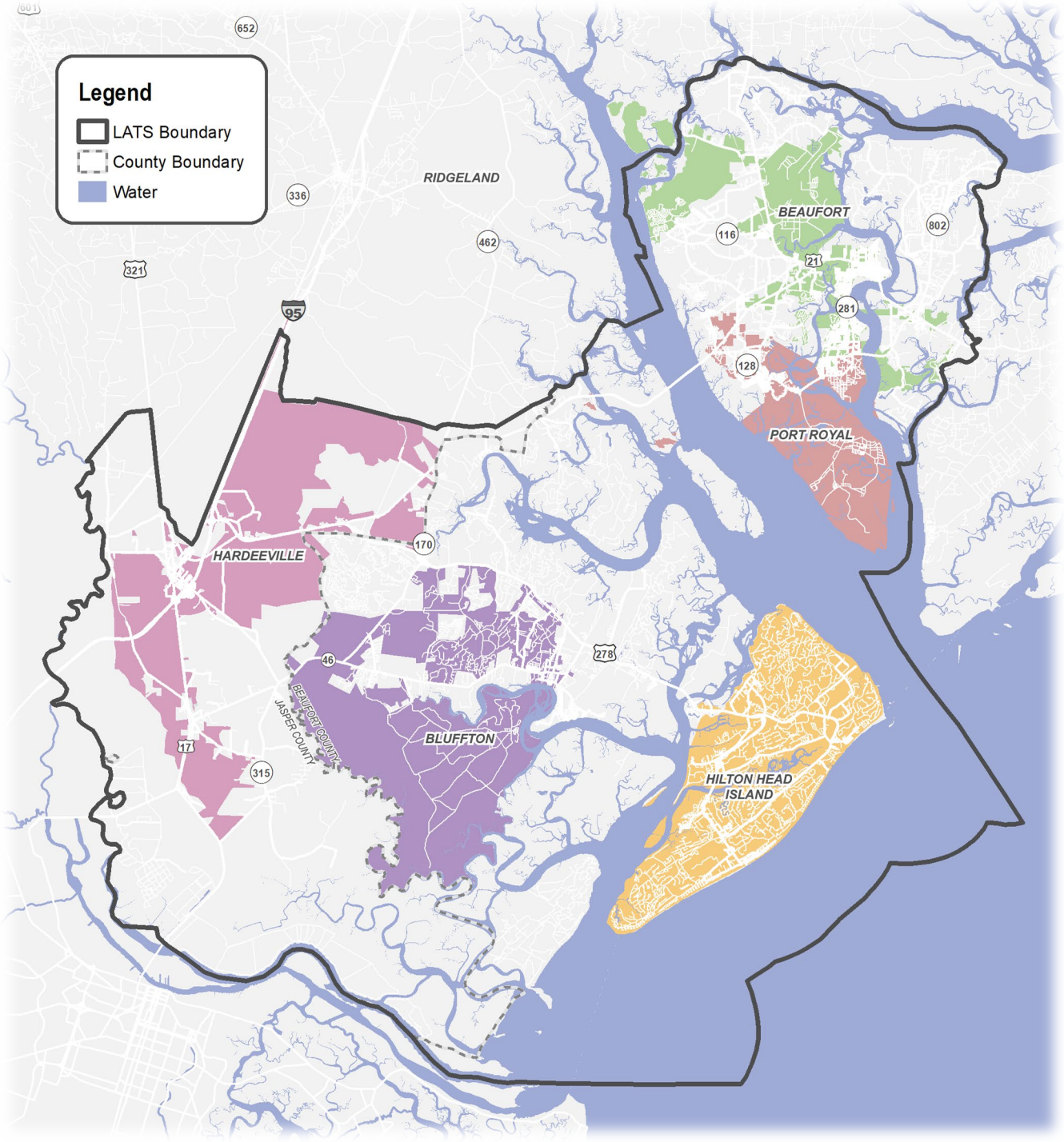
2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 3 | Social & Environmental Resources

Introduction

The *2045 LATS LRTP* process must consider the area's natural resources as well as the social and cultural elements unique to Beaufort, Bluffton, Hardeeville, Hilton Head Island, Port Royal, and the surrounding areas of Beaufort and Jasper Counties. Screening environmental and social resources as part of the transportation planning process is more than just good practice—it is a federal requirement. The screening process helps identify sensitive resources and attempts to mitigate adverse impacts that could result from construction. Identifying potential impacts also helps balance the competing interests like improving mobility and preserving a community's important natural and cultural features. The earlier these features are identified, the more likely sustainable solutions can minimize or avoid impacts and reduce unnecessary delays and expenses. This chapter of the *2045 LATS LRTP* documents environmental and social features. When overlaid with proposed transportation projects, this information provides a frame of reference to help assess the relative impacts of these projects on the community.

Figure 1: LATS Study Area



Population Characteristics

Population Density

The Metropolitan Planning Organization (MPO) for the Lowcountry region, known as the Lowcountry Area Transportation Study (LATS), lies in the southern portion of the Lowcountry region with a total area of approximately 506.5 square miles, reflecting 18% of the Lowcountry region. It is bordered by the rural portion of Jasper and Beaufort Counties as well as Georgia's Chatham County.

Table 1 provides information on total population and population density of counties, cities, and towns within the LATS Metropolitan Planning Area (MPA), as well as the Lowcountry region and South Carolina.

The population of the LATS area is estimated to be around 183,129, or roughly 67% of the Lowcountry region's population and 4% of the state's population.

Of the municipalities that fall within the LATS area, Hilton Head Island is by far the highest populated at 40,007. **Figure 2** depicts the population concentrations of the LATS MPA by block group.

The average population density in the LATS MPA is 362 people per square mile, compared to the Lowcountry region's average of 101 per square mile and the state's average of 171 people per square mile.

The LATS area is densest in portions of Bluffton, Hilton Head Island, northeastern Port Royal, and the City of Beaufort. Large residential developments located within these areas include the Hidden Cypress Golf Course; Sun City; Bluffton Park; the Country Club of Hilton Head; Mossy Oaks; and Laurel Bay, a military housing complex. Notably, the total population is based on ACS 5-Year Estimates which may be different from the total population from the Population Estimates Program. **Figure 3** shows the population density in the LATS MPA by block groups.

Table 1: Total Population and Population Density

	Total Population	Population Density *(Per Square Mile)*
Urban Beaufort County	**170,093**	**521**
City of Beaufort	13,404	479
Town of Bluffton	20,799	404
Hilton Head Island	40,007	966
Town of Port Royal	12,770	672
Urban Jasper County	**13,036**	**72**
City of Hardeeville	6,064	109
LATS	**183,129**	**362**
Lowcountry[1]	271,901	101
South Carolina	5,148,714	171

Source: U.S. Census Bureau, 2019 ACS 5-Year Estimates, Total Population Table; TIGER/Line Shapefiles, Land Area

Note:

1. The Lowcountry is inclusive of Hampton, Colleton, Jasper, and Beaufort County.

Figure 2: Total Population (2019) by Census Block Group

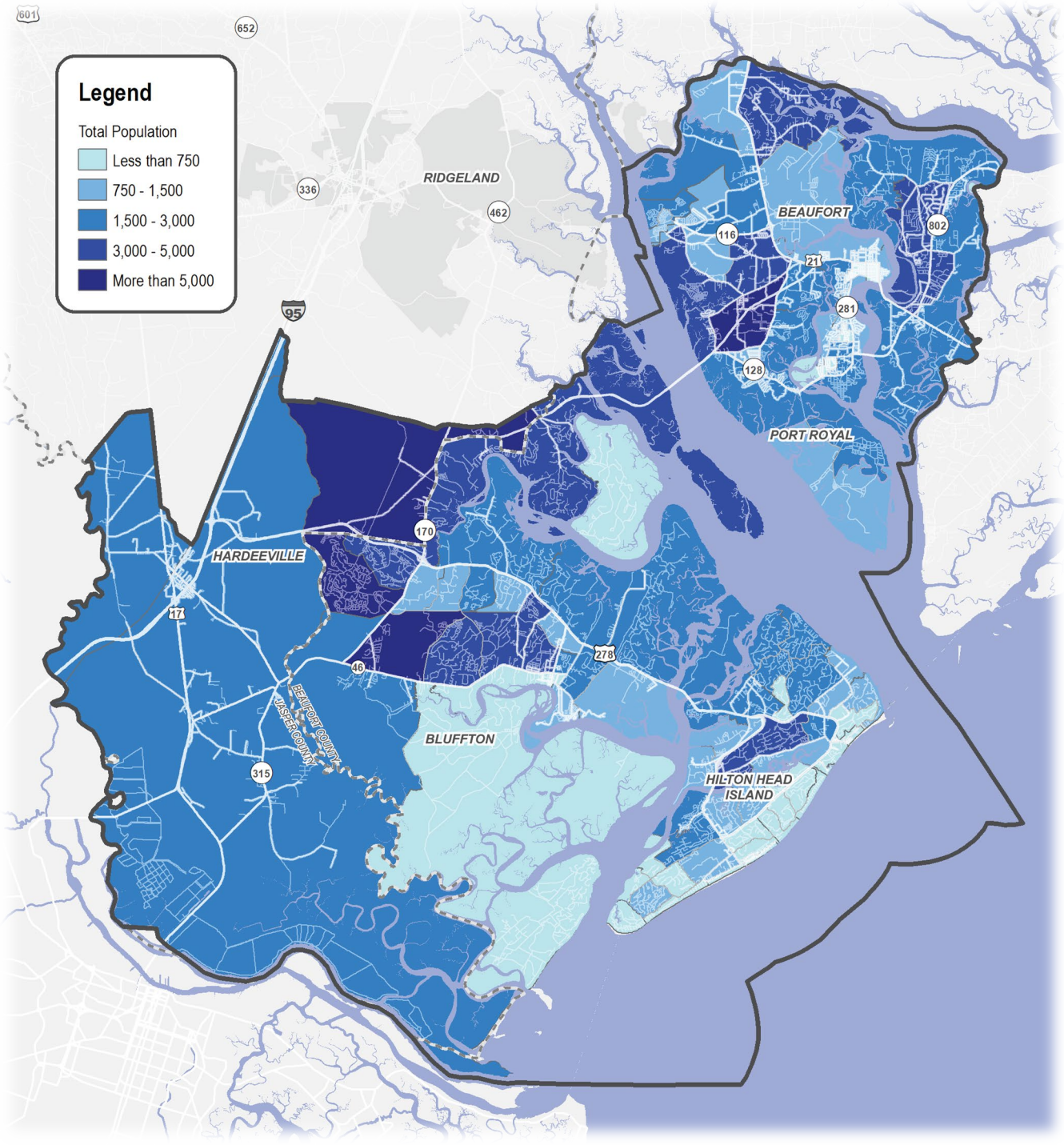
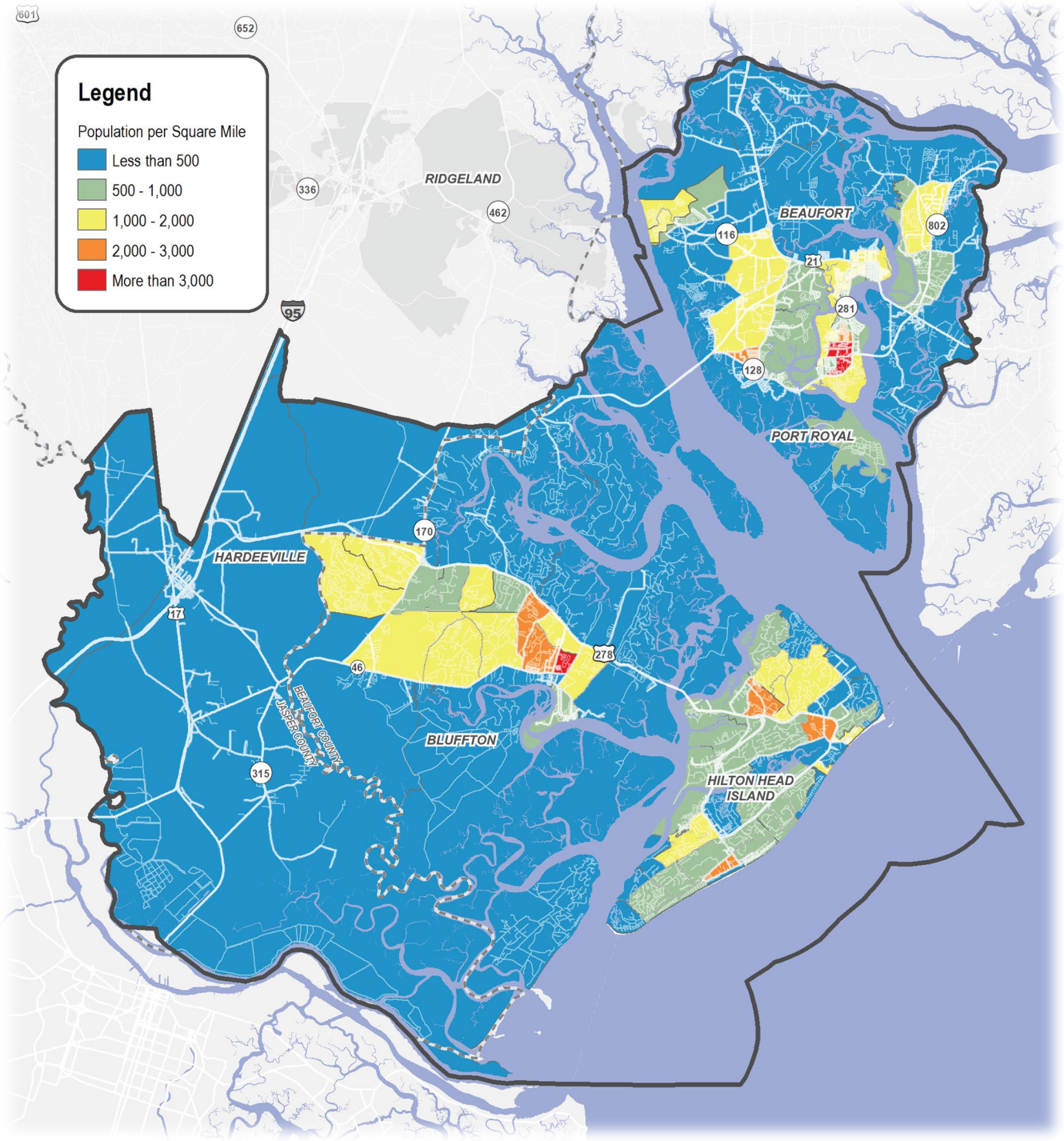


Figure 3: Population Density (2019) by Census Block Group



Population Projections

From 2000 to 2010, the state population grew by over 600,000 people, reflecting a 15.2% growth. In contrast, the population grew in Beaufort and Jasper counties by 33.1% and 20.3% respectively. This rate of growth for the two counties is projected to remain fairly consistent annually with Beaufort increasing at a rate of 1.9% annually and Jasper County at a rate of 2.2% annually. As such, by 2045 Beaufort County is projected to grow to a total population of 284,160 whereas Jasper County is anticipated to reach a total population of 48,035. These projections and percent growth are shown in the graph and table below. Population projections for 2040 and 2045 were extrapolated from the 2020-2035 projections.

Table 2: Historic and Projected Population 2000-2045

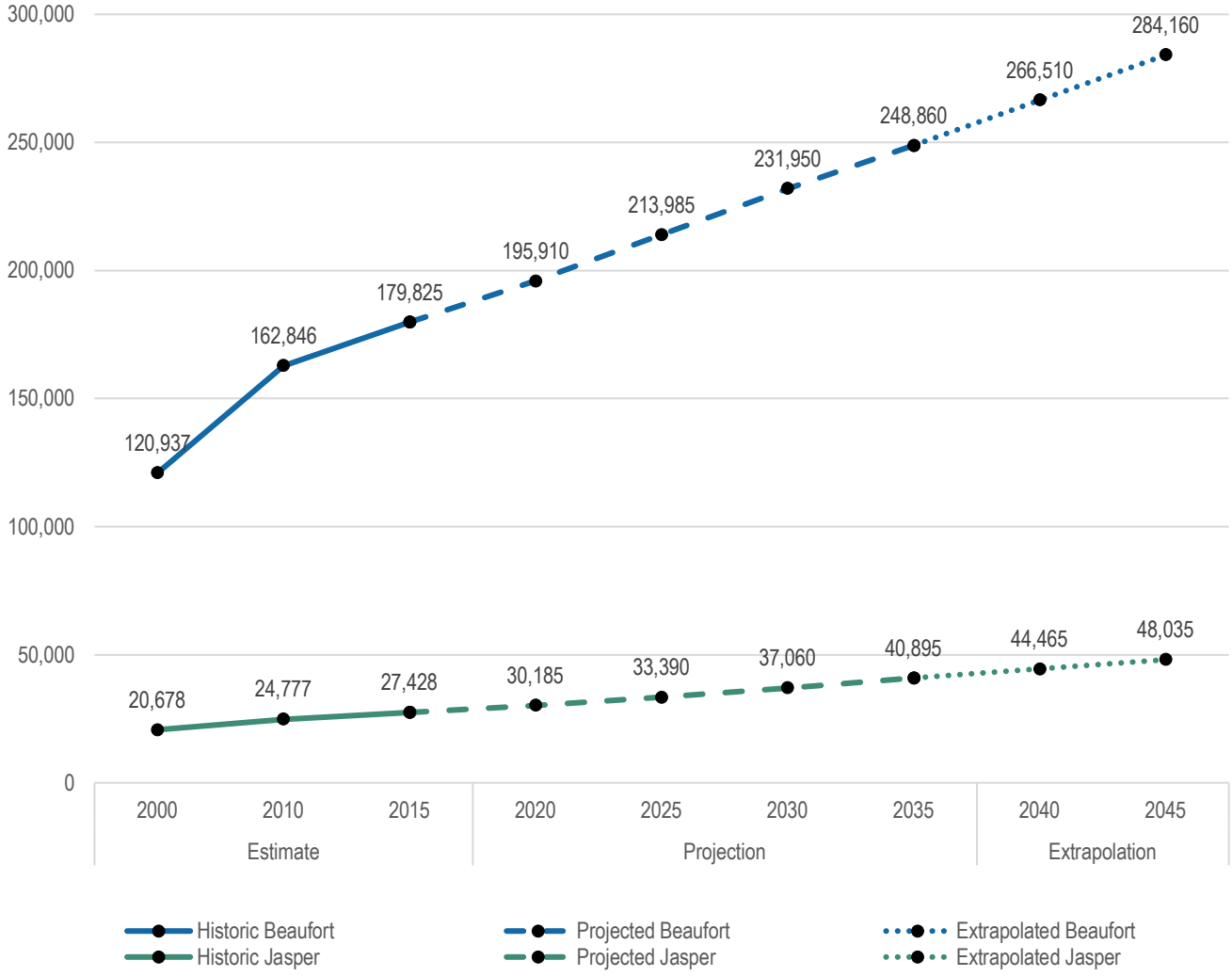
	Estimate			Projection						Annual Change
	2000	2010	2015	2020	2025	2030	2035	2040	2045	2010-2045
Beaufort	122,306	162,846	179,825	195,910	213,985	231,950	248,860	266,510	284,160	**1.9%**
Jasper	20,721	24,931	27,428	30,185	33,390	37,060	40,895	44,465	48,035	**2.2%**
SC	4,024,223	4,635,656	4,892,253	5,213,370	5,542,140	5,881,710	6,223,085	6,559,657	6,896,228	**1.3%**

Source: S.C. Department of Revenue and Fiscal Affairs Office, S.C. Community Profiles, S.C. Population Estimates from 2000-2015 and Population Projections from 2020-2035 (revised November 2019)

Notes:

1. Data for population projection are from U.S. Census Bureau, Annual Estimates of the Resident Population - Vintage 2018 and S.C. Department of Health and Environmental Control - Vital Records Department.
2. Population projections 2020-2035 are calculated by S.C. Department of Revenue and Fiscal Affairs - Health and Demographics Section, using 2000 and 2010 estimates for the purpose of trend analysis.
3. Population projections for 2045 were extrapolated from the 2020-2035 projections.

Figure 4: Historic and Projected Population 2000-2045



Source: S.C. Revenue and Fiscal Affairs Office, S.C. Community Profiles, S.C. Population Estimates from 2000-2015 and Population Projections from 2020-2035 (revised November 2019)

Minority

The American Community Survey (ACS) collects detailed information regarding race. Survey participants can indicate their race as White, Black or African American, American Indian and Alaska Native, Asian, or Native Hawaiian and Other Pacific Islander as well as whether they are of two or more races. Within this assessment, minority populations refer to people who do not define their race as "White Only."

The largest percentages of the population considered a minority can be found within Jasper County at 47.6% vs 26.8% within Beaufort County. More specifically, the region's minority populations are most pronounced in the portion of Jasper County within the study area, along US 21 north of Beaufort, in a northeast portion of Hilton Head Island, and along SC 46 (Bluffton Rd.) near US 278. Approximately 23.3% of the study area's population is considered part of a minority race, compared to 33.8% for the state of South Carolina. Additionally, Hispanic populations are most concentrated the northwestern portion of the urban area of Jasper County within LATS (69.3%), Bluffton along 278 and SC 46 (Bluffton Rd.) (54.0%) and the northeast portion of Hilton Head Island (51.6%). The table and figures below show both minority and Hispanic populations within the urban LATS area.

Table 3: Minority Population 2019

	Population	Minority	Percent Minority
Beaufort County	186,095	47,102	25.3%
Jasper County	28,657	13,646	47.6%
Urban Beaufort County	**170,093**	**37,694**	**22.2%**
Urban Jasper County	**13,017**	**5,007**	**38.5%**
LATS	**183,129**	**42,701**	**23.3%**
Lowcountry	271,901	32.6%	9.7%
South Carolina	5,020,806	1,648,795	32.8%

Source: U.S. Census Bureau, 2019 ACS 5-Year Estimates, Demographic and Housing Estimates Table, Esri Business Analysis 2020

Figure 5: Minority Population Percentage (2019) by Census Block Group

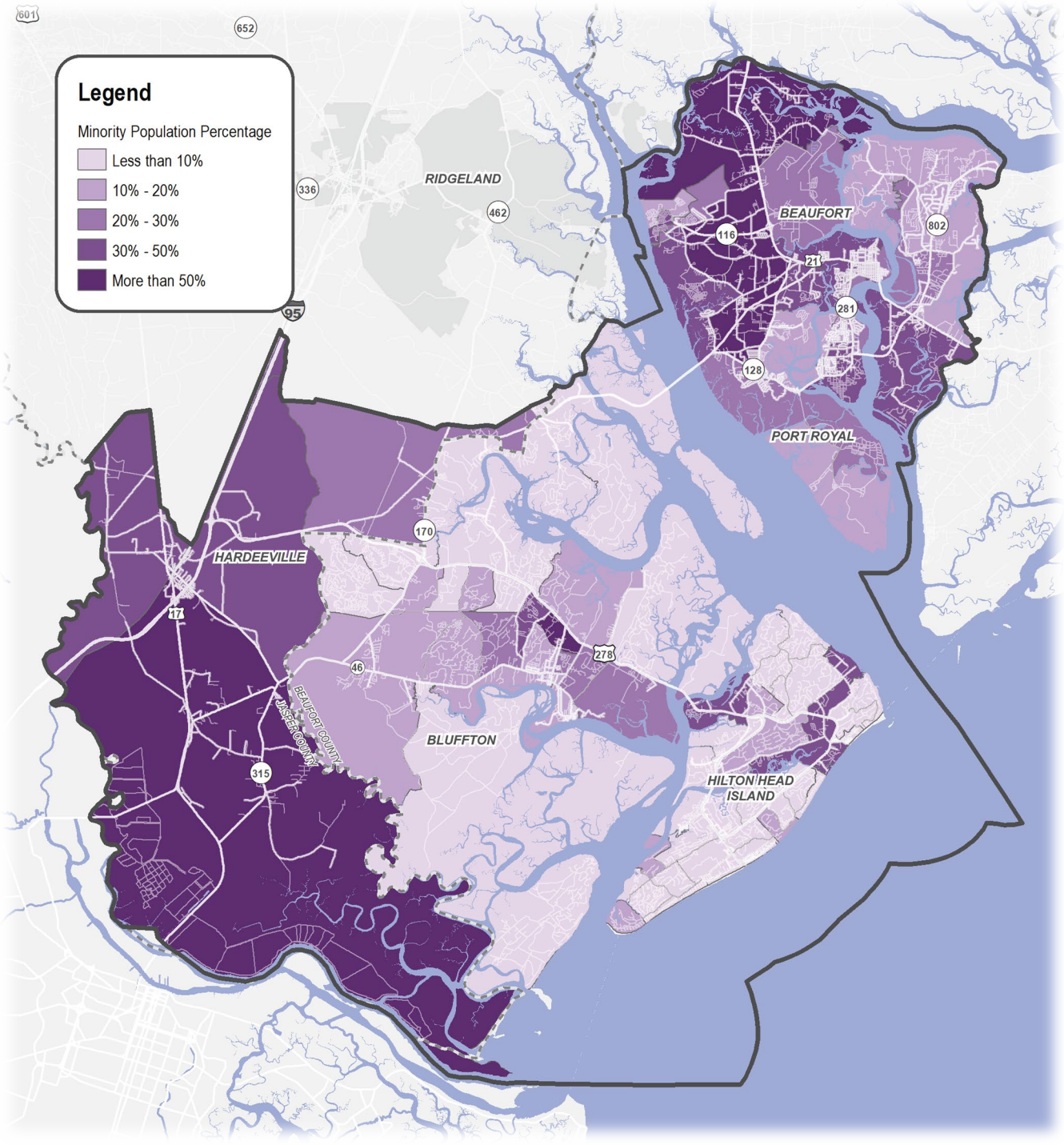
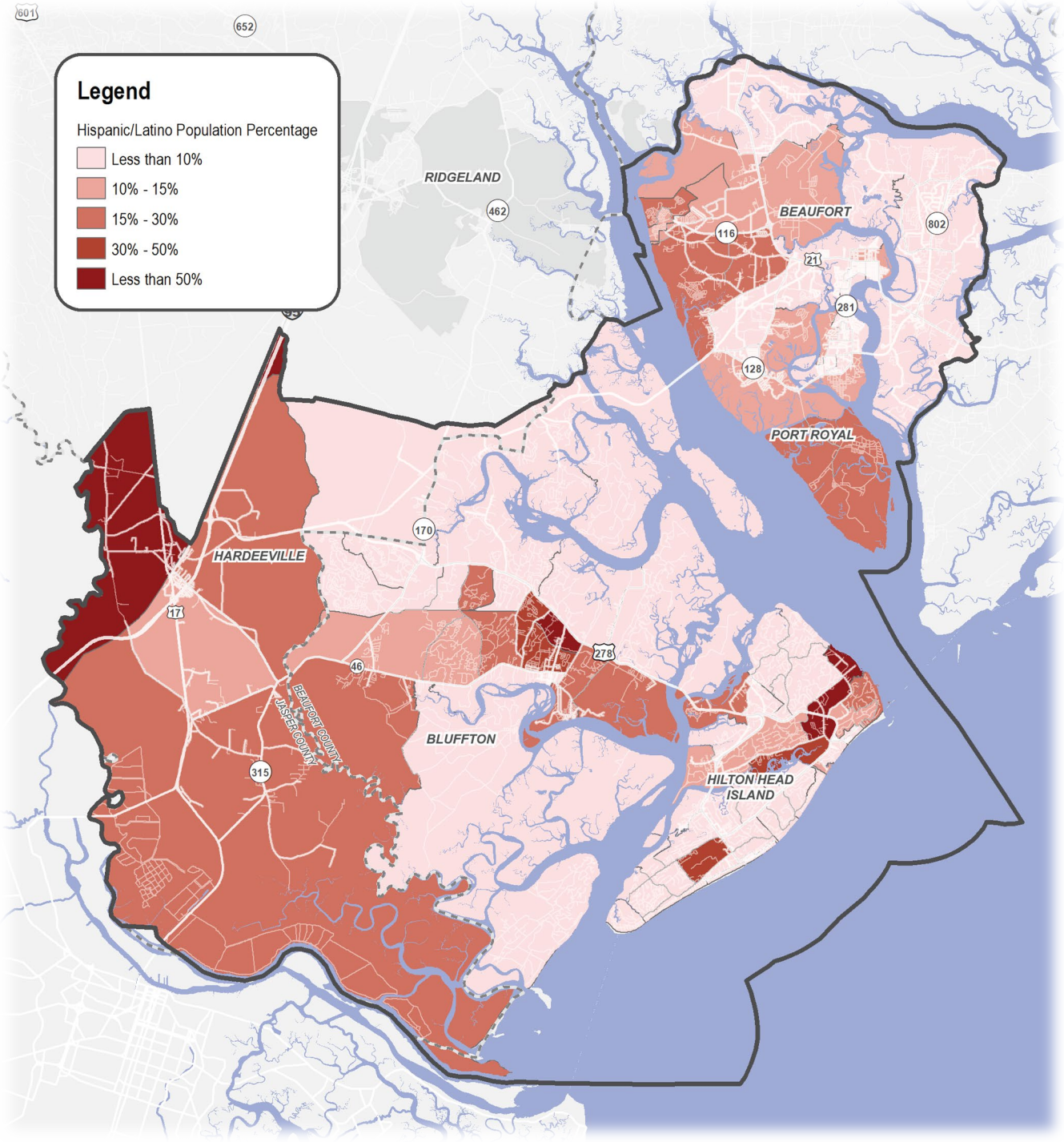


Figure 6: Hispanic Population Percentage (2019) by Census Block Group



Income and Poverty

The American Community Survey (ACS) defines poverty by families and individuals: families with a total income below the poverty threshold and individuals with incomes below the poverty threshold are considered to be in poverty. The 2021 poverty threshold for a family of four is $26,500 and the poverty threshold for an individual was $12,880.

The greatest poverty rates by percentage of families are in the northeastern portion of Hilton Head Island (45.8%), the northern portion of Jasper County within LATS along US 321 (41%), and Burton area north of the Broad River (28.7%).

Income can be used to determine the well-being of individuals or families and whether individuals or families are in poverty. As shown in **Table 4**, per capita income in the LATS area is $37,175* which is slightly higher than the Lowcountry's per capita of $33,525 and significantly higher than the state's per capita of $29,426. The highest per capita income within the LATS area is located on the southern portion of Hilton Head Island in the Sea Pines Resort and Wexford area followed by southern Bluffton and Daufuskie Island. The map on the following page illustrates the distribution of per capita income within the LATS area by census block group.

In the LATS area, 10.8% of individuals and 6.9% of families live in poverty, which is significantly lower than the state. The majority of the population in poverty can be found in northern urban portions of Jasper County, along portions of US 278 on Hilton Head Island, as well as in or near the City of Beaufort along US 21 as illustrated by the map on the following pages.

The U.S. Census Bureau uses a set of income thresholds that vary by family size and composition to determine who is in poverty as shown in the table below.

Table 4: Per Capita Income and Poverty (2019)

		% Population in Poverty	
	Per Capita Income	Individual	Family
Beaufort County	$38,946	10.2%	6.5%
Jasper County	$24,566	17.8%	12.8%
Urban Beaufort County	**$37,730***	**9.5%**	**6.4%**
Urban Jasper County	**$30,838**	**20.6%**	**13.6%**
LATS	**$37,175**	**10.8%**	**6.9%**
South Carolina	$29,426	15.2%	10.9%

Source: U.S. Census Bureau, 2019 ACS 5-Year Estimates, Aggregate Income in the Past 12 Months (in 2019 inflation-adjusted dollars) and Total Population Tables, Poverty Status in the Past 12 Months Table, and Poverty Status in the Past 12 Months of Family Table.

Note: *Block Group 1 of Census Tract 4 in Beaufort County was omitted from the Urban Beaufort County Per Capita Income figure due to lack of data.

Figure 7: Per Capita Income (2019) by Census Block Group

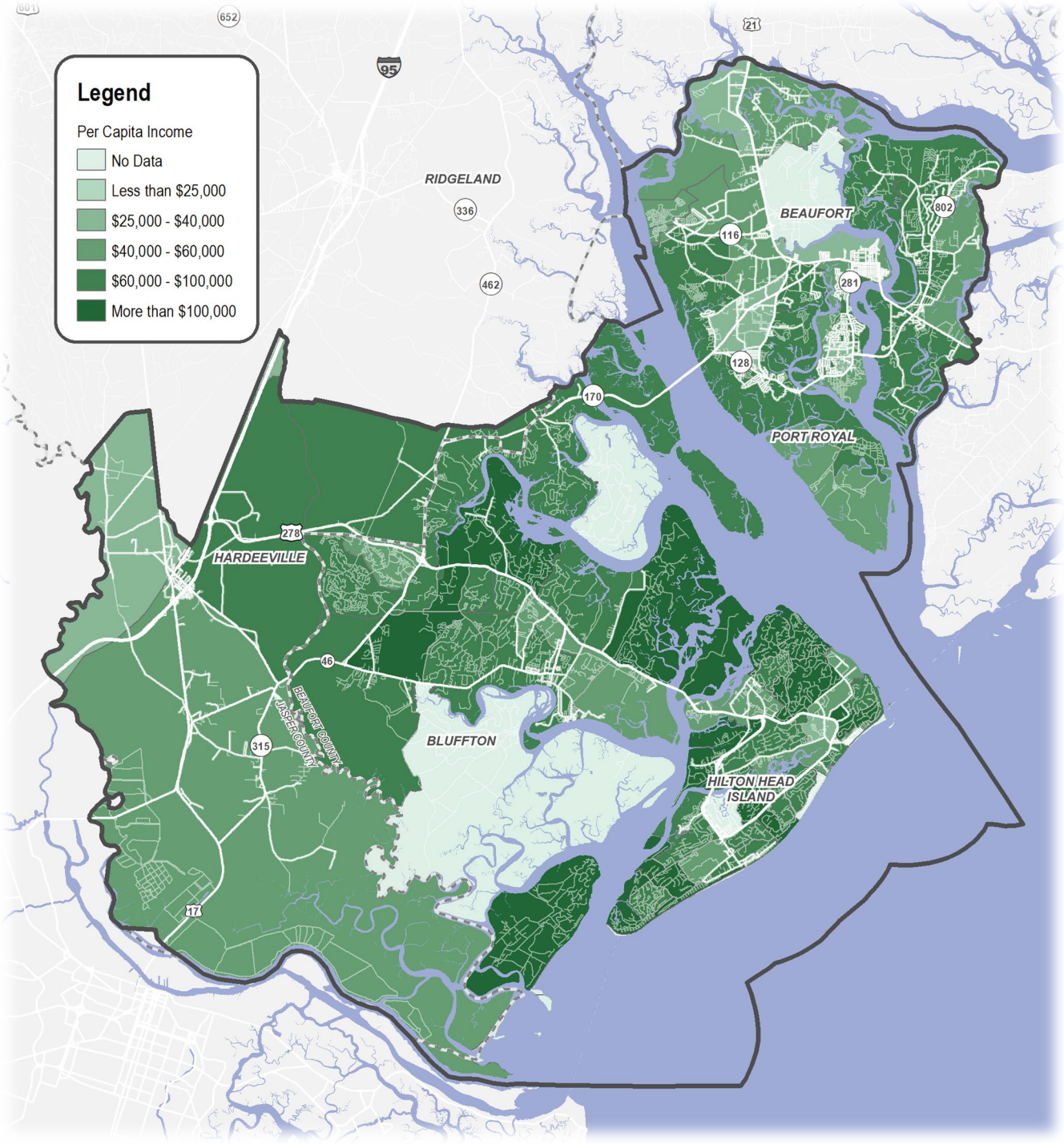


Figure 8: Individuals in Poverty (2019) by Census Block Group

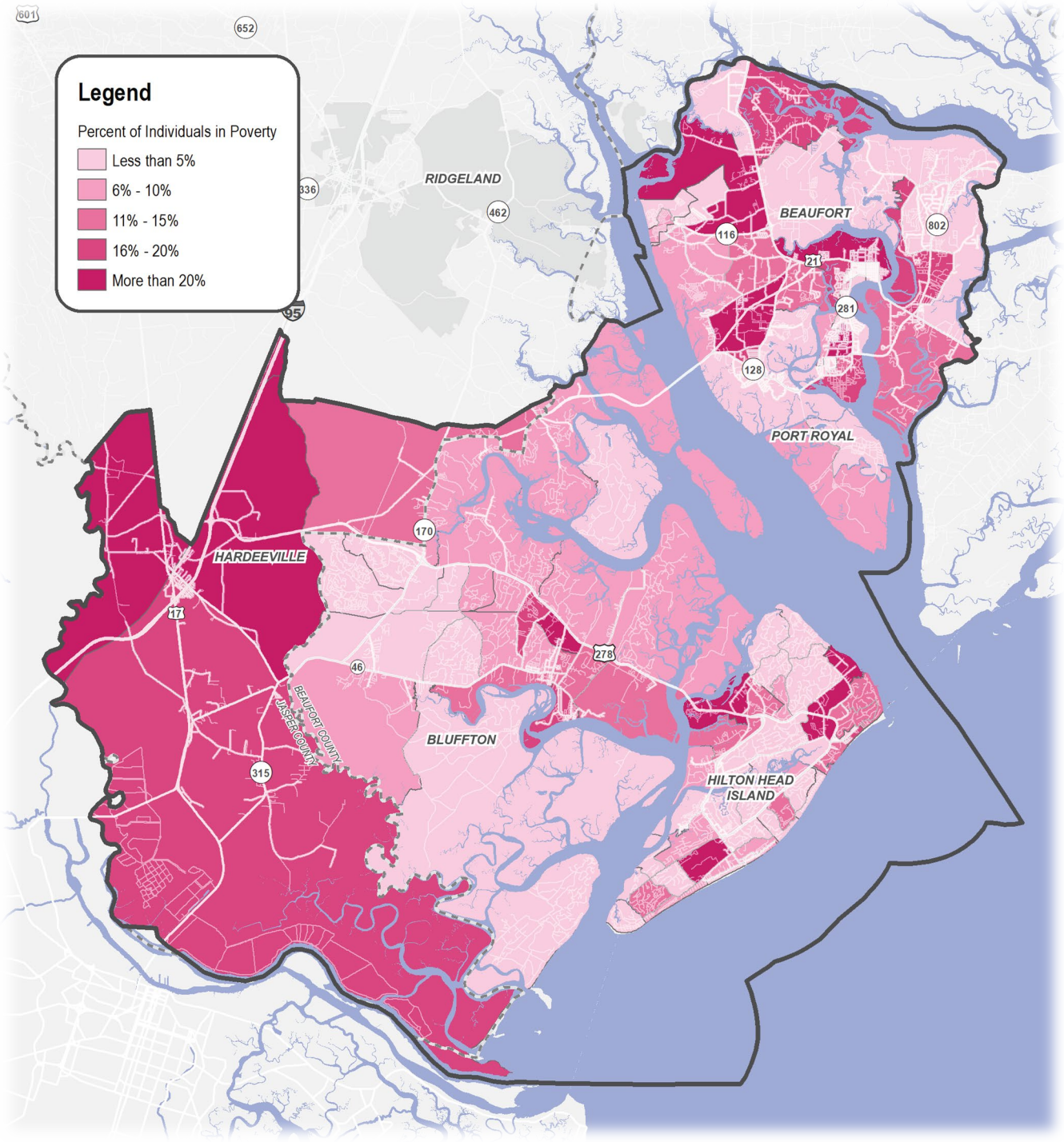
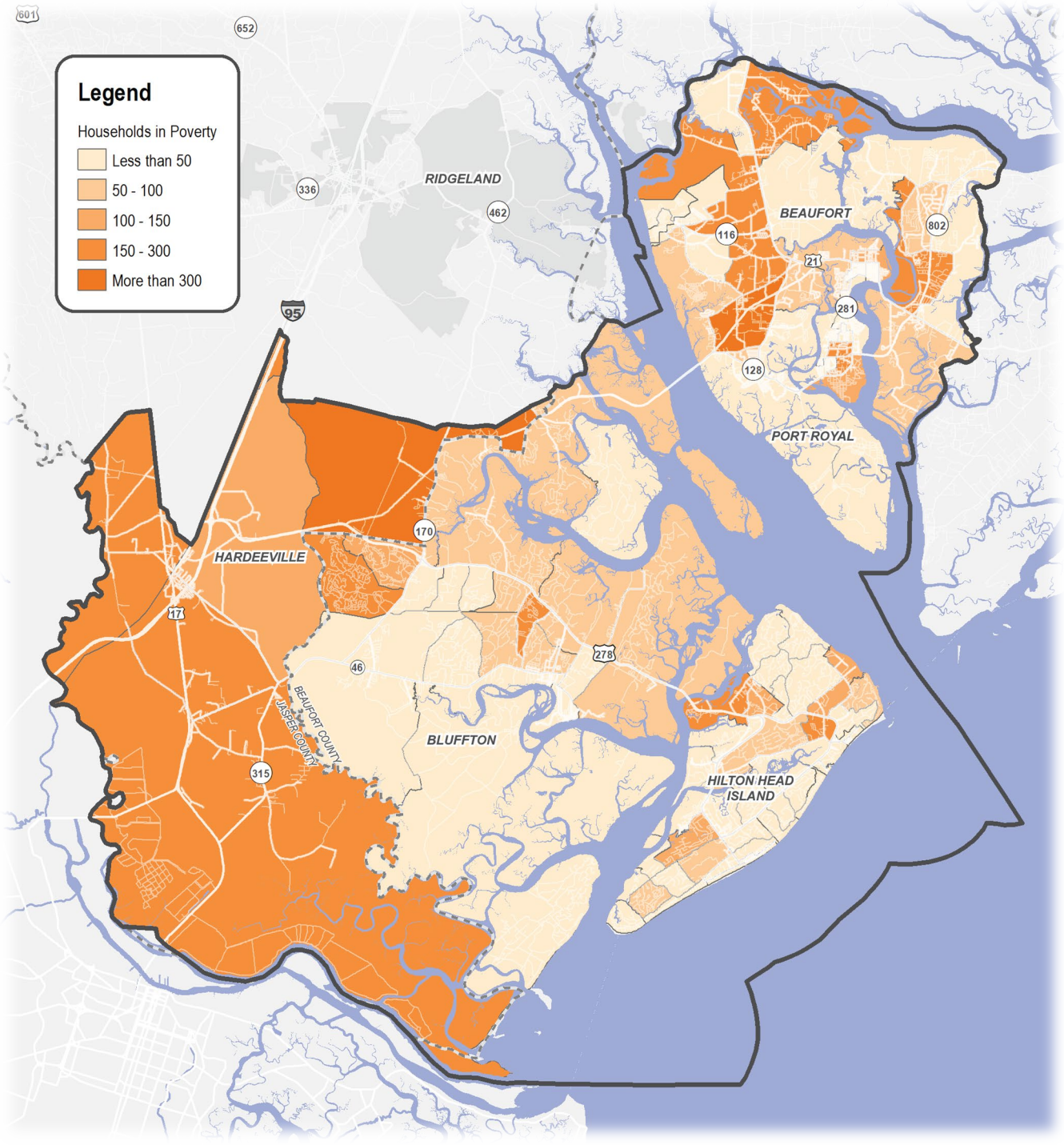


Figure 9: Households in Poverty (2019) by Census Block Group



Transportation Characteristics

Vehicle Ownership

There are 70,188 households within the LATS MPA. Of these, a total of 2,701 (3.9%) are households without a vehicle. The highest percentage of households without vehicles in the LATS area are located within urban Beaufort County (4.1%). A portion of this pertains to Daufuskie Island which does not permit automobiles but rather utilizes golf carts and boats.

