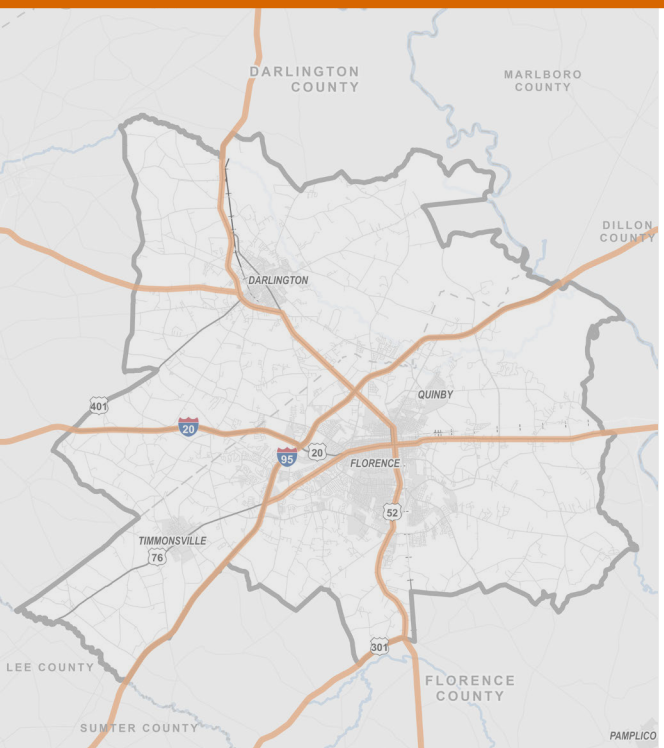
Florence Area Transportation Study

2045 Long Range Transportation Plan

July 2022



Florence Area Transportation Study

FLATS

Metropolitan Planning Organization

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Introduction

The Florence Area Transportation Study (FLATS) is the designated Metropolitan Planning Organization (MPO) serving the Pee Dee Region of South Carolina, including the City of Florence, City of Darlington, Town of Timmonsville, Town of Quinby, and portions of unincorporated Florence and Darlington County. An MPO is a federally mandated organization comprised of elected officials serving the local jurisdictions, that provide a collaborative and unified local voice for guiding current and future transportation investments.

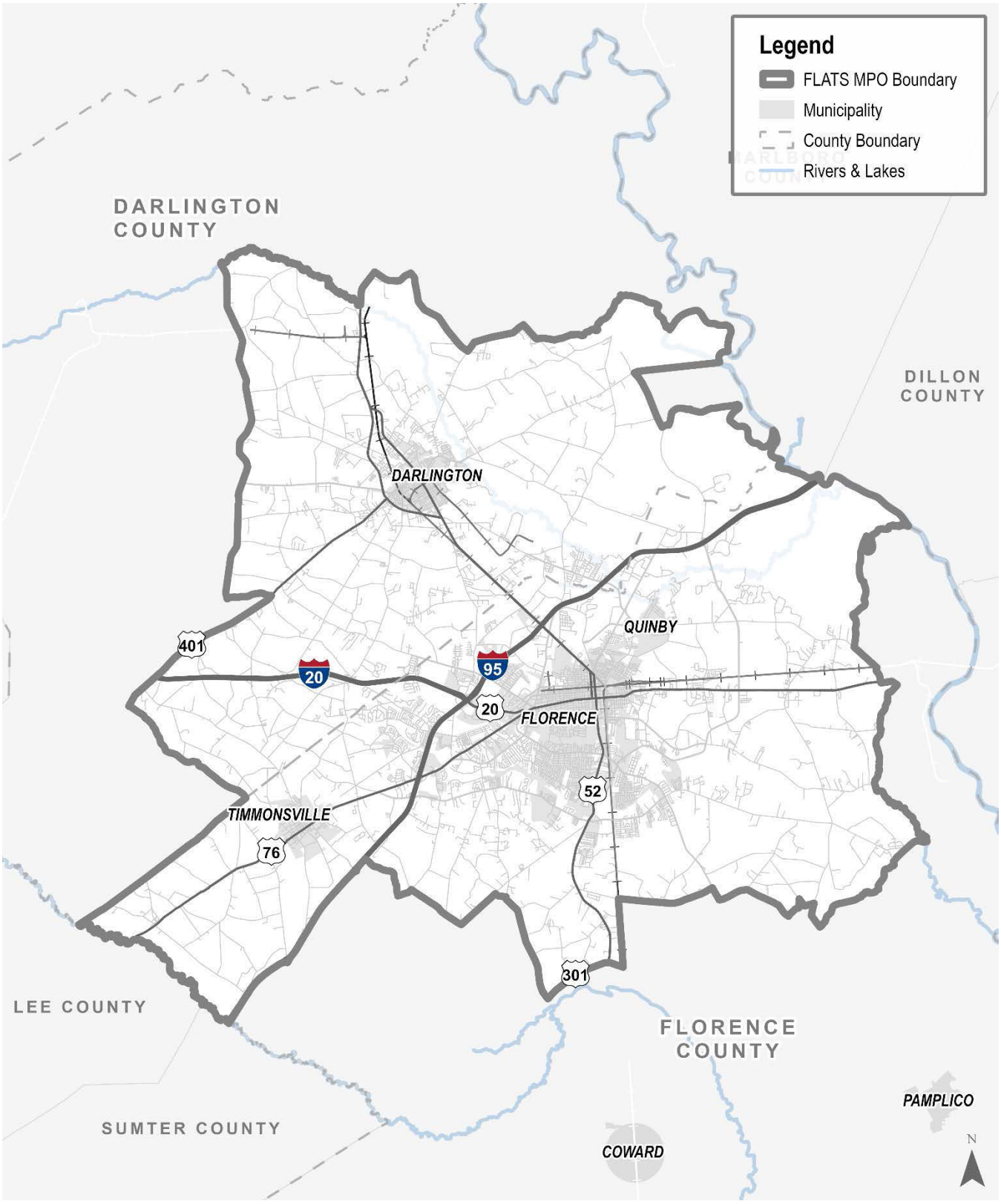
FLATS' decision-making authority is through the Policy Committee, currently comprised of 8 locally elected and appointed officials. FLATS has one advisory committee, called the Study Team, that provide focused input and recommendations to the Policy Committee. The Study Team includes many local, regional, state, and federal partners who are involved in the metropolitan transportation planning process. Agency partners include:

- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- South Carolina Department of Transportation (SCDOT)
- Florence County
- City of Florence
- Town of Timmonsville
- Town of Quinby
- Florence Regional Airport
- Darlington County
- City of Darlington
- Pee Dee Council of Governments (PDCOG)
- Pee Dee Regional Transit Agency (PDRTA)

Planning Area

The Florence Area Transportation study (FLATS) planning area covers approximately 440 square miles of the Pee Dee region of South Carolina. It incorporates sections of Darlington and Florence Counties, as well as the City of Darlington, City of Florence, Town of Timmonsville, Town of Quinby, and surrounding unincorporated areas of both counties. The area is home to an urban population of over 125,000 residents. Two major interstates run through the study area, I-95 and I-20, which connect the area to surrounding larger cities. The FLATS Planning Area is shown in Figure 1 on the following page.

Figure 1: FLATS MPO Planning Area



Purpose

The Florence Area Transportation Study (FLATS) 2045 Long Range Transportation Plan (LRTP) is designed to guide transportation planning activities by setting forth direction and strategies to help shape the region's transportation network through the year 2045. It considers all modes of transportation including driving, walking, bicycling, transit, and rail to help set priorities for the future. LRTPs are required to be updated every five years, and the current version of the FLATS LRTP, was adopted by the Policy Committee on July 27, 2018. The *FLATS 2045 LRTP* has been developed to satisfy the requirements of the federal Fixing America's Surface Transportation (FAST) Act, which was signed into law on December 4, 2015. The plan also addresses changes in the transportation system and considers new local, regional, statewide, and federal initiatives.

Federal Transportation Requirements

The Moving Ahead for Progress in the 21st Century Act (MAP-21), signed into law on July 6, 2012, established a performance-based planning program intended to guide investment of Federal transportation funds towards the realization of national transportation goals. The set of National Goals was retained and advanced through the next major federal transportation law, the Fixing America's Surface Transportation Act (FAST Act), which was signed into law on December 4, 2015, and will direct and fund transportation programs through September 2020. Under the FAST Act, two additional Planning Factors were added to the set of eight Federal Planning Factors. The full list of Federal Planning Factors, which are given special focus within the MPO's LRTP planning program, are listed below:

- 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 improvements and state and local planned growth and economic development patterns
- Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight
- Promote efficient system management and operation
- 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 (New Planning Factor established under the FAST Act)
- Enhance travel and tourism (New Planning Factor established under the FAST Act)