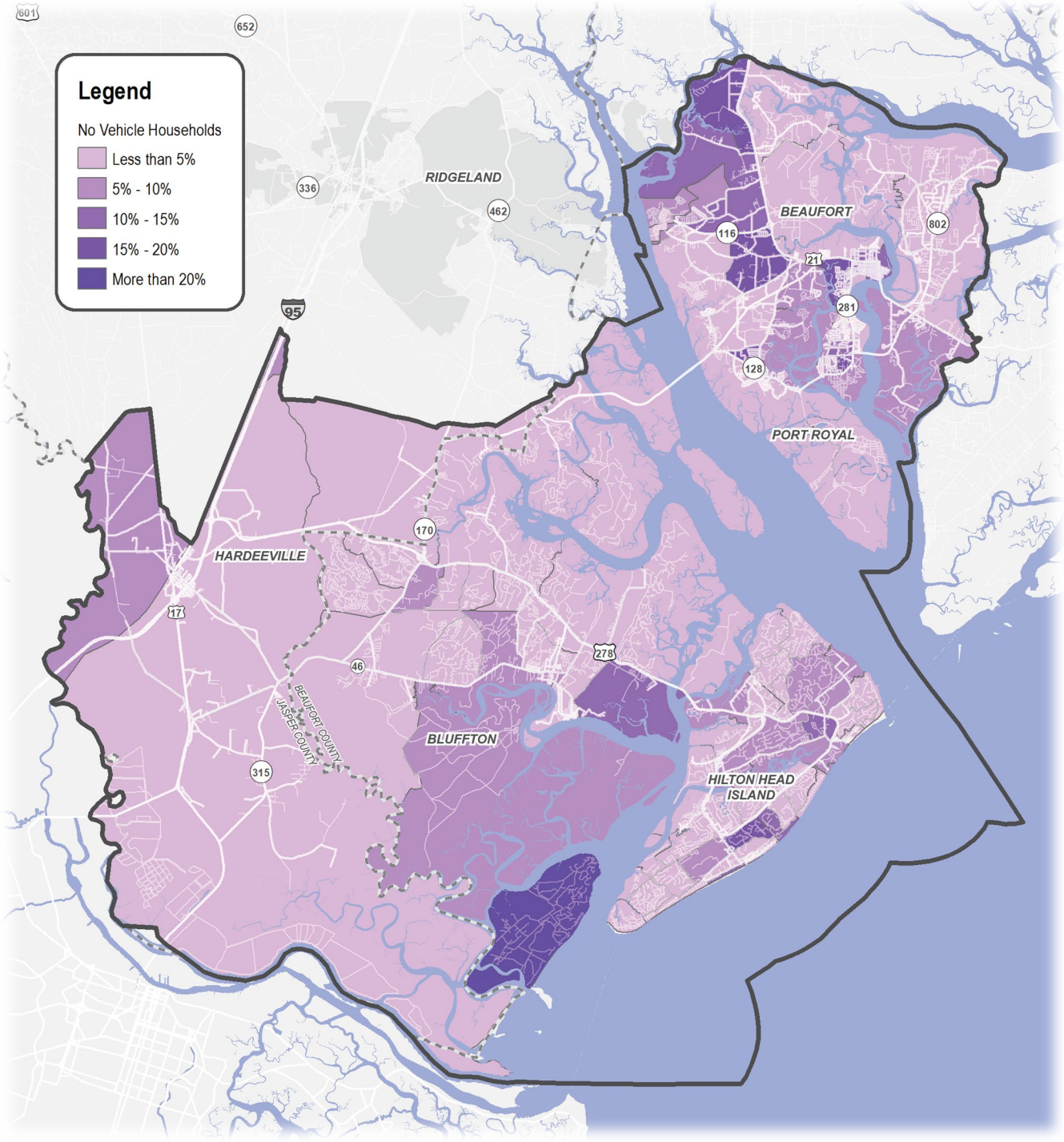
Table 5 and **Figure 10** illustrate the concentration of households without personal vehicles by census block group. The highest percentage of people without personal vehicles can be found on Daufuskie Island (28.6%), north of the Broad River along portions of US 21 (17.9% – 19.7%) as well as along US 278 on the south end of Hilton Head Island (16.7%). **Figure 10** illustrates these locations.

Table 5: Households Without Access to a Vehicle (2019)

	Percentage of Households without Vehicles
Beaufort County	4.2%
Jasper County	4.4%
Urban Beaufort County	4.1%
Urban Jasper County	1.7%
LATS	3.9%
South Carolina	6.3%

Source: U.S. Census Bureau, 2019 ACS 5-Year Estimates, Household Size by Vehicles Available Table

Figure 10: Households without Vehicles (2019) by Census Block Group



Commuting Time

Commuting time refers to the travel time to work in minutes for workers 16 years and over who do not work at home.

As shown in **Table 6**, The average travel time to work within the LATS MPA is 21.7 minutes, with the urban portions of Beaufort and Jasper County being 20.9 and 29.8 minutes respectively. By comparison, the state average commuting travel time of 25 minutes is significantly higher than that of the LATS area.

The area with the shortest average travel time to work, 11.4 minutes, is the Parris Island Marine Corps Base in Port Royal. Hardeeville and the remaining urban portions of Jasper County had the longest times at 29.5 and 31.6 minutes respectively.

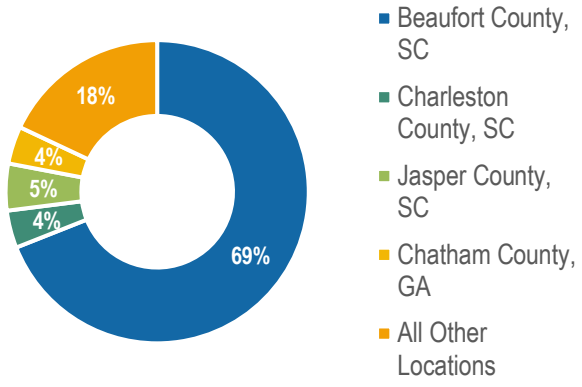
Table 6: Average Commute Times to Work (in minutes)

	Average Travel Time to work (Minutes)
Beaufort County	22.8
Jasper County	31.1
Urban Beaufort County	**20.9**
Urban Jasper County	**29.8**
LATS	**21.7**
South Carolina	25.0

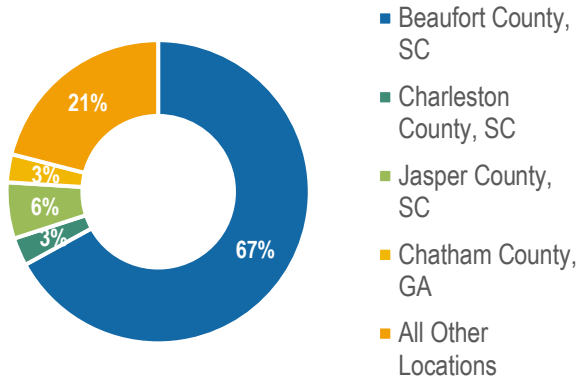
Commuting Patterns

Based on commute flows as reported by the American Community Survey, almost seven of every ten residents who live in the urban portion of Beaufort County also work in Beaufort County, whereas only two of every ten urban Jasper County residents work in Jasper County. A significant portion of urban Jasper County's population—almost half (45%)—works in Beaufort County. Thirteen percent of Jasper County's urban population travels to Chatham County, Georgia, to work. A further breakdown of the LATS area commuting patterns can be found in the charts below.

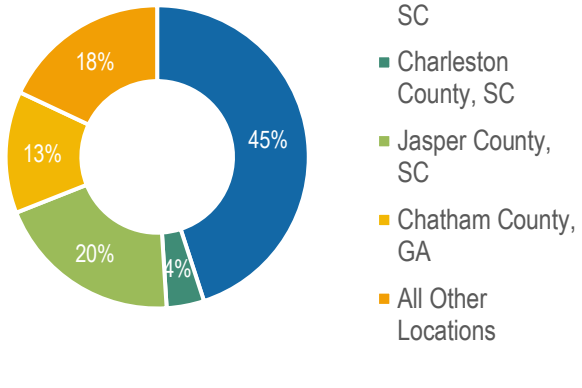
Where Urban Beaufort County Residents Work



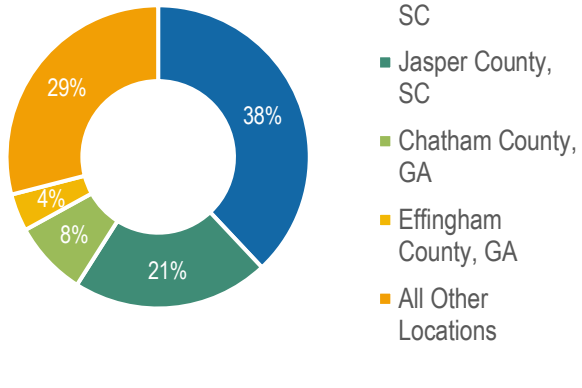
Where Urban Beaufort County Workers Live



Where Urban Jasper County Residents Work



Where Urban Jasper County Workers Live



Historic Properties

National Register of Historic Places

Beaufort County is home to two large military bases and a military hospital: the Marine Corps Air Station (MCAS) Beaufort located in northern Beaufort; Parris Island, which is one of just two Marine Corps Recruit Depots (MCRD) in the U.S. as well as the U.S. Naval Hospital Beaufort, which is located in Port Royal to the north of Parris Island.

The LATS region is also home to three national wildlife refuges and one South Carolina state park:

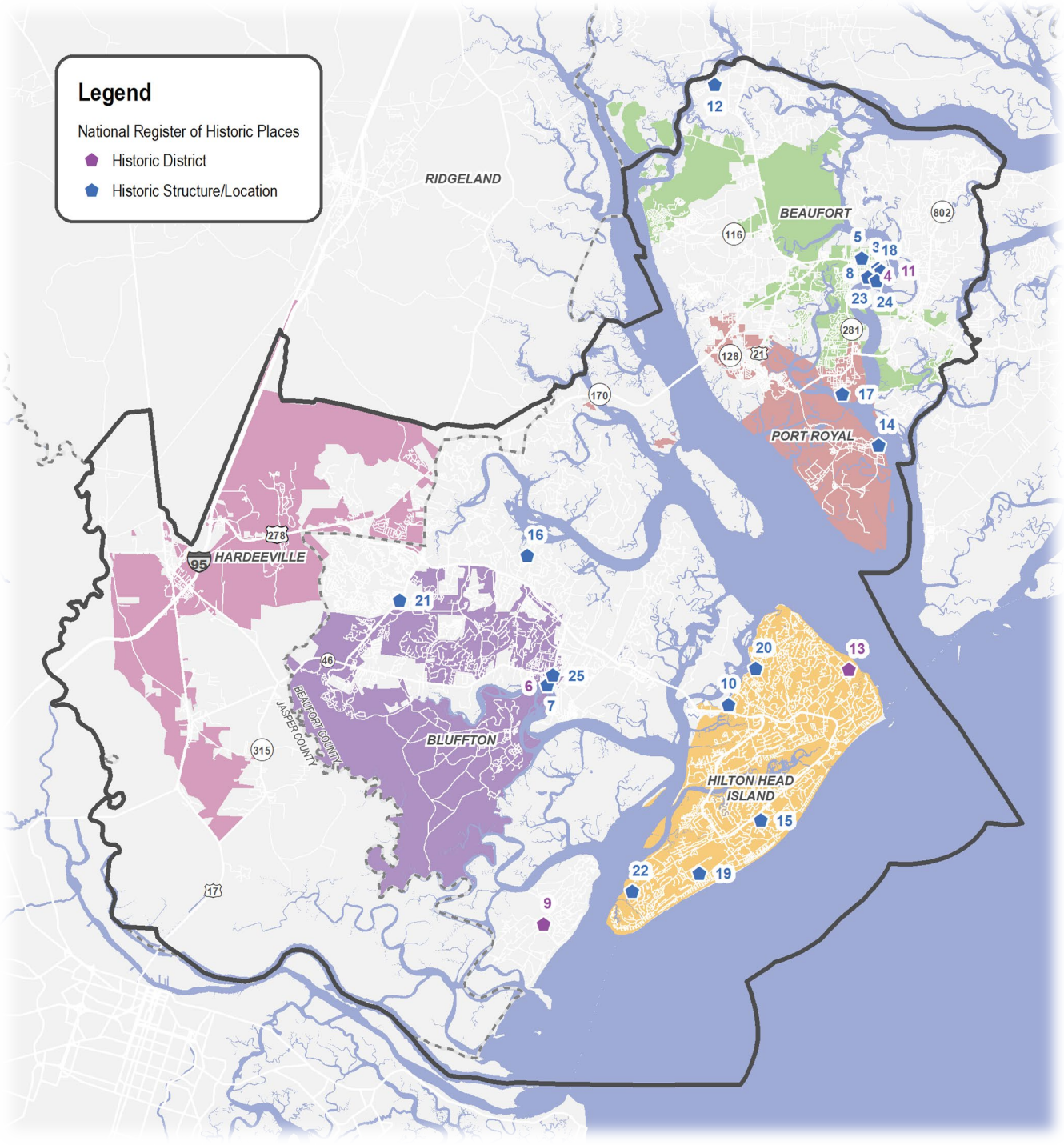
- Pinckney Island National Wildlife Refuge
- Savannah National Wildlife Refuge
- Sergeant Jasper State Park
- Tybee National Wildlife Refuge

Many cultural heritage and historic places are located within the LATS area. **Table 7** and **Figure 11** show a list of the national register of historic places, a total of 25 properties, located within the LATS boundary. Five of the 25 historic properties are considered historic districts/land areas with the largest of clusters focused within the City of Beaufort. None of the locations are located within urban Jasper County.

Table 7: National Register of Historic Places (2020)

1	The Anchorage	14	Parris Island Drydock House
2	The William Barnwell House	15	Rear Lighthouse of Hilton Head Range Light Station
3	The Barnwell-Gough House	16	Rose Hill Plantation House
4	Beaufort Historic District	17	The F.W. Scheper Store
5	Beaufort National Cemetery	18	The Robert Smalls House
6	Bluffton Historic District	19	Sea Pines Shell Ring
7	Church of the Cross	20	Skull Creek Shell Ring
8	The John A. Cuthbert House	21	St. Luke's Church
9	Daufuskie Island Historic District	22	Stoney-Baynard Plantation
10	Greens Shell Enclosure	23	Tabby Manse
11	Marshlands	24	The John Mark Verdier House
12	McLeod Farmstead	25	Campbell Chapel A.M.E Church
13	Michelville		

Figure 11: National Register of Historic Places (2020)

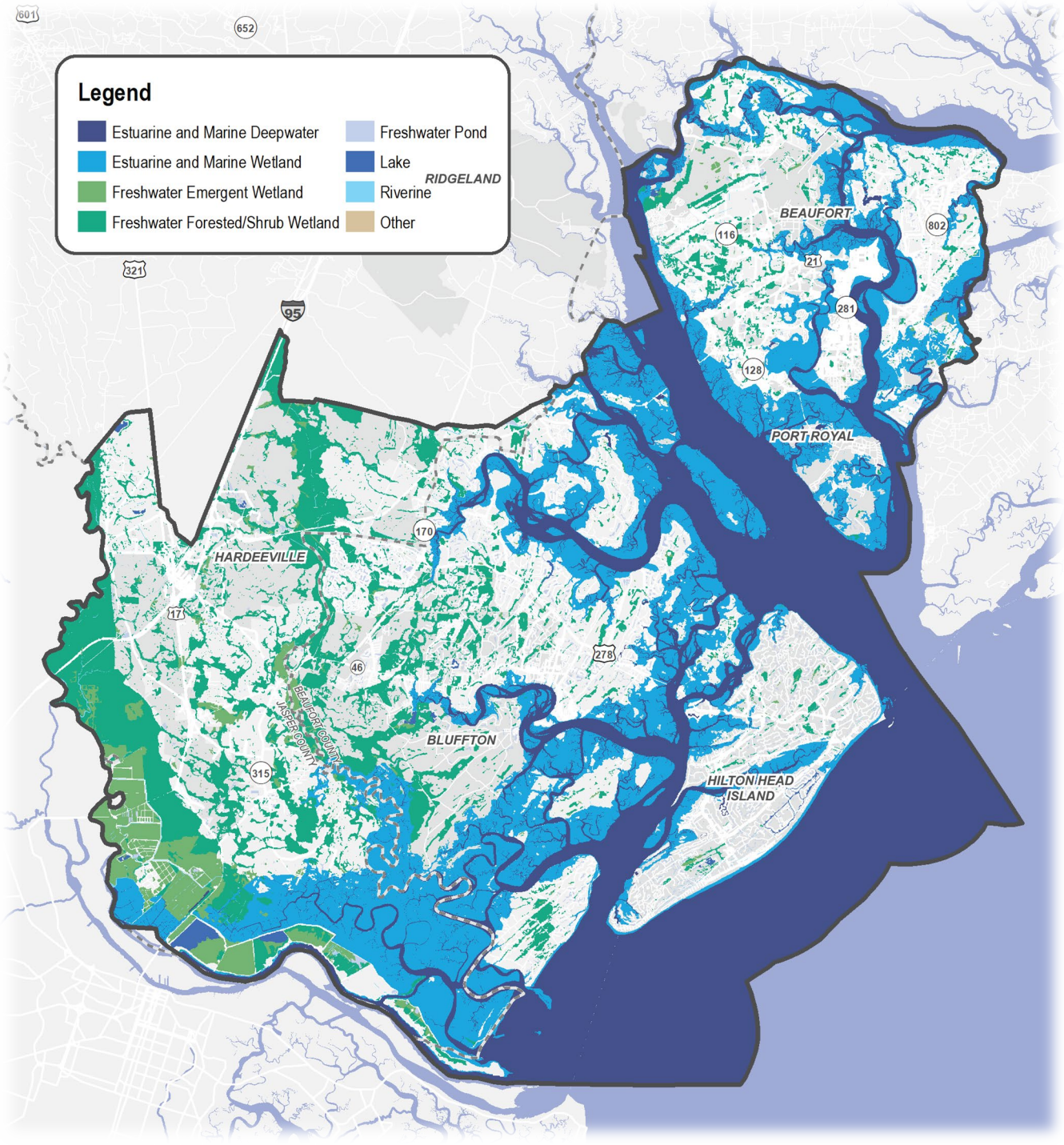


Natural Resources

Wetlands

The variety of wetlands and their diverse ecosystems are home to various species of plants and animals including many threatened and endangered species. The LATS MPA contains 144,865 acres of wetlands that account for 20.5% of the Lowcountry region's wetlands. The 144,865 acres of wetlands are composed of 59.1% estuarine and marine wetland, 32.9% are forested/shrub wetland, and 8.1% are freshwater emergent wetland. **Figure 12** illustrates these wetlands within the LATS area.

Figure 12: Wetlands within the LATS Area



2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 4 | Roadway

Introduction

The following chapter describes the process used to determine the roadway recommendations for the *2045 LATS LRTP*. By understanding the demographic, environmental, and historic context of the study area outlined in the previous chapter, the evaluation of the existing transportation network can be further contextualized. Chapter 4 identifies the existing challenges and attempts to mitigate those limitations with the scare resources of the Metropolitan Planning Organization (MPO). This chapter can be used as a tool to understand the current and future needs of the Lowcountry Area Transportation Study (LATS) Metropolitan Planning Area (MPA) for the next twenty years.

Role in the Region

The LATS area is shown below. The urbanized area of the Lowcountry is a tapestry of municipalities weaved together by the state-owned transportation network. With unique environmental features and constraints throughout the study area, the transportation network must operate efficiency and effectively to support the movement of people and goods.

Figure 1: The Lowcountry

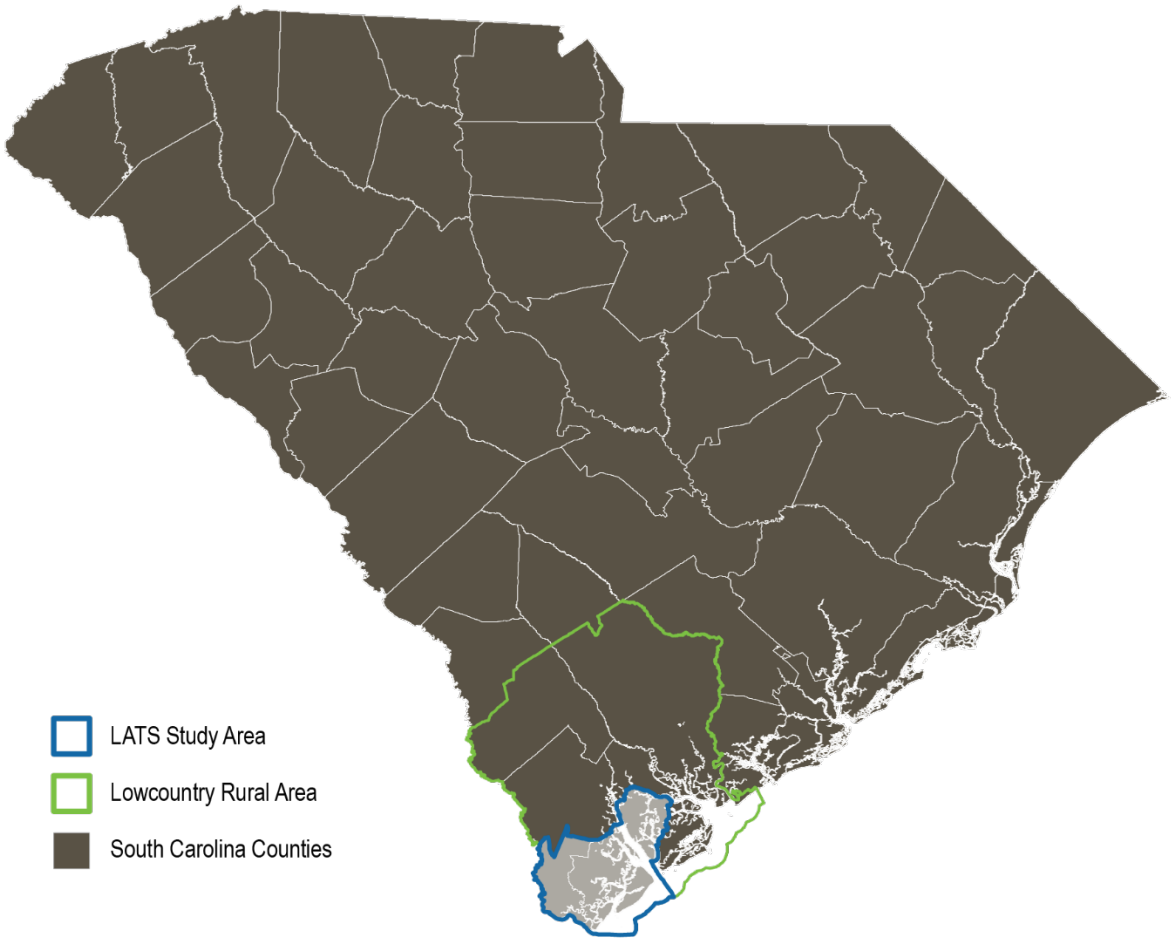
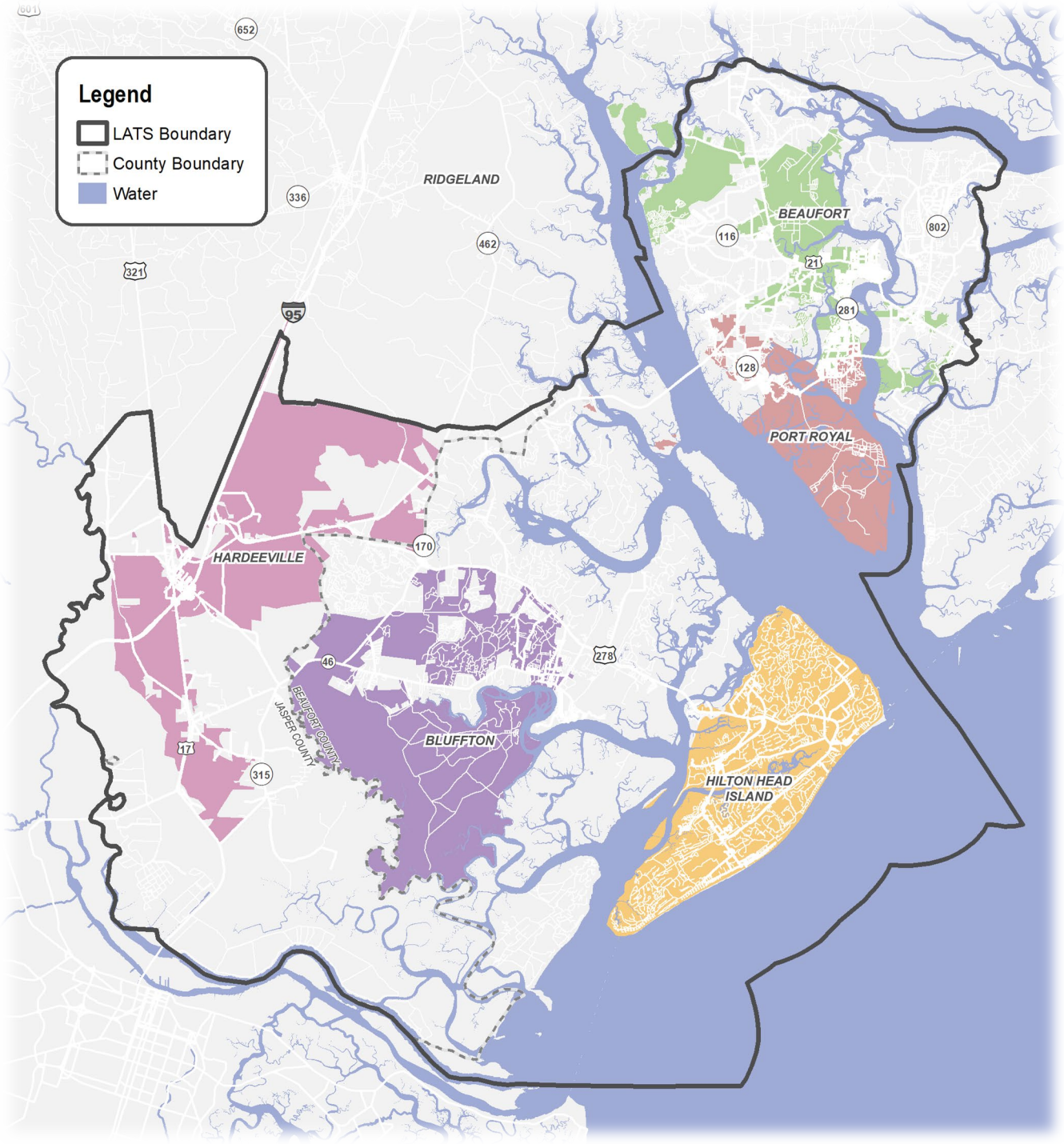


Figure 2: LATS Study Area



Planning Considerations

The first step to understanding the regional roadway network begins with an analysis of existing conditions. The documentation of current facilities will highlight issues on or gaps within the existing mobility network. These observations can be used to generate recommendations to mitigate the identified issues. This chapter focuses on understanding the existing conditions and how these conditions influenced the development of roadway and intersection recommendations of the *2045 LATS LRTP*.

Activity Centers and Transportation Corridors

The relationship between land use and transportation is synergetic. As the development of residential, commercial, and institutional growth occurs, the surrounding vehicular traffic typically increases. The construction or enhancement of roadways provides better access to and from these destinations, ultimately resulting in increasing property values. In turn, even more development is usually attracted. Generally, land use and transportation planning efforts must balance access, density, and connectivity in order to best serve a community. In the LATS area, several examples of different types of activity centers create a mixture of land uses and mobility enhancements to serve the region.

Table 1: Activity Center Type and Characteristics

Activity Center Type	Characteristics
Regional Activity Center *Local Example*: Downtown Beaufort *Transportation Crossroad*: US 21 at SC 281	• Accessible by interstates, freeways, or principal arterials and public transportation • Balances residential and non-residential land uses • Contains high-density urban land uses and large-scale development to support the region • Includes transit-supportive and employment area land uses • Provides diversity of housing options
Community Activity Center *Local Example*: Old Town Bluffton *Transportation Crossroad*: SC 46 at Boundary St and Bruin Rd	• Contains medium-scale development intended to service the everyday needs and activities of surrounding neighborhoods • Includes a variety of retail, civic, educational, and social land uses • Provides mostly medium-density residential • Served by municipal water and sewer
Neighborhood Activity Center *Local Example*: Center of Hardeeville *Transportation Crossroad*: US 17 at SC 46	• Accessible by major or minor arterials and is well integrated with collector streets • Contains primarily residential with mixed-use crossroads that serve as a core for neighborhood needs and services • Provides mixture of low- and medium-density residential

The relationship and linkages between activity centers and transportation corridors is crucial when considering mode choices. Activity centers are typically connected by a few major transportation corridors that connect homes, schools, employment, shopping, and recreational locations. Creating a variety of ways that people can get to and from their origins and destinations will enhance the overall quality of life in the region. By providing a range of alternatives—driving, walking, biking, or taking transit—the community will benefit. **Table 1** categories three types of activity centers and provides characteristics of these areas.

A street's intended function contributes largely to the success of its ability to connect destinations. The LATS area will need to consider the tradeoffs associated with growth and development with connectivity and sense of place. Typically, vehicular mobility is given priority while function of the street, the surrounding context, and consideration of alternative modes of transportation are often disregarded. The previous planning efforts throughout the Lowcountry have already started to assert its priorities towards access management, enhanced safety measures, and complete streets. The region should continue to blend access and connectivity functions with the preservation of its unique built environment and natural features.

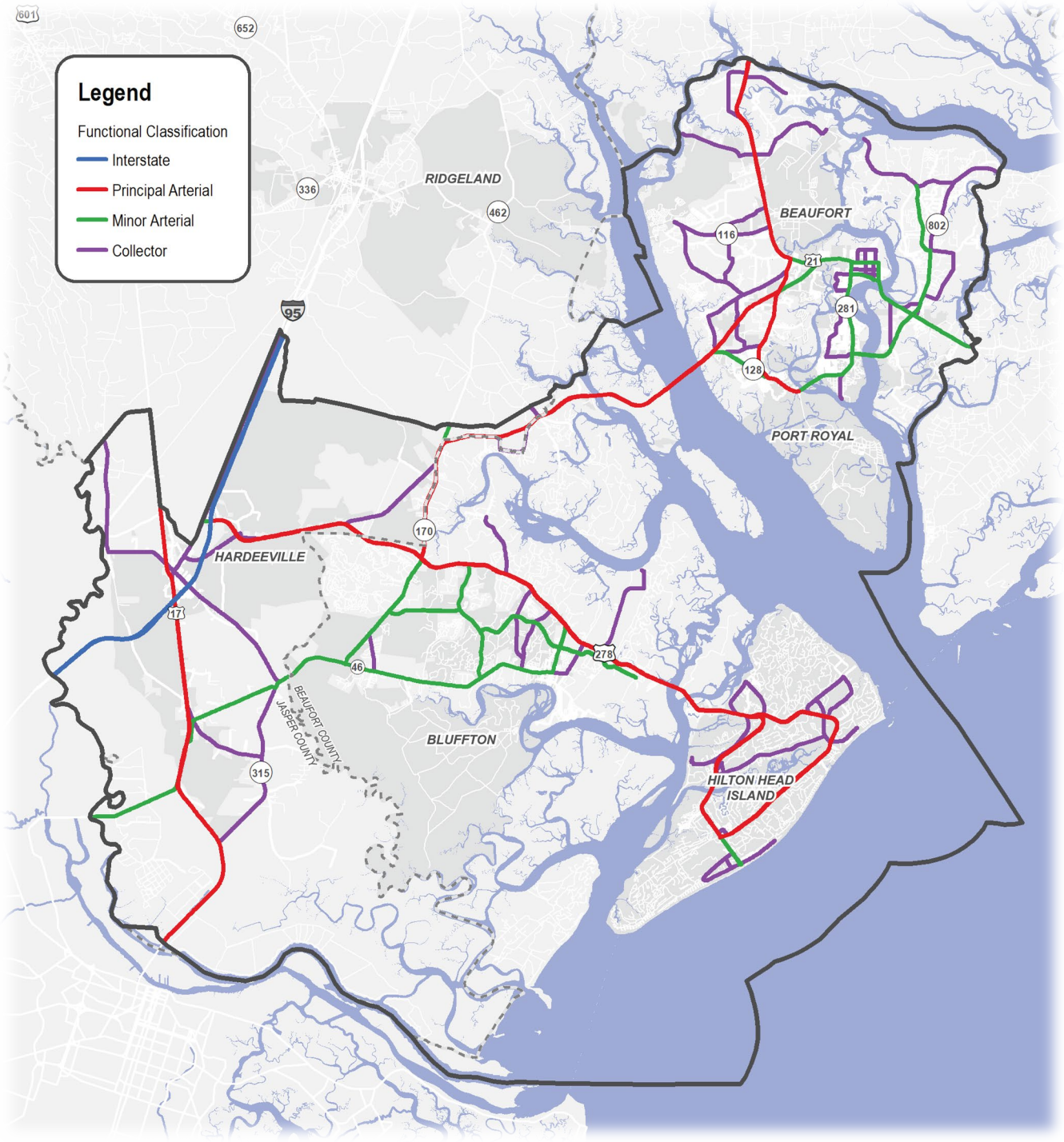
Corridor Characteristics

The elements in the transportation network can be best understood in terms of their respective function and impact on regional mobility.

Functional Classification

A functional classification is the system by which streets of different characteristics and functions are grouped into broad categories. The utility of creating functional categories is that it aids in the ability of planners, policy makers, engineers, and citizens to communicate about the transportation system. The functional classification system characterizes streets according to the land uses served and the traffic each street is intended to serve. The classification defines the street in terms of roadway design and features to service the movement primarily of vehicles.

Figure 3: Functional Classification



In the LATS area, the current street network is divided into several functional classifications including arterials, collectors, and local streets. **Figure 3** illustrates the functional classification for the LATS roadway networked based on SCDOT's functional classification system.

Arterials

Arterials provide high mobility by operating at higher speeds (45 miles per hour (mph) and above), provide enhanced roadway capacity, having a greater degree of access control, and serving longer travel distances. Arterials can be further subdivided into categories including expressways and freeways, major arterials, and minor arterials. While arterials usually connect to one another or to collector streets, they seldom connect to local streets.

Expressways and Freeways

Expressways and freeways provide the most mobility and the least access. These facilities primarily serve long distance travel and support regional mobility needs. The LATS study area is served by Interstate 95.

Major Arterials

Major arterials provide both access and mobility throughout a region. Typically, major arterials have tightly controlled access and few—if any—driveways. Major arterials provide connections to minor arterials and collector streets to expressways and freeways. These facilities function to serve medium to long distance travel. Several major arterials in the study area, include US 278, US 17, US 21, and SC 170.

Minor Arterials

Minor arterials are intended to local travel needs. While these facilities provide a mobility function, they often have more closely spaced intersections and are designed for lower speeds and less traffic. Minor arterials connect other minor arterials to major arterials and collector streets, ultimately providing more access to adjacent area than a major arterial would.

In the Lowcountry region, minor arterials are typically two-lane, undivided or multi-land roads with no paved shoulder. Where appropriate they provide left-turn lanes at intersections or driveways and range between 35 to 45 mph as the posted speed limit. Other key design features included on minor arterials are sidewalks, crosswalks, signalized intersections, and on-street parking. The minor arterials in the study area include SC 46, SC 128, SC 281.

Collectors

While collectors provide less overall mobility, they provide enhanced access. Collectors typically operate at speeds at or below 35 mph, provide more frequent and enhanced access to surrounding land uses, and serve short-distance travel. These facilities provide essential connections between arterials and local streets. While the majority of collectors connect with one another, they also connect local streets and non-expressway or freeway arterials.

The purpose of collector streets is to collect traffic from neighborhoods and disperse that traffic to major and minor arterials. Generally, collector streets have two lanes and exclusive left-turning lanes at intersections with major and minor arterials. In the study area, collector streets vary in their characteristics to fulfill the unique needs of surrounding neighborhoods. While they may differ in their physical characteristics, all connector streets provide good connectivity. Example collector streets in the study area are SC 315, SC 116, SC 802.

Locals

Local facilities provide greater access and the least amount of mobility. These facilities typically connect to one another or to collector streets and provide a high level of access to adjacent land uses/development (i.e., frequent driveways). Locals serve short distance travel and have low posted speed limits (25 mph to 35 mph).

Corridor Operations

Other facets of the transportation network include understanding how and where people and goods are moving.

Regional Mobility

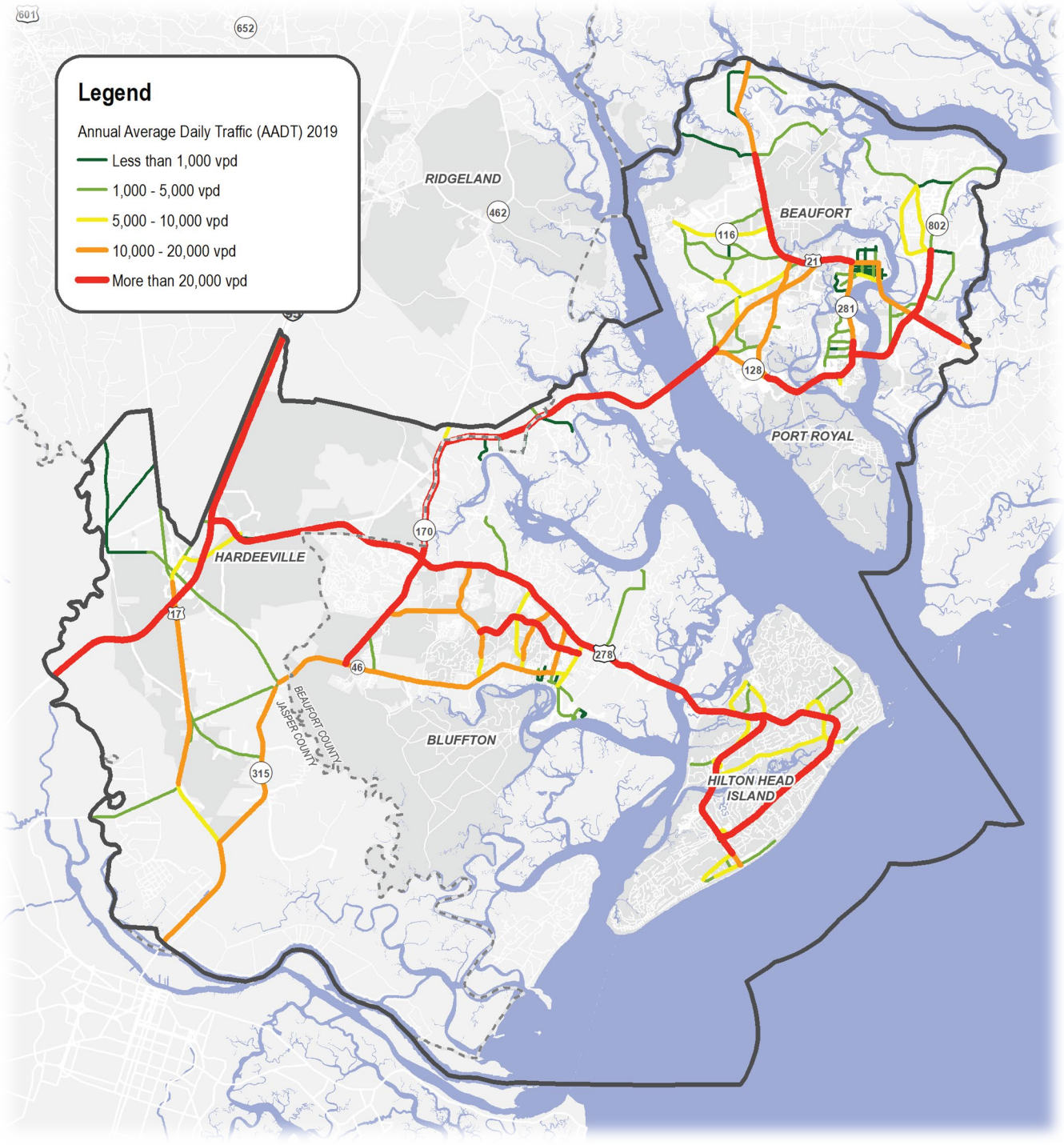
The region benefits from having a variety of options for regional mobility. This mobility is magnified by the connectivity between regions through I-95. The routes US 17, US 21, and US 278 serve as important inter- and intra-regional transportation corridors. These corridors provide intra-region connections between Hilton Head Island and Hardeeville and Downtown Beaufort to Port Royal. The LATS area is also served with connections to Savannah, Georgia, Charleston, South Carolina, and other surrounding municipalities through inter-regional routes.

Another consideration of regional mobility is the lack of system redundancy. Primarily due to environmental constraints or natural disasters, the transportation system is limited in alternative routing options. The lack of redundancy is particularly problematic when crashes, lane closures, or flooding impede traffic flow.

Annual Average Daily Traffic

The annual average daily traffic (AADT) reflects the total number of vehicles traveling along a roadway segment on an average day. **Figure 4** illustrates the AADT volumes in the study area. Some of the highest volumes of vehicles per day (vpd) can be found along I-95, US 21, and US 278. On I-95 alone there are over 56,000 vehicles per day. Another heavily traveled corridor is US 278. On US 278, between 30,000 to 57,000 vehicles per day move in an east-west direction from Hardeeville to Hilton Head Island.

Figure 4: Daily Traffic Volumes (AADT)



Congested Corridors

Traffic volumes alone cannot be the sole determinant of congestion. The available roadway capacity is equally important in understanding network congestion. A more holistic measurement is volume-to-capacity or V/C ratio. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the capacity of the roadway. This standardized traffic measure provides context across various types of roadways. In the *2045 LATS LRTP*, roadways were grouped into the following categories based on their V/C ratios:

- **Below Capacity**: The below capacity facilities are defined as having a V/C less than 0.80. The roadways operating with a V/C less than 0.80 have little to no congestion during peak travel periods. This level of service primarily occurs on rural roads or local streets.
- **At Capacity**: The at capacity facilities have a V/C between 0.80 and 1.00. The roadways operating at capacity are somewhat congested during non-peak periods and congested during peak hours. The roadways in this category balance operation and the cost of improvements.
- **Above Capacity**: The above capacity facilities have a V/C greater than 1.00. The roadways operating with V/C ratios over 1.00 experience congestion during both peak and non-peak periods. The changes in capacity can have major impacts on corridors and may create a standstill or gridlock of traffic. While congestion along corridors is related to a variety of factors, vehicular capacity is a crucial metric to understanding the existing transportation network.

The 2019 Base Year Congestion map in **Figure 5** shows congested corridors in the LATS area. Understanding the base year congestion provides a foundation for determining current needs and identifying future improvements to alleviate congestion.

The 2045 E+C (Existing Plus Committed) Congestion map in **Figure 7** shows projected future congestion based on the recently updated travel demand model (TDM). The TDM includes all existing and committed roadway projects that were recently completed or have funding associated between the previous base year (2010) and the new base year (2019). Aside from the new transportation projects, updating the TDM also involves updating socioeconomic information including but not limited to changes in population, household size, dwelling units, and employment density. Further details about the TDM can be found in the plan's Appendix.

When comparing the two congestion maps, it is clear that congestion worsens along several corridors. These corridors include US 21, US 278, and Argent Boulevard. **Figure 7** highlights the corridors that are below-, at-, and above-capacity.

Figure 5: 2019 Base Year Congestion

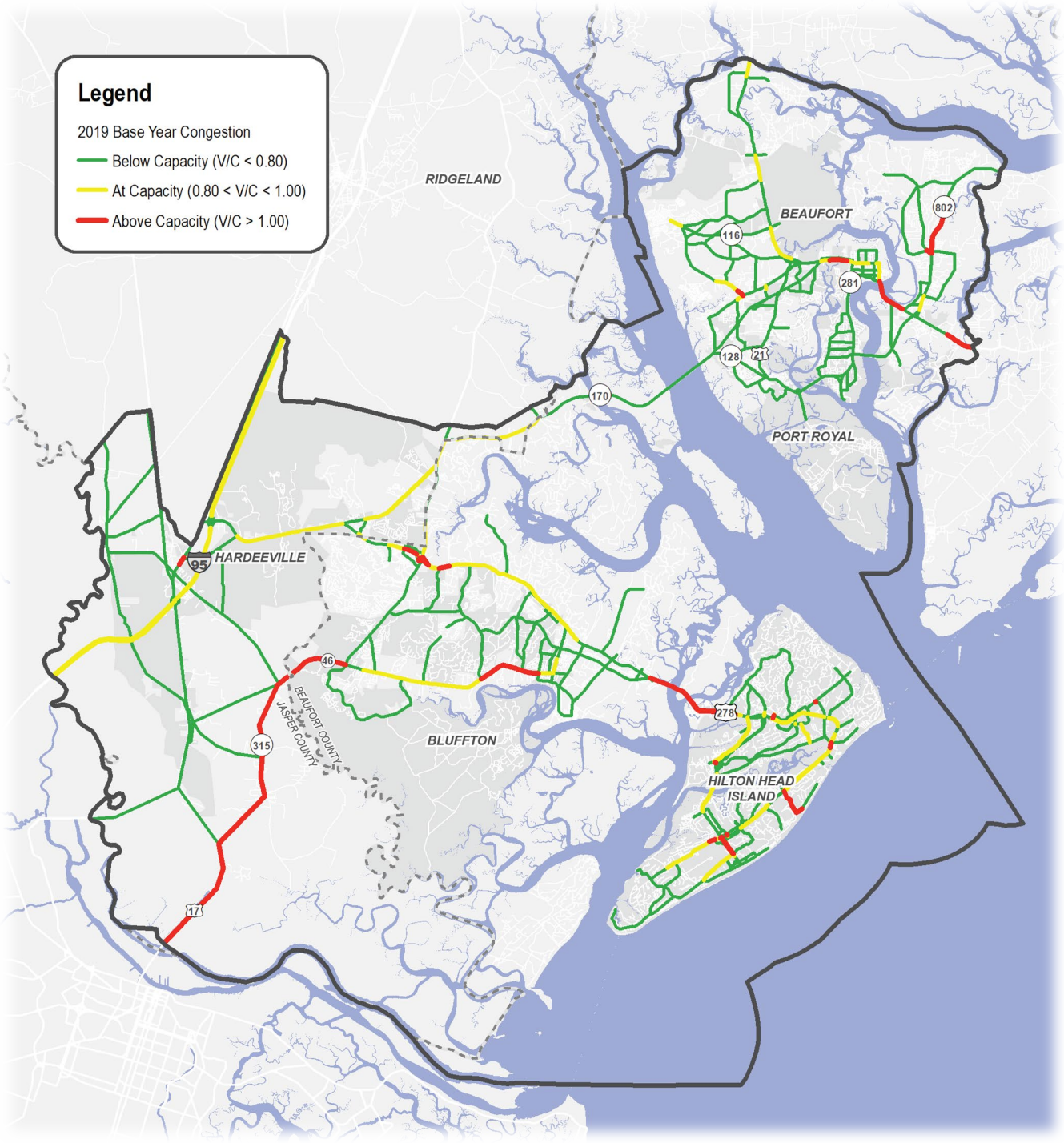


Figure 6: Programmed Projects Map

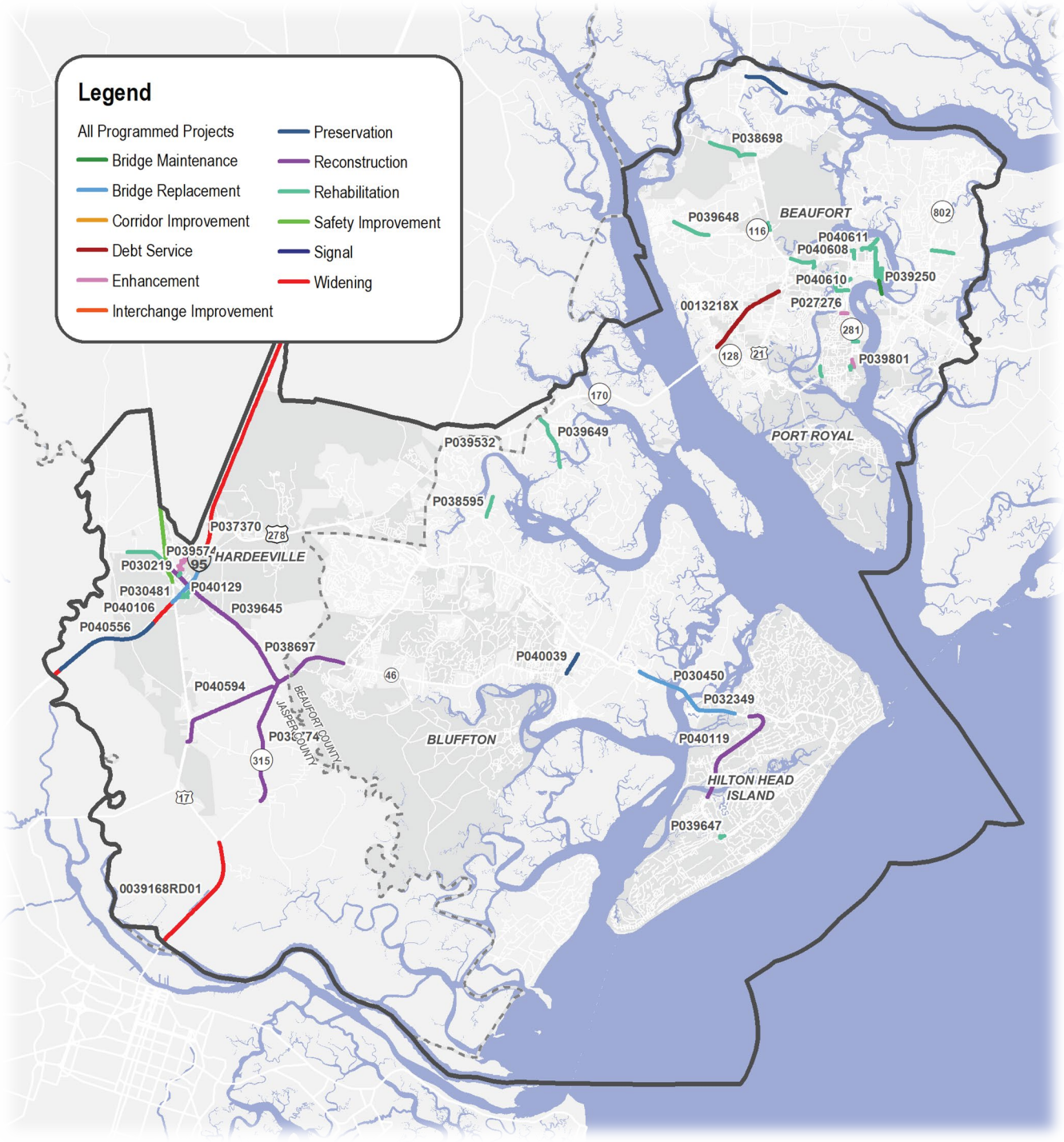
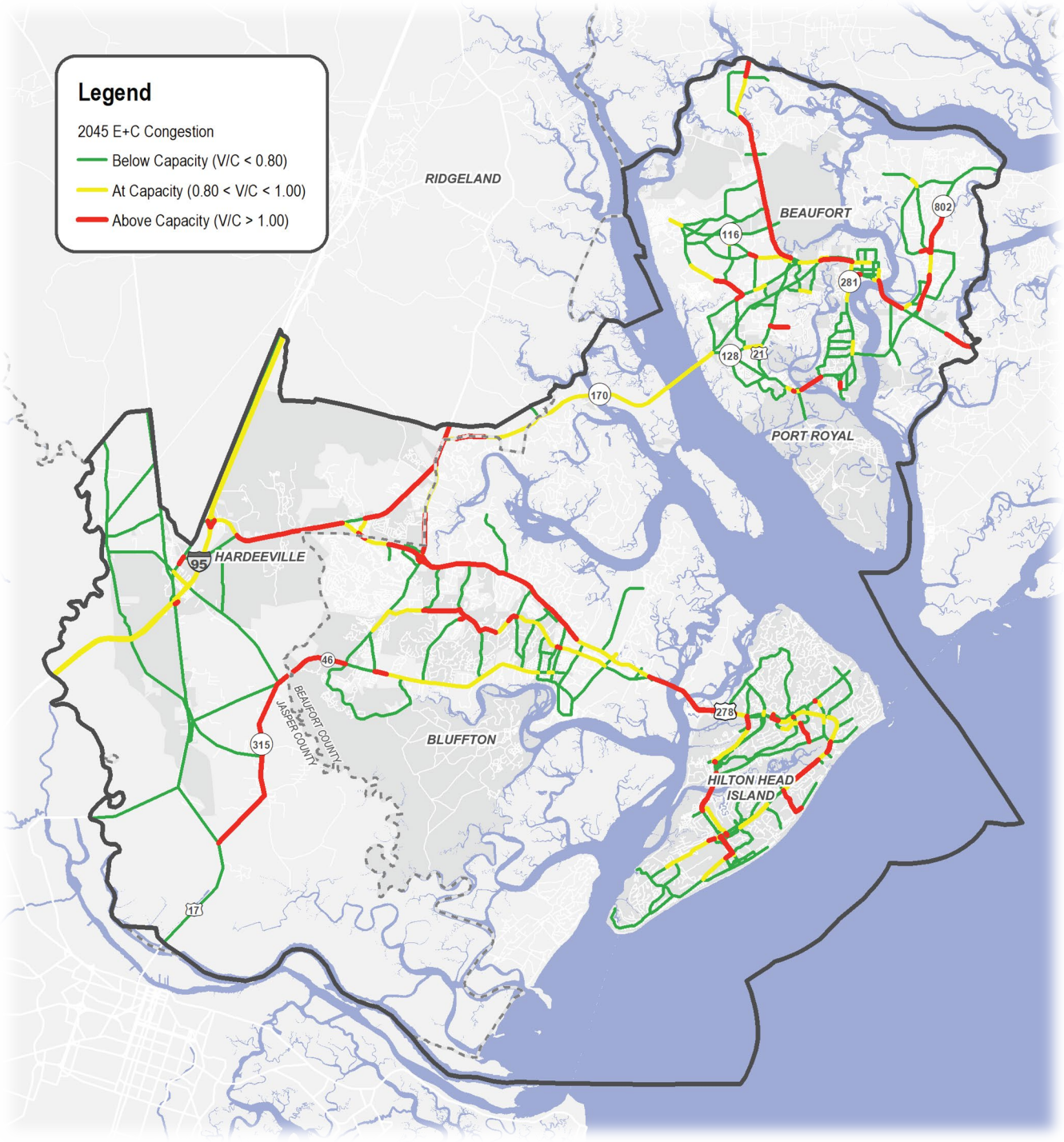


Figure 7: 2045 E+C Congestion



Complete Streets

A "complete street" is a community-oriented street that provides accommodations for bicycling, walking, and transit in the design, construction, maintenance, and operations of the transportation network. The South Carolina Department of Transportation (SCDOT) adopted a statewide Complete Streets policy in February 2021. The benefits of having a complete streets policy is that it can promote economic growth and diversity, expand and promote business retention, and support mobility of all user types. The creation of a complete street requires both community support in addition to coordination among local planners, designers, engineers, and other specialists. The *2045 LATS LRTP* aims to integrate the goals of the statewide complete streets policy in the development of all transportation recommendations. In order to achieve a successful complete streets program, the following principles must be considered:

- Balancing demands to better accommodate walking, biking, and riding transit in safe, efficient, and accessible ways.
- Blending street design with the surrounding area.
- Coordinating with various stakeholders including developers, property owners, SCDOT, and others to capitalize on private investment in the region.
- Empowering residents and visitors to be a part of the successful street design.
- Encouraging walking, biking, and riding transit in the design of streets
- Fulfilling community objectives.

The *2045 LATS LRTP* aims to achieve a balance between regional mobility needs and multimodal accessibility. Providing effective and accessible facilities for all users will be collaborative effort between the MPO, SCDOT, and the municipalities in the region.

Electric Vehicles

Although the number of plug-in electric vehicles and hybrid electric vehicles sold in the United States has increased since the early 2000s, conventional vehicles have still dominated market sales. The projections estimating the adoption of electric vehicles in the future vary significantly. A report produced by the International Energy Agency estimates that electric vehicles will account for 54% of new car sales globally by 2040.

As part of the Bipartisan Infrastructure Law, each state with a completed National Electric Vehicle Inventory (NEVI) plan will be able to access funding to build electric vehicle chargers. The program will provide nearly $5 billion over five years to help states create a network of EV charging stations along designated Alternative Fuel Corridors, particularly along the Interstate Highway System. A second, competitive grant program designed to further increase EV charging access in locations throughout the country, including in rural and underserved communities, will also be introduced in late 2022. The LATS MPO should continue to monitor regional and national trends to plan for the electrification of vehicles and invest in infrastructure that may be necessary in the future to support electric or hybrid vehicles.

Public Outreach

The analysis of quantitative measures is only part of the story. Public engagement was a crucial component to help contextualize the development of the *2045 LATS LRTP*. With local and firsthand experience, the people driving in and around the study area provide valuable insight into the gaps and opportunities of the transportation network. Stakeholder interviews and community workshops were conducted in August and September 2021 to guide the development of recommendations, community goals, and financial investments. An online survey was also provided to more broadly capture public input.

The summary below focuses on the responses specific to roadway and intersection recommendations. The subsequent chapters of the *2045 LATS LRTP* will explore other modes of transportation.

Stakeholder Interviews

During the stakeholder interviews, several reoccurring themes appeared in the discussion:

- The congestion and safety of several roadways including Argent Boulevard, US 170, and US 278
- The extension of Bluffton Parkway
- The compliance with the complete streets policy and general preference of access management over roadway widenings where appropriate

Community Workshop

The interactive community workshop at the onset of the planning effort allowed participants to learn what an LRTP is, view the existing demographic conditions, propose project ideas, and provide additional comments.

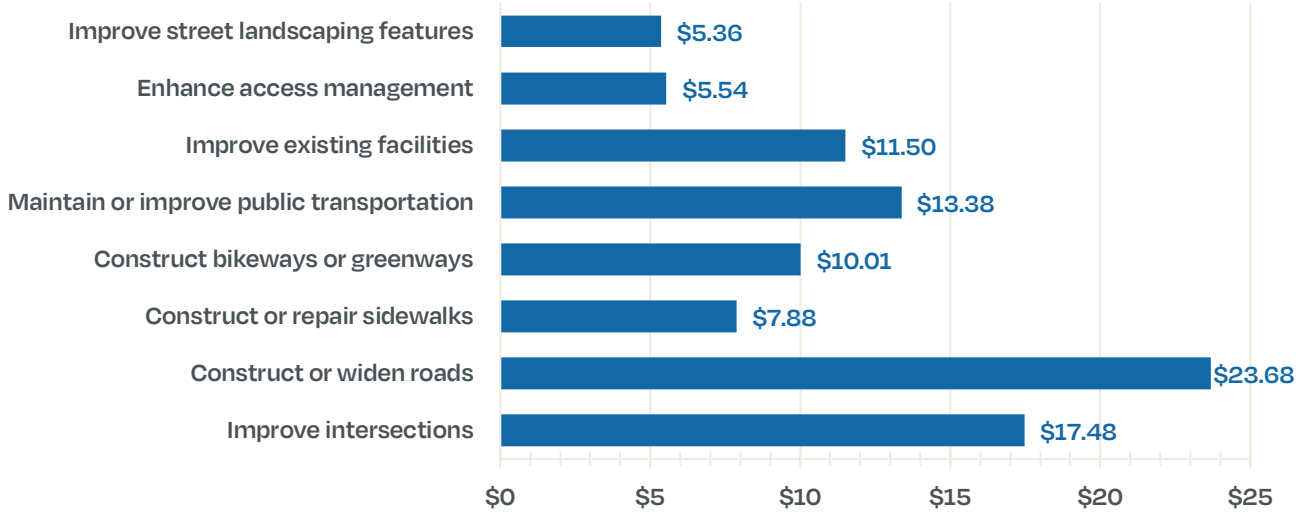
Online Outreach

To gather feedback from other stakeholders or members of the community that could not attend the in-person meetings, online resources were made available.

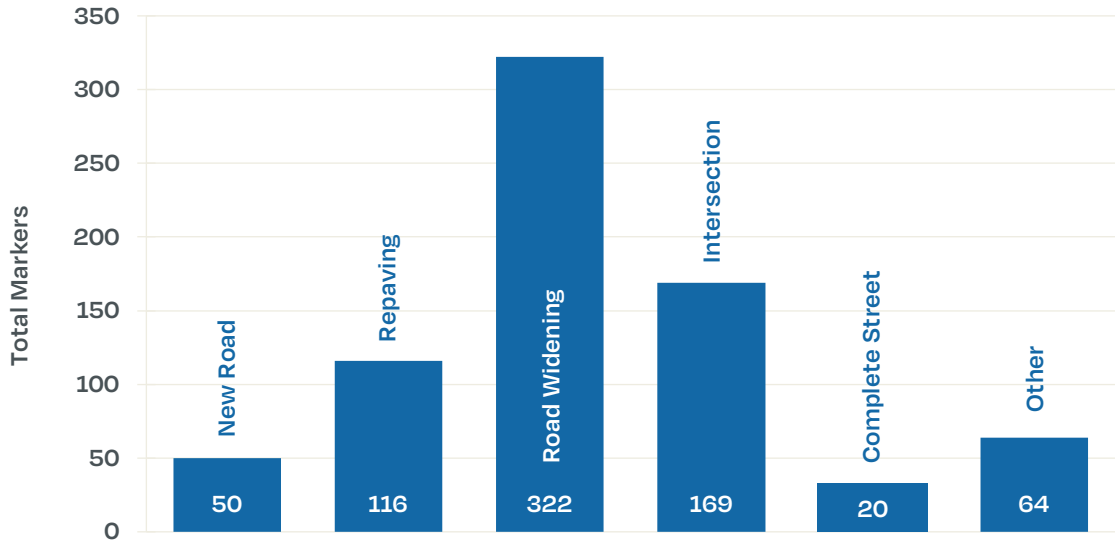
An online survey was offered as an additional venue for community members to provide input on regional transportation issues. The MetroQuest included questions about the plan's goals, trade-offs, and project ideas. The following responses related to roadway infrastructure improvements were noted.

When asked how participants currently travel versus how they would like to travel, participants said the following:

How would you spend transportation dollars?

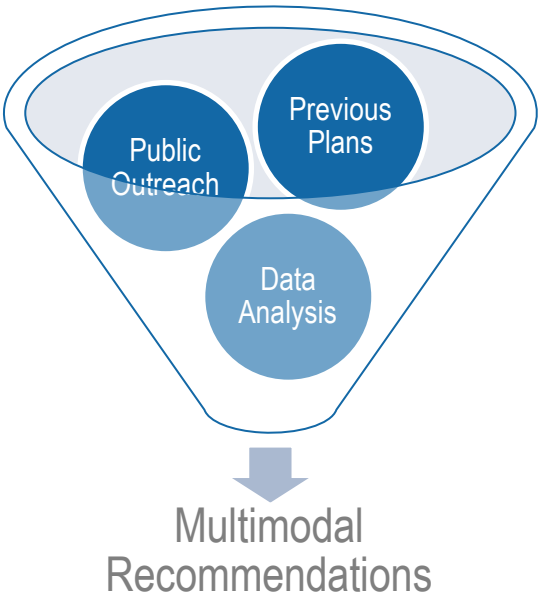


Participants were asked to map ideas. The project types that were recommended are summarized below.



Recommendations

The recommendations being developed in the *2045 LATS LRTP* draw upon the existing conditions and public process detailed in this chapter along with project recommendations identified through previous planning efforts. Ultimately, the desired outcome is a series of roadway recommendations that integrate smoothly with other multimodal improvements, addresses needs across the LATS study area, and includes a range of different project types. The following section summarizes roadway infrastructure recommendations that have been reviewed by the LATS Technical Committee and LCOG staff.



Roadway Recommendations

The roadway recommendations section describes the intersection and corridor projects considered in the *2045 LATS LRTP*. The improvements include interchange, intersection, new location, widening, and access management improvements. These recommendations are assigned an identification number for ease in project tracking and mapping and are sorted by jurisdiction. All of the recommendations were developed in concert with the recommendations documented in Chapters 5 through 8. *While many of the roadway recommendations incorporate multimodal enhancements, the consideration of bicycle and pedestrian facilities should be pursued in the development of any recommendation if applicable.* The projects were screened through the regional travel demand model and revised to reflect input heard from the public. Future collector street locations and alignments are not included as part of the recommended roadway projects and should be further determined on an individual basis by collaboration between local jurisdictions, the state, and local developers.

Intersection and Interchange Project Improvements

Over 25 intersection and interchange improvements were identified as part of the *2045 LATS LRTP*. The projects were identified based on safety, operational, or congestion issues. The improvements are classified into interchanges and intersections. An interchange is a grade-separated intersection where one road may pass over another with a ramp connecting them. An intersection is where two or more roads cross at the same level. The exact scope of improvements determined will be identified as projects move forward in the planning process. A variety of improvements could be used to enhance travel safety.

The following intersection improvements should be considered to improve safety and operations. Further information on intersection improvement types can be found in the Access Management Toolbox later in this chapter.

Realignment	To improve visibility and turning radii, roadways should meet at as close to a 90-degree angle as possible.

Improved Crossings To enhance comfort and access for pedestrians and bicyclists, intersection locations should consider improvements like painted crosswalks, median refuges, flashing beacons, or bicycle boxes.

Roundabouts To enhance traffic flow and reduce conflict points, a roundabout should be considered. A roundabout could replace a traditional signalized intersection.

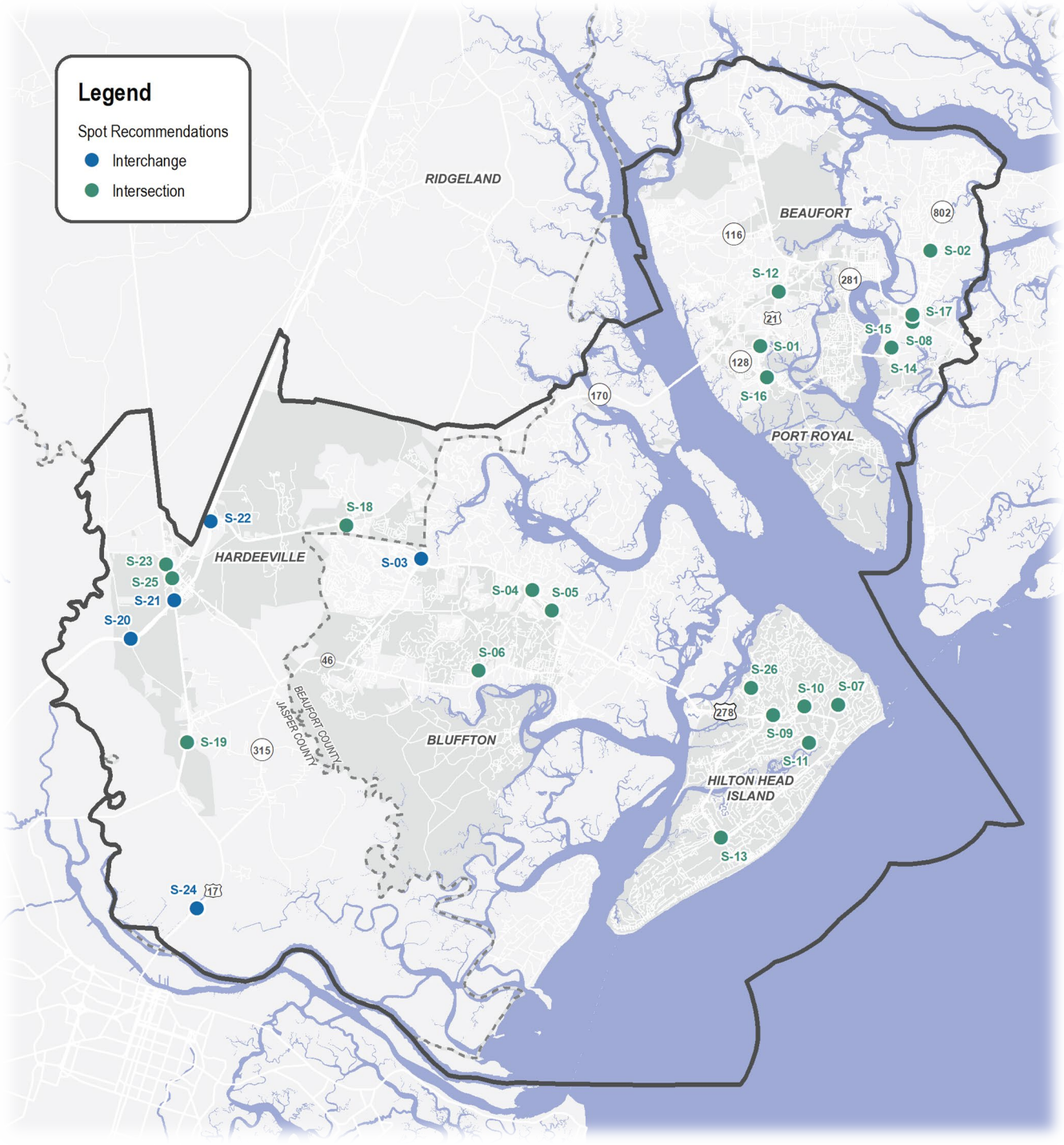
Turn Lanes and Striping To reduce the risk of rear-end crashes, adding a turning lane can provide adequate space for vehicles waiting to turn. Additional skip lane striping should be considered to further delineate dedicated spaces for vehicles.

Table 2: Recommended Intersection and Interchange Projects

Project ID	Spot Recommendation	Project Type
S-01	US-21 & S-73	Intersection
S-02	SC 802 & Brickyard Point Rd/Holly Hall Rd	Intersection
S-03	US 278 & SC 170	Interchange
S-04	US 278 & Buck Island Rd	Intersection
S-05	US 278 & Simmonsville Rd	Intersection
S-06	Buckwalter Pkwy/Pine Ridge Dr/Farm Lake Rd	Intersection
S-07	Dillon Rd – Gateway Circle Roundabout	Intersection
S-08	Hazel Farm Rd	Intersection
S-09	Main St & Wilborn Rd Roundabout	Intersection
S-10	Main St & Hospital Center Blvd Roundabout	Intersection
S-11	Marshland Rd – Leg O Mutton Rd Roundabout	Intersection
S-12	SC 170 & US 21	Intersection
S-13	Sea Pines Circle Roundabout	Intersection
S-14	US 21 (Lady's Island Dr) & Island Causeway	Intersection
S-15	US 21 (Meridian Dr)	Intersection

Project ID	Spot Recommendation	Project Type
S-16	US 21 & SC 128	Intersection
S-17	US 21 & SC 802	Intersection
S-18	US 278 & Argent Blvd	Intersection
S-19	US 17 & SC 170	Intersection
S-20	I-95 & Riverport Pkwy	Interchange
S-21	I-95 & US 17	Interchange
S-22	I-95 & US 278	Interchange
S-23	US 321 & SC 46	Intersection
S-24	US 17 Port Interchange	Interchange
S-25	US 321 & US 17	Intersection
S-26	Gumtree Rd, Wild Horse Rd, and Chinaberry Dr	Roundabout

Figure 8: Intersection and Interchange Recommendations



Corridor Project Improvements

Over 68 corridor recommendation were identified as part of the *2045 LATS LRTP*. The projects were identified based on public comment, guidance from the Technical Committee, identified safety concerns, identified operational deficiencies, and identified congestion issues. There are several improvement types proposed in the *2045 LATS LRTP* including:

New Location	New location projects can alleviate congestion on existing roadways by providing an alternative route. A new location project focuses less on the project alignment and more on the start and end point. The alignment of new location roadways should be determined in future planning studies.
Access Management	Access management solutions are context-sensitive improvements. The following section outlines—in greater detail—the specific access management treatments including site access treatments, median treatments, and intersection and minor street treatments.
ITS	Intelligent Transportation Systems (ITS) treatments are considered to be access management strategies. The following section outlines the specific ITS solutions including dynamic message signs, emergency vehicle preemption, progression-controlled signal system, and signal timing. ITS improvements can be used to enhance the flow of traffic without needing additional lanes.
Widening	A widening project primarily focuses on enhancing capacity. During the design or construction phase, other elements like sidewalks or bicycle lanes can be included to create more holistic transportation corridors. Additionally, expansion or widening may only be necessary at specific intersections to accommodate egress and ingress on the corridor.

As projects progress in the planning process, it is understood that exploring access management solutions, improving the secondary roadway network, promoting alternative modes of transportation are all locally preferred alternatives to pursuing roadway widening projects. The LATS MPO should continue to partner with member municipalities to best address the local and regional needs.

Table 3: Recommended Corridor Projects

Project ID	Corridor Recommendation	Project Type	Length (miles)
BC-01	Boundary St improvements from Neil Rd to Laurel Bay	Access Management	2.23
BC-02	Brickyard Point/Middle Rd from Better Than Ever St to roundabout	Widening	1.63
BC-05	Joe Frazier Rd from SC 116 to Broad River Blvd	ITS and Access Management	3.48
BC-06	Meadowbrook Dr Ext from Gay Dr to US 21	New Location	0.07
BC-07	New Location from S-281 to S-167	New Location	0.76
BC-08	New Location from US 21 to S-7-73	New Location	0.70
BC-09	New Location from Myrtle St to Reynolds St	New Location	0.42
BC-10	Ribaut Rd from Lenora Rd to US 21 BUS	ITS and Access Management	4.77
BC-11	Ribaut Rd from Boundary St to Parris Island Bridge	Access Management	5.66
BC-12	SC 170 from Okatie Center Blvd to Tidewatch Dr	Widening	1.54
BC-13	SC 170 from Tidewatch Dr to SC 462	Widening	2.88
BC-14	SC 170 from Boundary St to Broad River Bridge	Access Management	5.36
BC-18	SC 802 (Sam's Point Rd) from Miller Dr to Brickyard Point Rd	Access Management	1.93
BC-19	US 21 (Lady's Island Dr) from Lady's Island Bridge to US 21 (Sea Island Pkwy)	Access Management	2.07
BC-20	US 21 BUS from Ribaut Rd to Woods Memorial Bridge	Access Management	1.57
BC-21	US 21 from Trask Pkwy to Parris Island Bridge	Access Management	5.57

Project ID	Corridor Recommendation	Project Type	Length (miles)
BC-22	Joe Frazier Rd from Laurel Bay Rd to Broad River Blvd	Widening	3.48
BC-23	New Location from Broad River Blvd to Castle Rock Rd	New Location	0.27
BC-24	New Location from SC 128 to Castle Rock Rd	New Location	0.97
BC-25	New Location from Broad River Blvd to Castle Rock Rd	New Location	1.05
BC-26	New Location from Broad River Blvd to SC 170	New Location	1.58
BC-27	New Location from New Location to Clear Water Way	New Location	0.41
BC-28	New Location from SC 170 to Grober Hill Rd	New Location	1.38
BC-29	New Location from Goethe Hill Rd to SC 170	New Location	0.85
BC-30	New Location from US 21 to SC 170	New Location	1.64
BC-31	New Location from Broad River Blvd to New Location	New Location	0.29
BC-32	New Location from SC 170 to Goethe Hill Rd	New Location	0.28
BC-33	New Location from Broad River Blvd to New Location	New Location	0.19
BL-01	Buckwalter Frontage Connector from Buckwalter Pkwy to Willow Run	New Location	0.70
BL-02	Bluffton Pkwy from Buckwalter Pkwy to Buck Island Rd	New Location	2.30
BL-03	Buck Island Rd from Bluffton Pkwy to US 278	ITS and Access Management	1.06
BL-05	SC 170/SC 46 from roundabout to Jasper County line	Widening	1.93
BL-06	SC 46/SC 170 from Argent Blvd to SC 462	Widening	0.87

Project ID	Corridor Recommendation	Project Type	Length (miles)
BL-08	Buckwalter Pkwy from US 278 to SC 46	Access Management	4.29
H-01	US 321 from US 17 to Honey Hill Rd	Widening	2.17
H-02	US 17 (Whyte Hardee Blvd) from I-95 (Exit 5) to John Smith Rd	Access Management	1.61
H-03	John Smith Rd from US 17 to US 278	Widening and Access Management	2.08
H-04*	Bluffton Pkwy from Riverport Pkwy to SC 170	New Location	9.52
HHI-01	Arrow Rd from New Orleans Rd to Palmetto Bay Rd	Widening and Access Management	1.43
HHI-03	New Orleans Rd from Arrow Rd to St Augustine Place	Widening and Access Management	0.18
HHI-04	US 278 from Sea Pines Cir to Spanish Wells Rd	ITS and Access Management	8.60
HHI-05	US 278 BUS from Spanish Wells Rd to Sea Pine Cir	Access Management	8.30
HHI-07	US 278 Frontage Road North from Squires Pope Rd to Wild Horse Rd	New Location	0.23
HHI-08	US 278 Frontage Road South from Squires Pope Rd to Spanish Wells Rd	New Location	0.94
JC-01	Argent Blvd from US 278 SC 170	Widening	3.80
JC-02	New Location from Bluffton Pkwy to SC 46	New Location	0.41
JC-03	New River Pkwy from US 278 to Argent Blvd	Widening	0.58
JC-04	Riverport Pkwy from SC 170 to US 321	New Location	8.02
JC-05	SC 170 from US 278 to SC 462	Widening	4.12
JC-06	SC 315/SC 46 from US 17 to SC 170	Access Management	6.10
JC-07	SC 462 from SC 170 to Snake Rd	Widening	2.50

Project ID	Corridor Recommendation	Project Type	Length (miles)
JC-08	Short Cut Rd from SC 170 to Argent Blvd	Widening	0.45
JC-09	US 17 from US 278 to John Smith Rd	Widening	1.34
JC-10	US 17 from SC 315 to SC 170	Widening	2.33
JC-11	US 278 from I-95 to SC 170	Widening	7.85
JC-12	US 278 from Jasper County line to SC 170	Widening	2.24
JC-13	US 278 from Beaufort County line to Argent Blvd	Widening	0.67
JC-14	US 278 Ext from US 17 to US 321	Widening	1.43