New Legislation

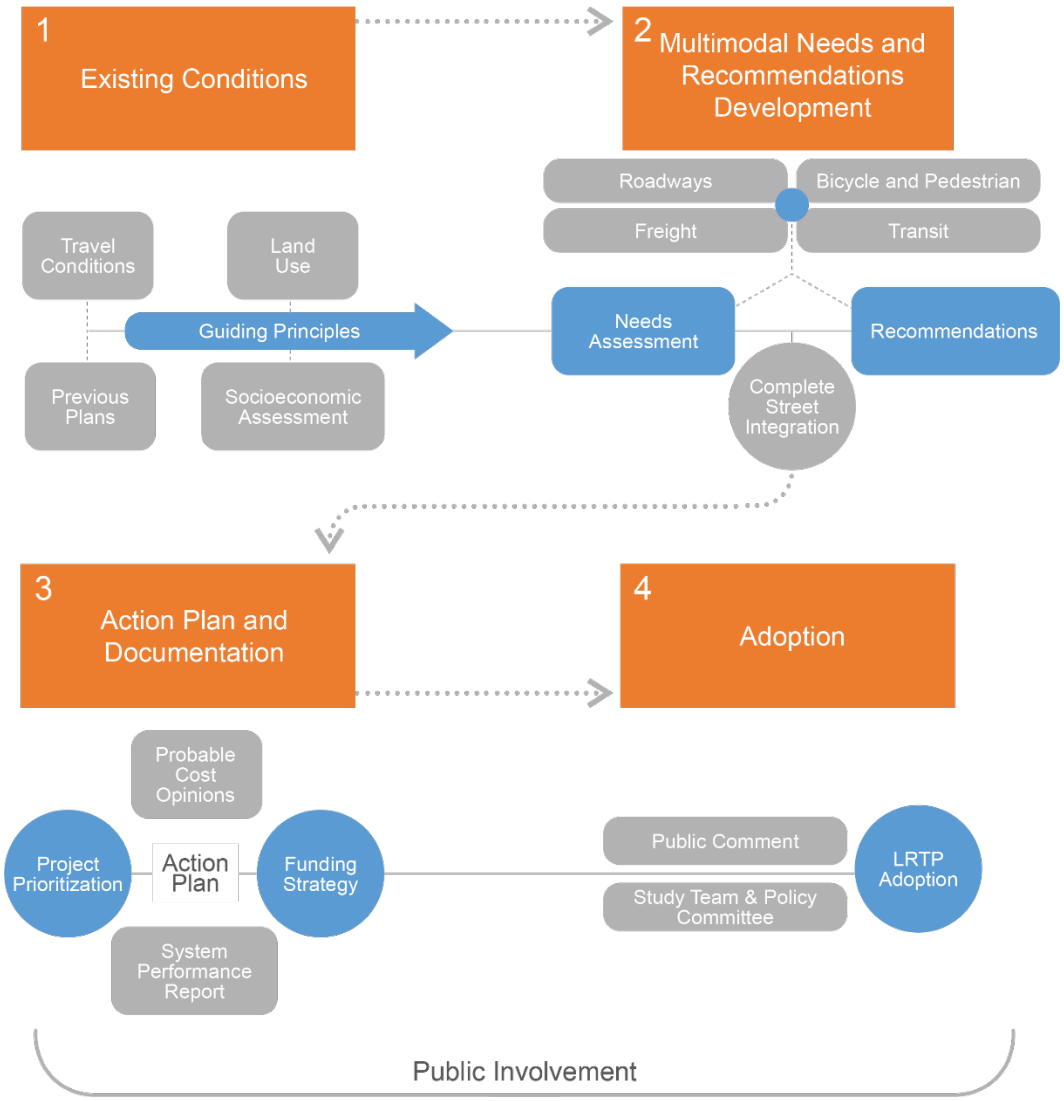
Recently, President Biden signed the Bipartisan Infrastructure Law (BIL, known also as the Infrastructure Investment and Jobs Act, IIJA) on November 15, 2021. This legislation will provide federal transportation funding through the life of this LRTP.

Planning Process

The *FLATS 2045 LRTP* represents a collaborative effort to refine the vision for the region's transportation network and identify a coordinated set of multimodal projects to achieve it. The plan addresses existing issues and anticipated concerns for congestion, safety, access, connectivity, and operations. The planning process involved collaboration between multiple jurisdictions, key stakeholders, residents, and was designed to create an open dialogue among the larger community.

The process started with an assessment of the current transportation network, socioeconomic conditions, and recently completed or ongoing planning efforts. A series of guiding principles 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 needs identification and public input. The recommendations were prioritized through the 2045 horizon year of the plan. The outcome of this process is a fiscally constrained plan for the region, which outlines a set of projects and investments that can be reasonably funded through 2045 based on current and future financial revenues.

Figure 2: Planning Process



Community Outreach

The overall intent of the public engagement process was to engage with audiences in a way that is open and respectful, while collecting input that is useful to the development of the plan. The objective was to educate and inform regional stakeholders on the LRTP process and its importance, provide multiple, flexible opportunities to provide feedback, enable stakeholders to take an active role in shaping the LRTP, and to actively incorporate stakeholder input to guide the ultimate recommendations. Developing a sense of ownership among stakeholders will be important to the prospects for successful implementation over time.

Stakeholder Interviews

Early in the planning process, the project team held a series of small group discussion with municipal staff, regional agencies, and various SCDOT program representatives. These meetings helped identify issues and needs of the current transportation system relative to each organizations interests. Meeting summaries are provided in the Appendix.

Online Survey

An interactive online survey was available from November 5, 2021 to January 9, 2022. Over 200 participants offered input on community goals and investment priorities, as well as mapped ideas and concerns with the existing transportation system. The online survey used five interactive screens to educate the public about the long range transportation process and gather input to guide the plan's development. More information on the online survey can be found in the Appendix.

208
Total Responses

3,169
Data Points

397
Written Comments

Public Workshop

A public workshop was held at the Florence County Library on May 10, 2022. The workshop provided information on the LRTP process and an overview of the community engagement to date. Other stations allowed participants the opportunity to review and refine the draft multimodal recommendations and gain an understanding of the prioritization process used to rank projects. Over 25 members of the community participated in the workshop. Following the in-person meeting, materials were shared to the FLATS website. A summary of comments received can be found in the Appendix.

Study Team and Policy Committee Briefings

Throughout the planning process, the project team provided three briefings each to the Study Team and Policy Committee. Ultimately, the Study Team recommended the *FLATS 2045 LRTP* for adoption on July 11, 2022 and the Policy Committee adopted it on July 25, 2022.

Guiding Principles and Planning Factors

Guiding Principles

The guiding principles for the *FLATS 2045 LRTP* are the primary drivers for the entire planning process. They establish the overall direction for the plan and serve as a resource when developing and prioritizing projects within the region. The following guiding principles were established in the FLATS 2040 LRTP process during 2017 and revisited during this update to be responsive to changes in federal transportation legislation and community feedback.

Culture and Environment

Enhance the quality of life in the Florence area with planning strategies that minimize environmental impacts to protect and preserve natural resources and valued places.

Economic Vitality

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

Mobility and Accessibility

Provide a balanced and connective multimodal transportation system that makes it easier for users to bike, walk, or take transit to reach key destinations.

Safety and Security

Promote a secure transportation system that protects the region's infrastructure from threats, supports emergency response, and is safe all users and Pee Dee employees as they move around the region.