**Additional study will be needed to determine the proposed alignment*

Figure 9: Corridor Recommendations

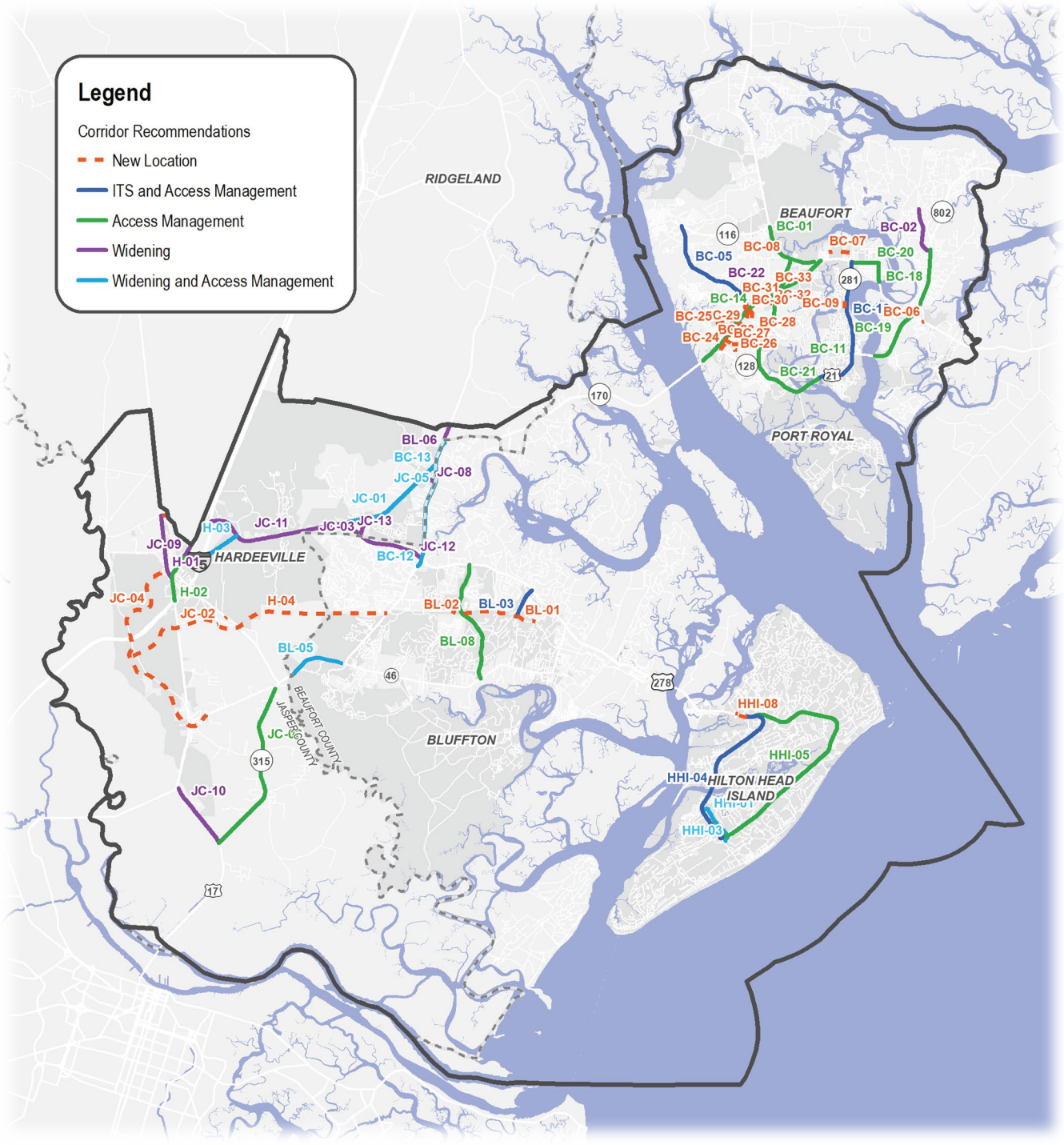


Figure 10: Corridor Recommendations Beaufort and Port Royal Inset

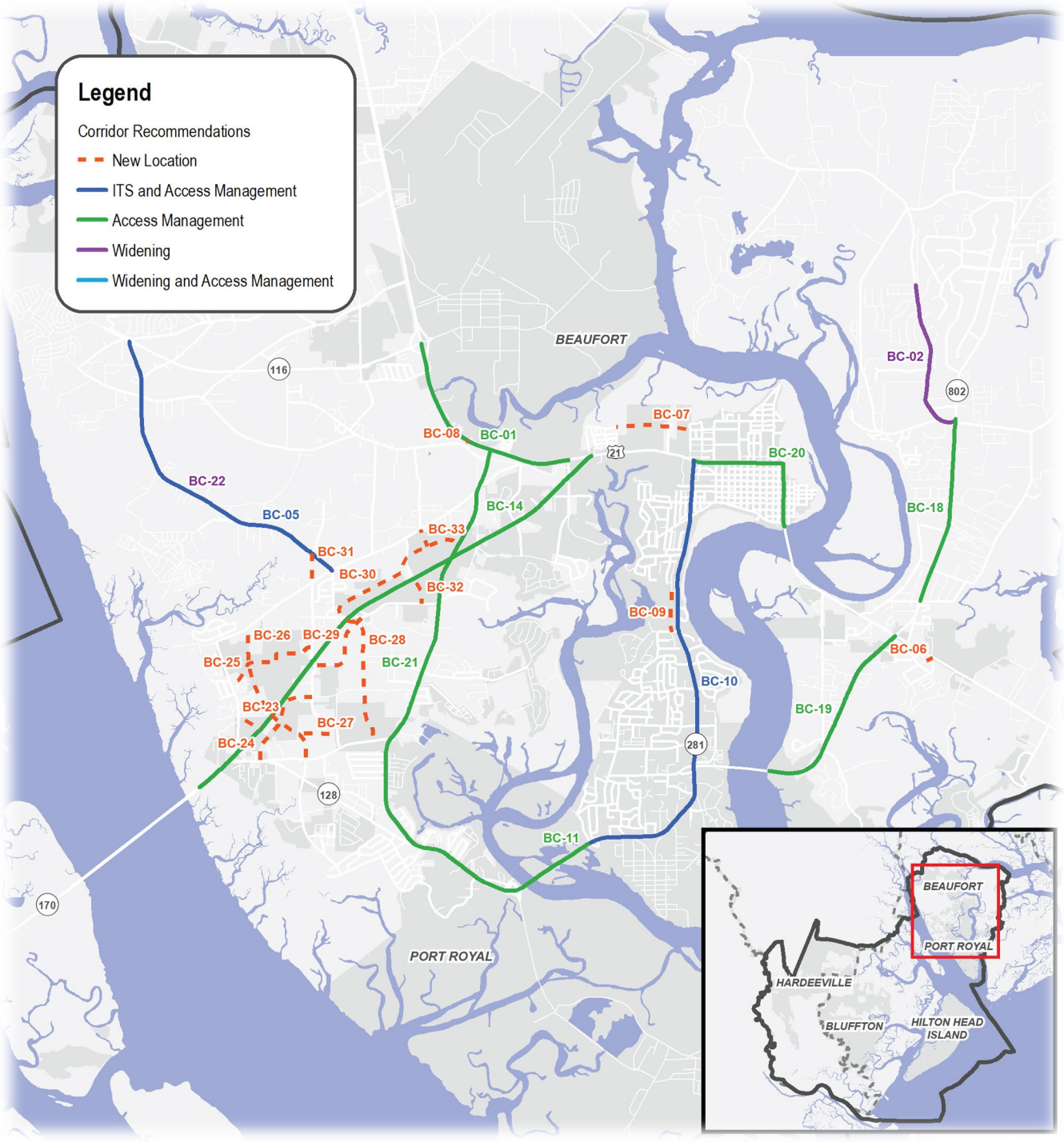


Figure 11: Corridor Recommendations Bluffton Inset

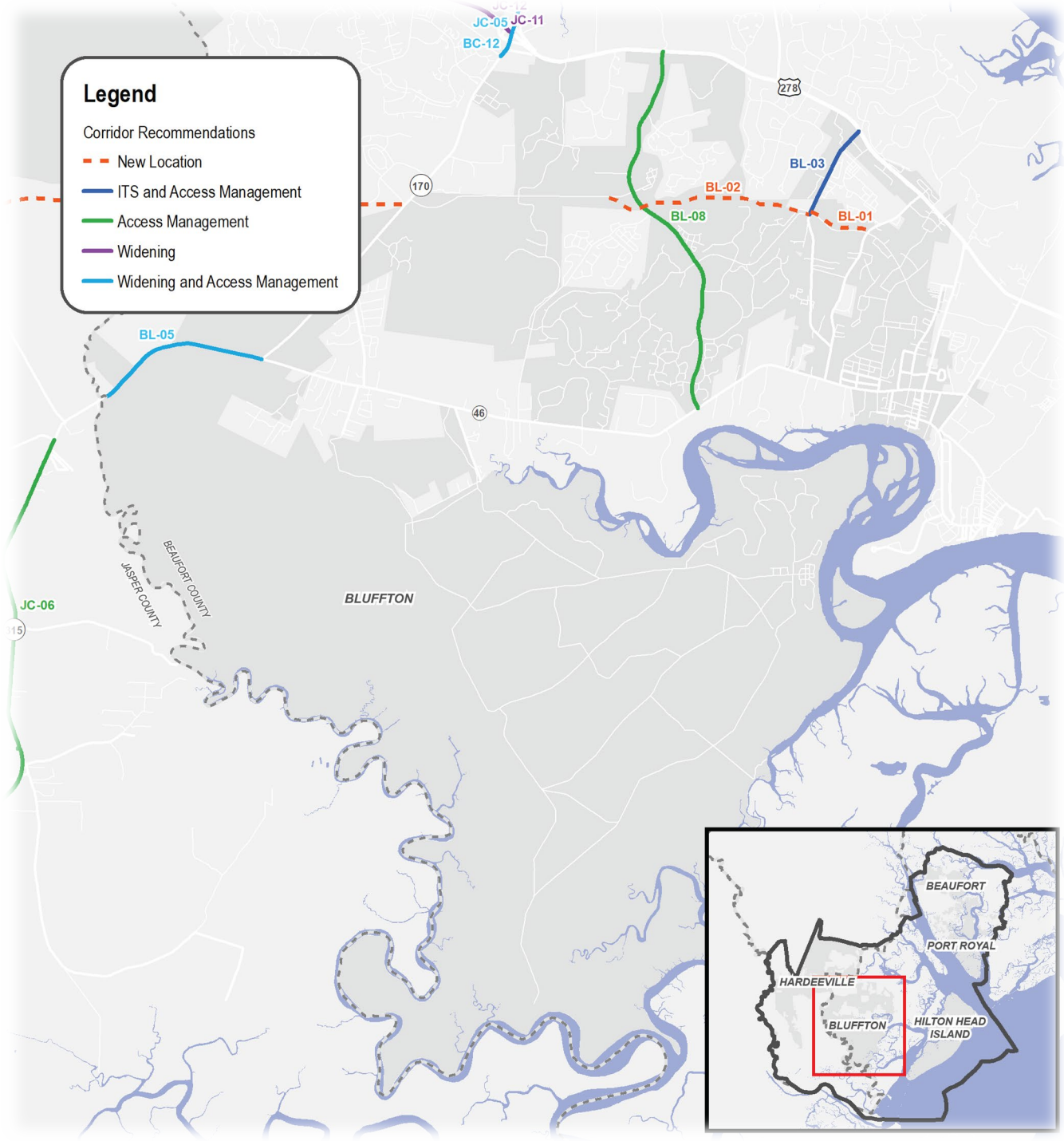


Figure 12: Corridor Recommendations Hardeeville Inset

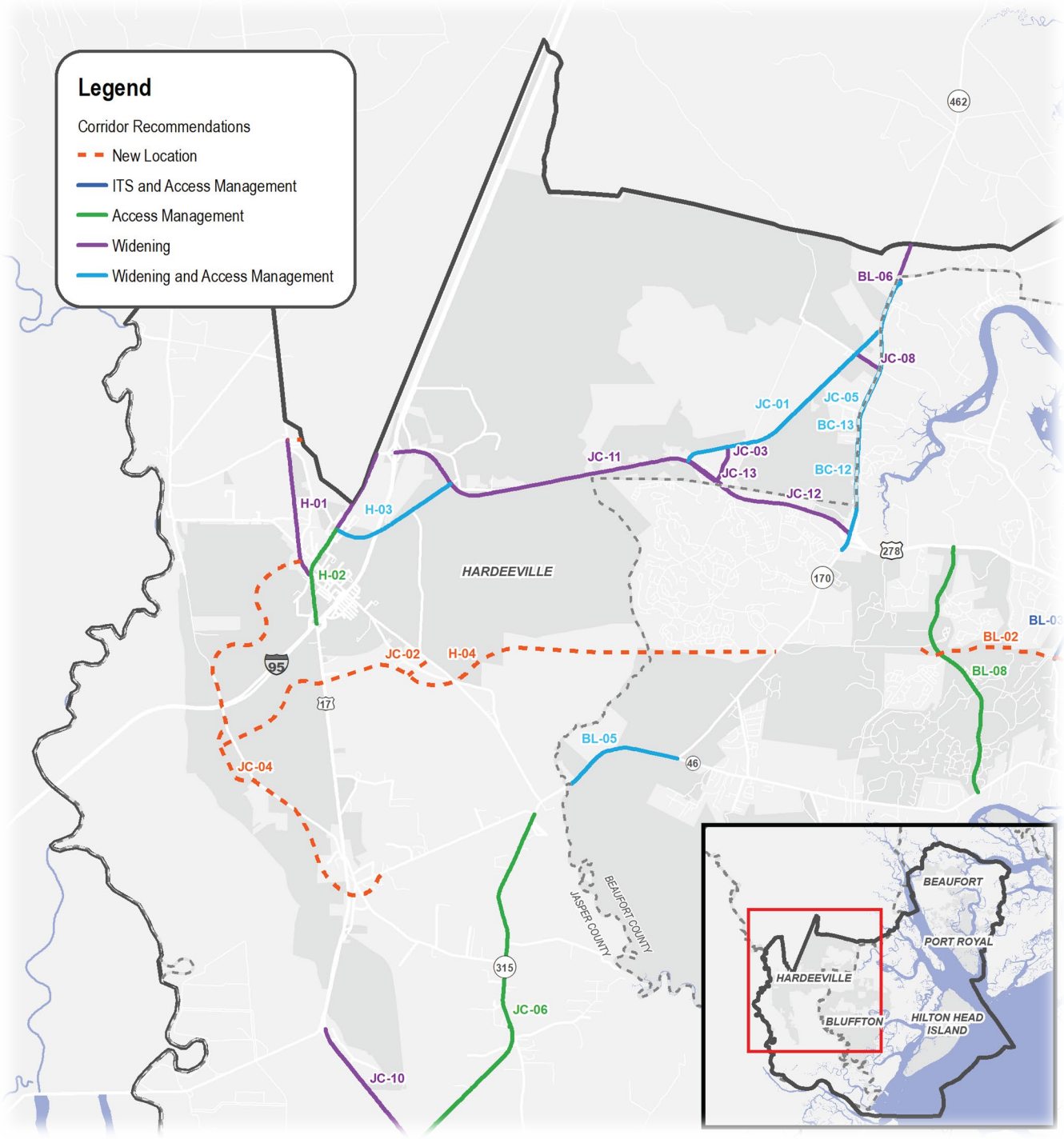
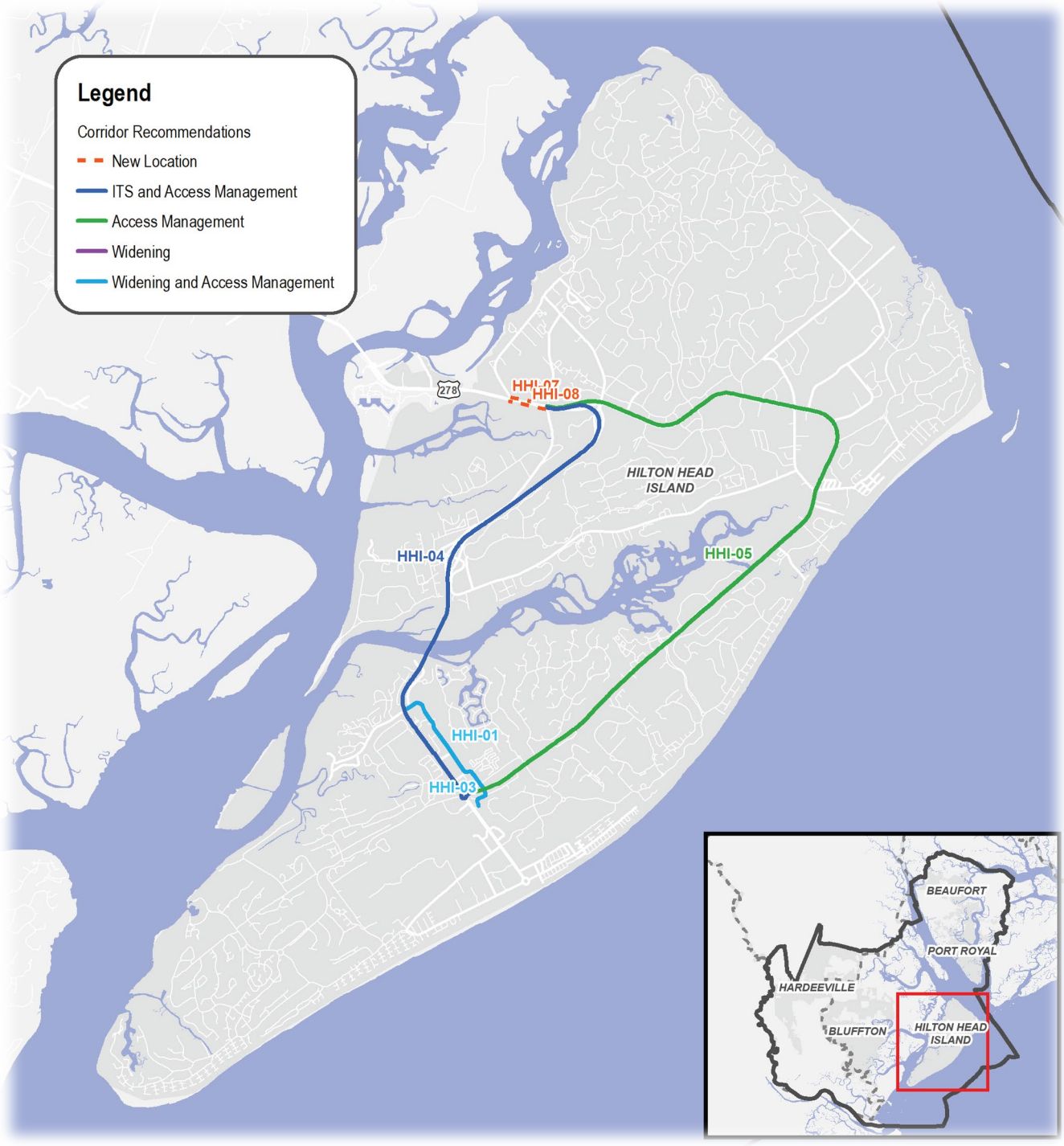


Figure 13: Corridor Recommendations Hilton Head Island Inset



Access Management

The Federal Highway Administration (FHWA) defines access management as "the proactive management of vehicular access points to land parcels adjacent to all manner of roadways." When applied appropriately, access management can promote efficiency and safety across the transportation network. Corridors with poor access management often have greater congestion and higher crash rates. In order to mitigate safety concerns, access management strategies require coordination between government agencies and landowners. Access management enhancements can improve the functionality of a corridor while maintaining the current corridor footprint. Compared with widening or new location projects, access management improvements can often be more cost effective.

Access Management Toolbox

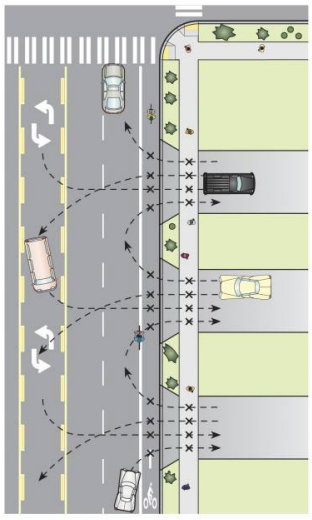
Access management is a context-sensitive improvement. It is not a one-size fits all strategy and a variety of techniques should be considering the Lowcountry region. The following toolkit provides an overview of the differing strategies available to mitigate congestion and other adverse effects. While a comprehensive access management program focuses on vehicular movements, the successful implementation of access management accounts for alternative modes of transportation. The purpose of this toolkit is to provide local planners and engineers with an overview of the techniques to enhance safety in the region. The overlap between the strategies highlights the complexity of identifying the right blend of improvements at any given location.

The solutions for access management can be divided into four major categories: site access treatments, median treatments, intersection and minor street treatments, and intelligent transportation systems.

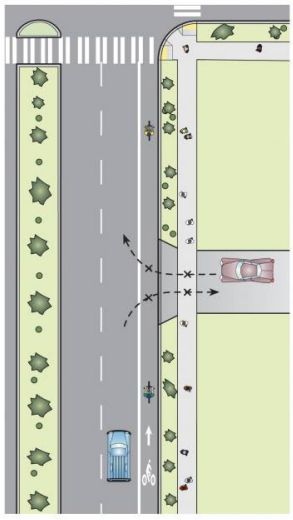
Site Access Treatments

The improvements to reduce the number of vehicle conflicts is a key consideration during the site development process along a corridor. The movement of vehicle in and out of a site can create unnecessary conflict and congestion if there are too many access points into a site. Site access treatments should consider the following improvements:

- Access to Adjacent Sites
- Driveway Placement and Location
- Driveway Length
- Improved On-Site Traffic Circulation
- Number of Driveways
- Minor Street Approach Improvements



Uncontrolled Access



Consolidated Driveways

Median Treatments

Median treatments are effective along corridors with cross access, backside access, and on-site circulation. The benefits of creating a median divided roadway are reduced traffic congestion and improved safety. Despite restricting some left-turn movements, conflicts are reduced, and the flow of traffic improves. An additional benefit of median treatments are the opportunities for landscaping. Improving the aesthetics of a corridor can encourage surrounding investment and contribute to promoting a sense of place. The following treatments should be considered along the corridors identified for access management:

- Directional Crossover (Left-Over Crossing)
- Improved On-Site Traffic Circulation
- Left-Turn Storage Lanes
- Median U-Turn Treatment
- Non-Traversable Medians
- Offset Left-Turns

Broad River Bridge (SC-170) Landscaped Median

Intersection Treatments

A variety of improvements at the intersection level that can greatly reduce conflict. At signalized intersections, treatments to reduce driver confusion can be implemented by establishing the proper curb radii and ensuring adequate laneage along street approaches. Other treatments to further enhance safety for pedestrians and bicycles can occur concurrently. The following treatments at intersections should be considered:

- High-Visibility Pedestrian Crossings
- Intersection and Driveway Curb Radii
- Painted Bicycle Left-Turn Box
- Roundabout
- Skip Marks (Dotted Line Markings)
- Traffic Signal Spacing

Example of Intersection Treatments

Intelligent Transportation Systems (ITS) Treatments

The inclusion of Intelligent Transportation Systems (ITS) solutions has many benefits when implemented concurrently with other access management strategies. ITS solutions leverage computer technology to enhance traffic flow in an effort to reduce crashes and manage emissions. Through remote control of the signal system, agencies can share traveler information with the public and allow emergency vehicles to have priority traveling through a signalized intersection.

- Dynamic Message Signs (DMS)
- Emergency Vehicle Preemption (EVP)
- Progressive-Controlled Signal System
- Signalization Timing

Example of EVP

Access Management Corridors

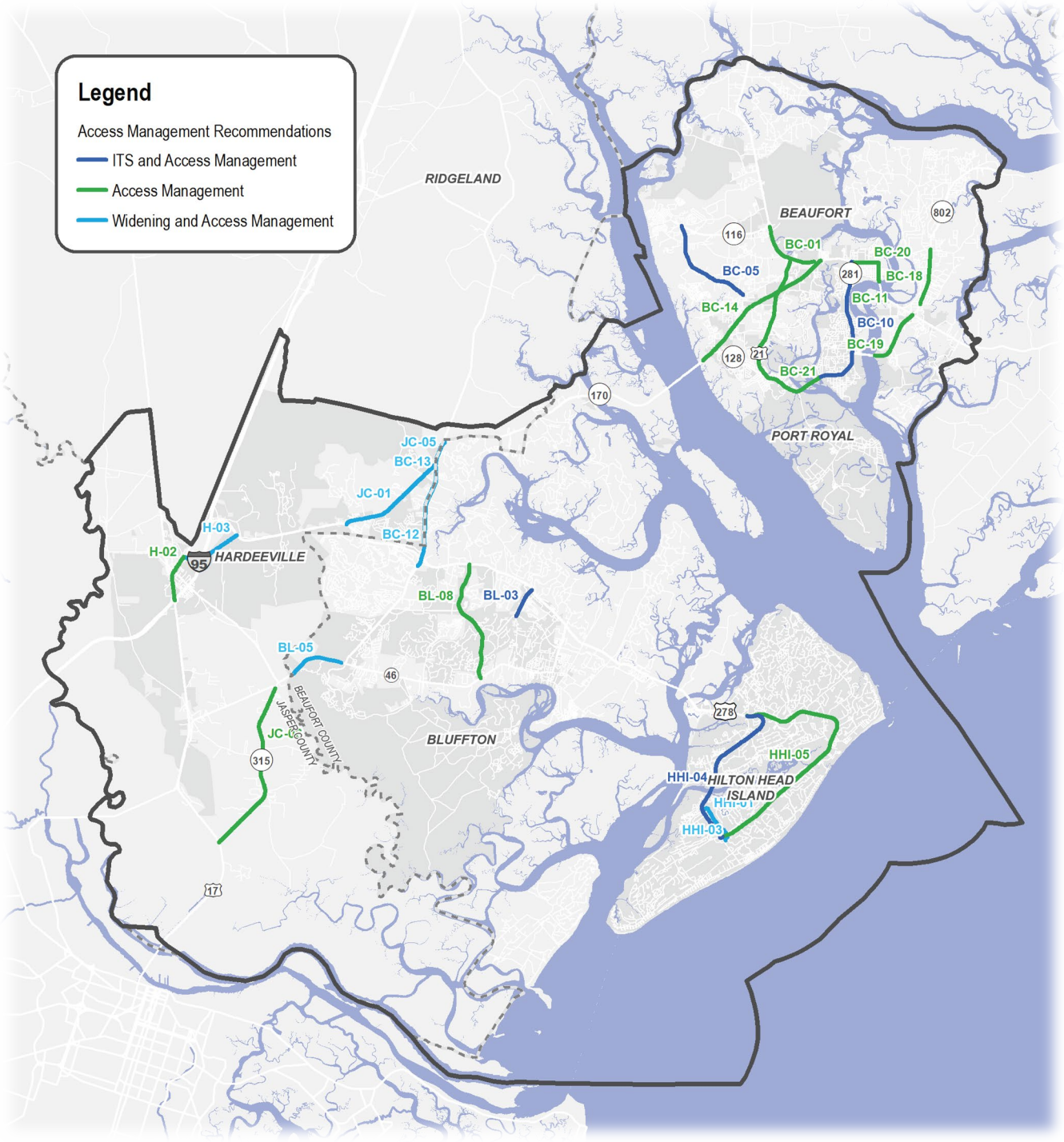
The Technical Committee along with LCOG staff identified certain corridors for access management treatments. The solutions identified for each corridor will need to be studied in further detail to determine the appropriate treatment. The access management toolbox provides a variety of strategies to provide guidance on the types of improvements that should be considered. These recommended access management corridor projects are a subset of the corridor recommendations already discussed in **Table 4** and **Figure 14**.

Table 4: Recommended Access Management Corridors

Project ID	Corridor Recommendation	Project Type	Length (miles)
BC-01	Boundary St improvements from Neil Rd to Laurel Bay	Access Management	2.23
BC-05	Joe Frazier Rd from SC 116 to Broad River Blvd	ITS and Access Management	3.48
BC-10	Ribaut Rd from Lenora Rd to US 21 BUS	ITS and Access Management	4.77
BC-11	Ribaut Rd from Boundary St to Parris Island Bridge	Access Management	5.66
BC-14	SC 170 from Boundary St to Broad River Bridge	Access management	5.36
BC-18	SC 802 (Sam's Point Rd) from Miller Dr to Brickyard Point Rd	Access Management	1.93
BC-19	US 21 (Lady's Island Dr) from Lady's Island Bridge to US 21 (Sea Island Pkwy)	Access Management	2.07
BC-20	US 21 BUS from Ribaut Rd to Woods Memorial Bridge	Access Management	1.57
BC-21	US 21 from Trask Pkwy to Parris Island Bridge	Access Management	5.57
BL-03	Buck Island Rd from Bluffton Pkwy to US 278	ITS and Access Management	1.06
BL-08	Buckwalter Pkwy from US 278 to SC 46	Access Management	4.29
H-02	US 17 (Whyte Hardee Blvd) from I-95 (Exit 5) to John Smith Rd	Access Management	1.61

Project ID	Corridor Recommendation	Project Type	Length (miles)
H-03	John Smith Rd from US 17 to US 278	Widening and Access Management	2.08
HHI-01	Arrow Rd from New Orleans Rd to Palmetto Bay Rd	Widening and Access Management	1.43
HHI-03	New Orleans Rd from Arrow Rd to St Augustine Place	Widening and Access Management	0.18
HHI-04	US 278 from Sea Pines Cir to Spanish Wells Rd	ITS and Access Management	8.60
HHI-05	US 278 BUS from Spanish Wells Rd to Sea Pine Cir	Access Management	8.30
JC-06	SC 315/SC 46 from US 17 to SC 170	Access Management	6.10

Figure 14: Access Management Corridors



Special Studies or Other Projects

The Technical Committee along with LCOG staff identified special studies for further consideration for improvements along certain corridors or other projects that fulfill a regional need. Where funding is available, the MPO should consider partnering with localities to determine the full scope of work.

3rd Bridge Feasibility Study

The feasibility study would evaluate the need for a third bridge to Lady's Island.

Bluffton Parkway Corridor Study

From US 278 to I-95 (Exit 3), the Bluffton Parkway Corridor Study would identify specific improvements to address multimodal considerations, safety concerns, and traffic volumes.

Hilton Head Island Bridge Feasibility Study

The feasibility study would evaluate the need for a second bridge into Hilton Head Island.

I-95 Feasibility Study

A feasibility study for the I-95 corridor between mile marker (MM) 8 and MM 33 will identify strategies to improve capacity and address operational deficiencies along each interchange.

Regional Freight Plan

The regional freight plan would gather and analyze freight data across the region to understand existing freight corridors, understand barriers to freight mobility, and identify locations for freight improvements.

SC 170 Access Management Study

Access management strategies would be studied along SC 170 from Boundary St to SC 46 roundabout. The access management study would analyze current congestion, safety, and mobility needs along the corridor in greater detail to identify locations, types, and estimated costs for recommended improvements.

SC 46/SC 315 Access Management Study

The access management study would evaluate SC 46/SC 315 between SC 170 and the US 17 roundabout. The study would identify strategies to address congestion, safety, and multimodal transportation needs. The recommendations from this study will be implemented with the funding identified for JC-6. The study would identify the types of improvements, cost estimates, and project phasing for the SC 46 and SC 315 corridors.

US 278 Access Management Study

The US 278 Access Management Study would identify recommendations between I-95 to Sea Pines Circle. As part of the access management study, specific recommendations to account for regional growth and safety concerns along the US 278 corridor.

Prioritization Process

In order to best understand how to allocate the region's limited financial resources, it was crucial to ensure that recommendations were quantitatively screened through a robust methodology. In 2007, the South Carolina General Assembly enacted Act 114. Act 114 required that South Carolina Department of Transportation (SCDOT) establish a data-driven prioritization process. In 2016, the General Assembly enacted Act 275, which updated the prioritization requirements that MPOs and Council of Governments (COGs) must follow. The prioritization process is unique based on the project improvement classification: corridor improvements or widening projects, new location roadways, and intersection projects. By demonstrating that the projects outlined in this process address the goals of the state, the LATS MPO can more successfully position itself to acquire state and federal funding. The following tables outline the prioritization criteria, definition, and percentage of the score.

Table 5: Corridor and Widening Project Prioritization

Evaluation Criteria	Definition	Percentage of Score
Traffic Volume and Congestion	The traffic volume and congestion score are based on current and future traffic volumes and associated level-of-service (LOS).	35%
Located on a Priority Network	The priority network score is based on a project's location in relationship to defined priority network.	25%
Public Safety	The public safety score is based on crash rates.	10%
Economic Development	The economic development score is based off of an assessment of livability, regional economic development, benefit-cost & cost effectiveness, and system performance.	7%
Truck Traffic	The truck traffic score is based on current and project truck percentages.	10%
Financial Viability	The financial viability score is based on estimated project cost in comparison to the ten-year State Transportation Improvement Program (STIP) budget. Additional consideration will be given to projects supplemented with local project funding and/or other federal and state funding.	5%
Pavement Quality Index (PQI)	The PQI score is based on pavement condition assessment.	3%
Environmental Impacts	The environmental impact score is based on an assessment of potential impacts to natural, social, and cultural resources.	5%

Table 6: New-Location Project Prioritization

Evaluation Criteria	Definition	Percentage of Score
Traffic Volume and Congestion	The traffic volume and congestion score is based on a comparison of network hours of delay between build and no-build scenarios.	40%
Economic Development	The economic development score is based off of an assessment of livability, regional economic development, benefit-cost & cost effectiveness, and system performance.	20%
Environmental Impacts	The environmental impact score is based on an assessment of potential impacts to natural, social, and cultural resources.	15%
Connectivity to a Priority Network	The priority network score is based on the proposed road's relationship to a priority network.	15%
Financial Viability	The financial viability score is based on estimated project cost in comparison to the ten-year State Transportation Improvement Program (STIP) budget. Additional consideration will be given to projects supplemented with local project funding and/or other federal and state funding.	10%

Table 7: Intersection Improvement Project Prioritization

Evaluation Criteria	Definition	Percentage of Score
Traffic Volume and Congestion	The traffic volume and congestion score is based on current and future traffic volumes and the associated level-of-service.	35%
Public Safety	The public safety score is based on crash rates.	25%
Truck Traffic	The truck traffic score is based on current and projected truck percentages.	10%
Located on a Priority Network	The priority network score is based on the project's relationship to a priority network.	15%
Financial Viability	The financial viability score is based on estimated project cost in comparison to the ten-year State Transportation Improvement Program (STIP) budget. Additional consideration will be given to projects supplemented with local project funding and/or other federal and state funding.	5%

Evaluation Criteria	Definition	Percentage of Score
Economic Development	The economic development score is based off of an assessment of livability, regional economic development, benefit-cost & cost effectiveness, and system performance.	5%
Environmental Impacts	The environmental impact score is based on an assessment of potential impacts to natural, social, and cultural resources.	5%

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 5 | Safety and Security

Introduction

A priority of the long-range transportation planning process is considering the safety of the region. The key federal legislation that dedicates funding to invest in safety across the nation is the recently enacted Infrastructure Investment and Jobs Act (IIJA), otherwise known as the Bipartisan Infrastructure Law (BIL). This transportation funding legislation, combined with the performance planning requirements from its predecessor the Fixing America's Surface Transportation (FAST) Act, lays the groundwork for identifying safety and security needs. Further, a series of performance measures tracking fatalities, serious injuries, and vehicle miles traveled communicates the continued focus on safety as a priority for motorized and non-motorized travelers. The *2045 LATS LRTP* assesses the existing safety and security conditions and provides recommendations for future consideration and improvements.

Role in the Region

Both safety and security are prominent goals for the *2045 LATS LRTP*. In transportation planning, "safety" refers to the protection of an individual traveler including motorists, bus riders, bicyclists, or pedestrians. The inclusion of safety recommendations at high-priority intersections in the LATS area is essential. Including the most relevant guidance from SCODT on roadway design standards to maximize safety along a corridor is a preliminary step in addressing issues across the region.

"Security" refers to the integrity of the transportation system. Security recommendations aim to mitigate threats and minimize unforeseen impacts across the region. Transportation security includes considering emergency services or evacuation routes. An intentional focus on investment and maintenance for strategic transportation corridors and bridges will promote the region's security. In the LATS area, special consideration must be given to coastal hazards. While the unique environment makes the region vulnerable to hurricanes and other severe weather events, promoting best practices can enhance safety and security.

Relevance to the Long-Range Transportation Plan

As noted in Chapter 2, the federal planning factors guide the plan development process. For this element, two federal planning factors directly apply:

- Increase the safety of the transportation system for motorized and non-motorized users
- Increase the security of the transportation system for motorized and non-motorized users

The development of the *2045 LATS LRTP* focused on linking the Lowcountry region's unique needs and considerations with federal planning priorities.

The safety and security conditions described in this chapter are drawn from a combination of data provided by SCDOT, public feedback, previous planning efforts, and a planning-level analysis of regional needs. The impacts of the safety and security improvements support all modes of transportation including automobiles, bicycles, pedestrians, freight, public transportation, and aviation.

Planning Considerations

Safety and Transportation Planning

According to the National Highway Traffic Safety Administration, South Carolina experienced the tenth highest number of fatalities among all 50 states in 2019. With over 1,000 fatalities occurring in a single year alone, South Carolina is one of the more dangerous states in the country. The statewide fatality rate per 100 million vehicle miles traveled (VMT) in 2019 was 1.73.[1] This fatality rate has actually increased since 2014, when it was 1.66 statewide. In the study area, there were over 17,500 crashes between 2016 and 2021. Of the 17,594 crashes 134 were fatal crashes and 7,378 resulted in a serious injury. Given the quantity and severity of crashes, it is essential that the *2045 LATS LRTP* identifies solutions for reducing the number of crashes, fatalities, and serious injuries.

At all levels of planning—federal, state, regional, and local—safety must be a core principle. The consistent emphasis of safety planning at the federal level reaffirms the concerns heard at the local and regional levels. The following section outlines the guidelines that ensure safety remains a cornerstone of the *2045 LATS LRTP* planning process.

Engineering

The recommendations presented in the *2045 LATS LRTP* are a collection of engineering enhancements that intended to improve traffic congestion, mobility, and safety for all mode users. Using crash data provided by SCDOT, the long-range plan could identify high-priority crash areas throughout the region and present strategies to mitigate problematic intersections, interchanges, or corridors. The engineering best practices used to maximize safety include:

- Identifying intersection improvements to mitigate crashes
- Constructing a cohesive network of on- and-off street bicycle facilities
- Designing pedestrian-friendly streets and intersections
- Configuring streets to accommodate truck freight
- Maintaining standards for at-grade railroad crossings

Enforcement

Activities to monitor the appropriate behavior of all roadway users may include coordination with law enforcement, organizations dedicated to enhancing safety, and safety-specific task forces. These enforcement initiatives exist at both the state and federal level including Buckle Up South Carolina, Obey the Sign or Pay the Fine, Sober or Slammer, and Target Zero. SCDOT also prepares technical documents to provide further guidance about data analysis and presentation. The MPO can partner with local agencies and SCDOT to support enforcement programs in the region.

Education

Where engineering and enforcement primarily focus on certain target age groups, education has the potential to reach a broader group of people. Education programs can encourage the safe usage of all modes throughout the region. These programs can be incorporated into school activities, community activities, local organization partnerships, task force groups, or government-sponsored events. The opportunity to partner enforcement and education campaigns should be pursued to support life-long habits. According to South Carolina's Strategic Highway Safety Plan, between 2014 – 2018, the annual

[1] "Traffic Safety Facts Annual Report Tables," NHTSA. https://cdan.nhtsa.gov/tsftables/tsfar.htm#

number of young drivers involved in a collision that resulted in fatality or a serious injury was 1,451 people.[2] The MPO should continue identify programs to help educate children and teenagers on how to safely navigate the transportation network. One example of a successful education campaign is the national Safe Routes to School (SRTS) campaign. The SRTS program identifies tools and trainings, conducts research, and supports locally driven strategies to safety get children to and from school primarily through biking and walking.

Emergency Services

An essential component of safety across any transportation system is ensuring safe access to homes and businesses by emergency personnel. The ability for emergency medical services and fire department personnel to quickly respond to incidents is a resounding sentiment in the public perception. The roadway recommendations outlined in this plan can have a positive impact on emergency response times. The improvements will encourage enhanced connectivity of the street network and provide alternative route choices. To further strengthen the network, improving and re-timing signal systems and encouraging intelligent transportation system (ITS) improvements can create a safer network for people of all ages and abilities.

Security and Transportation Planning

Transportation security planning helps identify and implement strategies to mitigate imminent and unforeseen threats. While general strategies can be planned at the regional level, implementation of many security strategies will be most effective at the local level. In the Lowcountry, key security considerations include coastal evacuation routes, sensitive facilities evacuation, maintenance of critical bridges and other infrastructure, protection of freight corridors, and maintaining public transportation operations. A subset of these considerations is outlined in further detail below. The considerations should continue to be an area of emphasis for the MPO.

The Four Categories of Security

Typically, security measures fall into one of the four categories:

Prevention limits access to ensure safety and security of the transportation system

Protection focuses on vulnerable aspects of the transportation system including bridges, rail corridors, and other critical infrastructure

Recovery refers to the initial and immediate response during an emergency in addition to the long-term strategies to provide relief

Redundancy identifies alternative routes in the instance of an emergency by creating an interconnected street network for all modes of transportation

[2] "Strategic Highway Safety Plan Target Zero," SCDOT. https://scdps.sc.gov/sites/default/files/Documents/accountability/BR1_SC_SHSP_Dec20-LoRes.pdf

Emergency Response and Fire Protection

Whether man-made or natural, an emergency management department is responsible for maintaining the response to emergency situations. The Beaufort County Emergency Management (EMS) Department is responsible for coordinating the county's preparedness and responding to emergency situations. Similarly, Jasper County EMS Department outlines the possible types of emergencies that could occur in the county. In addition to the Beaufort and Jasper County EMS departments, the region includes other departments to respond to other types of emergencies. These departments include fire, public works, and police departments at either the city or county level. The coordination between these departments helps ensure the safety of all people across the region.

Evacuation Routes

The Lowcountry is vulnerable to natural emergencies including hurricanes, flooding, tropical storms, and earthquakes. The South Carolina Department of Natural Resources (SCDNR) states that more than half of South Carolina's earthquakes occur on the Coastal Plain. While the Lowcountry is susceptible to earthquakes, the concentration and intensity of the earthquakes is typically minor.[3] Since 1851, forty recorded tropical cyclones have made landfall.

The South Carolina Emergency Management Division (SCEMD) provides statewide guidance on natural disasters. In 2021, the SCEMD prepared a Hurricane Guide to outline warning signs, storm categories, emergency zones, and evacuation routes.[4] Since 1851, there have been 40 recorded tropical cyclones make landfall.[5] There are six coastal South Carolina counties that have more than 200 miles of coastline including Beaufort and Jasper. The hurricane evacuation routes and lane reversal systems are preemptive measure that have been identified to respond to emergency situations in the Lowcountry. **Figure 1** shows the evacuation routes in the region.

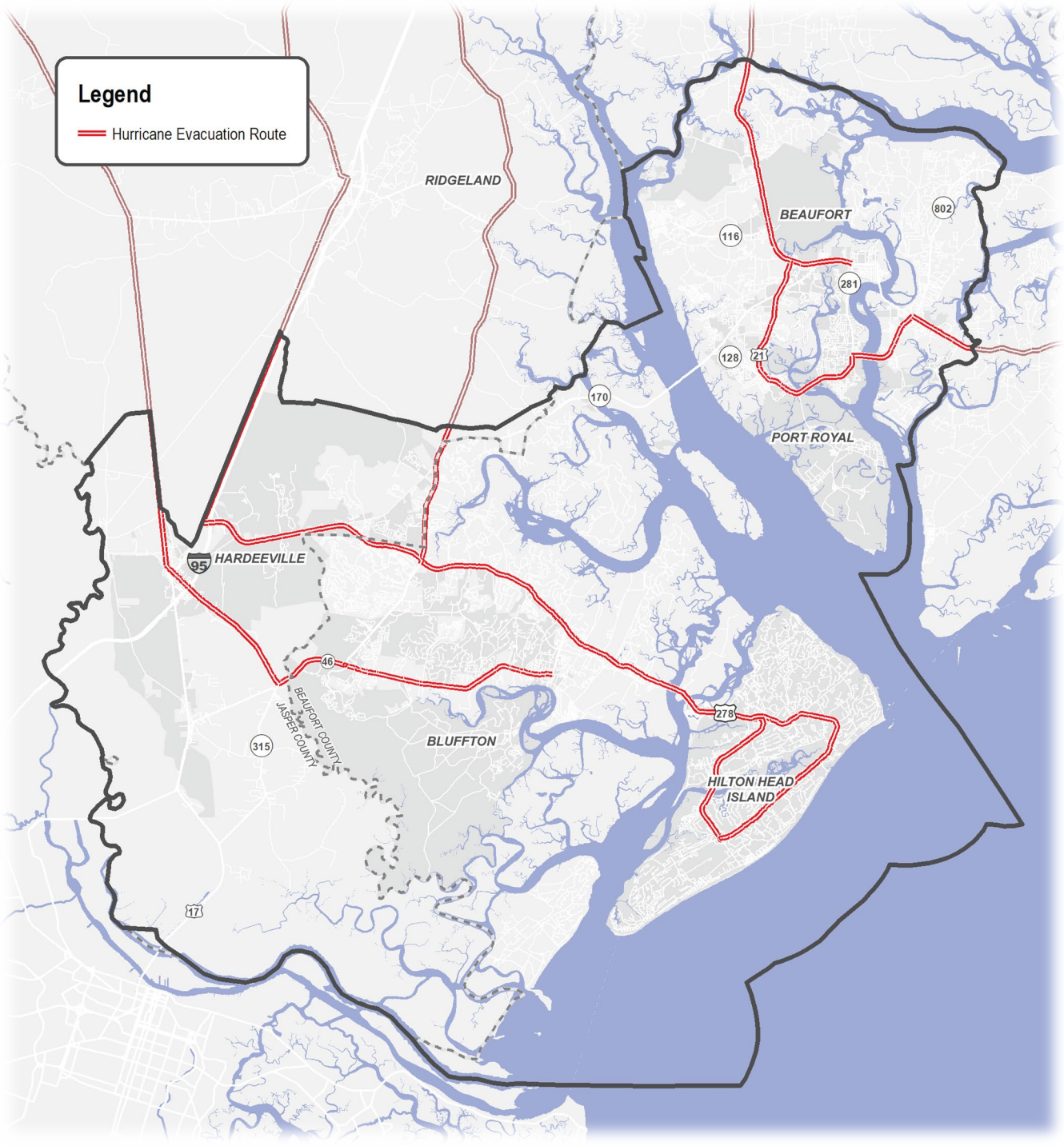
To enhance the flow of traffic traveling away from the coast, SCDOT has established a lane reversal plan for Beaufort and Hilton Head Island. For more information, check the Hurricane Guide for South Carolina.

[3] "Earthquake Guide," SCEMD. https://www.dnr.sc.gov/geology/pdfs/SCEMD_Earthquake_Guide.pdf

[4] "Hurricane Guide South Carolina," SCEMD. http://scemd.cdn.missc.net/media/1593/sc-hurricaneguide-2021_english.pdf

[5] "Appendix 1 (South Carolina Hurricane Plan)," SCEMD. https://www.scemd.org/media/1325/hurricane-base-plan.pdf

Figure 1: Evacuation Routes



Freight Considerations

The movement of goods also includes the transport of hazardous materials. The movement of hazardous materials through the region can pose a serious security threat along freight networks. In Beaufort County, County Ordinance 46-159 requires that businesses storing and transporting hazardous materials—via any mode—must register them with the County.[6] This registration must be renewed annually. In Jasper County, 118-74 requires annual renewal fees depending on the category of hazardous waste.[7]

Transit Considerations

The Federal Transit Administration requires Palmetto Breeze to spend a minimum of 1% of all federal dollars received on security. Palmetto Breeze is an important partner in coordinating emergency response plans, particularly assisting with emergency evacuation. To that end, it is recommended Palmetto Breeze (in collaboration with LATS) develop a security and emergency management plan that dovetails with existing municipal, county, and military plans.

[6] "Beaufort County Code of Ordinance," Beaufort County. https://library.municode.com/sc/beaufort_county/codes/code_of_ordinances?nodeId=PTIGEOR_CH46HESA_ARTVHAMA

[7] "Jasper County Code of Ordinance," Jasper County. https://library.municode.com/sc/jasper_county/codes/code_of_ordinances?nodeId=COOR_CH18OFMIPR_ARTIVHAMAOR

Traffic Safety and Crash History

An analysis of crash data provided by South Carolina Department of Transportation (SCDOT) helped establish and understand existing conditions in order to identify locations where safety are needed. A traditional crash analysis includes a study of crash frequency and crash type at each location. The crash analysis for the *2045 LATS LRTP* focuses on severity along heavily traveled corridors and intersections where improvements are most critical.

In order to understand safety concerns throughout the LATS area, a preliminary analysis by county helped establish the underlying context. The table below shows the number of fatal and serious injury crashes by county between January 2016 and March 2021.

Table 1: Fatal and Injury Crashes by County (2016 -2021)

County	Fatal	Injury
Beaufort County	114	6,767
Urban Beaufort County	**99**	**6,149**
Jasper County	88	2,431
Urban Jasper County	**35**	**1,229**

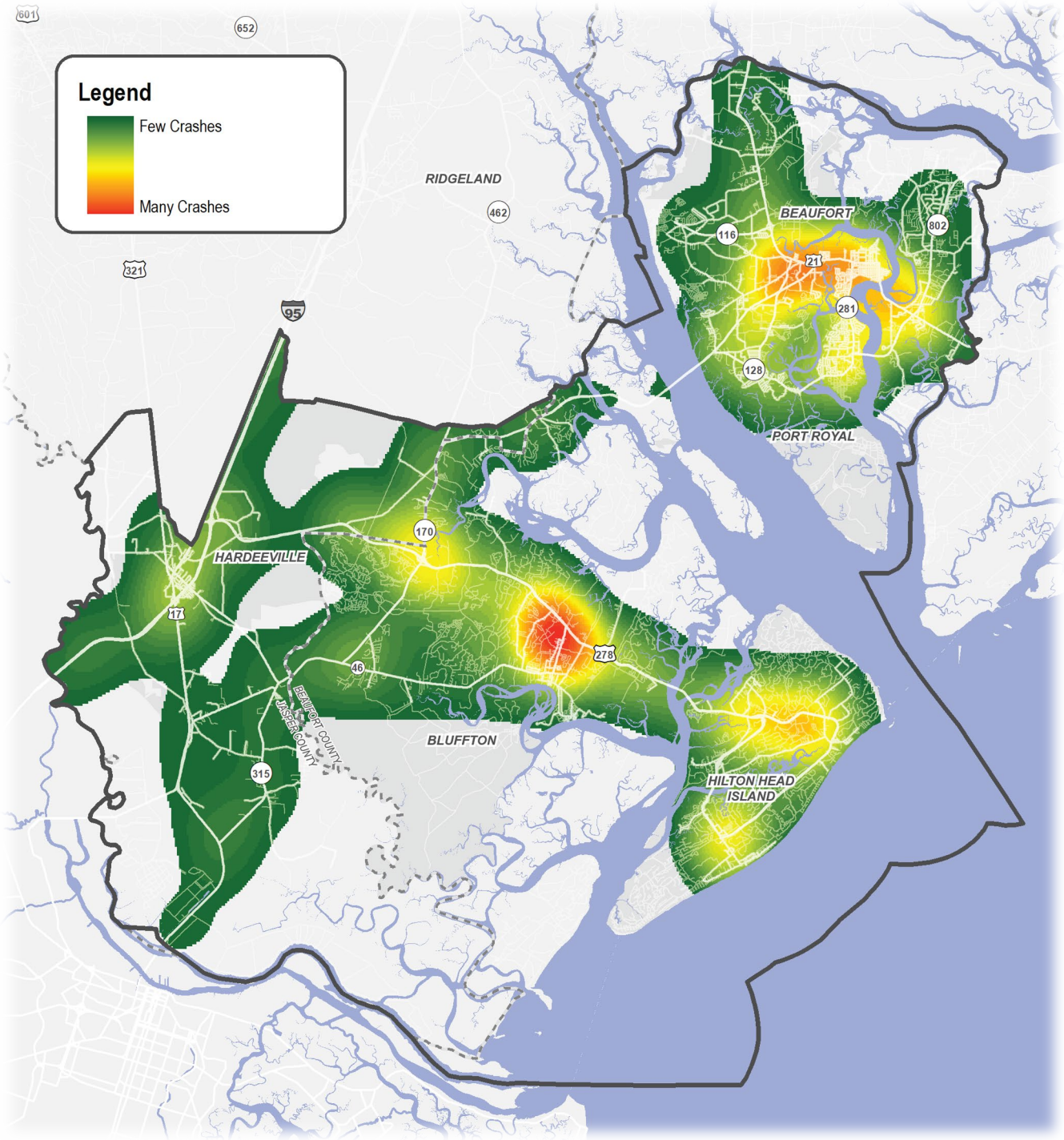
There are several factors of roadway design that may contribute to a corridor or intersection's high crash frequency; these factors can include driveway access, intersection designs, and traffic congestion. The relationship between traffic congestion and crash frequency is undeniably connected. The proposed corridor and new location projects aim to reduce congestion throughout the network in addition to promoting safety and addressing existing concerns for all modes of transportation. For intersection recommendations in particular, driveway access in and around adjacent sites should be carefully considered. The proximity of driveways to an intersection can contribute to high crash frequencies by creating conflict points.