System Preservation

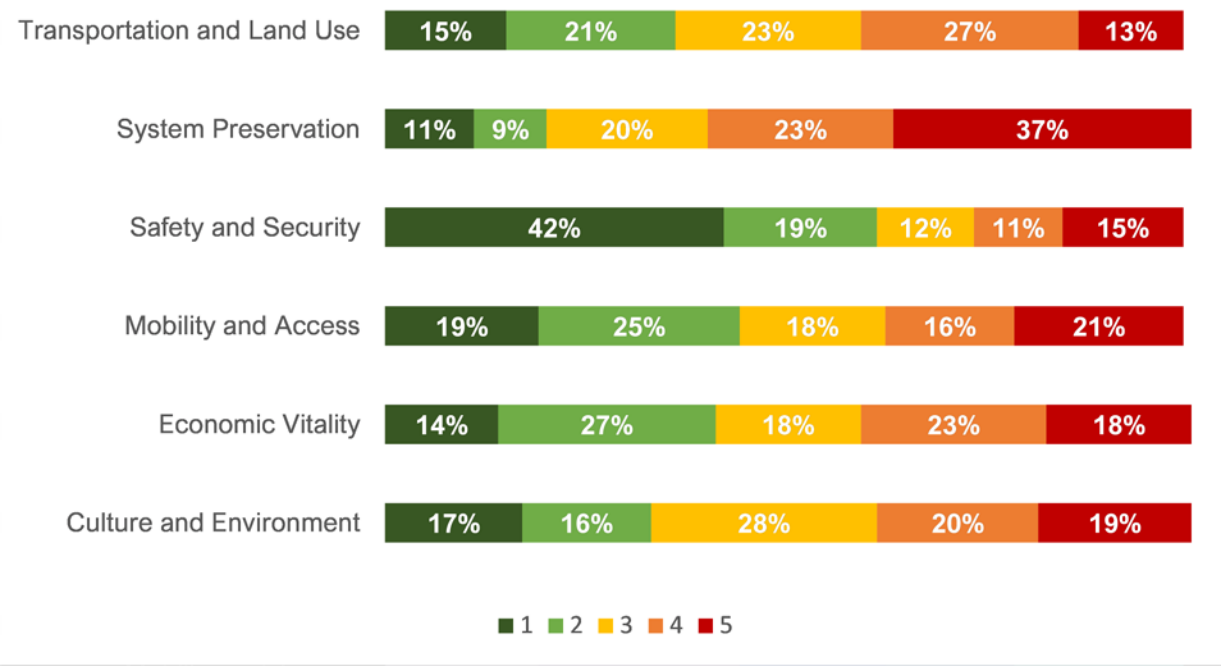
Strengthen and support the current transportation network to extend the functional life of transportation facilities, embrace current and emerging technologies, and make travel more efficient.

Transportation and Land Use

Coordinate transportation investments and land use decisions to improve travel and promote an efficient, interconnected, multimodal, and accessible transportation network for people, goods, and the delivery of services.

Outreach Spotlight – Guiding Principles

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 *FLATS 2045 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).



FAST ACT Planning Factors

MAP-21 required that eight Federal Planning Factors be considered within the planning process. The FAST Act carried this requirement forward and added two additional Planning Factors, including Factor #9 (Improve the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation) and Factor #10 (Enhance travel and tourism).

The Federal Planning Factors helped to provide guidance during the development of the *FLATS 2045 LRTP* guiding principles. However, the final refined statements were developed to reflect the specific vision for the Pee Dee region. As a result, the six guiding principles do not share a one-to-one relationship with the MAP-21/FAST Act Planning Factors. Table 1 demonstrates the relationship between the MAP-21/FAST Act Federal Planning Factors and the *FLATS 2045 LRTP* guiding principles.

Table 1: Relationship between FLATS 2045 LRTP and FAST Act Federal Planning Factors

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

Introduction

Chapter 2 is an assessment of the conditions and trends that affect how individuals in the FLATS region live, work, and travel. It sets the stage for defining and shaping the transportation strategy for the future. This chapter leverages a variety of data sources from the local, regional, state, and federal levels. Individual data sources are noted where they are referenced. Most of the demographic information is provided by the US Census Bureau's 2019 American Community Survey 5-Year Estimates, accessed in the fall of 2021.

Population Characteristics

The Florence Area Transportation Study (FLATS) is situated in the Pee Dee region of South Carolina and encompasses approximately 440 square miles of land. The MPO incorporates the northern and southern most area of Florence and Darlington County respectively. Beyond Florence and Darlington County, the region is bordered by Dillion County, Lee County, Marion County, and Sumter County. The area is home to over 125,000 people.

Population Trends

The FLATS region's population accounts for 3.9% of the total population of South Carolina. As of the 2020 Census, the City of Florence was home to 39,899 residents, and is the most populated city in the FLATS region. Darlington County has seen a steady decrease in population since 2010, and data from the South Carolina Revenue and Fiscal Affairs Office shows this trend continuing. Florence County's population has been more stable, but population is anticipated to decrease as well.