In addition to the design of facility, the other factors or causes of a fatal crash can be analyzed to further understand the existing conditions. The table below summarizes the top four causes of fatal crashes:

Table 2: Causes of Fatal Crashes (2016 -2021)

Cause	Fatalities (Percentage)	Fatalities (Number)
Under the Influence	21%	74
Driving Too Fast	12%	42
Ran Off Road	11%	40
Failure to Yield	9%	32
Other Causes	47%	169

Figure 2: Crash Locations



A complete analysis of fatal crashes must also consider different modes of transportation. To contextualize safety as it relates to vehicles, bicycles, and pedestrians helped to further inform the recommendations. **Table 3** summarizes the crashes involving pedalcycles and pedestrians in the Beaufort and Jasper counties. In this definition, an event involving a pedalcyclists includes bicyclists, and other cyclists including riders of two-wheel, non-motorized vehicles, tricycles, and unicycles powered by pedals.[8]

Table 3: Crashes Involving a Pedalcycle or a Pedestrian (2016 -2021)

Event	Beaufort		Jasper		Total Fatal	Total Injury
	Fatal	*Injury*	*Fatal*	*Injury*		
Pedalcycle	10	108	1	3	11	111
Pedestrian	12	78	4	14	16	92
Total	**22**	**186**	**5**	**17**	**27**	**203**

The LATS MPO should continue to coordinate with SCDOT to identify best practices to promote bicycle and pedestrian safety. In order to address the safety concerns and promote non-vehicular modes of transportation, the following recommendations should be considered during construction:

Intersection Treatments

- Bicycle Boxes
- Stop Bars
- Lead Signal Indicators
- Signalized Pedestrian Crossings
- Mid-block Crossings
- Lighting Enhancements

Facility Treatments for Bicycles

- Dedicated Bicycle Lanes
- Curb Extensions
- High Visibility Signage
- Separated Facilities Including Multiuse Pathways

Facility Treatments for Pedestrians

- Pedestrian Overpass or Underpass
- Separated Sidewalks

[8] "Bicycles and Other Cyclists," NHTSA. file:///C:/Users/starla.couso/Downloads/2015%20Traffic%20Safety%20Fact%20Sheet%20Bicyclists%20&%20Other%20Cyclists.pdf

Climate Change

The built and natural environment are undeniably intertwined. A multitude of trends will influence the future of transportation planning including more extreme weather events, advancements in technologies, and changes in socioeconomic demographics. South Carolina's economy is dependent on both the efficient movement of people and goods in and out of the state. It is imperative to understand the current climactic trends in the state and across the nation to determine long-term strategies for transportation.

Climate change is defined as the long-term change in average weather patterns due—in large part—to human activities.[9] Climate change poses a threat to the reliability and capacity of existing transportation infrastructure. Naturally occurring events will take place more frequently and with more drastic consequences on existing systems. Examples of events could include extreme temperatures, severe storm events, and rising sea levels.

The development of a long-range plan should consider strategies to create resilient transportation infrastructure. Several of the FAST Act federal goals could be interpreted to address climate change. While the LATS MPO has addressed all of the federal goals through the creation of the plan's goals, the MPO should continue to find creative ways to incorporate resiliency planning into transportation planning to proactively combat climate change. Aside from the strategies that have already been identified in this chapter, LATS MPO should invest in constructing sustainable street designs and investing in transit-oriented development to better prepare for the impacts of climate change.

Transit-Oriented Development

Transit-oriented development—or TOD—creates walkable and livable communities for people of all ages and abilities. Not only does TOD create walkable communities, but it also provides a wider variety of transportation choices like biking, walking, or taking transit. TOD can relieve the cost of transportation on lower income households, bolster public transportation ridership, and reduce emissions that are associated with driving a personal vehicle. The idea of TOD is explored further in Chapter 7.

Sustainable Street Design

Street designs that focus on protected alternative modes of transportation will not only enhance the community's quality of life, but also encourage biking, walking, or taking transit. The strategic planning of street design can also impact stormwater runoff, water quality, and mitigate the heat island effect. All of these benefits address some adverse effects of climate change. A sustainable street design is both a proactive and strategic investment into a variety of transportation infrastructure. By creating a diverse, resilient transportation system will only better position the LATS MPO in the long-term.

[9] NASA, https://climate.nasa.gov/resources/global-warming-vs-climate-change/

Public Outreach

The public engagement for the *2045 LATS LRTP* was an integral component of identifying safety and security needs. As a consistent theme and critical area to address, safety and security was at the forefront of the recommendation development process.

Stakeholder Interviews

A series of stakeholder interviews were conducted at the onset of the planning process. A variety of focus areas were identified including bicycle, pedestrian, transit; military and economic development; municipal staff; and elected officials. Throughout all the interviews, safety and security was a recurring theme across all modes. A full summary of the stakeholder interviews can be found in the Appendix. Related to safety and security, stakeholders made the following comments:

- Addressing specific safety concerns along I-95, Argent Blvd, and US 17
- Continuing to invest in protected or dedicated multimodal facilities including bicycle and pedestrian infrastructure
- Ensuring the transportation network is prepared to facilitate movement during a hurricane or other extreme weather event where evacuation is warranted
- Investing in infrastructure like bridges, broadband, and intelligent transportation systems (ITS)
- Providing education opportunities for all roadway users

Community Workshop

At the community workshop, participants were asked to address to write and discuss their safety concerns throughout the region. During the workshop, participants expressed interest in:

- Integration of recommendations with a complete streets policy
- Inclusion of more multimodal facilities separated from traffic
- Consideration for repaving existing roadways

Online Outreach

The online survey included questions about the plan's goals, future investments, and project ideas. The following responses related to safety and security are summarized below:

"Most roads need widening and lower speed limits"

"I prefer walking, biking and public transportation to driving[;] I drive only because it is not safe to do otherwise."

"[Someone] is going to be killed out there. I avoid Argent [Blvd] as much as possible..."

"Argent is a death trap!"

Recommendations

Both safety and security of the transportation system were key considerations during the development and fiscal constraint of projects. In the prioritization methodology outlined by SCDOT, the number of and severity of crashes was taken into consideration to score corridor and intersection projects. The recommendations outlined in the *2045 LATS LRTP* are responsive to safety concerns and promote security throughout the region.

The projects designated in high-crash locations are outlined in **Table 4** and **Table 5**.

Table 4: High Crash Location Intersections

Project ID	Spot Recommendation	Project Type
S-03	US 278 & SC 170	Interchange
S-04	US 278 & Buck Island Rd	Intersection
S-05	US 278 & Simmonsville Rd	Intersection
S-12	SC 170 & US 21	Intersection
S-13	Sea Pines Cir Roundabout	Intersection
S-17	US 21 & SC 802	Intersection
S-21	I-95 & US 17	Interchange
S-25	US 321 & US 17	Intersection

Table 5: High Crash Location Corridors

Project ID	Corridor Recommendation	Project Type	Length (miles)
BC-01	Boundary St Improvements Phase II from Neil Rd to Laurel Bay Rd	Access Management	2.23
BC-04	Burnt Church Rd from Bluffton Pkwy to Alljoy Rd	Widening	1.68
BC-10	Ribaut Rd from Lenora Rd to US 21 BUS	ITS and Access Management	4.77
BC-11	Ribaut Rd Improvements from Boundary St to Parris Island Bridge	Access Management	5.66
BC-12	SC 170 from Okatie Center Blvd to Tidewatch Dr	Widening	1.54

Project ID	Corridor Recommendation	Project Type	Length (miles)
BC-14	SC 170 from Boundary St to Broad River Bridge	Access Management	5.36
BC-20	US 21 BUS from Ribaut Rd to Woods Memorial Bridge	Access Management	1.57
BC-21	US 21 from Trask Pkwy to Parris Island Bridge	Access Management	5.57
HHI-04	US 278 from Sea Pines Cir to Spanish Wells Rd	ITS and Access Management	8.60
HHI-05	US 278 BUS	Spanish Wells Rd to Sea Pines Cir	8.30
HHI-06	US 278 from Gumtree Rd to Dillon Rd	Widening	2.38
JC-05	SC 170 from US 278 to SC 462	Widening	4.12
JC-11	US 278 from I-95 to SC 170	Widening	7.85
JC-12	US 278 from Jasper County Line to SC 170	Widening	2.24

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 6 | Bicycle and Pedestrian

Introduction

A holistic long range transportation plan is not complete without consideration of active transportation. While several of the roadway recommendations outlined in Chapter 4 contain multimodal improvements, this chapter further explores the exclusive connectivity of bicycle and pedestrian facilities. Planning for the expansion of the region's bicycle and pedestrian network will not only enhance the region's quality of life, but also promote economic stimulation and investment throughout the region. Chapter 6 analyzes the existing and planned facilities to improve biking and walking in the LATS area.

Role in the Region

The *2045 LATS LRTP* can leverage the previous planning efforts from recently adopted plans. The commitment to adopt Complete Streets policies and prioritize safety of all users is accepted throughout the LATS area. The *2045 LATS LRTP* will carry forward the locally adopted bicycle and pedestrian recommendations.

Relevance to the Long Range Transportation Plan

As modes of transportation, biking and walking are unique. The trips that occur biking or walking can be for recreation purposes, but they can also be for trips to and from work. According to the 2019 American Community Survey 5-Year Estimates, nearly 4% of households in the LATS area do not have access to a personal vehicle. Not only is the construction of bicycle and pedestrian facilities an investment in recreation and tourism, but it is also an investment in communities that rely on alternative modes of transportation. The LATS area is a diverse region with fairly extensive existing bicycle and pedestrian facilities. The continued commitment and partnership among local, regional, and state entities will only further benefit the community.

Planning Considerations

The planning considerations outline the various components that should be accounted for during the plan development process to ensure that active transportation decisions and investments are equitable and realistic. The following pages explore the existing conditions and relevant considerations that are crucial to understanding how to best implement bicycle and pedestrian projects.

Federal Planning Factors

The emphasis on multimodal connections is echoed at the federal level. Out of the ten planning factors described by the FAST Act legislation, six of the factors closely relate to the enhancement of the bicycle and pedestrian network.

Table 1: Federal Planning Factors

Federal Planning Factors			
1	Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	**6**	**Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight**
2	**Increase the safety of the transportation system for motorized and nonmotorized users**	7	Promote efficient system management and operation
3	Increase the security of the transportation system for motorized and nonmotorized users	8	Emphasize the preservation of the existing transportation system
4	**Increase the accessibility and mobility of people and for freight**	**9**	**Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation**
5	**Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns**	**10**	**Enhance travel and tourism**

The Five Es of Bicycle and Pedestrian Planning

The Five E's of Bicycle and Pedestrian Planning represent a series of approaches that can be used by planners, engineers, local officials, and the public to better incorporate active transportation into their communities. By considering and balancing each component with one another, the implementation of bicycle and pedestrian facilities will more likely be successful. Addressing these five interrelated components helps create a transportation network that balances the needs of bicyclists, pedestrians, and motorists.

Engineering

The engineering component refers to the planning and designing of multimodal facilities. Planners and engineers must consider the safety of people of all ages and abilities and provide connected facilities to expand the active transportation network.

Education

The education component refers to the resources that are provided to all cyclists, pedestrians, and motorists to equip them with a mutual understanding of how to share the roadway network.

Encouragement

The encouragement component refers to the ways to promote biking and walking. This component both refers to the physical investment in multimodal facilities and the investment in creating attractive and safe destinations.

Enforcement

The enforcement component refers to the actions that promote the safety of all users of the roadway network. The enforcement should encourage all users to share multimodal facilities.

Evaluation/Planning

The evaluation and planning component refers to the continuous review of existing and planned facilities. The communities that value active modes of transportation have systems in place to assess the existing policies and programs, while also outlining how to expand these facilities in the future. The roadway recommendations of the *2045 LATS LRTP* should continue to incorporate design choices to encourage biking and walking.

Planning for All Ages and Abilities

The development of recommendations must consider people of all ages and abilities and recommend appropriate facilities that are responsive to the intended or expected users. Two crucial pieces of information can help inform how the planning and design of facilities may best service the community: the trip purpose and user skill or comfort level. These considerations are specific to bicycle users—particularly the skill level—however, the themes of accessibility and safety are applicable to all types of facilities and people.

Trip Purpose

The types of users can be used to further explore the types of trips people are making throughout the region. Most trips can be grouped into two relevant categories:

- **Utilitarian or Non-Discretionary Travel**. Certain groups do not or cannot use a personal motor-vehicle. In certain cases, people with disabilities or elderly people cannot operate or do not feel comfortable operating a vehicle. In the Beaufort and Jasper Counties, more than 26% and 18% of the population is over 65 years of age (respectively) according to 2019 American Community (ACS) 5-Year Estimates. Approximately 2.0% and 2.2% of the populations in Beaufort and Jasper County do not have access to a vehicle. Often, these demographic groups must rely on biking, walking, or taking public transportation to make trips.
- **Recreational or Discretionary Travel**. Both walking and biking are excellent options for exercise. As a form of recreation, walking and biking can not only establish a healthy lifestyle, but also promote the livability of communities.

All types of travelers would benefit from a safe and connected network of bicycle and pedestrian facilities.

User Skill or Comfort Level

Bicyclists can further be grouped by their comfort and skill level.

- **Advanced Cyclists**. This group typically contains the most experienced users who can ride in mixed traffic or on roadway facilities including painted bicycle lanes, wide shoulders, and sharrows. The advanced cyclists can navigate through arterials, which are characterized by higher volumes of traffic and higher speed limits. Although this group represents approximately 20% of all cyclists, they account for nearly 80% of annual bicycle miles traveled.
- **Intermediate and Basic Adult Cyclists**. This group may prefer multi-use pathways or exclusive bicycle facilities like separated bicycle lanes or cycletracks. Generally, they feel uncomfortable around heavy, fast-moving traffic.
- **Child Cyclists**. This group has little to no experience on the road and generally stays on neighborhood streets or multi-use pathways. On busier streets, younger cyclists will likely stay on sidewalks or off-street facilities that protect them from traffic.

Types of Facilities

Several types of bicycle, pedestrian, and non-motorized facilities can comprise the active transportation network. Planners and engineers should consider the intended types and skill levels of the people who will use these facilities. The *2045 LATS LRTP* provides a blend of bicycle and pedestrian recommendations to complement the region's overall transportation network.

Sidewalks and multi-use pathways along roadways provide standard connections between destinations. The facilities for bicycles are more varied than pedestrian facilities due to their proximity to roadways. The different types of bicycle and pedestrian facilities and improvements can be found below.

On-Road Improvements

Shared Lane Markings (Sharrows)

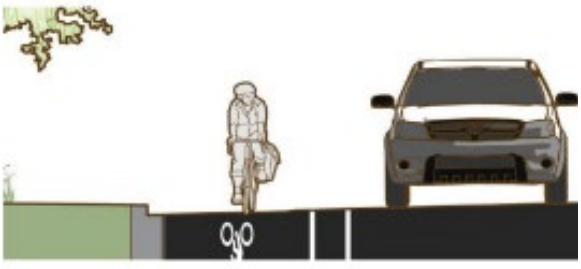
A shared lane marking indicates the shared space for both motor vehicles and bicycles. The best use of shared land markings is typically on low-speed, space-constrained roadways. A shared-lane marking is usually best accompanied by additional signage.

- Between 100 feet to 250 feet

Paved Shoulder

A paved shoulder uses the extra pavement beyond the typical travel lane. The shoulder is designated by striping to indicate to both cyclists and vehicles the boundary.

- Typically, between 4 feet to 6 feet wide



Bicycle Lanes

A buffered bike lane provides a painted buffer between bike lanes and travel lanes or parking lanes, increasing comfort for both motorists and bicyclists.

- Typically, between 4 feet to 6 feet wide
- Separation for a buffer is a minimum of 2 feet wide

Protected Bike Lanes (Cycle Tracks)

A protected bicycle lane or cycle tracks use physical separation protect cyclists from passing traffic.

- Typically, between 4 feet to 6 feet wide
- Separation for a buffer is a minimum of 2 feet wide

Bicycle-Friendly Streets

A bicycle-friendly street typically are low volume and low speed streets (should not exceed 25 mph). They provide a safe environment for bicyclists.

Multi-use Pathway

A multi-use pathway, also known as a sidepath or greenway, can be located adjacent to a roadway with enough separation—typically a planted buffer—to make all users feel comfortable. A multi-use pathway can also be found in open spaces and reflect the natural landscape.

- Typically, between 10 feet to 14 feet wide
- Shared with cyclists and pedestrians

Sidewalk

A paved pathway for pedestrians. The primary purpose of a sidewalk is to safely separate pedestrians from vehicular traffic. To achieve this separation, a planted strip or on-street parking can be used.

- The minimum sidewalk width is 5 feet wide[1]

[1] "Chapter 13 Multimodal Transportation," SCDOT Roadway Design Manual. https://www.scdot.org/business/pdf/roadway/revisedChapters/Chapter%2013%20Multimodal%20Transportation.pdf

Public Outreach

There were several public outreach opportunities conducted throughout the planning process. The summary below focuses on the responses and input specific to bicycle and pedestrian recommendations.

Stakeholder Interviews

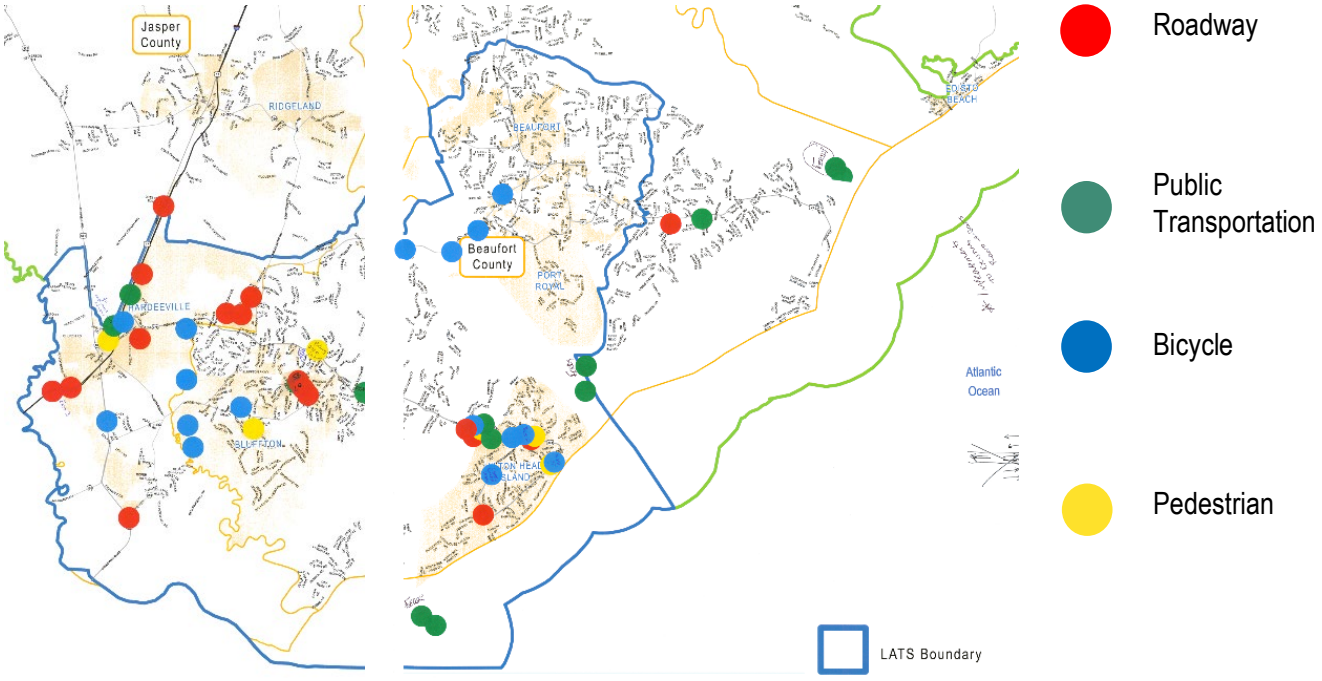
Conversation in the stakeholder interviews focused on operational and safety challenges as well as economic development opportunities. The bicycle and pedestrian-related comments and feedback are summarized below:

- Creating multimodal connectivity between key destinations
- Finding strategies that address the interconnectivity between transportation and housing
- Constructing complete streets with multimodal facilities

Community Workshops

The interactive community workshop allowed participants to learn what a long range transportation plan is, view the existing demographic conditions, propose project ideas, and provide additional comments. The bicycle and pedestrian comments—blue and yellow, respectfully—in the LATS area included suggestions for facilities along the following corridors:

- US 278 between Hardeeville and Hilton Head island
- SC 170 between Snake Rd and US 21
- Between US 278 and south of SC 46

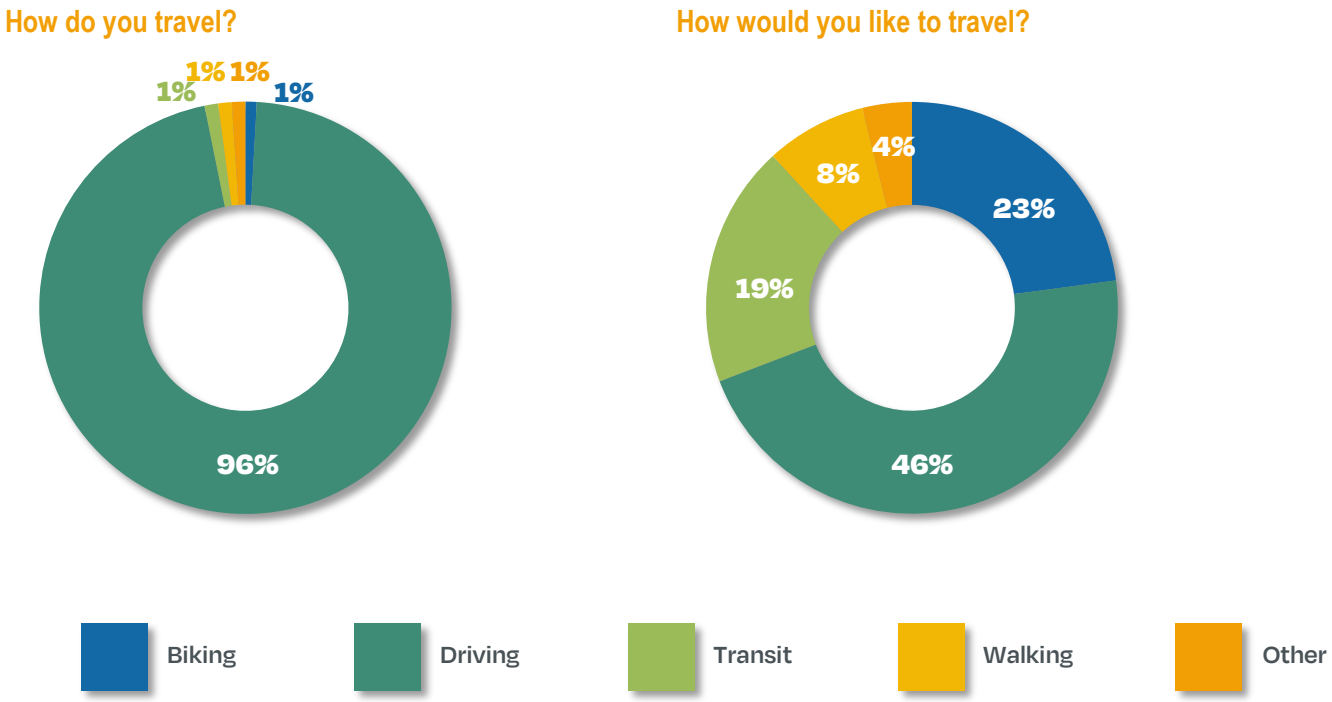


Online Outreach

To gather feedback from other stakeholders or members of the community that could not attend the in-person meetings, online resources were made available.

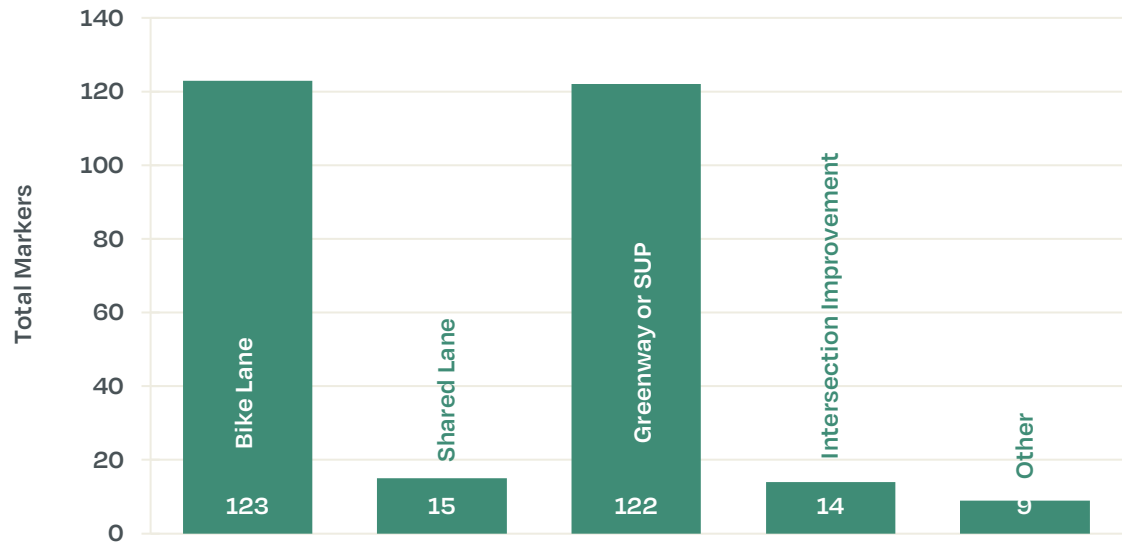
An online survey was offered as an additional venue for community members to provide input on regional transportation issues. The MetroQuest survey included questions about the plan's goals, trade-offs, and project ideas. The following responses related to bicycle and pedestrian improvements were noted.

During public outreach, the desires and concerns of the community related to bicycle and pedestrian facilities was reaffirmed. When asked how people would like to travel throughout their communities, 54% of people said they would like to travel some other way than a vehicle. When asked about the types of facilities, people chose the dedicated or separated multi-use pathway facilities. The public outreach results highlight the desire and interest throughout the region to provide safe and connected bicycle and pedestrian facilities. The planning efforts that pre-date the *2045 LATS LRTP* provide a strong basis and foundation for carrying forward pre-vetted recommendations.

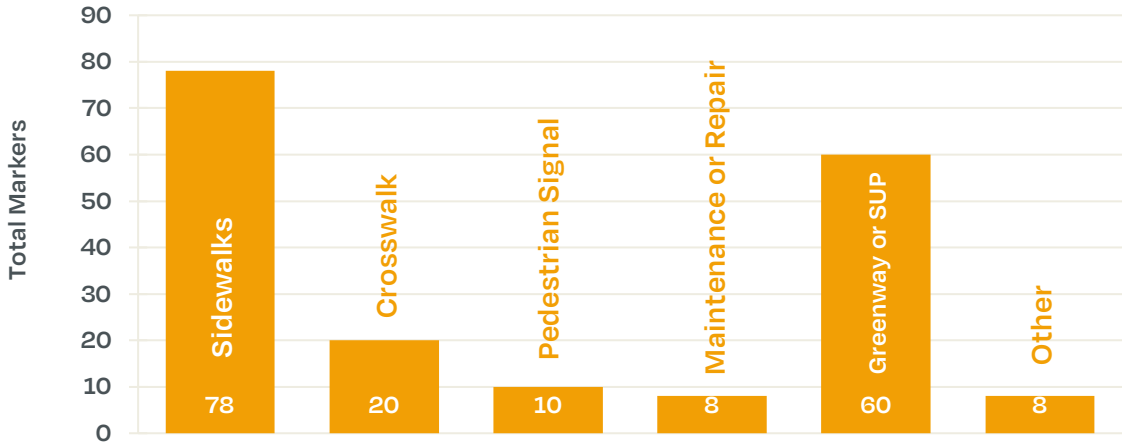


Other elements of public outreach specific to bicycle and pedestrian facilities can be seen, summarized on the following page.

Participants were asked to map ideas. The project types that were recommended for bicycle facilities are summarized below.



Participants were asked to map ideas for pedestrian facilities. The project types that were recommended for pedestrians are summarized below.



Existing Facilities

The existing bicycle and pedestrian facilities provide a solid foundation for expansion and enhanced connectivity throughout the region. With recently completed Bicycle and Pedestrian Plans, the counties in the LATS area have already identified a vision for active transportation. The Beaufort County Connects: Bicycle and Pedestrian Plan (2021) highlights the desire for enhanced facilities for both commuting and recreation. The Beaufort County Connects Plan was a multijurisdictional, multicounty planning effort to transform transportation throughout the region. Each participating municipality's council recognized the necessity of a multi-regional bicycle and pedestrian plan and adopted Beaufort County Connects. In Hardeeville's Bicycle and Trails Plan (2017), 60% of residents stated to be "interested but concerned" about biking around the city. A full review of each planning document can be found in Chapter 1.

The recommendations from both The Beaufort County Connects: Bicycle and Pedestrian Plan and the Hardeeville Bicycle and Pedestrian Trails Master Plan were folded directly into the *2045 LATS LRTP*.

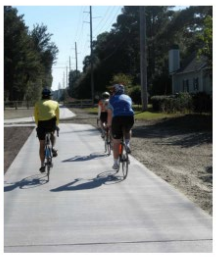
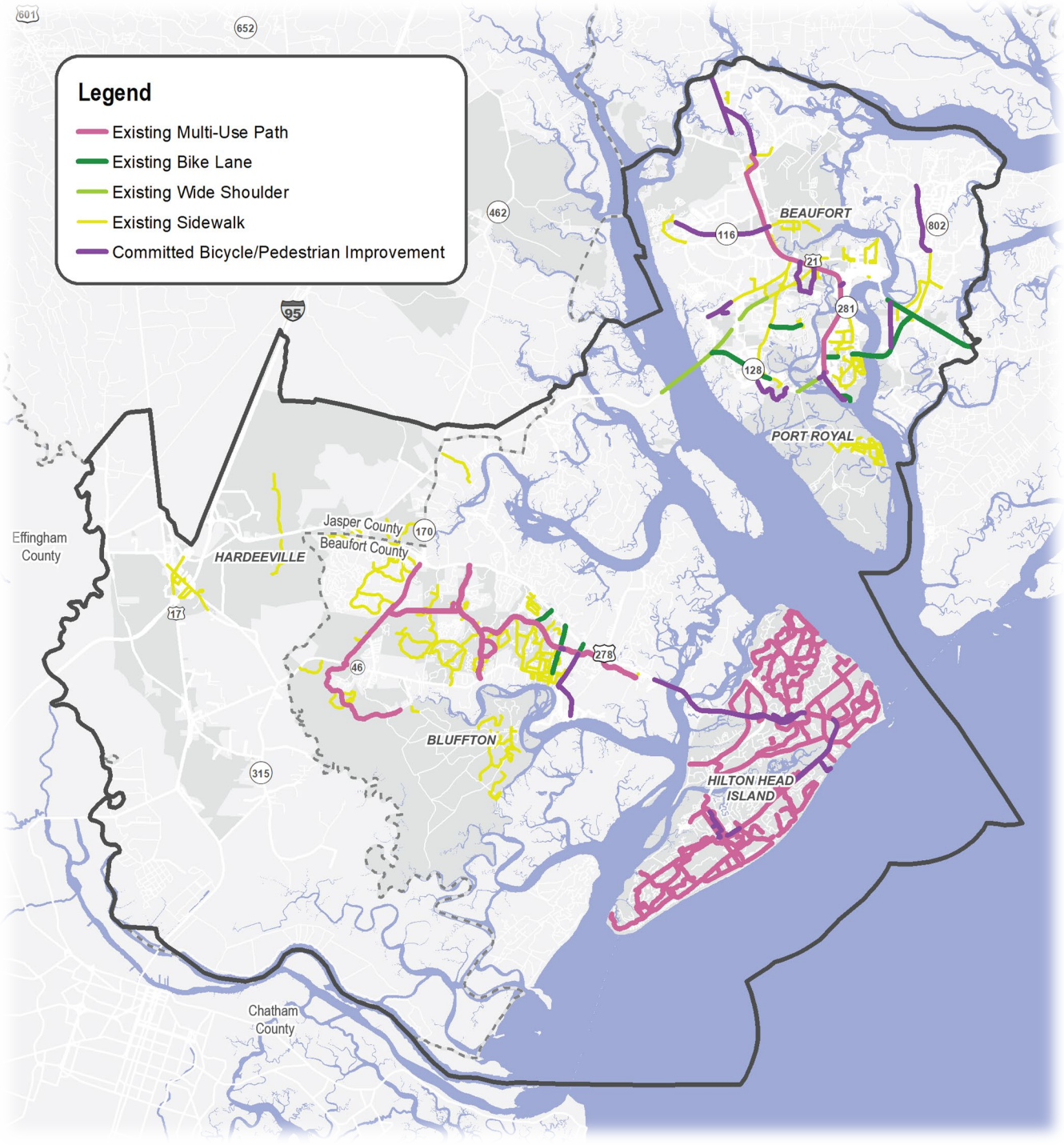


Figure 1: Existing Bicycle and Pedestrian Facilities



Recommendations

A comprehensive and connected active transportation network in the LATS area benefits residents and visitors of all ages and socioeconomic backgrounds. In higher-density urban areas, well-designed facilities for biking and walking can be more convenient than vehicular travel. In addition to providing dedicated and safe facilities, providing active transportation-supportive infrastructure like benches, lighting, and bicycle storage is equally important. This type of investment will help create spaces that people want to live in, work in, and enjoy.

The municipalities in the LATS area have already identified active transportation improvements across the region. By leveraging the recently completed studies, the *2045 LATS LRTP* can build on the work that has already been conducted. The long range plan can also identify synergies between roadway, bicycle, pedestrian, and public transportation improvements. The recommendations discussed in the following section focus on both on- and off-street bicycle and pedestrian recommendations.

New Connections

The goal of any long range plan is to identify the key regional destinations and provide access to places with multimodal solutions. A key consideration of the *2045 LATS LRTP* is also to fill in the gaps between existing connections and create a regional spine network. The combination of recommendations will provide safer connections to a variety of destinations including:

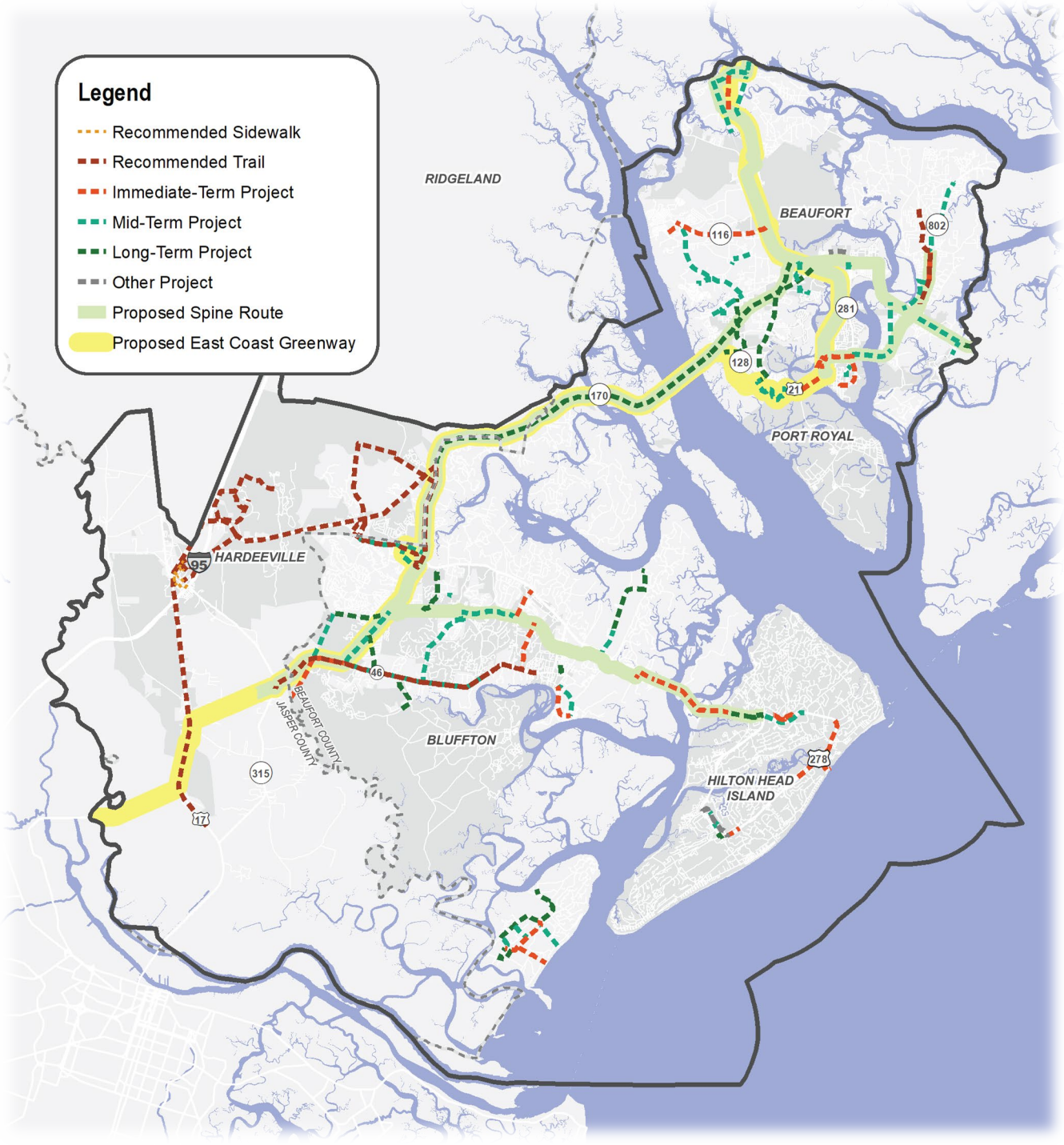
- Employment centers
- Parks and recreation centers
- Public facilities including schools, libraries, and grocery stores

The expansion of the active transportation network will promote sustainable, resilient growth throughout the region. Investing in active transportation will ensure that communities are accessible and connected while maintaining the unique character of the region's communities.

New Technologies

In order to be responsive to economic growth and market trends, the consideration of new technologies is crucial. While the *2045 LATS LRTP* is a snapshot in time, identifying the shifting trends that could shape the landscape of transportation should be considered. With increasing interest in micromobility, the MPO should continue to be open to opportunities to co-host a pilot study for electric bicycles (e-bikes) and electric scooters. Expanding multimodal options will create a more diverse and accessible transportation network.

Figure 2: Proposed Bicycle and Pedestrian Facilities



* Projects shown with an asterisk are segments of the proposed East Coast Greenway.

Table 2: Proposed Bicycle and Pedestrian Facilities

Facility Name	Extents (To – From)	Length (miles)	Jurisdiction(s)
Spanish Moss Trail	Clarendon to Whale Branch	3	Beaufort County
Laurel Bay Rd		3.4	Beaufort County
Rugrack Rd Sidewalk	Joseph Shanklin Elementary to Laurel Bay Rd	0.5	Beaufort County
Pine Grove Rd/Burton Wells Rd		0.9	Beaufort County
Lady's Island Dr	To Port Royal Elementary/Live Oaks Park via Old Shell Rd/14th St	1.3	Beaufort County
School Rd		1.6	Beaufort County
Beach Rd	School Rd to terminus	1.2	Beaufort County
Big Estate Rd	Hwy 17 to Big Estate Cir	1.4	Beaufort County
US 17	Big Estate Rd to Harriet Tubman Bridge	3	Beaufort County
Seabrook Rd*	US 21 to Spanish Moss Trail	1.3	Beaufort County
US 21*	Seabrook Rd to Keans Neck Rd	1.7	Beaufort County
US 21	Detour Rd to Seabrook Rd	1.6	Beaufort County
Burton Wells Park	To Habersham Market	0.5	Beaufort County
Joe Frazier Rd	Broad River Blvd to Laurel Bay Rd	3.5	Beaufort County
Sams Point Rd	Traffic Circle to Springfield Rd	2.5	Beaufort County
MLK Jr Blvd	To St Helena Elementary School	0.8	Beaufort County
McTeer Bridge		1	Beaufort County
Okatie Center Blvd N & S and US 278	SC 170 to University Blvd	2.2	Beaufort County
New River Linear Trail	SC 46 to Del Webb Trailhead	1.8	Beaufort County
Sawmill Creek Rd Sidewalk		0.7	Beaufort County
Benjies Point Rd	School Rd to Haig Pt	0.5	Beaufort County
Church Rd		0.6	Beaufort County
Turtle Beach Rd	Oak Ridge Ln to Terminus	1	Beaufort County
US 21	Keans Neck Rd to US 17	3.3	Beaufort County
US 21	Airport Cir to MLK Jr Blvd	3.7	Beaufort County
US 21	St. Helena Elementary to Hunting Island Dr	9.5	Beaufort County
Sawmill Creek Rd Bike Lane	US 278 to Trask Boat Landing	3.5	Beaufort County
Martinangele Rd Easement/Prospect Rd/Benjies Pt Rd/School Rd		1	Beaufort County
SC 802 (Sam's Point Rd) Improvements	Miller Dr to Brickyard Point Rd	1.9	Beaufort County
Cooper River Landing Rd/Haig Point Rd	Freeport Marina to Daufuskie Island Boat Landing	3.5	Beaufort County

Facility Name	Extents (To – From)	Length (miles)	Jurisdiction(s)
Brickyard Point/Middle Rd	Better Than Ever St to Roundabout	1.6	Beaufort County
Sams Point Rd Pathway	Wallace Rd to southern terminus of Middle Rd	1.1	Beaufort County, City of Beaufort
Wallace Rd and Sunset Blvd		1.5	Beaufort County, City of Beaufort
Meridian Rd		1.6	Beaufort County, City of Beaufort
US 21	Sams Point Way to Airport Cir	0.8	Beaufort County, City of Beaufort
Chowan Creek Bluff Sidewalk	US 21 to Lady's Island Elementary	0.4	Beaufort County, City of Beaufort
Marsh Rd	Duke St to Boundary St	0.3	Beaufort County, City of Beaufort
Burton Hill/Old Salem Rd		1.4	Beaufort County, City of Beaufort
Parris Island Gateway	Savannah Hwy to US 21	4.3	Beaufort County, City of Beaufort, Town of Port Royal
SC 170	Broad River Bridge to Spanish Moss Trail	5.4	Beaufort County, City of Beaufort, Town of Port Royal
SC 170*	Callawassie Dr to Broad River Bridge	4.8	Beaufort County, Jasper County
SC 170*	Cecil Reynolds Dr to Oldfield Way	4	Beaufort County, Jasper County
SC 170*	Oldfield Way to Callawassie Dr	3.8	Beaufort County, Jasper County
East Coast Greenway		29.5	Beaufort County, Jasper County
Russell Bell Bridge*	Spanish Moss Trail to Broad River Dr	1.3	Beaufort County, Port Royal
New River Liner Trail (Paving)	Hwy 46 South to New River	1.5	Beaufort County, Town of Bluffton
SC-46 Trail	New River Park to New River Linear Trail	0.6	Beaufort County, Town of Bluffton
Buck Island Rd	Bluffton Pkwy to US-278	1	Beaufort County, Town of Bluffton
Alljoy Rd		1.6	Beaufort County
SC 170 (NB)*	SC 46 to Bluffton Pkwy	2.3	Beaufort County, Town of Bluffton
Old Miller Rd/Lake Point Dr Connection		0.4	Beaufort County
SC 46	Traffic Circle to Buckwalter Pkwy	4.8	Beaufort County, Town of Bluffton
Ulmer Rd/Shad Rd		1.3	Beaufort County
Gibbet Rd		1.3	Beaufort County
New Connection	Old Palmetto Bluff Rd to SC 46	1	Beaufort County, Town of Bluffton
5A (Future Bluffton Pkwy)		1.8	Beaufort County, Town of Bluffton
Hampton Pkwy	Bluffton Pkwy to US 278	1.7	Beaufort County, Town of Bluffton

Facility Name	Extents (To – From)	Length (miles)	Jurisdiction(s)
Hawkes Rd	Bruin Rd to Bluffton Community Library	0.3	Beaufort County, Town of Bluffton
New Connection	Future Bluffton Pkwy to US 278	1.7	Beaufort County, Town of Bluffton
Island West/Buckwalter Place Connector Path		0.3	Beaufort County, Town of Bluffton
Broad River Dr*		1.7	Beaufort County, Town of Port Royal
Broad River Blvd/Riley Road		1.1	Beaufort County, Town of Port Royal
Shell Point Rd	Broad River Dr to Savannah Hwy	1.6	Beaufort County, Town of Port Royal
Grober Hill Rd/Castle Rock Rd	Savannah Hwy to Broad River Blvd	2.6	Beaufort County, Town of Port Royal
New Location	S-281 to S-167	0.8	City of Beaufort
Waddell Rd/Battery Creek Rd/Riverside Dr Bike Lane	Ribaut Rd to Spanish Moss Trail	1	City of Beaufort, Town of Port Royal
Sergeant Jasper Trail		20.5	City of Hardeeville
Main St/SC 46 Sidewalk	US 17 to Jim Hatter Way	0.5	City of Hardeeville
Charles St Sidewalk	Main St/SC 46 to Garr Ln	0.3	City of Hardeeville
Garr Ln Sidewalk	US 17 to Branchwood Cir	0.2	City of Hardeeville
1st St Sidewalk	Garr Ln to Hare St	0.2	City of Hardeeville
Hare St Sidewalk	US 17 to McTeer St	0.1	City of Hardeeville
Martin St Sidewalk	Main St/SC 46 to Boyd St	0.2	City of Hardeeville
Boyd St Sidewalk	US 17 to Bush Ave	0.5	City of Hardeeville
Ullman St Sidewalk	Boyd St to US 17	0.2	City of Hardeeville
Bush Ave Sidewalk	Boyd St to SC 46/Main St	0.2	City of Hardeeville
Sand Shark Trail*		11.5	City of Hardeeville
Arrow Rd	New Orleans Rd to Palmetto Bay Dr	1.4	Hilton Head Island
High Speed Commuter Bike Route	Sea Pines Circle to Cross Island Pkwy/William Hilton Pkwy	5.5	Hilton Head Island
New River Pkwy	US 278 to Argent Blvd	0.6	Jasper County
SC 46*	SC 170 (Freedom Pkwy) to SC 170 (Okatie Pkwy)	9.7	Town of Bluffton
SC 46 Improvements	SC 170 to Buck Island Rd	6.5	Town of Bluffton
SC 170/SC 46*	Roundabout to Jasper County Line	1.9	Town of Bluffton
Shelter Cove Ln	US 278 BUS to Shelter Cove Park	0.2	Town of Hilton Head Island
US 278 Bus E	Dillon Rd to Mathews Dr/Folly Field Rd	1.1	Town of Hilton Head Island
Singleton Beach Rd	Chaplin Park to Collier Beach Park	0.4	Town of Hilton Head Island
US 278 Bus E	Arrow Rd to Village at Wexford	0.4	Town of Hilton Head Island
Chaplin Linear Park		1.2	Town of Hilton Head Island
US 278 Bus E	Gardner Dr to Jarvis Park Dr	1.4	Town of Hilton Head Island

Facility Name	Extents (To – From)	Length (miles)	Jurisdiction(s)
Archer Rd Pathway		0.2	Town of Hilton Head Island
Lagoon Rd/Ibis St Pathway	Avocet St to North Forest Beach Dr	0.8	Town of Hilton Head Island
US 278	Gumtree to Square Pope Rd	1.0	Town of Hilton Head Island
US 278/US 278 Bus	US 278/US 278 to Greenwood Dr	0.3	Town of Hilton Head Island
Sea Pines Cir	Sea Pines Cir to Welcome Center	04	Town of Hilton Head Island
Jonesville Rd		1.1	Town of Hilton Head Island
Woodhaven Dr/Ln, Phase I Boggy Gut Pathway		0.2	Town of Hilton Head Island
Main St	Wilborn Rd to Hospital Center Blvd	1.1	Town of Hilton Head Island, Beaufort County
US 278	Squire Pope Rd to Bridges *(SCDOT Project)*	1.5	Town of Hilton Head Island, Beaufort County
US 278	Jenkins Island to Mainland *(SCDOT Project)*	1.8	Town of Hilton Head Island, Beaufort County
Naval Park	To Cypress Wetlands	0.4	Town of Port Royal

East Coast Greenway

The East Coast Greenway (https://www.greenway.org/) provides 3,000 miles of safe biking and walking routes, while connecting 15 states and 450 cities and towns from Maine to Florida. While the ultimate goal is to provide all of this route through multi-use paths within the public right-of-way, portions of the East Coast Greenway that are still under development also follow existing roadways. The East Coast Greenway Alliance is a non-profit that coordinates efforts to promote and complete the East Coast Greenway. When finally completed, the East Coast Greenway will provide a continuous network for people of all ages and abilities.

In South Carolina, 258 miles are proposed to create the spine route. Statewide, the East Coast Greenway currently consists of over 50 miles of protected greenway (approximately 20% of the total spine route), with the remainder of the route using be on-road facilities. The on-road facilities include bicycle lanes, sharrows, signage, wide outside lanes, and paved shoulders. The off-street facilities are multi-use pathways that are completely separated from traffic. The design and development of the East Coast Greenway is still underway. The opportunity to leverage and create connections branching off of the spine route can successfully expand the active transportation network throughout the Lowcountry. In Beaufort County, the Spanish Moss Trail and a sidepath along SC 170 provide more than 10 miles of multi-use path connectivity for the East Coast Greenway. The remainder of the facility within Beaufort and Jasper Counties is on-road. The multi-use path segments are ten to twelve feet pathways, consistent with the requirements outlined in the Greenway Guide.

Source: Beaufort County Connects 2021

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 7 | Public Transportation

Introduction

Public transportation, or transit, provides alternative travel options to people who cannot or choose not to drive. Lowcountry Regional Transit Authority (LRTA) operating as Palmetto Breeze has been serving residents, employees, and visitors in Beaufort and Jasper Counties, as well as Allendale, Colleton, and Hampton Counties with transit service for four decades. The various transit options of 20 routes made up of commuter buses, circulating shuttles, and on-demand services offered by Palmetto Breeze serve riders across the Lowcountry region, providing access to major regional employers, shopping areas, tourist destinations, health care services, social services, and universities.

The Public Transportation element of the *2045 LATS LRTP* documents existing public transportation and paratransit service in the LATS area and reiterates existing recommendations and strategies to enhance access and mobility for residents and visitors throughout the area.

Role in the Region

This chapter highlights previous planning efforts in the region and pulls forward the recommendations laid out in existing adopted transit plans. The *2045 LATS LRTP* supports these recommendations by developing roadway, pedestrian, and bicycle recommendations that accommodate transit and improve first-mile and last-mile connections. This process ensures that the *2045 LATS LRTP* builds upon previous planning efforts and creates a coordinated system that serves existing and potential needs of the area while satisfying Federal and State eligibility requirements for financial assistance.

COVID-19 Implications

The COVID-19 pandemic caused transit ridership to decline throughout the country. This not only altered travel patterns but also negatively impacted many transit agencies since their revenue largely comes from fares and ridership-related funds. While Palmetto Breeze was able to successfully provide continuous commuter and demand-response service despite the challenges of the COVID-19 pandemic, many transit agencies across the nation struggled to maintain service operations.

The Coronavirus Aid, Relief, and Economic Security (CARES) Act is a $2.2 trillion stimulus bill that was passed on March 27, 2020. The CARES Act is a relief bill aimed to support state and local economic recovery. The Federal Transit Administration is responsible for the allocation of $25 billion to urbanized and rural areas. The funding is provided at a 100-percent federal share with no local matches required. The funds can be used to support operating, capital, or other expenses to respond to lost revenue generation from COVID-19.

Relevance to the Long Range Transportation Plan

Referenced in Chapter 2, the *2045 LATS LRTP* established several goals to guide the development of the plan and its recommendations for the region. These goals were developed from public feedback and represent the vision of transportation in LATS over the next 20 years. The transit recommendations in the *2045 LATS LRTP* were developed primarily within the context of the following plan's goals:

- **Access and Mobility**—Promote an efficient, interconnected, multimodal, and accessible transportation network for people, goods, and the delivery of services.
- **Economic Vitality**—Encourage economic development through targeted transportation investments that enable competitiveness, productivity, and efficiency.

Planning Considerations

A successful transit system is planned intentionally with community needs and desires in mind. While some planning considerations are federally mandated, others represent best practices in the transportation planning field.

Federal Planning Factors

Current federal transportation legislation requires MPOs to consider all modes of transportation in the analysis of region-wide mobility and the development of recommended plans, programs, and policies. The following considerations are critical for developing a transit system that appropriately meets the needs of the region's transit users. The emphasis on multimodal connections is echoed at the federal level. Out of the ten planning factors described by the FAST Act legislation, five of them closely relate to the enhancement of the transit network.

Table 1: Federal Planning Factors

Federal Planning Factors			
1	Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	**6**	**Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight**
2	Increase the safety of the transportation system for motorized and nonmotorized users	**7**	**Promote efficient system management and operation**
3	Increase the security of the transportation system for motorized and nonmotorized users	8	Emphasize the preservation of the existing transportation system
4	**Increase the accessibility and mobility of people and for freight**	9	Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation
5	**Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and State and local planned growth and economic development patterns**	**10**	**Enhance travel and tourism**

Types of Riders

Public transit providers seek to provide a useful transportation service to the area they serve that balances maximizing ridership and geographic coverage. These two goals are often at odds, as an urban area's population is often densely concentrated in a small area, meaning the geographic area that maximizes the services ridership potential is much smaller than the total service area. Generally, transit riders are considered to fall within three general categories.

- **Occasional Riders:** Occasional riders only use transit every so often. It's not their main form of transportation but they use transit every once and a while when needed or for special events they need to travel for.
- **Commuters:** Commuters use transit to travel to and from work but rarely use it for other purposes.
- **All-Purpose Riders:** All-purpose riders use transit in their daily life for all purposes, not just to get to and from work. All-purpose riders may not have access to or are unable to use a personal vehicle and could be dependent on the transit system to travel. These include riders who may be too young to drive, the elderly, persons with disabilities, and those without the financial means to own and operate a personal vehicle. Other reasons for being an all-purpose rider include convenience, comfort, or environmental principles.

These categories recognize that useful transit service is ultimately a question of whether the available service fits a rider's transportation needs. By focusing on making transit both useful and convenient, it will better accommodate riders in all categories.

The population trends throughout the LATS area are becoming increasingly dispersed, making convenient transit service more complex and expensive to operate. To encourage transit use and decrease dependence on the automobile, a safe, comfortable customer delivery system with attractive and convenient amenities must be developed around bus stops. The customer delivery system requires a network of sidewalks, safe street crossings, bicycle facilities, and bicycle storage. The efficiency of transit also depends on an interconnected street network suitable for bus traffic and convenient ways for riders to shift between public transportation modes. For these reasons, transit cannot be considered in isolation, and the strategies presented in this chapter support improvements to the larger transportation system.

Bus and Shuttle Service

Palmetto Breeze has a total of 20 different bus routes. Seven of those are commuter routes, which typically connect people to their place of employment. These are typically longer routes, with fewer stops to increase the efficiency and speed of the trip. In addition to commuter routes, Palmetto Breeze also has six circulating shuttles that service smaller areas with more frequent stops when compared to commuter routes. Similar to the shuttle services, Hilton Head Island has the Breeze Trolley which has two routes serving the southern and middle areas of the island. The remaining five routes are demand-response, which permits riders to schedule rides in advance. This enables the transit agency to serve riders in more rural areas while balancing resources. Three of the demand response routes connect to the City of Beaufort, while the other two connect to Bluffton. A map showing Palmetto Breeze routes and service area is shown on the following page.

New in 2022, the Bluffton Breeze is a fixed-route public transportation service that runs Monday through Friday from 7 am to 6 pm. The Bluffton Breeze serves Old Town Bluffton as well as surrounding areas of Bluffton. Each vehicle is equipped with bicycle racks, a deployable lift for those in need of assistance, and seating that is sanitized daily.

Figure 1: Palmetto Breeze Routes and Service Area

ADA and Paratransit Service

To service riders who may need special accommodations such as the disabled or elderly, all Palmetto Breeze buses are equipped with wheelchair lifts making the routes ADA accessible. Palmetto Breeze also has a paratransit service called Easy Breeze Paratransit.

Paratransit is a transportation service that supplements typical fixed routes by providing rides for the individual without the limitation of specified routes or timetables. Easy Breeze Paratransit utilizes shuttles (pictured at right) and is offered to riders who meet the criteria established under the Americans with Disabilities Act. It is a door-to-door service, complementing fixed-route bus service within ¾ of a mile of the Hilton Head Island trolleys (The Breeze) and in the city limits of Walterboro (Route 429). This paratransit service, in combination with the ADA accommodations provided on all buses, creates a more comprehensive transit system that is able to meet the needs of many users.

Land Use and Transit

Travelers are more likely to use transit when service is convenient, dependable, and easy to use. While this level of service requires a complete network of roads, sidewalks, and bikeways, it also demands connections to the places travelers need and want to go. Where possible, transit should occur in areas with transit-supportive land uses. Development types that maximize potential transit ridership include transit-oriented development, transit-ready development, and single-use transit destinations.

Transit-Oriented Development

Transit-oriented developments (TODs) provide a mixture of residential and commercial uses focused around a transit station or bus stop. The transit stop is surrounded by relatively high-density development that spreads out as you move away from the center. The scale of a TOD generally is limited to ¼- to ½-mile in diameter to support the walkability and bikeability of the area.

Transit-Ready Development

In locations that lack existing transit facilities or lack the demand to support a TOD, policies and guidelines that support transit-ready development should be leveraged. Transit-ready development describes the coordinated design of new neighborhoods and activity centers that supports future transit expansion. Like TODs, transit-ready developments include a mixture of land uses, pedestrian-friendly design, appropriate locations and routes for transit, an interconnected network of internal streets, and appropriate densities supportive of future transit use.

Single-Use Transit Destinations

While transit-oriented and transit-ready developments are the ideal development types to support transit because they are mixed-use areas, many existing single-use locations in the LATS area are viable long-term facilities for transit. The military bases and Hilton Head Island are a few examples of vital destinations for many residents of the LATS region. These types of locations represent places where access to public transportation continues to be an important priority.

Other Public Transportation Services

Transit agencies often offer a variety of service types, for example, larger metropolitan areas may have fixed bus routes along with a metro or subway system. Key to the success of incorporating a variety of services is ensuring that the service fits the needs in its given context. For a more coastal area such as LATS, the opportunity to move via barge or ferry is a viable option.

Daufuskie Island

Daufuskie Island is a residential sea island located between Savannah, Georgia and Hilton Head Island, South Carolina. The island has an area of about eight square miles and is home to a private residential community, a resort, and largely undeveloped parcels. During the off-season, the population is about 430 people. In the summer months, the number of people on the island spikes when the resort is filled by tourists and vacation-goers.

Daufuskie Island can only be accessed by boat and Palmetto Breeze provides administrative services for the ferry, operated by Haig Point Ferry Company, from Hilton Head Island to Daufuskie Island. The ferry is available to Daufuskie Island landowners and residents for a discounted rate while tourists and visitors ride at a higher fare. The ferry is complemented by the Daufuskie Ferry Shuttle (Route 509) which circulates between the parking at the Bluffton Visitor's Center and the Ferry Embarkation.

Public Outreach

There were several public outreach opportunities conducted throughout the development of the *2045 LATS LRTP*. The summary below focuses on the responses and input specific to public transportation recommendations.

Stakeholder Interviews

During the stakeholder interviews, several key points were made:

- The consideration of an enhanced and expanded public transportation system
- The exploration of a ferry service along the coast
- To better understand the relationship between housing and affordable transportation

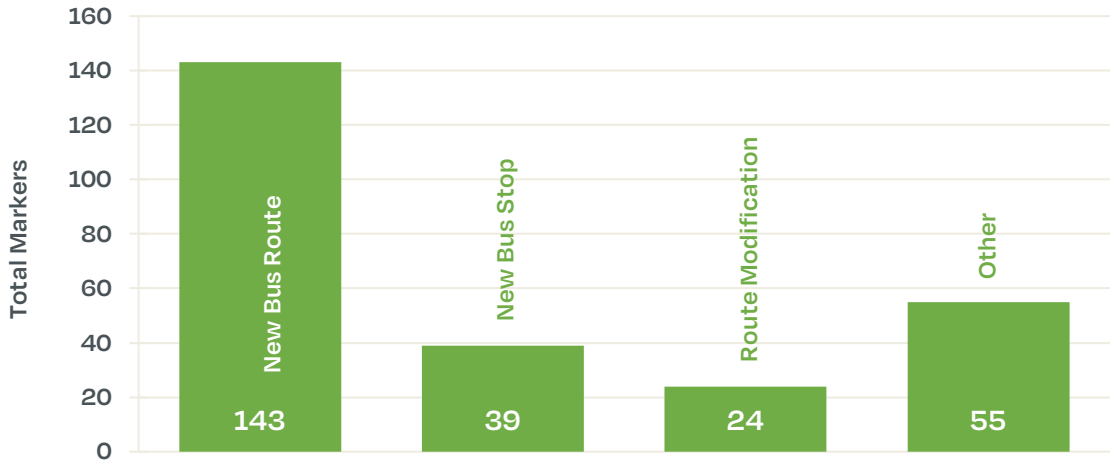
Community Workshop

At the onset of the *2045 LATS LRTP* development, an interactive community workshop allowed participants to provide specific comments about public transportation. The public transportation comments in the LATS area focused on enhanced transit throughout the Lowcountry as a region, connected destinations via ferry or barge, and desired opportunities for expanded public transportation services.

Online Outreach

To gather feedback from other stakeholders or members of the community that could not attend the in-person meetings, online resources were made available. An online survey was offered as an additional venue for community members to provide input on regional transportation issues. The MetroQuest included questions about the plan's goals, trade-offs, and project ideas. The following responses related to roadway infrastructure improvements were noted.

Participants were asked to map ideas. The project types that were recommended are summarized below.



Recommendations

The transit recommendations below come from the *Transit Implementation Plan* which is a study that came out of the Palmetto Breeze Small Urban Area *Transit Development Plan (TDB)* to determine which of the new routes or services from the prior study recommendations would have the most likely chance for successful implementation and community use. The *2045 LATS LRTP* will carry forward the recommendations identify by Palmetto Breeze, the Beaufort County Comprehensive Plan, and the Jasper Comprehensive Master Plan. The MPO will continue to coordinate with the regional transit agency and county staff. The table below catalogs those recommendations and the maps on the following pages display some of these proposed routes.

Table 2: Transit Implementation Plan Recommendations

Future Trolley Service on Hilton Head Island	
Potential Future Trolley Service	Future trolley would be implemented in an additional three phase approach by extending the existing trolley route to run further northeast along William Hilton Parkway to Sea Turtle Marketplace. The third phase would add trolley service between Coligny Beach Park and a new park-and-ride at Crossings Park operating along Pope Avenue, Palmetto Bay Road, and Arrow Avenue. The final phase would be a trolley that loops along Pope Avenue, South Forest Beach Drive, and Cordillo Parkway.
Other Urban/Study Area Services	
Local Route	• Monitor the local transit service in the Town of Bluffton and revise as needed. • Study the feasibility of a route that services Hilton Head Island Airport. • Support the development of bus rapid transit features in high-demand corridors. • Create concentrated growth corridors and promote the inclusion of "Transit Ready Nodes" that prepare corridors for potential fixed-route service. • Promote the use of transit to alleviate seasonal and local traffic while providing opportunities for employees to access employment centers.

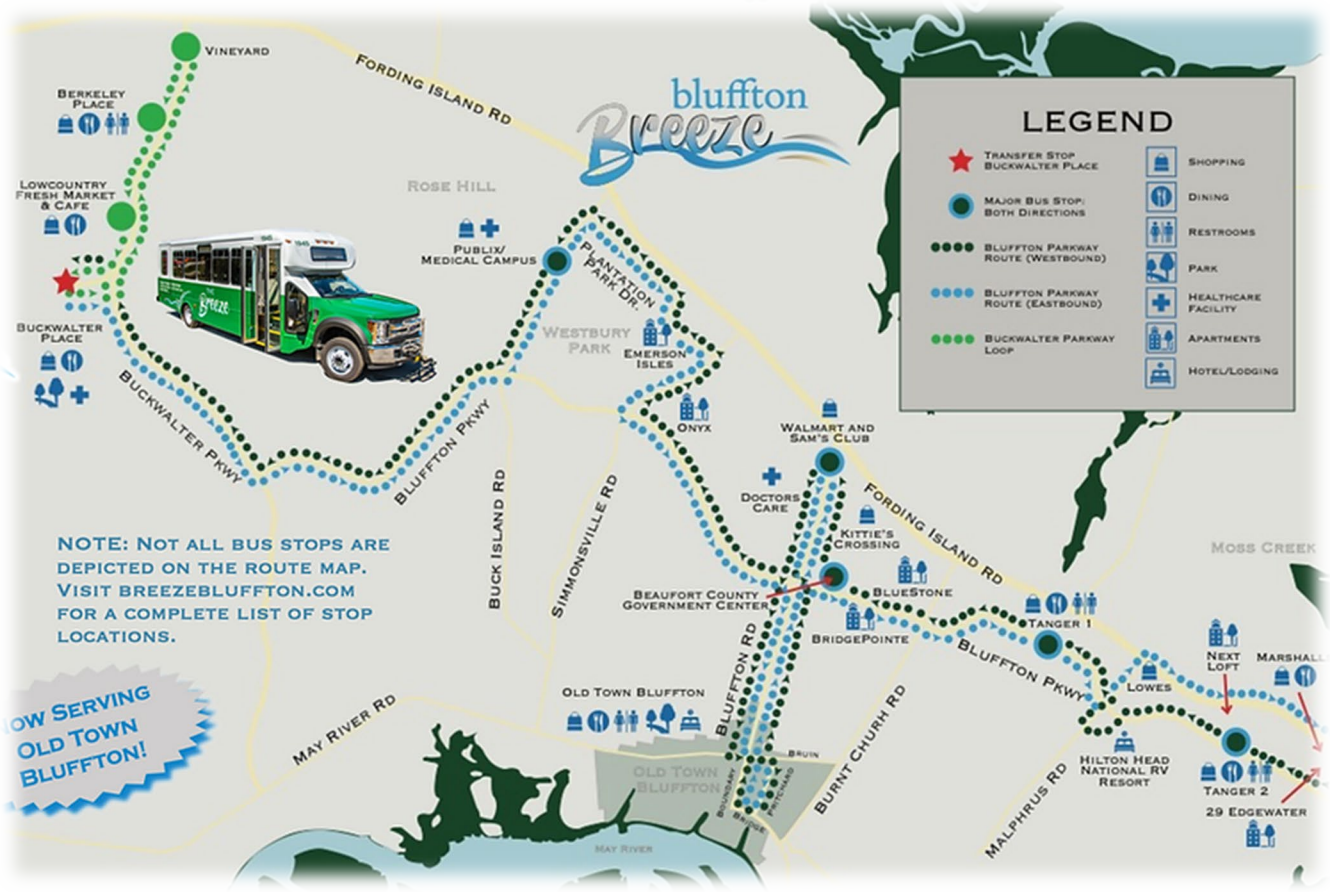
Connector Route	• Develop a fixed express route from Bluffton to Hilton Head Island to connect the two towns.
Flex Routes	• Develop two flex routes/circulator on Hilton Head Island and in Bluffton. • Develop commuter and family service between Laurel Bay and the three military facilities.
Inter-State Route	• Study potential connection from Palmetto Breeze service area to Savannah/Hilton Head International Airport. • Study potential routes to connect to Savannah and Charleston.
Study/Other	• Study the possibility of a shuttle trolley to serve Port Royal, City of Beaufort, and Lady's Island. • Coordinate location of affordable housing along transit routes and near employment centers.

Other Future Recommendations

During the development of the *2045 LATS LRTP*, other long-term transit considerations were discussed with the public and stakeholders. These considerations include:

- Transit service connecting the LATS region with Savannah and Charleston
- Ferry service between Beaufort/Port Royal and Hilton Head Island or other connections within the region

Figure 2: Bluffton Breeze Service



2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 8 | Freight and Aviation

Introduction

The movement of goods is an often-overlooked part of transportation planning and infrastructure investment. Freight transportation is the movement of goods and commodities across a variety of modes, including truck, rail, marine, air, and pipeline. The ability to move goods reliably and efficiently directly effects the economic productivity of the region and nation as a whole.

Chapter 8 of the *2045 LATS LRTP* outlines how local decisions and public feedback can enhance the safe and efficient movement of goods and people. Freight and aviation are important contributors to the economy of the LATS area, and decisions made locally affect the region and beyond. As the region's needs grow while financial and environmental constraints remain, the transportation system requires a balanced approach to moving people and goods.

Planning Considerations

FAST Act Freight Planning Goals

The federal legislation established the National Multimodal Freight Policy that includes goals to guide decision-making and requires the development of a National Freight Strategic Plan and a National Multimodal Freight Network.[1] These national freight transportation goals are outlined below:

1. Identify infrastructure improvements, policies, and operational innovations that –
    a. strengthen the contribution of the National Multimodal Freight Network to the economic competitiveness of the United States;
    b. reduce congestion and eliminate bottlenecks on the National Multimodal Freight Network; and
    c. increase productivity, particularly for domestic industries and businesses that create high-value jobs;
2. Improve the safety, security, efficiency, and resiliency of multimodal freight transportation
3. Achieve and maintain a state of good repair on the National Multimodal Freight Network
4. Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network
5. Improve the economic efficiency and productivity of the National Multimodal Freight Network
6. Improve the reliability of freight transportation
7. Improve the short- and long-distance movement of goods that –
    a. travel across rural areas between population centers;
    b. travel between rural areas and population centers; and
    c. travel from the Nation's ports, airports, and gateways to the National Multimodal Freight Network;
8. Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address multimodal freight connectivity
9. Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network
10. Pursue the goals described in Title 23 U.S.C. 167 in a manner that is not burdensome to State and local governments.

[1] "National Multimodal Freight Policy," USDOT. https://www.transportation.gov/freight

The South Carolina Department of Transportation (SCDOT) updated the State Freight Plan in 2020. A requirement of the FAST Act, The State Freight Plan identifies the freight system and infrastructure available for goods movement, presents estimated demands on the freight system, and recommends potential project and policy level strategies to accomplish these goals.[2] Where applicable, this section of the *2045 LATS LRTP* draws on the data and recommendations of the State Freight Plan.

Surrounding Area

The LATS area is situated along the I-95 corridor between two urban centers: Charleston, South Carolina and Savannah, Georgia. Both cities have large marine ports that are vital to the southeast's economy.

In 2020, the Port of Charleston ranked sixth among all marine ports by cargo value, moving approximately $72 billion worth of goods in imports and exports.[3] In that same year, the Port of Savannah ranked fourth among marine ports by cargo value, moving $122 billion worth of goods. Both the state of Georgia and South Carolina have invested heavily in these port facilities by expanding their terminal capacities, deepening harbor channel depths, increasing rail capacity, and investing in new terminal infrastructure.

Despite these investments, neither the Port of Savannah nor Charleston will be able to meet the current forecasted demand for additional containerized cargo by 2055. Originally, the Jasper Ocean Terminal was a joint venture between the Georgia Ports Authority and South Carolina Ports Authority (SCPA) to construct a new marine container terminal on the north bank of the Savannah River in Jasper County. SCPA transferred ownership to Jasper County in spring 2021. The U.S. Army Corps of Engineers is preparing an Environmental Impact Statement (EIS) to assess the potential impacts associated with the construction and operation of this facility on the environment. The LATS area is already well-positioned to benefit from increased container cargo coming into the region from the Ports of Savannah and Charleston, but the Jasper Ocean Terminal will bring these industries even closer to the LATS area. The vision for the terminal includes the following components:

Table 1: Terminal, Road, and Rail Access

Terminal Site	Road & Rail Access
• 12,500-foot-long pile supported wharf and a 210-foot-wide berth	• 4-lane divided highway to connect the terminal site to U.S. Highway 17
• 790-foot-wide access channel between the proposed berth and Savannah Harbor Federal Navigation Channel	• Double- and single-track rail to connect the terminal site to existing CSX Transportation and Norfolk Southern rail lines
• 2,200-foot diameter turning basin to accommodate Neo-Panamax and Ultra Large Container Vessels	• New rail bridge across the Back River near US 17 and across the Savannah River upstream of Garden City Terminal
• Intermodal rail yard	• Grade separated rail crossing and access road interchange with US 17

[2] South Carolina State Freight Plan Update (2020). South Carolina Department of Transportation.

[3] South Carolina Ports Authority http://scspa.com/about/statistics/cargo-value/

Terminal Site	Road & Rail Access
• Container storage yard	

Freight Modal Profiles

The Federal Highway Administration's (FHWA) Freight Analysis Framework (FAF) is a dataset that tracks freight movement between states and metropolitan areas by all modes of transportation. The state of South Carolina has three distinct FAF Zones: Charleston, Greenville, and the Rest of SC that can be seen in **Figure 1**. The LATS area is within the "Rest of SC" FAF Zone, which covers all area in South Carolina not within the Greenville and Charleston FAF Zones. The following section will identify the breakdown of freight movements by mode for the Rest of SC FAF Zone. Because the LATS area is only a small portion of the Rest of SC FAF Zone, it is possible that the LATS area's freight modal trends are different than the data presented here. Nonetheless, the trends for the Rest of SC FAF Zone give an indication of the general freight trends in the LATS area. The most recent version of FAF data is version 5, released in 2021. The base year for FAF version 5 is 2017, with modal and commodity projections estimated to 2050.

Summary

Freight movement in the Lowcountry area has historically been predominantly done through trucks, which is in line with national trends for freight movement. **Figure 2** shows the mode split by value of goods transported in 2017. Approximately, $112.4 billion worth of goods were transported to, from, and within the Rest of SC FAF Zone in 2017. By value, the most dominant mode of freight transportation was trucking, which represented 83% or $92.8 billion of all goods moved. "Multiple modes & mail" includes shipments by multiple modes (intermodal transport) and by parcel delivery services, U.S. Postal Service, or couriers (capped at 150 pounds). "Multiple modes & mail" is the second most common mode of freight transport, representing 10% of the value of all goods moved. Intermodal transport is common in supply chains for a variety of goods, but usually involved trucking at some points, such as truck to rail intermodal transport. Other refers to modes not classified here, including flyaway aircraft, or shipments for which a mode cannot be determined.

Figure 1: Freight Analysis Framework (FAF) Zones

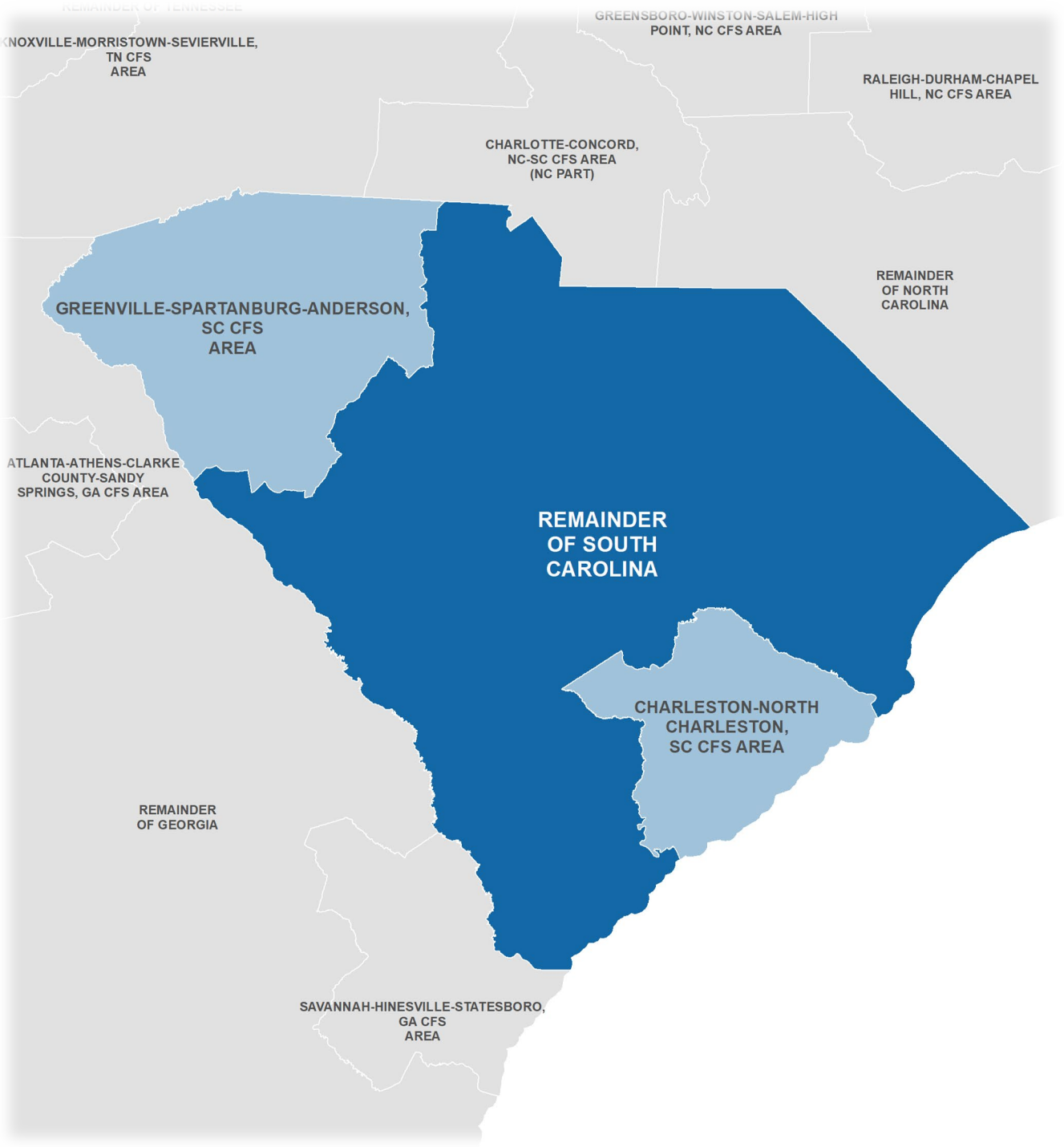


Figure 2: Freight Shipments by Mode and Value in 2017 (Rest of SC FAF Zone)

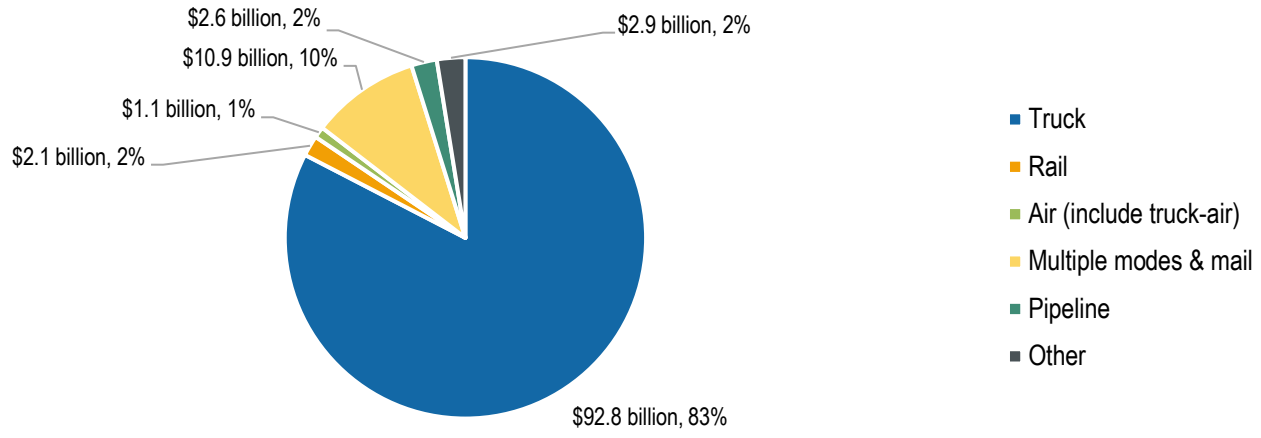
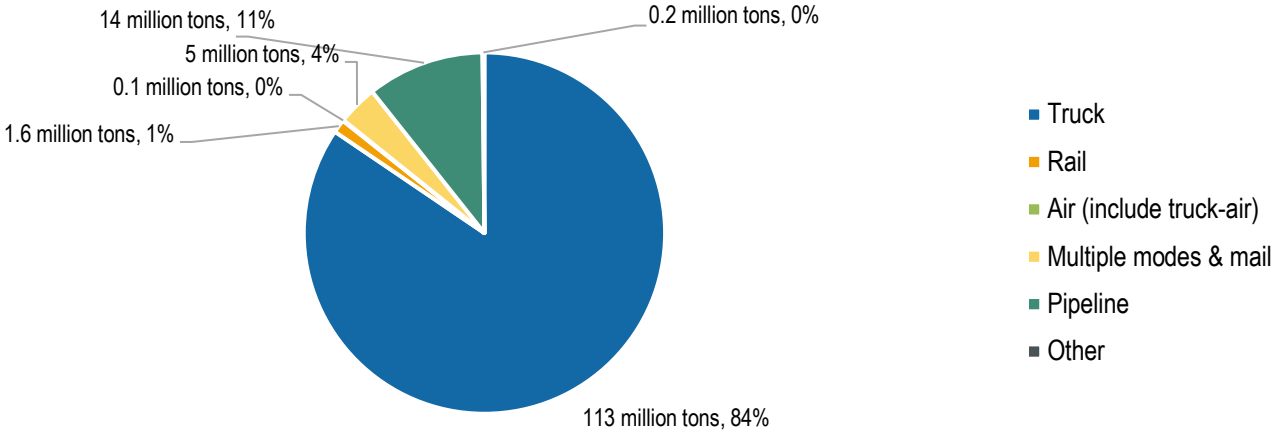


Figure 3 shows the mode split by weight of goods transported in the Rest of SC FAF Zone. In 2017 approximately 134 million tons of goods were transported to, from, and within the Rest of SC FAF Zone. Trucking is still the predominant mode of transport when looking at goods transported by weight, with 84% of all tonnage being transported by trucks. Pipeline is the second most common mode for shipping goods by weight, making up 11% of total tonnage. Pipelines typically move low-value and heavy commodities long distances, as shown by the high proportion of freight moved when measured by weight and low proportion of freight moved when measured by value. Though air cargo represents a small proportion of freight moved by weight (approximately 100,000 lbs), it has the second highest value per ton of all the other modes, as shown in **Table 1**. Nationally, air cargo shipments have been increasing, mainly from an increased demand from consumers to same-day deliveries and a broader shift toward e-commerce as opposed to brick and mortar retail.

Figure 3: Freight Shipments by Mode and Weight 2017 (Rest of SC FAF Zone)



Source: FHWA Freight Analysis Framework, Version 5.2, 2021.

Table 1: 2017 Freight Mode by Value per Ton (Rest of SC FAF Zone)

Mode	Value Per Ton
Other and Unknown	$12,400
Air	$11,000
Multiple Modes & Mail	$2,300
Rail	$1,300
Truck	*820
Pipeline	$180

The FAF version 5 dataset includes mode split projections to the year 2045. Mode split trends observed in 2017 are projected to remain the same in 2045, with trucking being the predominant mode to transport goods and minor fluctuations in the amount of goods transported by other modes. However, freight volumes are expected to increase significantly, both in terms of weight and value. **Table 2** shows the percent current value and weight of goods transported in 2017 for each mode, the projected value and weight of goods transported in 2045, and the change in percentage between the two points in time. The total value of goods transported to, from, and within the Rest of SC FAF Zone is expected to increase by 47%, but the weight of goods is only supposed to increase by 34%. This indicates that in the future freight shipments in the Rest of SC FAF Zone will be high-value low-weight goods.

Table 2: Percent Change in Freight Shipments by Weight and Value between 2017 and 2045 (Rest of SC FAF Zone)

Mode	Value ($ billion)			Weight (million tons)		
	2017	2045	% Change	2017	2045	% Change
Truck	$92.8	$173.2	46%	113	169	33%
Rail	$2.1	$4.2	51%	1.6	3	49%
Air	$1.1	$2.1	46%	0.1	0.2	57%
Multiple Modes	$10.9	$22.5	51%	5	9	47%
Pipeline	$2.6	$3.7	30%	14	20	30%
Other	$2.9	$6.3	55%	0.2	0.5	59%
Total	$112.4	$211.9	47%	113	169	34%

Source: FHWA Freight Analysis Framework, Version 5.2, 2021.

Highways

Trucks are the most common mode for transporting goods due to their ability to transport a variety of goods over short and long distances, and the majority of a truck's time is spent travelling on highways. The LATS area lies along the I-95, one of the nation's busiest freight corridors that connects some of the largest metropolitan areas in the country.

In its most recent Freight Plan Update (2020), SCDOT established a Statewide Freight Network. This network consists of roads and highways projected to carry at least one million tons of freight or greater in year 2040 and provide appropriate connectivity to freight generators, key intermodal facilities, and South Carolina's Interstate Network. **Figure 4** shows highways in the LATS Area identified in the Statewide Freight Network. In addition to I-95, there are four US routes that have are part of the State Freight Network in the LATS area: US 17, US 278, US 321, and US 21. Each of these highways connects to major employment and populations hubs. US 17 connects the cities of Savannah and Charleston; US 278 connects Hilton Head Island to I-95; US 321 connects provides a more western north-south route parallel to the I-95 corridor; and US 21 connects Beaufort to I-95.

The Truck Travel Time Reliability Index (TTTR) is a performance measure used to assess travel conditions for trucks on highways. The TTTR is defined as the 95th percentile truck travel time divided by the 50th percentile truck travel time using data from the FHWA's National Performance Management Research Data Set (NPMRDS).

Figure 5 shows the TTTR measurements on highways for which data is available. The only corridors on which there are travel reliability issues are the US 17 and I-95 corridors. Specifically, the I-95/US 17 and I-95/ US 278 interchanges have the most unreliable travel conditions in the study area.

Aviation

Aviation includes both the movement of cargo and people. Aviation needs are fulfilled through a combination of large and small airports across the state. There are seven airports in the LATS area, as shown in **Figure 4**, but there are only two that are open to the public or commercial use: Hilton Head Island Airport and Beaufort County Airport. The other five facilities are privately owned, or are military bases or hospitals. Aviation is not a significant mover of people or cargo in the LATS area, but the two airports that are open for public and commercial use are outlined below.

Hilton Head Island Airport

Hilton Head Island Airport (HHH), categorized as a primary commercial service airport, is the largest airport in the LATS area. American Airlines, Delta, and United operate daily nonstop flights to Charlotte, Atlanta, and Washington, DC, respectively. Each carrier offers seasonal flights to other locations on the east coast and in the Midwest. From July 2020 to July 2021, HHH had 142k arriving passengers and 140k departing passengers, which was a substantial increase from the 81,000 arrivals and 79,00 departures in from July 2018 to

July 2019 before the COVID-19 pandemic.[4] The export is expected to get several upgrades in the next few years.

Beaufort County Airport

The Beaufort County Airport is a county-owned, public-use general aviation airport in Beaufort County, South Carolina. Categorized as a general aviation facility, Beaufort County Airport is used for civil aviation operations.

Savannah/Hilton Head International Airport

The Savannah/Hilton Head International Airport (SAV) is both a commercial and military airport in Savannah, Georgia. Eleven carriers make nonstop flight to 35 locations around the United States.

While the Savannah/Hilton Head International Airport is not in the LATS area, it is a key regional service for travelers coming into and out of the Lowcountry.

[4] Hilton Head Airport (HHH) TranStats. Bureau of Transportation Statistics. https://www.transtats.bts.gov/airports.asp?20=E

Figure 4: Freight Infrastructure

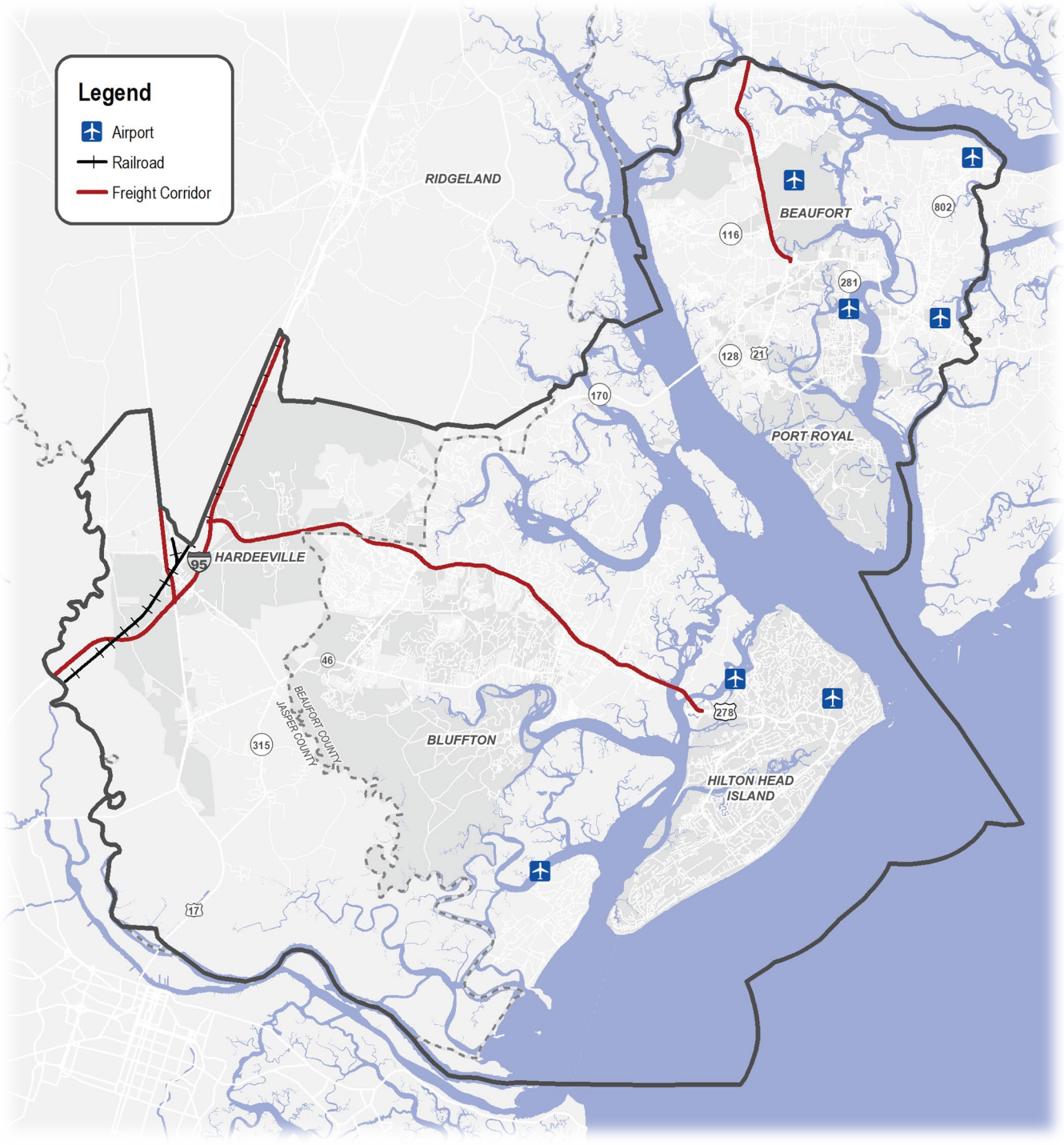
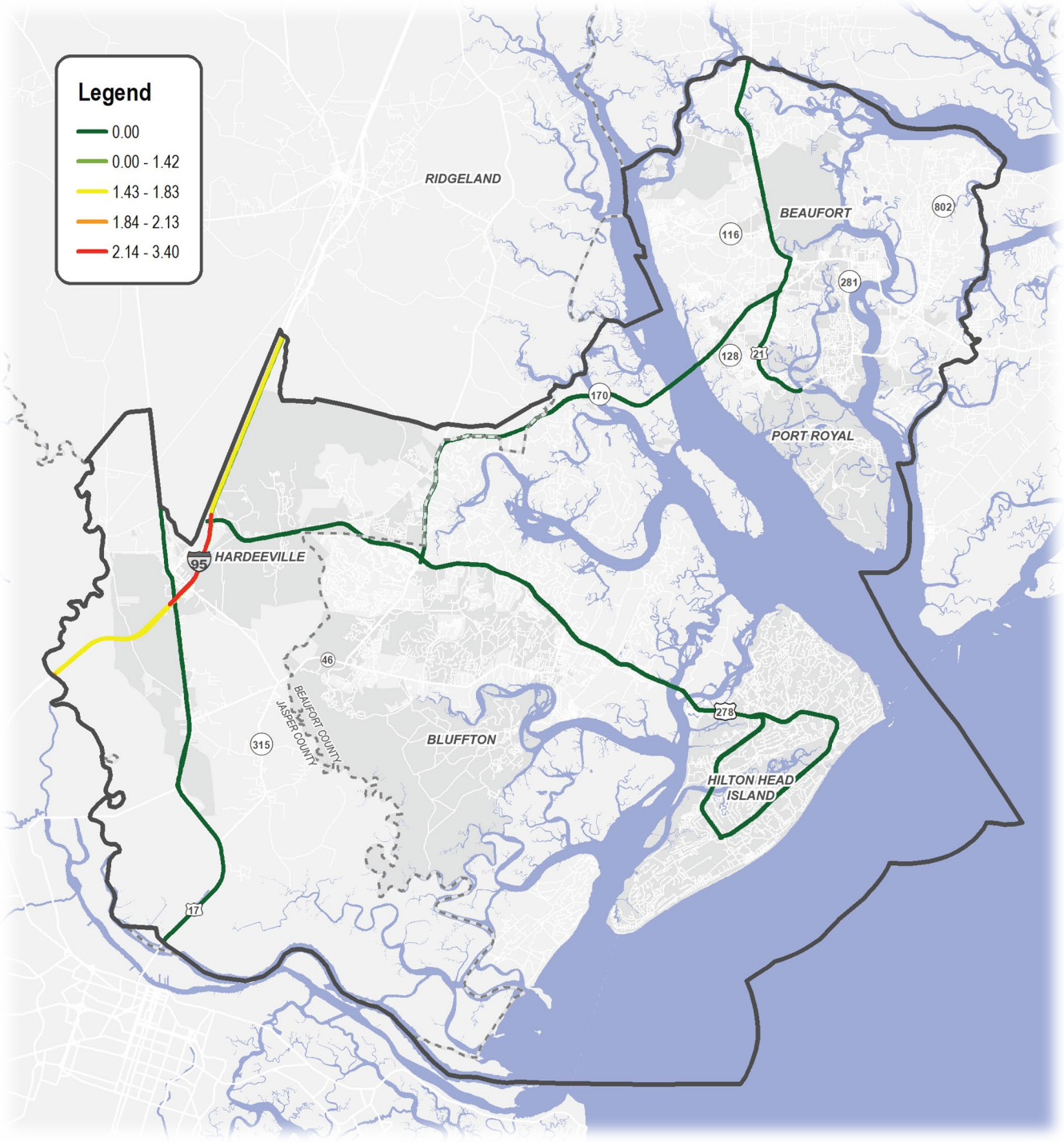


Figure 5: Truck Travel Time Reliability in the LATS Area



Source: FHWA National Performance Management Research Data Set (NPMRDS)

Rail

Rail is typically used to transport heavy bulk commodities that do not have time-sensitive schedules for delivery over long distances. The main advantages for using rail to transport goods are its cost efficiency and environmental benefits. According to the American Association of Railroads, railroads are the most fuel-efficient way to move freight over land, moving one ton of freight more than 480 miles per gallon of fuel, on average. More goods moved with less fuel means lower freight shipping rates for businesses. Moreover, railroads are three to four times more fuel-efficient than trucks and a single freight train can replace several hundred trucks.[5]

Rail is most often associated with intermodal freight transportation, or the movement of goods or one good across multiple modes. The most common form of intermodal transport is rail-truck. Both the Ports of Savannah and Charleston have Class I Freight Railroad access, meaning containers can be offloaded off of ships directly onto trains to be transported further inland. This greatly decreased the amount of local truck traffic in the area surrounding the ports, which includes the LATS area.

Railroads are broken into three classifications based on annual operating revenues: Class I, Class II (Regional), and Class III (Shortline). In South Carolina there are two Class I railroads that move the majority of regional freight: CSX and Norfolk Southern. **Figure 4** shows rail lines that run through the LATS area. The one railroad of note is the CSX line that runs parallel to I-95 through Hardeeville. This line runs between Savannah and Charleston and CSX has given track usage rights to Amtrak to run passenger trains. When completed, the Jasper Ocean Terminal is envisioned to have on-dock rail facilities and would need a new connection to tie into existing CSX and Norfolk Southern rail lines.

Though rail represents a small proportion of freight moved by both value and weight in the Rest of SC FAF Zone, increased shipping traffic at the Ports of Savannah and Charleston and an increase in on-dock rail facilities could lead to more goods being shipped over rail in the future.

[5] "Freight Rail Facts and Figures," American Association of Railroads. https://www.aar.org/facts-figures#:~:text=Railroads%20are%20the%20most%20fuel,can%20replace%20several%20hundred%20trucks.

Commodity Flows

In addition to estimating freight flows by mode split, the FAF5 dataset also estimates the value and weight of over 41 commodity types moved in and out of an area. **Figure 6** shows the top commodities moved by weight to, from, and within the Rest of SC FAF Zone, and **Figure 7** shows the top commodities moved by value. Each chart shows the top 10 commodities as well the weight or value of the remaining commodity types moved in 2017. By weight gravel, logs, and coal-n.e.c. are the three predominant moved within the Rest of SC FAF Zone, representing approximately 41% of all commodities moved by weight. Coal-n.e.c. stands for "not elsewhere classified" and includes various coal and petroleum products that are not included in other commodity groups. When looking at commodities moved by value, the three most common commodities are mixed freight, plastics/rubber, and motorized vehicles, representing approximately 32% of all commodities moved by value.

Figure 6: Commodities Moved by Weight in 2017 (Rest of SC FAF Zone)

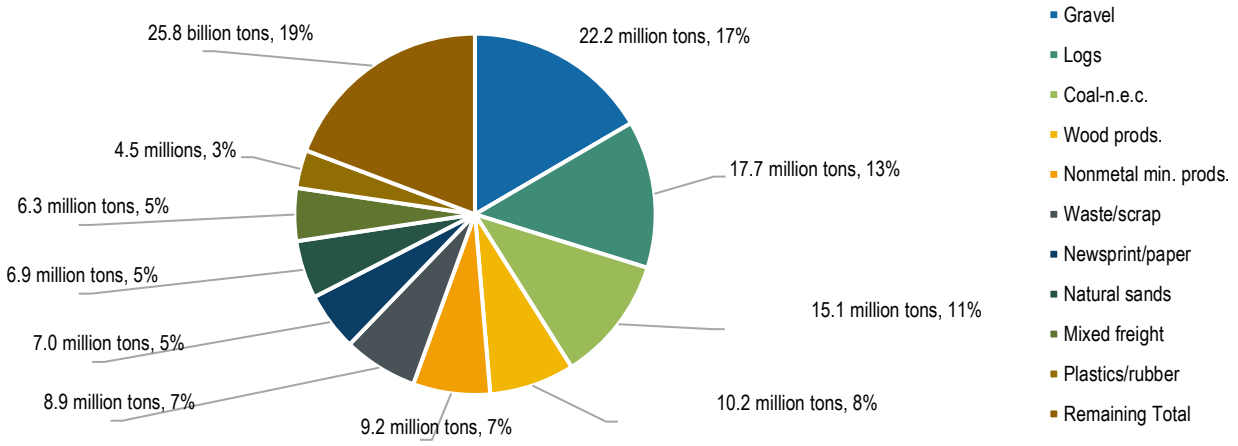
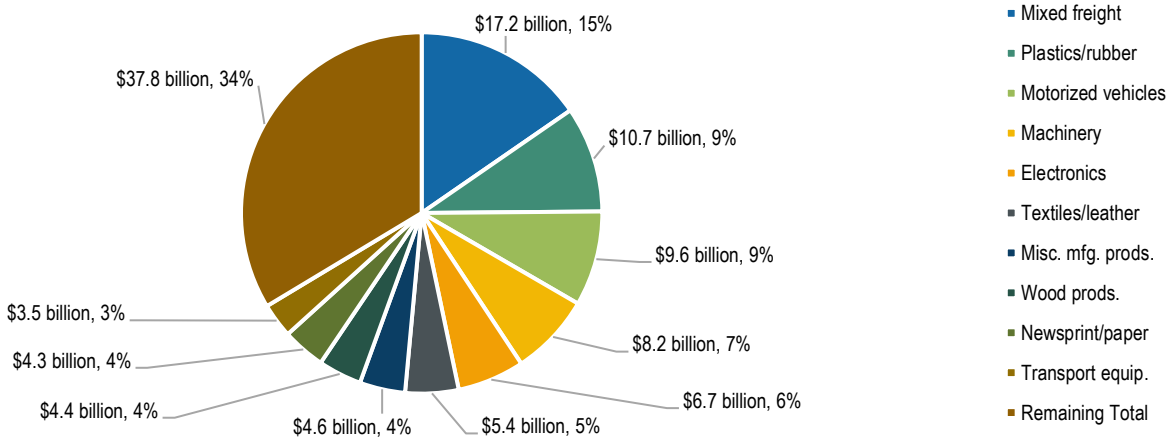


Figure 7: Commodities Moved by Value in 2017 (Rest of SC FAF Zone)



Source: FHWA Freight Analysis Framework, Version 5.2, 2021.

Figure 8 and **Figure 9** show the 2045 estimates for the top ten commodities moved by weight in value in 2017. Movement of each commodity is expected to grow significantly over that time, with the weight and value of goods increasing between approximately 24 and 60%, except for the movement of waste/scrap metal, which is estimated to decrease by approximately 2% in terms of total tonnage moved. By weight, the top ten commodities moved in 2017 will also be the top commodities moved in 2045, and the same is true for the top ten commodities moved by value, except for transportation equipment, which moves out of the top ten to the 13th most moved commodity by value, and basic chemicals moves into the top ten.

Figure 8: Projected Commodities Moved by Weight in 2045 (Rest of SC FAF Zone)

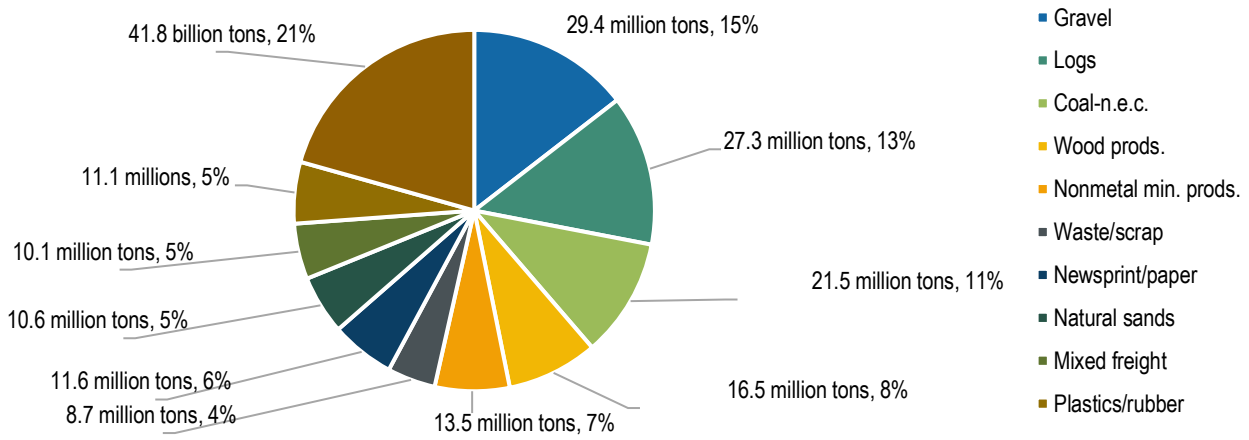
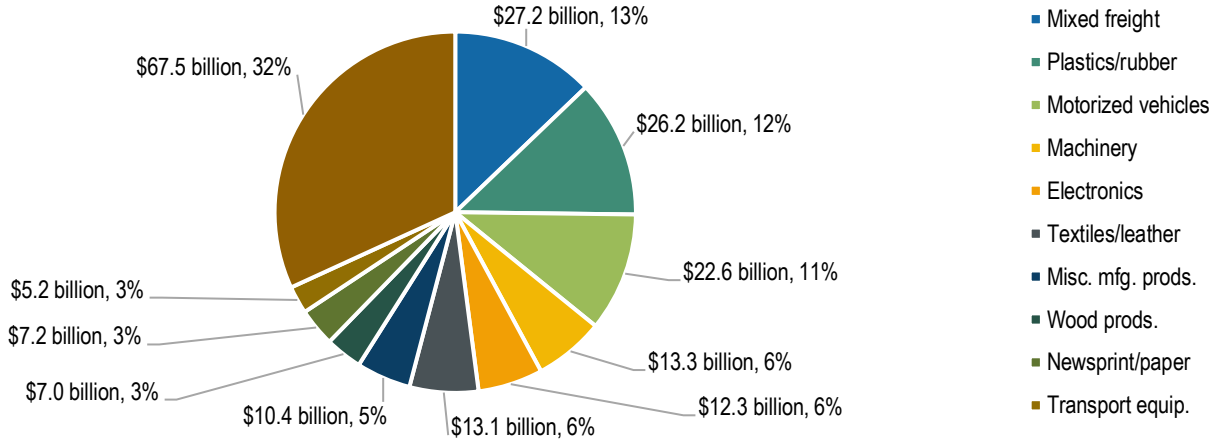


Figure 9: Projected Commodities Moved by Value in 2045 (Rest of SC FAF Zone)



Source: FHWA Freight Analysis Framework, Version 5.2, 2021.

Recommendations

There are several recommendations in the *2045 LATS LRTP*'s financially constrained plan that address the current and anticipated freight needs. The existing and projected needs for rail, water, and air transportation modes do not warrant distinct transportation action from the LATS MPO. The trends for all modes should be monitored to determine if additional improvements for air, rail, or water transportation improvements are necessary. The MPO should continue to work with Jasper County and the Savannah Port Authority on the development of the Jasper Ocean Terminal.

In addition to these project recommendations, the *2045 LATS LRTP* recommends the development of a regional freight study. This study will allow for a more in-depth analysis of current freight movements within the Lowcountry Region, identify barriers to freight travel, and prioritize recommendations for improvement.

Table 3: Freight Supportive Improvements

Project ID	Recommendation	Project Type	Length (miles)
BC-01	Boundary St improvements from Neil Rd to Laurel Bay	Access Management	2.23
H-01	US 321 from US 17 to Honey Hill Rd	Road Widening	2.17
H-02	US 17 (Whyte Hardee Blvd) from I-95 (Exit 5) to John Smith Rd	Access Management	1.61
JC-11	US 278 from I-95 to SC 170	Widening	7.85
JC-12	US 278 from Jasper County line to SC 170	Widening	2.24
JC-13	US 278 from Beaufort County line to Argent Blvd	Widening	0.67

2045 LATS
LONG RANGE TRANSPORTATION PLAN

Chapter 9 | Financial Plan and Implementation

Introduction

To meet the needs of the region over the next 25 years, the *2045 LATS LRTP* proposes a mixture of transportation recommendations that are financially constrained. A requirement of any long range transportation plan is to demonstrate that the proposed investments are realistic throughout the duration of the plan's horizon year (2045). The financial plan uses the anticipated revenue to contrain the list of recommendations. In order to demonstrate financial constraint, the long range plan must fulfil these requirements. The following chapter details the proposed investments and identifies the anticipated revenues for the life of the plan.

Financial Plan Development

The proposed recommendations were developed in collaboration with representation from the LATS area municipalities, the Technical Committee, Policy Committee, the Lowcountry Council of Governments (LCOG), the Lowcountry Regional Transit Authority (LRTA), the South Carolina Department of Transportation (SCDOT), and the Federal Highway Administration (FHWA). The list of projects included roadway, bicycle, pedestrian, freight, and transit improvements. The financial plan includes the existing and committed (E+C) projects from the MPO in the 2021-2027 Transportation Improvement Plan (TIP) in addition to the proposed recommendations of this plan. The recommendations are responsive to the identified needs of the community and consider environmental, socioeconomic, and transportation considerations. The projects identified in this plan are the product of meaningful public participation process including an online survey, stakeholder interviews, a public workshop, and input from the Technical and Policy Committees.

After the verification and refinement of the plan's recommendations, revenue forecasts were developed. The revenue forecast process included a review the local and state expenditures, historic and current funding trends, and anticipated funding levels. As part of this process, LATS, SCDOT, LRTA, Beaufort County, and Jasper County were consulted. All of the figures presented in this section are in current year dollars (2022) and inflated to reflect the projected year of implementation or expenditure. The industry standard or best practice in the Lowcountry region uses a 3% inflation rate to forecast costs and revenues. Despite the recent surge of inflation and cost of construction, it is assumed that inflation will level out over time.

The final chapter of the long range plan provides an overview of the assumptions, planning-level cost estimates, financial strategies, and methodology used to create the constrained financial plan. In subsequent plan updates, all funding programs, projects, and assumptions should be re-evaluated.

Horizon Years

The finically constrained plan shows the proposed investments of the plan that are reasonable anticipated based on revenues within a series of funding periods or buckets. The funding periods summarized for the *2045 LATS LRTP* include:

- **2022-2025**. The 2022-2025 funding period includes the existing and committed (E+C) projects and associated funding from the 2021-2027 Transportation Improvement Plan (TIP). The projects identified in this time period were previously identified by the MPO and SCDOT as priority projects for the region based on performance-based planning. While included in the financial plan, these projects were not re-evaluated.
- **2026-2030**. Since the TIP is a six-year program, this time band is inclusive of projects funded through 2027. In addition to the TIP projects, high-priority projects identified through the project prioritization process were also included. The projects programmed in this funding period are typically smaller projects that demonstrate

substantial benefit for a low cost. This time band is inclusive of several multijurisdictional corridor and feasibility studies.

- **2031-2035**. This horizon year encompasses the medium-priority corridor and intersections projects. The projects included in this funding period may include larger, capital projects that require more accrued funds.
- **2036-2045**. Using the remaining available funds, the projects identified between 2036-2045 include improvements to mitigate long-term issues throughout the region.
- **Beyond 2045**. The Vision Plan identifies all the projects that could not be reasonably funded by the 2045 horizon year of the long range plan. While the need for these projects has been identified, the anticipated projected revenues cannot adequately fund all of the projects throughout the life of the plan.

The roadway projects included in the System Upgrade (Guideshare) portion of the 2021-2027 TIP are shown in the table below. Throughout the six-year period the LATS MPO will spend approximately $8.7 million dollars on improvements along US 17.

Table 1: 2021-2027 TIP Roadway System Upgrade Projects

Project	County	Phase (FY 27)	Project Cost
US 17 (Georgia State Line to SC 315)	Jasper	Construction	$704,000
US 17 Back River Bridge	Jasper	Construction	$8,000,000

Financial Planning Scenarios

The LATS MPO secures funding for its projects through a variety of local, state, and federal sources. The majority of state and federal funding for the MPO is are primarily distributed through the Guideshare Funding Program. The Guideshare Program is primarily determined by current and projected regional population trends and vehicle miles traveled compared to other regions of South Carolina. The funding levels are not expected to increase substantially over the life of the *2045 LATS LRTP*. Notably, the needs of the Lowcountry exceed the amount of available funding provided by state and federal sources.

Sales Tax

In 2018, Beaufort County voters approved a 1% Transportation Tax—or Penny Referendum—to be used for multimodal transportation projects. The goal of the sales tax was to collect $120 million or expire after four years. The Beaufort sales tax ended in December 2021 after reaching the collected goal of $120 million.

In 2016, Jasper County approved a Sales Tax Ordinance to secure funding for transportation projects. The tax would not exceed ten years or a total capital cost of $27 million dollars. The Jasper County sales tax outlined the estimate capital cost of seven projects to be funded and constructed with the generated funds.

In both counties, voters approved a sales tax to fund transportation projects. The local funding pool provides an excellent opportunity to fund regional needs that otherwise may not be met through traditional state and federal funding sources. Since the construction of several projects in both counties, the public may be open to renewing the sales tax initiative for a ten-year period.

The financial plan consists of two analyses and scenarios. The first scenario, referred to as the "Current Funding Methods" scenario, represents the constrained plan using current sales tax as well as current state and federal funding sources through the Guideshare Program. The alternative scenario, referred to as the "Sales Tax Renewal" scenario, analyzes the effects of renewing the 1-cent sales tax with the referendum being voted on in late 2022 in Beaufort County and after 2027 in Jasper County. The current funding levels anticipated are projections from previous sales tax revenues. The annual revenue growth rate assumes 1.035% growth in both counties.

Roadway

Roadway Capital Funding

Based on the current and anticipated population trends in the LATS area, the annual Guideshare revenue was increased since the previous long range plan. Currently, the LATS MPO receives $5.2 million in Guideshare revenue annually. Approximately $144 million in Guideshare revenue is anticipated to be available during the life of the plan. Once the baseline funding levels are been established, the next step is to determine which projects can reasonably expected to be funding. The revenue forecasts were adjusted to reflect a 3% inflation rate. The proposed improvements were analyzed and prioritized to determine which projects met the performance-based criteria. The prioritization process is described in depth in Chapter 4. As a result, the higher rated projects were considered for implementation prior to lower scoring projects.

Table 2 shows the forecasted capital roadway revenues and costs for the *2045 LATS LRTP* for the Current Funding Methods scenario, which assumes the continuation of current state and federal funding and the completion of the existing Jasper County sales tax. State and federal funding includes Guideshare revenues as well as Non-Guideshare funding sources such as the State Infrastructure Bank that have been identified for specific projects within the 2021-2027 TIP. **Table 3** shows the forecasted capital roadway revenues and costs for the Sales Tax Renewal scenario, which

assumes the renewal of sales tax revenue in 2022 and 2027 in Beaufort and Jasper respectfully. An estimated $210.9 million in capital roadway revenue is forecasted to be available in the Current Funding Methods Scenario. An estimated and $2.217 billion in capital roadway revenue is forecasted to be available in the Sales Tax Renewal scenario. **Table 2** and **Table 3** are organized by funding period to show the interim and total revenue for the duration of the plan.

Table 2: Capital Roadway Revenues and Costs, Current Funding Methods

Period	Total Revenue	Total Cost	Balance
2022 - 2025	$68,227,316	$66,540,000	$1,582,316
2026 - 2030	$45,409,145	$44,665,000	$1,896,461
2031 - 2035	$30,409,145	$31,924,000	$18,545,606
2036 - 2045	$66,818,290	$67,458,000	$276,896
Total	**$210,863,896**	**$210,587,000**	**$276,896**

**Balances are carried over and added to subsequent funding periods.*

Table 3: Capital Roadway Revenues and Costs, Sales Tax Renewal

Period	Total Revenue	Total Cost	Balance
2022 - 2025	$257,945,233	$245,821,000	$12,124,233
2026 - 2030	$402,345,170	$405,134,000	$9,335,403
2031 - 2035	$454,337,174	$452,166,000	$11,506,577
2036 - 2045	$1,168,304,157	$949,318,000	$21,885,734
Total	**$2,282,931,734**	**$2,261,046,000**	**$21,885,734**

**Balances are carried over and added to subsequent funding periods.*

The following tables and figures group projects into funding periods. **Figures 1 - 5** and **Table 4** show the roadway capital projects that can reasonably expect to be funded with in the Current Funding Methods scenario. **Figures 6 - 10**, and **Table 5** show the roadway capital projects that can reasonably expect to be funded within the Sales Tax Renewal scenario.

Unfunded Vision

Neither of the funding scenarios are able to fully constrain the identified roadway needs. The full unfunded vision list can be found in the Appendix. Following the financial constraint of the two scenarios, the following unfunded vision project costs remain:

- Current Funding Methods: $3.738 billion
- Sales Tax Renewal: $1.077 billion

Figure 1: Financially Constrained Projects – Current Funding Methods

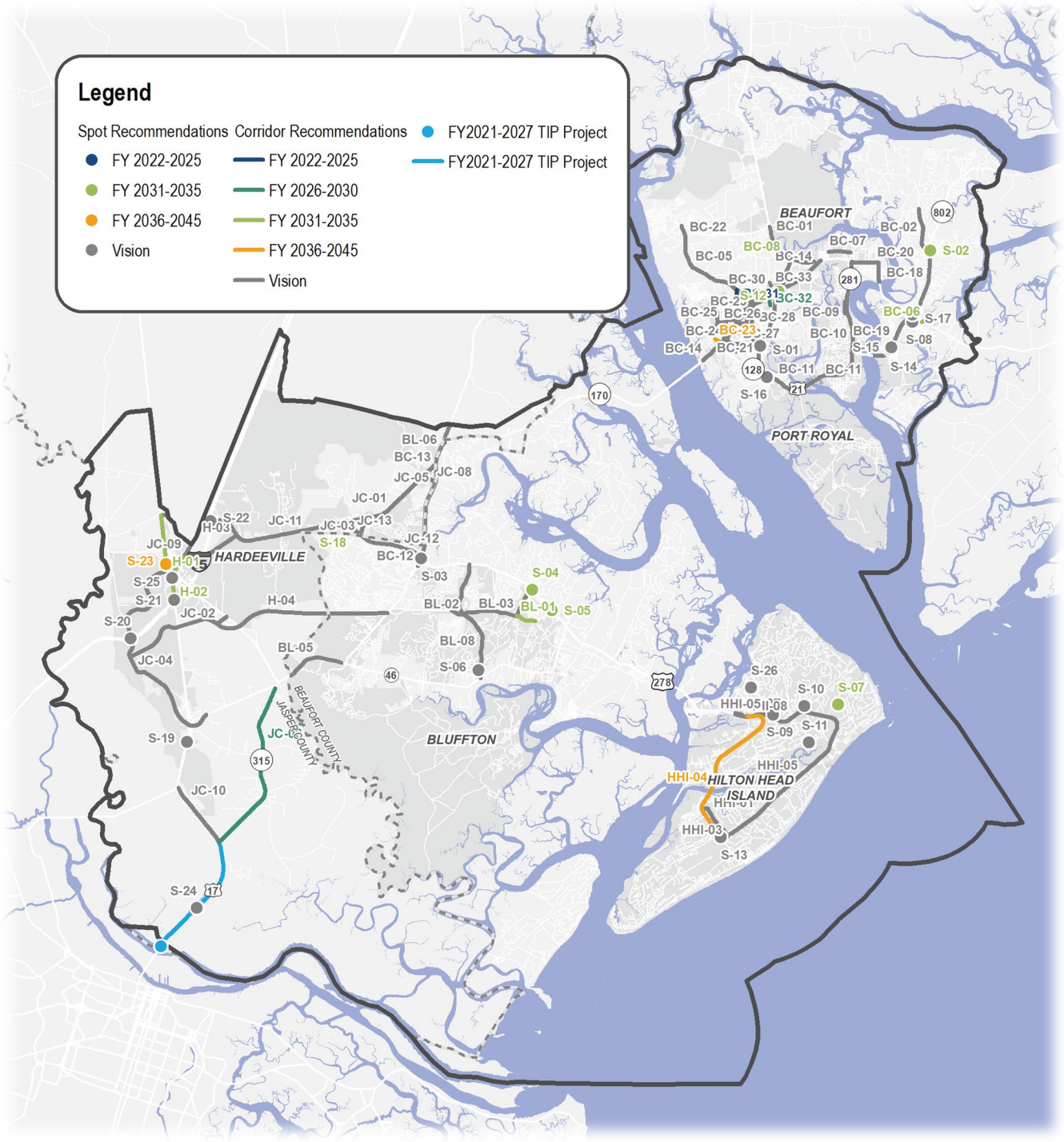


Figure 2: Financially Constrained Projects – Current Funding Methods Inset – Beaufort and Port Royal

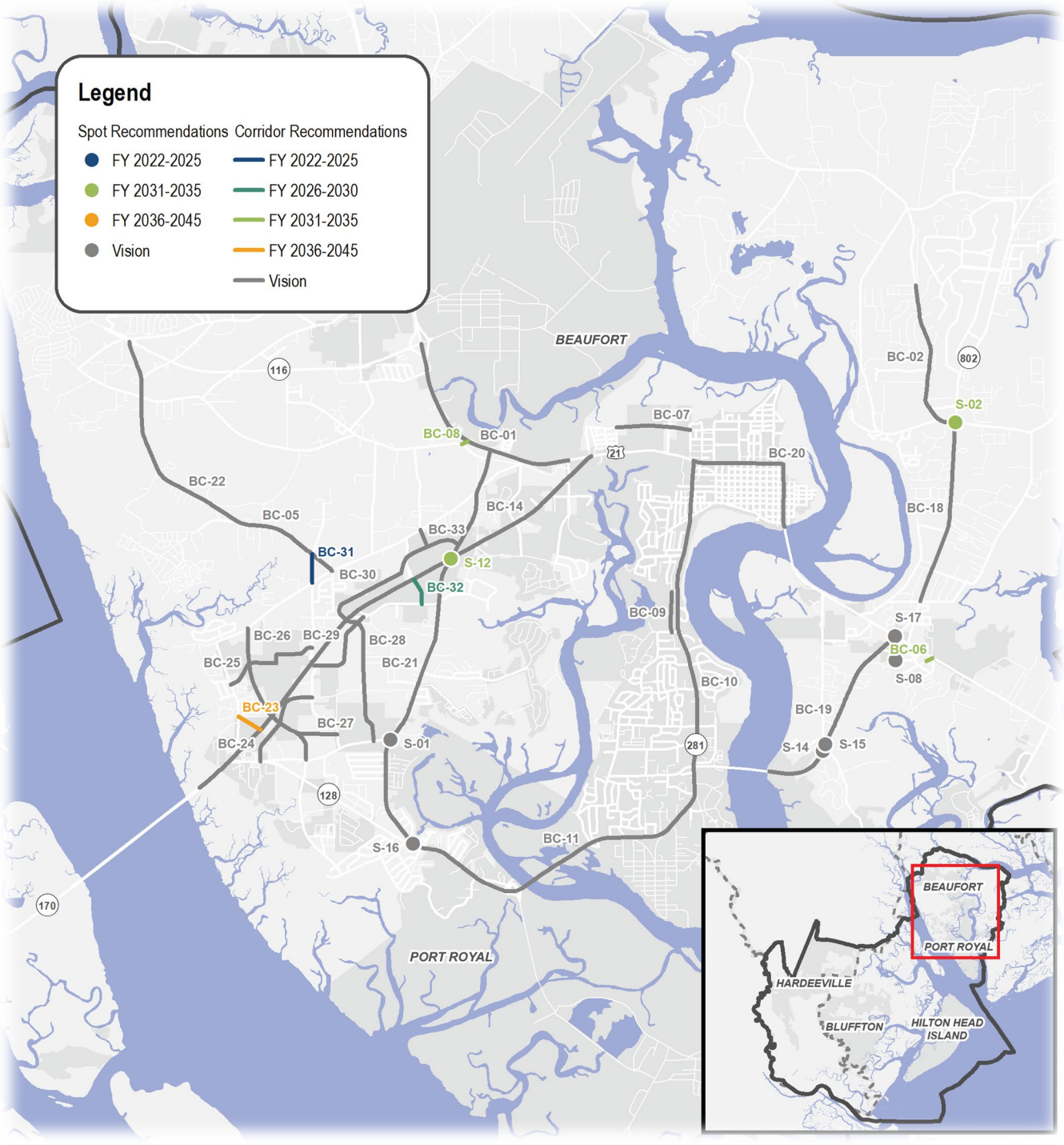


Figure 3: Financially Constrained Projects – Current Funding Methods Inset – Bluffton

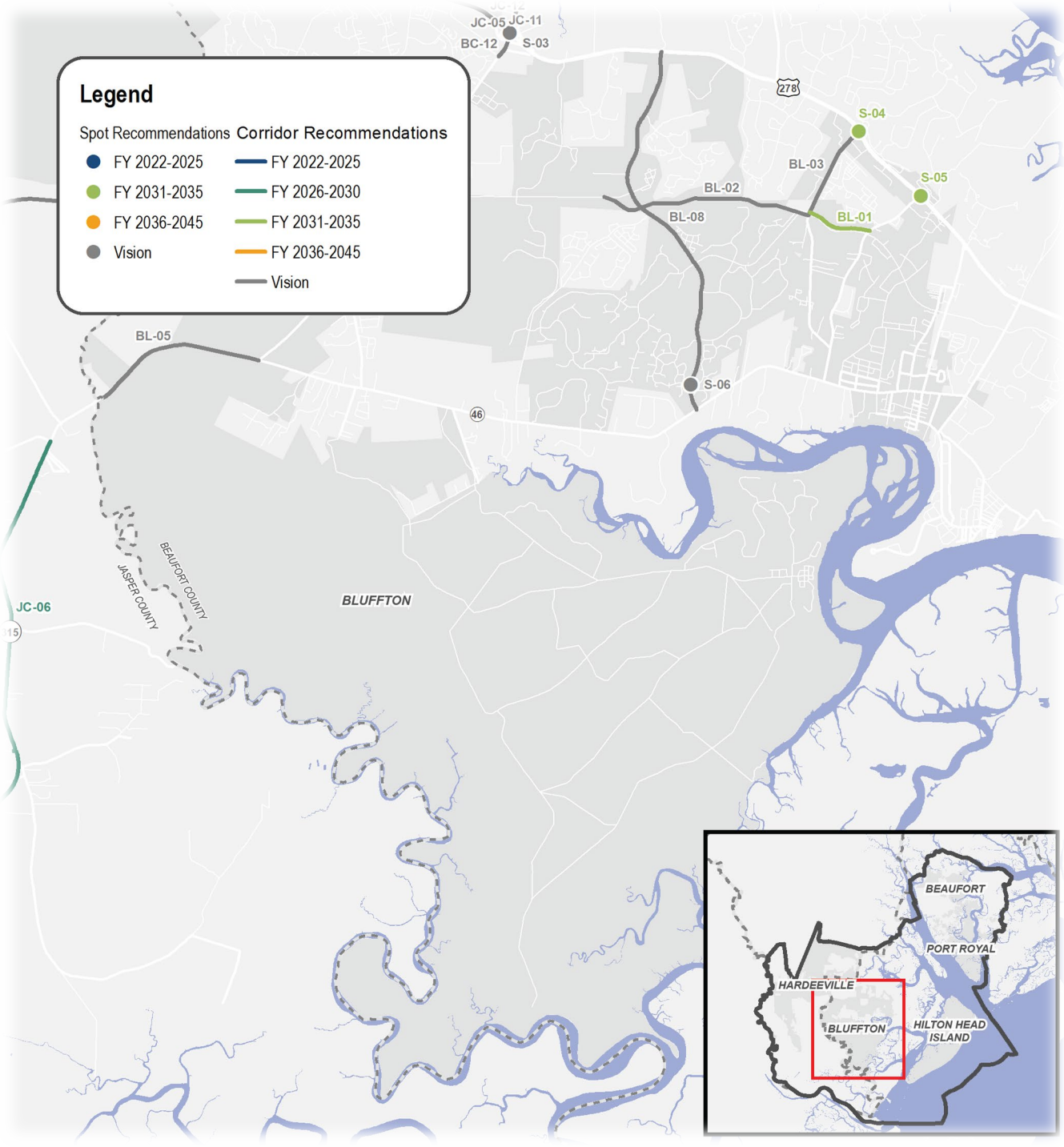


Figure 4: Financially Constrained Projects – Current Funding Methods Inset – Hardeeville

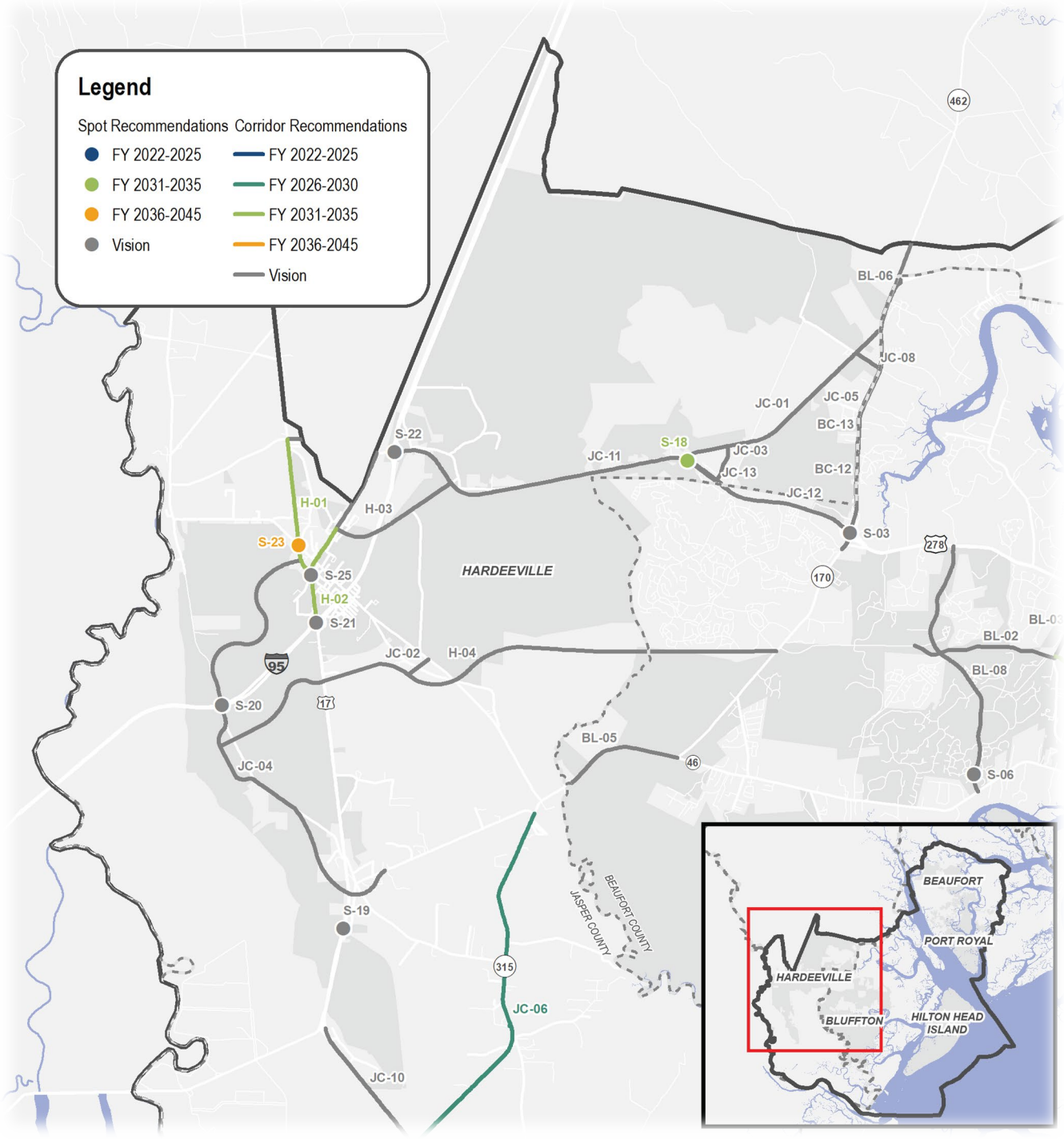


Figure 5: Financially Constrained Projects – Current Funding Methods Inset – Hilton Head Island

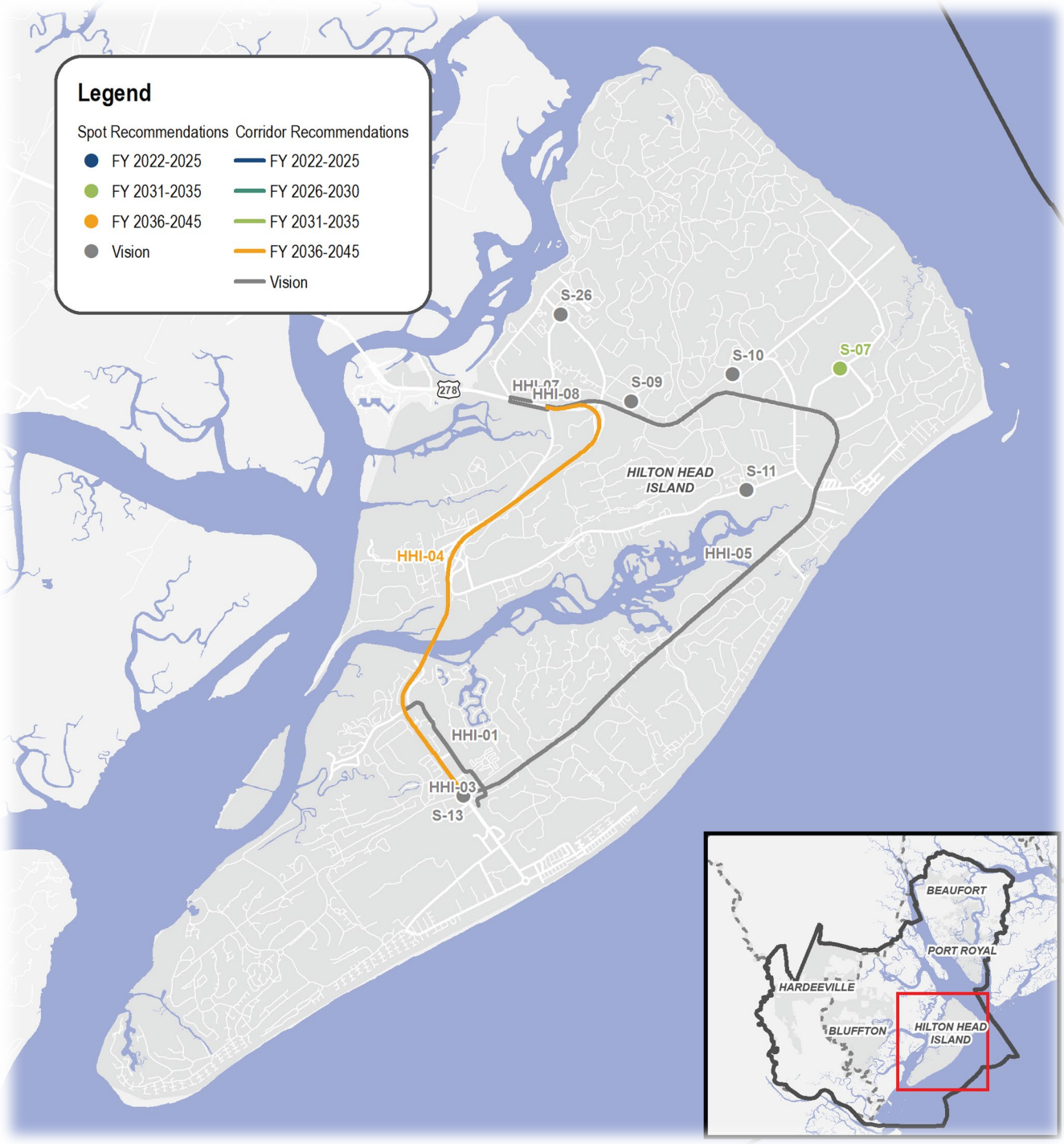


Table 4: Financially Constrained Projects – Current Funding Methods

Horizon Year	Project ID	Project	Project Type	Cost (2022)*
2022-2025	BC-31	New Location from Broad River Blvd to Joe Frazier Rd	New Location	$4,193,000
	S-16	US 21 & SC 128 Intersection Improvements	Intersection	$5,200,000
		Freight Plan	Study	$300,000
		Transit Study for Northern Beaufort	Study	$200,000
		SC 170 from Boundary St to SC 46	Access Management Study	$400,000
		SC 46 / SC 315 from SC 170 to US 17	Access Management Study	$250,000
		Bluffton Pkwy from US 278 to I-95	Access Management Study	$400,000
2026-2030	JC-06	SC 315 / SC 46 to US 17 to SC 170	Access Management	$16,054,000
	BC-32	New Location from SC 170 to Goethe Hill Rd	New Location	$4,740,000
		US 278 from I-95 to Sea Pines Cir	Access Management Study	$500,000
		Lady's Island 3rd Bridge	Feasibility Study	$100,000
		Hilton Head Island 2nd Bridge	Feasibility Study	$100,000
2031-2035	S-12	SC 170 & US 21 Intersection Improvements	Intersection	$5,200,000
	H-02	US 17 (Whyte Hardee Blvd) from I-95 (Exit 5) to John Smith Rd	Access Management	$5,200,000
	H-01	US 321 from US 17 to Honey Hill Rd	Widening	$3,578,000
	BL-01	Buckwalter Frontage Connector from Buckwalter Pkwy to Willow Run	New Location	$915,000
	S-05	US 278 & Simmonsville Rd	Intersection	$1,184,000
	S-04	US 278 & Buck Island Rd	Intersection	$1,184,000
	S-18	US 278 & Argent Blvd	Intersection	$1,184,000

Horizon Year	Project ID	Project	Project Type	Cost (2022)*
2031-2035	BC-08	New Location from US 21 to S-7-73	New Location	$224,000
	S-02	SC 802 & Brickyard Point Rd/Holly Hall Rd	Intersection	$1,184,000
	BC-06	Meadowbrook Dr Ext from Gay Dr to US 21	New Location	$808,000
2036-2045	HHI-04	US 278 from Sea Pines Cir to Spanish Wells Rd	ITS and Access Management	$33,017,000
	BC-23	New Location from Broad River Blvd to Castle Rock Rd	New Location	$4,518,000
	S-23	US 321 & SC 46	Intersection	$936,000

**Cost included in FY 2022 dollars and rounded to the nearest 1,000.*

Figure 6: Financially Constrained Projects – Sales Tax Renewal

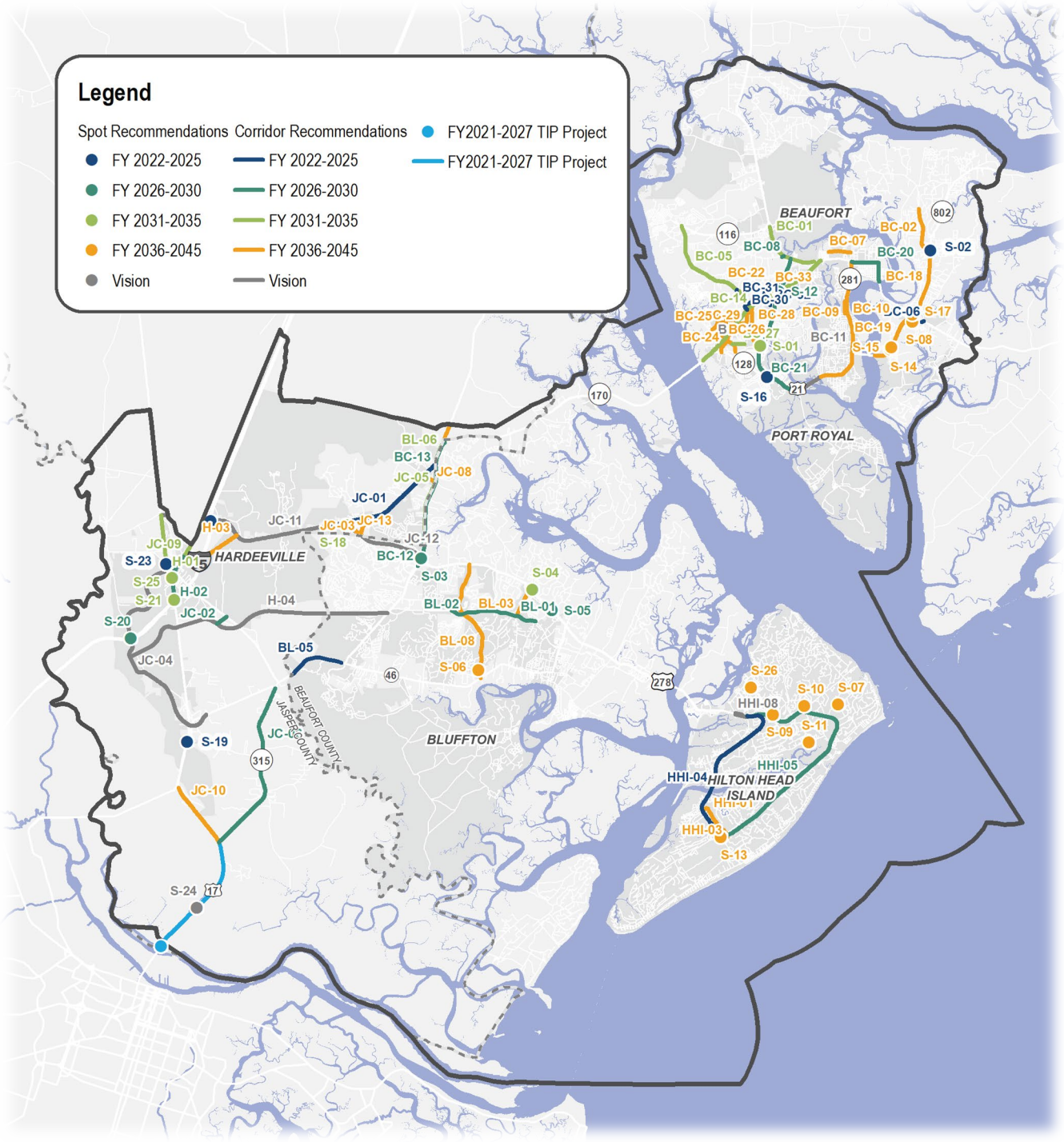


Figure 7: Financially Constrained Projects – Sales Tax Renewal Inset – Beaufort and Port Royal

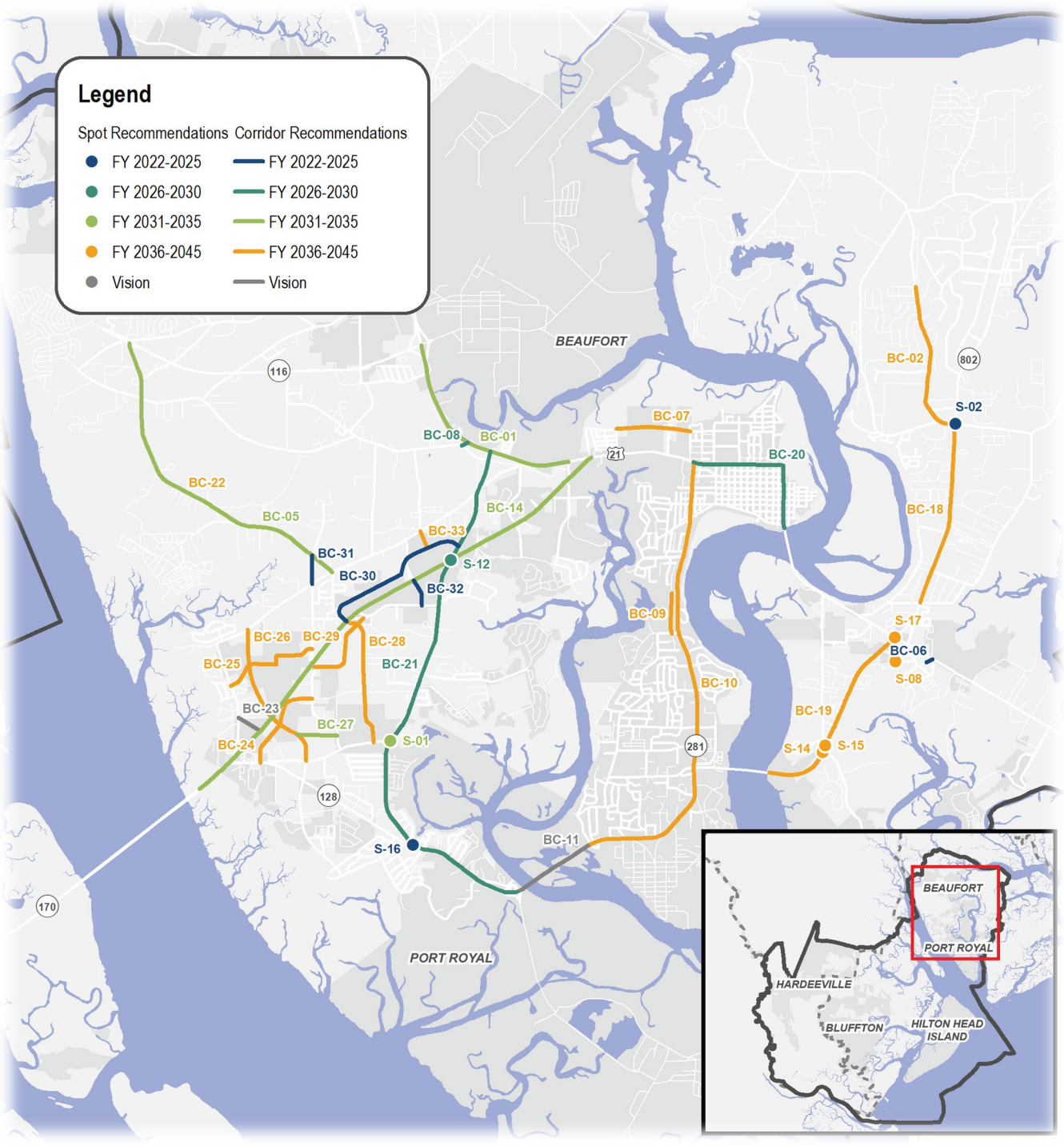


Figure 8: Financially Constrained Projects – Sales Tax Renewal Inset – Bluffton

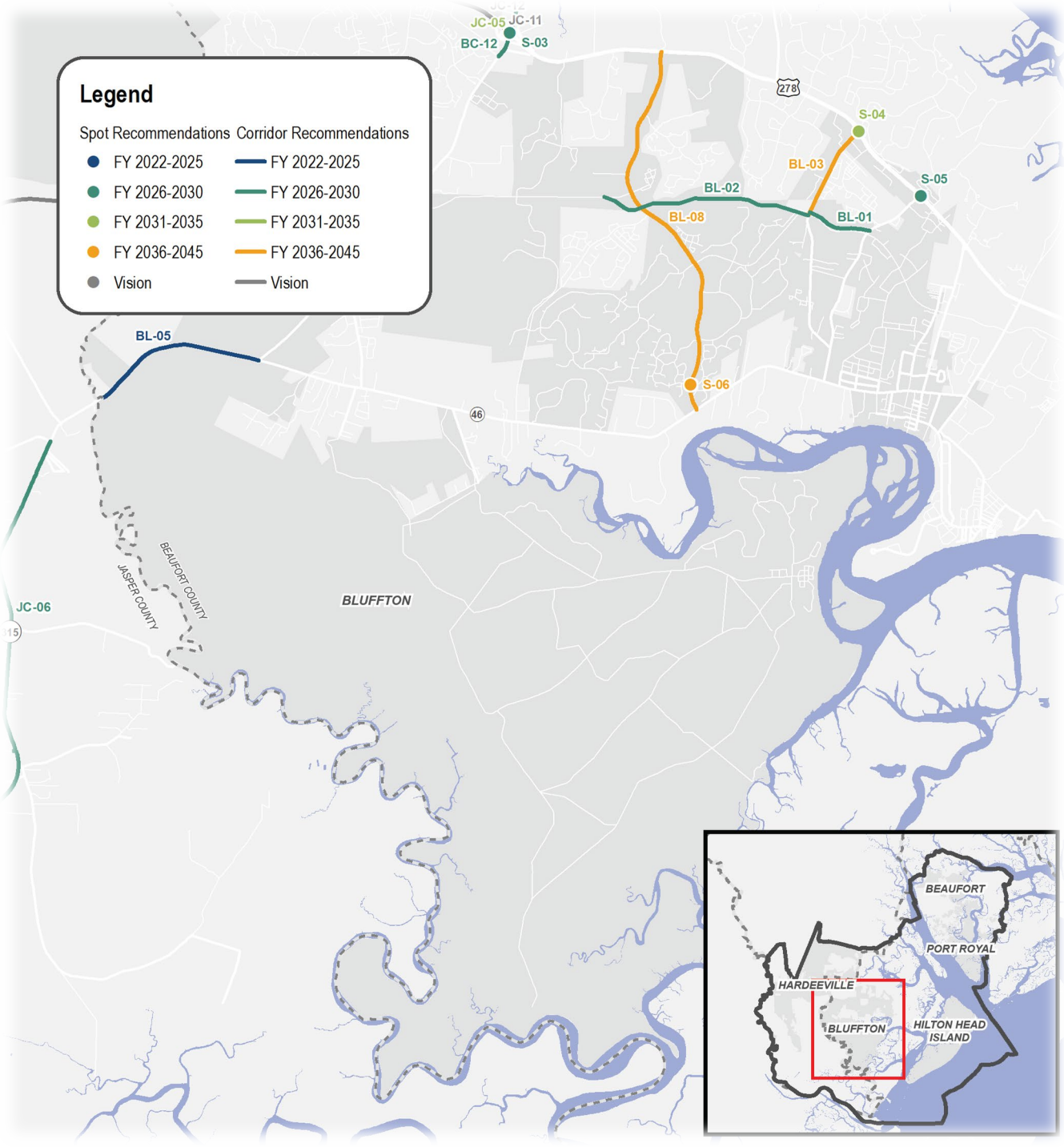


Figure 9: Financially Constrained Projects – Sales Tax Renewal Inset – Hardeeville

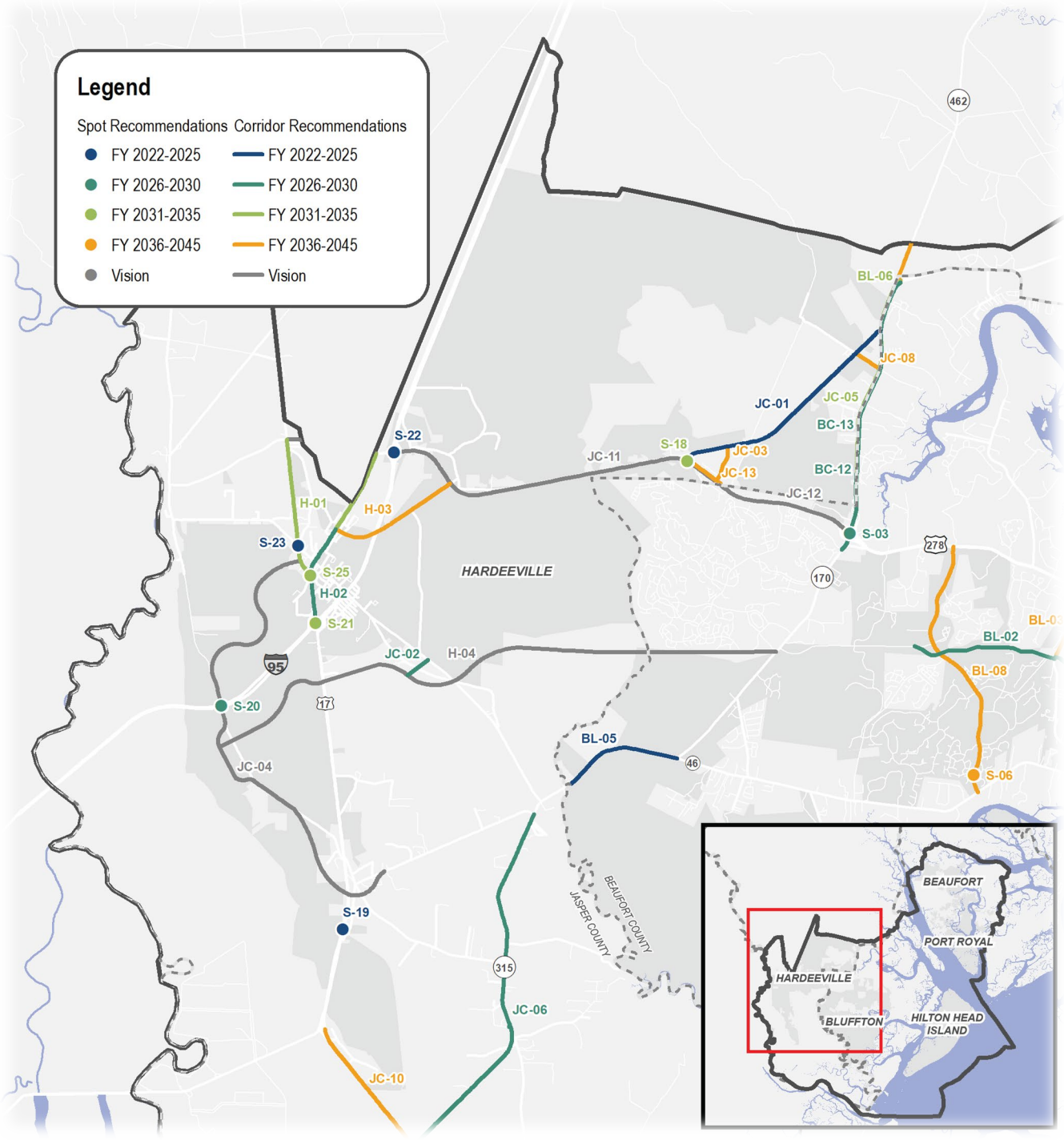


Figure 10: Financially Constrained Projects – Sales Tax Renewal Inset – Hilton Head Island

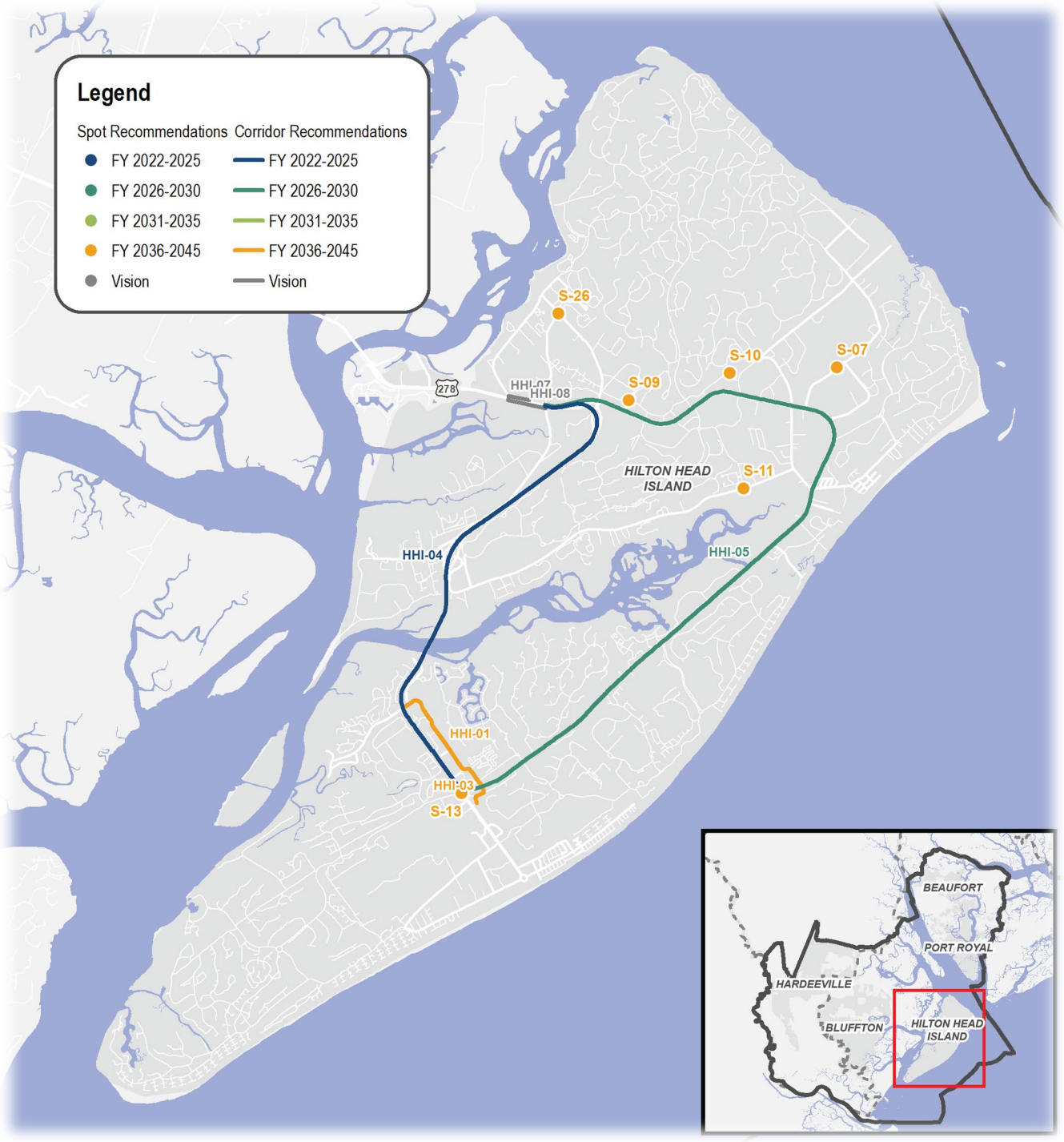


Table 5: Financially Constrained Projects – Sales Tax Renewal

Horizon Year	Project ID	Project	Project Type	Cost
2022-2025	BC-31	New Location from Broad St to Joe Frazier Rd	New Location	$4,193,000
	BC-32	New Location from SC 170 to Goethe Hill Rd	New Location	$4,740,000
	HHI-04	US 278 from Spanish Wells Rd to Sea Pines Cir	ITS and Access Management	$33,017,000
	S-16	US 21 & SC 128 Intersection Improvements	Intersection	$5,200,000
	BC-30	New Location from US 21 to SC 170	New Location	$44,041,000
	BL-05	SC 170 / SC 46 from Roundabout to Jasper County Line	Widening	$46,800,000
	S-22	I-95 & US 278	Intersection	$1,895,000
	S-02	SC 802 & Brickyard Point Rd/Holly Hall Rd	Intersection	$1,184,000
	BC-06	Meadowbrook Dr Ext from Gay Dr to US 21	New Location	$808,000
	S-23	US 321 & SC 46	Intersection	936,000
	S-19	US 17 & SC 170	Intersection	$1,184,000
	JC-01	Argent Blvd	Widening	$36,400,000
		Freight Plan	Study	$300,000
		Transit Study for Northern Beaufort County	Study	$200,000
		SC 170 from Boundary St to SC 46	Access Management Study	$400,000
		SC 46 / SC 315 from SC 170 to US 17	Access Management Study	$250,000
		US 278 from I-95 to Sea Pines Circ	Access Management Study	$500,000
		Bluffton Pkwy from US 278 to I-95	Access Management Study	$400,000
2026-2030	JC-06	SC 315 / SC 46 from US 17 to SC 170	Access Management	$16,054,000
	S-12	SC 170 & US 21 Intersection Improvements	Intersection	$5,200,000

Horizon Year	Project ID	Project	Project Type	Cost
2026-2030	H-02	US 17 from I-95 to John Smith Rd	Safety Improvements	$3,578,000
	BC-13	SC 170 from Tidewatch Dr to Sc 462	Widening and Access Management	$41,600,000
	BC-21	US 21 from Trask Pkwy to Parris Island Bridge	Access Management	$171,600,000
	S-03	US 278 & SC 170	Intersection	26,000,000
	BC-12	SC 170 from Okatie Center Blvd to Tidewatch Dr	Widening and Access Management	$36,400,000
	HHI-05	US 278 BUS from Sea Pines Cir to Spanish Wells Rd	Access Management	$26,000,000
	BC-20	US 21 BUS from Ribaut Rd to Woods Memorial Bridge	Access Management	$23,400,000
	BL-01	Buckwalter Frontage Rd from Buckwalter Pkwy to Willow Run	New Location	$915,000
	S-05	US 278 & Simmonsville Rd	Intersection	$1,184,000
	BC-08	New Location from US 21 from S-7-73	New Location	$224,000
	S-20	I-95 & Riverport Pkwy	Intersection	$13,500,000
	JC-02	New Location from Bluffton Pkwy to SC 46	New Location	$2,382,000
	BL-02	Bluffton Pkwy from Buckwalter Pkwy to Buck Island Rd	New Location	$17,897,000
		Lady's Island 3rd Bridge	Feasibility Study	$100,000
		Hilton Head Island 2nd Bridge	Feasibility Study	$100,000
2031-2035	H-01	US 321 from US 17 to Honey Hill Rd	Widening	$7,602,000
	BC-14	SC 170 from Boundary St to Broad River Bridge	Access Management	$78,000,000
	BC-01	Boundary St Improvements from Neild Rd to Laurel Bay Rd	Access Management	$78,000,000
	JC-05	SC 170 from US 278 to SC 462	Widening and Access Management	$83,200,000

Horizon Year	Project ID	Project	Project Type	Cost
2031-2035	S-21	I-95 & US 17	Intersection	$32,898,000
	S-04	US 278 & Buck Island Rd	Intersection	$1,184,000
	S-18	US 278 & Argent Blvd	Intersection	$1,184,000
	BL-06	SC 46/SC 170 from Argent Blvd to SC 462	Widening	$10,400,000
	S-19	US 17 & SC 170	Intersection	$1,184,000
	S-01	US 21 & S-73	Intersection	$1,184,000
	S-25	US 321 & US 17	Intersection	$780,000
	BC-27	New Location from New Location to Clear Water Way	New Location	$11,466,000
	BC-05	Joe Frazier Rd from SC 116 to Broad River Blvd	ITS and Access Management	$9,172,000
	JC-09	SC 315/SC 46 from US 17 to SC 170	Widening	$10,400,000
2036-2045	JC-10	US 17 from SC 315 to SC 170	Widening	$15,600,000
	S-17	US 21 & SC 802	Intersection	$10,400,000
	BC-29	New Location from Goethe Hill Rd to SC 170	New Location	$14,323,000
	JC-13	US 278 from Beaufort County Line to Argent Blvd	Widening	$20,800,000
	JC-07	SC 462 from SC 170 to Snake Rd	Widening	$20,800,000
	BC-28	New Location from SC 170 to Grober Hill Rd	New Location	$40,293,000
	BC-09	New Location from Myrtle St to Reynolds St	New Location	$1,790,000
	BC-07	New Location from S-281 to S-167	New Location	$3,303,000
	BL-08	Buckwalter Pkwy from US 278 to SC 46	Access Management	$37,440,000
	BC-10	Ribaut Rd from Lenora Rd to US 21 BUS	ITS and Access Management	$9,409,000
	BC-33	New Location from Broad River Blvd to New Road	New Location	$2,694,000

Horizon Year	Project ID	Project	Project Type	Cost
2036-2045	BC-25	New Location from Broad River Blvd to Castle Rock Rd	New Location	$24,696,000
	BC-24	New Location from SC 128 to Castle Rock	New Location	$24,229,000
	S-13	Sea Pines Cir	Intersection	$15,600,000
	BC-19	US 21 from Lady's Island Bridge to US 21	Access Management	$10,400,000
	H-03	John Smith Rd from US 17 to US 278	Widening and Access Management	$29,120,000
	BC-26	New Location from Broad River Blvd to SC 170	New Location	$37,214,000
	S-09	Main St & Wilborn Rd	Intersection	$8,320,000
	BC-22	Joe Frazier Rd from Laurel Bay Rd to Broad River Blvd	Widening	$29,120,000
	BL-03	Buck Island Rd from Bluffton Pkwy to US 278	ITS and Access Management	$13,159,000
	BC-18	SC 802 from Miller Dr to Brickyard Point Rd	Access Management	$59,280,000
	HHI-01	Arrow Rd from New Orleans Rd to Palmetto Bay Rd	Widening and Access Management	$15,600,000
	BC-02	Brickyard Point / Middle Rd from Better Than Ever St to Roundabout	Widening	$18,949,000
	JC-08	Short Cut Rd from SC 170 to Argent Blvd	Widening	$3,120,000
	HHI-03	New Orleans Rd from Arrow Rd to St Augustine Place	Widening and Access Management	$2,600,000
	S-10	Main St & Hospital Center Blvd	Intersection	$8,320,000
	S-08	Hazel Farm Rd	Intersection	$3,103,000
	S-11	Marshland Rd – Leg O Mutton Rd Roundabout	Intersection	$2,080,000
	S-14	US 21 & Island Causeway Intersection Improvement	Intersection	$15,600,000
	S-15	US 21	Intersection	$15,600,000

Horizon Year	Project ID	Project	Project Type	Cost
2036-2045	S-06	Buckwalter Pkwy / Pine Ridge Dr / Farm Lake Rd	Intersection	$1,040,000
	S-07	Dillon Rd – Gateway Circle Roundabout	Intersection	$2,080,000
	JC-03	New River Pkwy from US 278 to Argent Blvd	Widening	$5,200,000
	S-26	Gumtree Rd, Wild Horse Rd, and Chinaberry Dr Roundabout	Intersection	$20,000,000

Roadway Maintenance Funding

Maintenance funding in the LATS region is provided by SCDOT through their pavement and reconstruction program and their bridge program. Pavement and reconstruction funds are used for both the pavement resurfacing and pavement preservation programs. As a result, these funds are primarily used for roadway maintenance, though preservation strategies such as shoulder widenings can also be funded in this manner. Bridge program funds are used to rehabilitate or replace structurally deficient or functionally obsolete bridges across the state. The pavement and reconstruction funding levels are projected to remain relatively stable over the 2021-2027 TIP and as such are not expected to increase beyond the rate of inflation. Similarly, bridge program funds are not anticipated to increase over time beyond the rate of inflation. As a result, maintenance funds are shown here as keeping pace with inflation. Projecting these funding sources through the 2040 horizon year of the LRTP, the total maintenance funding available for the LATS region is approximately $1.673 billion. The maintenance costs generated annually are assumed to equal the revenue available. LATS should continue to monitor maintenance funding trends. Decreasing maintenance funding levels could negatively impact the feasibility of future capacity expansion projects.

Table 6: Forecasted Roadway Maintenance Revenues

Period	Total Revenue*
2022 - 2025	$302,939,000
2026 - 2030	$201,316,548
2031 - 2035	$333,664,779
2036 - 2045	$835,226,490
Total	**$1,673,146,817**

**The maintenance costs generated annually are assumed to equal the revenue available.*

Bicycle and Pedestrian

Table 7 reflects the proposed revenues for bicycle and pedestrian projects with current funding sources. Currently, the Transportation Alternative Program (TAP) is used to fund community-based bicycle, pedestrian, and streetscaping projects. This federally funded grant program requires a local match of 20% or more of project cost. The funding structure is divided into divisions based on population. LATS is designated as an urban area of the state with a population greater than 5,000 but is not a Transportation Management Area (TMA) with a population at or above 200,000. About $1.8 million dollars is available annually for regions within this population cohort. Grants can be awarded to a maximum value of $400,000. The municipalities in the LATS area will continue to aggressively pursue TAP funding for active transportation projects.

The assumptions outlined in this financial plan is that one TAP grant will be awarded at maximum value every three years. The assumption remains constant through the horizon year of the long range plan and increases 3% annually to account for inflation.

In order to maximize flexibility for implementation, the bicycle and pedestrian projects have not been prioritized. Many of the bicycle and pedestrian projects overlapping with roadway capital and maintenance projects can be funded together using state or federal sources. In addition to state and federal sources, local sources can be utilized. With the anticipated renewal of the Beaufort and Jasper sales taxes, bicycle and pedestrian projects can be funded. Both counties can consider dedicating a portion of the sales tax revenues to be used exclusively for bicycle and pedestrian projects.

Table 7: Bicycle and Pedestrian Current Funding Revenues

Period	Total Revenue
2022 - 2025	$ 533,333
2026 - 2030	$ 691,150
2031 - 2035	$ 796,731
2036 - 2045	$ 1,994,368
Total	**$ 4,015,582**

Public Transportation Funding

In the 2021-2027 Transportation Investment Program (TIP), capital and operating funding is designated to Lowcountry Regional Transportation Authority (LRTA). Funding for administration, planning, and capital needs are all captured under capital revenue. The funding split is divided as 80% federal, 10% state, and 10% local. For operations, funding is split up as 50% federal, 25% state, and 25% local. The funding levels from the 2021-2027 TIP are assumed to remain consistent throughout the life of the TIP, after which they will increase by 3% annually to account for inflation. As specific capital investments are identified, they should be incorporated into the next iteration of the LATS LRTP.

Any funding that is provided through a 5311 grant is not incorporated into the *2045 LATS LRTP*. **Table 8** summarizes project capital and operating revenues for the LRTA.

Table 8: Transit Capital and Operating Revenues

Period	Capital Revenue	Operating Revenue
2022 - 2025	$ 1,800,000	$ 1,612,000
2026 - 2030	$ 2,332,632	$ 2,089,002
2031 - 2035	$ 2,688,966	$ 2,408,118
2036 - 2045	$ 6,730,993	$ 6,027,978
Total	**$ 13,552,591**	**$ 12,137,098**

Alternative Funding Sources

For both the Current Funding Methods and Sales Tax Renewal scenarios, there will be significant unfunded needs beyond the 2045 plan horizon year. As a result, it is important to identify alternative potential funding sources. In addition to the unfunded roadway needs, the needs for investment in other modes including public transportation, bicycle, and pedestrian facilities continues to outweigh the available funding sources. The Guideshare revenues alone will not sufficiently fund the identified transportation projects in *2045 LATS LRTP*. Several alternative funding sources are identified below.

Impact Fees

The use of impact fees requires special authorization by the South Carolina General Assembly. By requiring an impact fee, developers can be expected to assist in the implementation of transportation improvements for new collector streets. A collector street can support the traffic impacts in surrounding areas. Impact fees are already implemented within the LATS area but can be revisited as needed to more effectively align revenue collection with emerging needs.

"C" Funds

In partnership with SCDOT, counties can fund local transportation projects on state roads, county roads, and city streets. The "C" Fund comes from a state gasoline tax, which is distributed to the 46 counties based on several factors including population, land area, and rural road mileage. Starting in fiscal year 2021-2022, counties must spend at least 33% of "C" Funds on the state highway system. The County Transportation Committee (CTC) chooses and approves the projects that are funded. The Beaufort CTC can distribute approximately $2.6 million annually to local and state projects. The Jasper CTC receives around $1.6 annually to fund state and local projects.

Road Maintenance Fee

The revenue generated from the road maintenance fee could be used for the construction, repairs, and maintenance of county-owned bridges and roadways. In Beaufort County, the implementation of a road fee began in 1972. Currently, Beaufort County's road maintenance fee is $10.

Local Sales Tax

In South Carolina, many communities have introduced a "Pennies for Progress" sales tax to fund capital and transportation projects. The local sales tax is implemented at the county level and requires a voter referendum. While the sales tax is temporary—typically implemented by a fixed timeframe or dollar cap amount—it can be renewed at the time of its expiration date. As demonstrated in Beaufort and Jasper Counites, a local sales tax can be an efficient and effective way to fund projects independent of the need for state or federal funds. Other regions of the state are using their sales tax funding to serve as the local match for projects, which expands the financial impact of the revenue generated. The continued renewal of the local sales tax in Beaufort and Jasper Counties will create opportunities to move projects forward more rapidly and address locally identified needs.

Transportation Bonds

The use of transportation bonds is a strategic tool to improve local roadways and active transportation. Voters must approve the use of bonds to improve the transportation system. The types of projects that have historically been funded using transportation bonds include new road construction, road extensions, sidewalks, and streetscape enhancements. Recently, some municipalities have created dedicated transportation bonds to fund bicycle- or pedestrian-specific

projects and improvements. Local communities should consider implementing mode-specific transportation bonds if the desire arises.

Transportation Grants

A variety of competitive grant opportunities exist at both the federal and state level for all modes of transportation. Pursuing a grant can be a collaborative opportunity to acquire funding for both rural and urban areas. One major source of funding is the Rebuilding American Infrastructure with Sustainability and Equity (RAISE) discretionary grant program, formerly known as TIGER grants. The aim of the RAISE grant program is to fund historically underserved and disadvantaged communities. A grant administered at the state-level by the South Carolina Department of Parks, Recreation and Tourism (SCPRT) is the Recreational Trails Program (RTP). The RTP grant can be used to construct new recreational trails, improve or maintain existing trails, develop or improve trailheads, and acquire trail corridors. The MPO should continue to explore the competitive grant processes in order to supplement the needs of the community.

Bipartisan Infrastructure Law Competitive Grants

The Bipartisan Infrastructure Law (BIL) will authorize $140 billion in new grant funding. The following highlights several grants that the LATS MPO should consider pursuing:

- **Passenger Ferry Grant Program**. The Passenger Ferry Grant program (49 U.S.C. 5307(h)) provides competitive funding for projects that support passenger ferry systems in urbanized areas. These funds constitute a core investment in the enhancement and revitalization of public ferry systems in the nation's urbanized areas.
- **Safe Streets & Roads for All (SS4A)**. The purpose of SS4A is to improve roadway safety by significantly reducing or eliminating roadway fatalities and serious injuries through safety action plan development and implementation focused on all users.
- **Bridge Formula Program (BFP)**. FHWA encourages the use of BFP funds—including projects that involve new or highway bridge construction—for projects that address equity, barriers to opportunity, challenges faced by individuals and underserved communities in rural areas, or restoring community connectivity.

There are a variety of grants available through the BIL. The LATS MPO should continue to opportunistically pursue grant funding for transportation improvements.

Federal Emergency Management Agency Grants

Given the region's unique environmental challenges, the LATS MPO should consider pursuing Federal Emergency Management Agency (FEMA) grants. More information can be found on FEMA's website. There are four major categories of grants that FEMA offers:

- **Preparedness Grants**. Support first responders and citizens to mitigate high-consequence disaster and emergencies.
- **Hazard Mitigation Assistance Grants**. Hazard mitigation grants aim to reduce the long-term risk to people and property from future disasters.
- **Resiliency Grants**. Resiliency grants help promote dam safety as well as areas susceptible to earthquake risk.
- **Emergency Food and Shelter Program**. The program supplements ongoing work to provide shelter, food, and supportive services to individuals and families experience homelessness.

LRTP Amendment and Modification Process

Typically, the TIP undergoes a major update every three years. The TIP is a living document that is prone to change as projects or elements of projects are updated. There are two major categories that most changes fall into: amendments or modifications. The following subsections details the process or identifying and performing an amendment or modification to the TIP.

Amendments

The consistency between the LRTP and TIP is required to receive federal funding. The following conditions would prompt the LRTP amendment process:

- A new project is added to the TIP, regardless if the project was previously in the TIP or not
- A programmed project is deleted from the TIP
- A significant change or deletion of a regionally significant project feature of an existing project – including changing the projects termini
- A deletion or movement of a project from the first four years of the TIP
- A change in a project's funding
- A change in a project's description or scope in addition to a change that is inconsistent with the National Environmental Policy Act (NEPA) documentation

Modification

A modification includes all other changes that are not categorized as an amendment. Typically, these modifications include:

- A shift of funding between years for an individual project
- A change of federal, state, or local funding source
- A change in designation of the responsible agency with the original project sponsors approval

The following table outlines the conditions under which an amendment or modification is required.

Table 9: TIP Amendment and Modification Process

TIP Budget	Modification	Amendment
< $100,000	Increase less than 100%	Increase 100% or greater
> $100,000 - $500,000	Increase less than $500,000	Increase greater than $500,000
> $500,000 - $2,000,000	Increase less than $500,000	Increase greater than $500,000
> $2,000,000	Increase less than 50%	Increase greater than 50%

Revision Process

An amendment will typically be processed quarterly. An amendment must be submitted by January 1, April 1, July 1, and October 1 of each year. The policy amendment will be recommended by the LATS Technical Committee for consideration and action of the Policy Committee. Typically, a formal public meeting will not be held. A public notification of the action recommended by the Policy Committee will be posted on the LATS page of the LCOG website. Input will be accepted during the comment period of any committee meetings.

Any modifications must be submitted to LATS staff by the first working day of each month. Typically, a modification will be processed by the fifteenth working day of the month. Processing a modification may be delayed if there is missing information. A modification does not require committee review or approval.

LATS staff will process TIP revisions by conducting the following:

- Submitting the requested amendment and modification into the TIP project database
- Notifying SCDOT of an amendment or modification for inclusion into the STIP
- Documenting a monthly summary of amendments and modifications to the TIP list

Action Plan

With the growing pressure on the region's transportation system and limited funding for capital and maintenance, the LATS MPO and member jurisdictions should consider the following strategies when developing a strategy to obtain funding:

- Partner with Beaufort and Jasper County to coordinate transportation project improvements throughout the region
- Prioritize discretionary funding grants to supplement bicycle and pedestrian improvements
- Coordinate with LRTA to develop a prioritized list of projects and identify alternative funding source to supplement public transportation needs
- Explore alternative funding sources for freight, barge, and aviation projects in the LATS region
- Communicate the importance of alternative funding sources with the public and local officials

Conclusion

The *2045 LATS LRTP* outlines the vision for all modes of transportation. The creation of the financially constrained plan ensures that prioritized projects can be reasonably funded and implemented for the duration of the long range plan. While not all of the identified projects can be funded, the LATS MPO should continue to identify potential funding sources to supplement current funding revenues. As projects advance into funding and implementation phases, the LATS MPO will continue to collaborate with SCDOT, FHWA, and local municipalities to determine how to advance the recommendations outlined in this plan. As new data becomes available, the plan's priorities should be reassessed in future iterations of the long range plan. This adaptable and dynamic planning process will provide the blueprint for the region to efficiently and effectively address transportation needs.

2045 LATS

LONG RANGE TRANSPORTATION PLAN