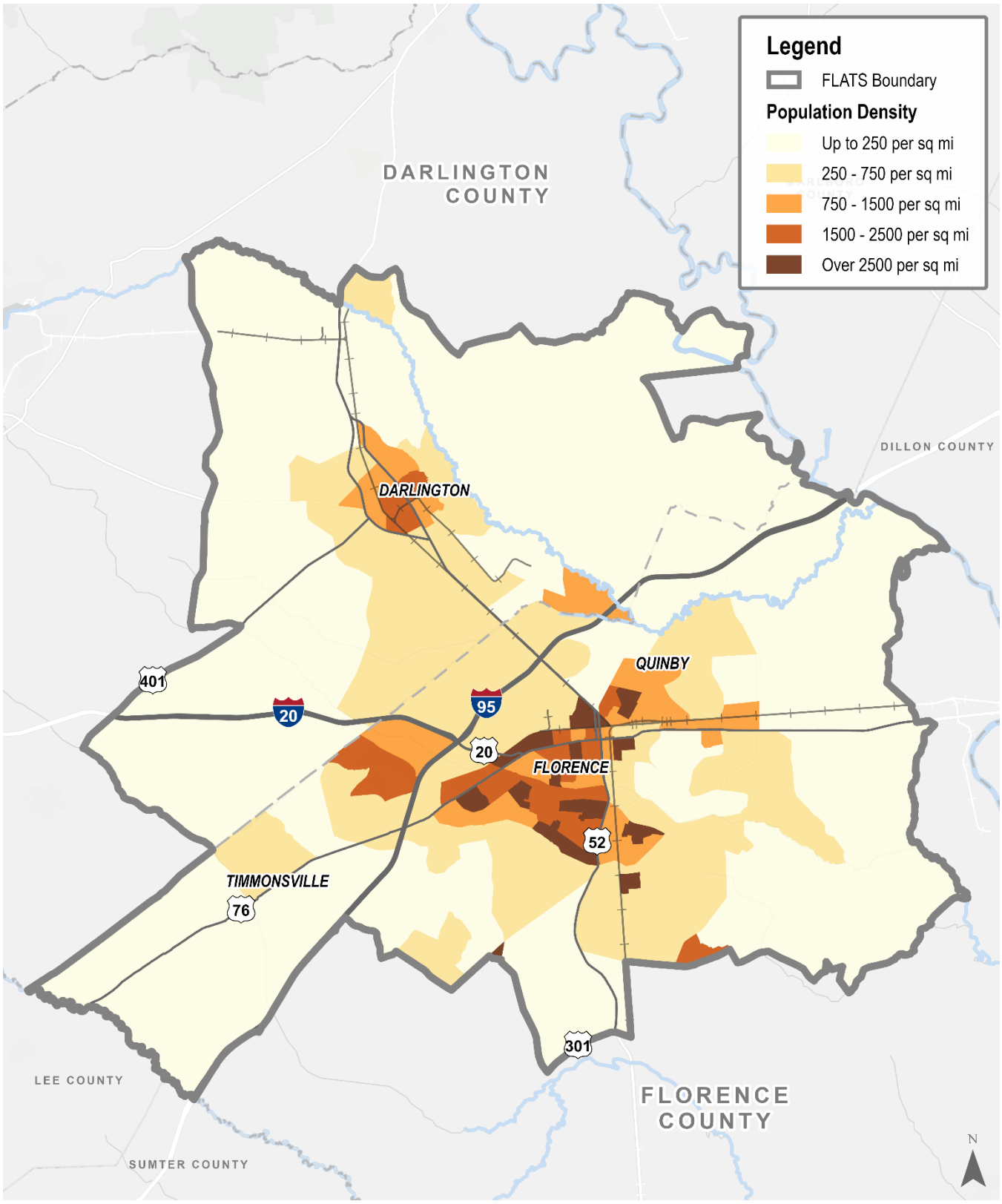
The average population density within the FLAT's region is 324 residents per square mile compared to the state average of 171 people per square mile. Figure 2 illustrates the population concentrations of the FLATS area by census block group.

Table 2: Historic and Projected Population Data

	Historic			2020 Census	Projected		
Year	**2000**	**2010**	**2015**		**2025**	**2030**	**2035**
Florence County	125,767	137,140	138,740	137,059	136,405	134,255	131,405
Florence	31,333	37,056	38,462	39,899	N/A		
Timmonsville	2,382	2,320	2,371	2,345	N/A		
Quinby	852	932	930	913	N/A		
Darlington County	67,523	68,521	67,519	62,905	64,760	62,970	60,820
Darlington	6,701	6,289	6,170	5,901	N/A		
South Carolina	4,012,012	4,625,364	4,892,253	5,118,425	5,542,140	5,881,710	6,223,085

1) Historic and projected data from South Carolina Revenue and Fiscal Affairs Office
2) 2020 values from US Census Bureau

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



Minority Population

The American Community Survey 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".

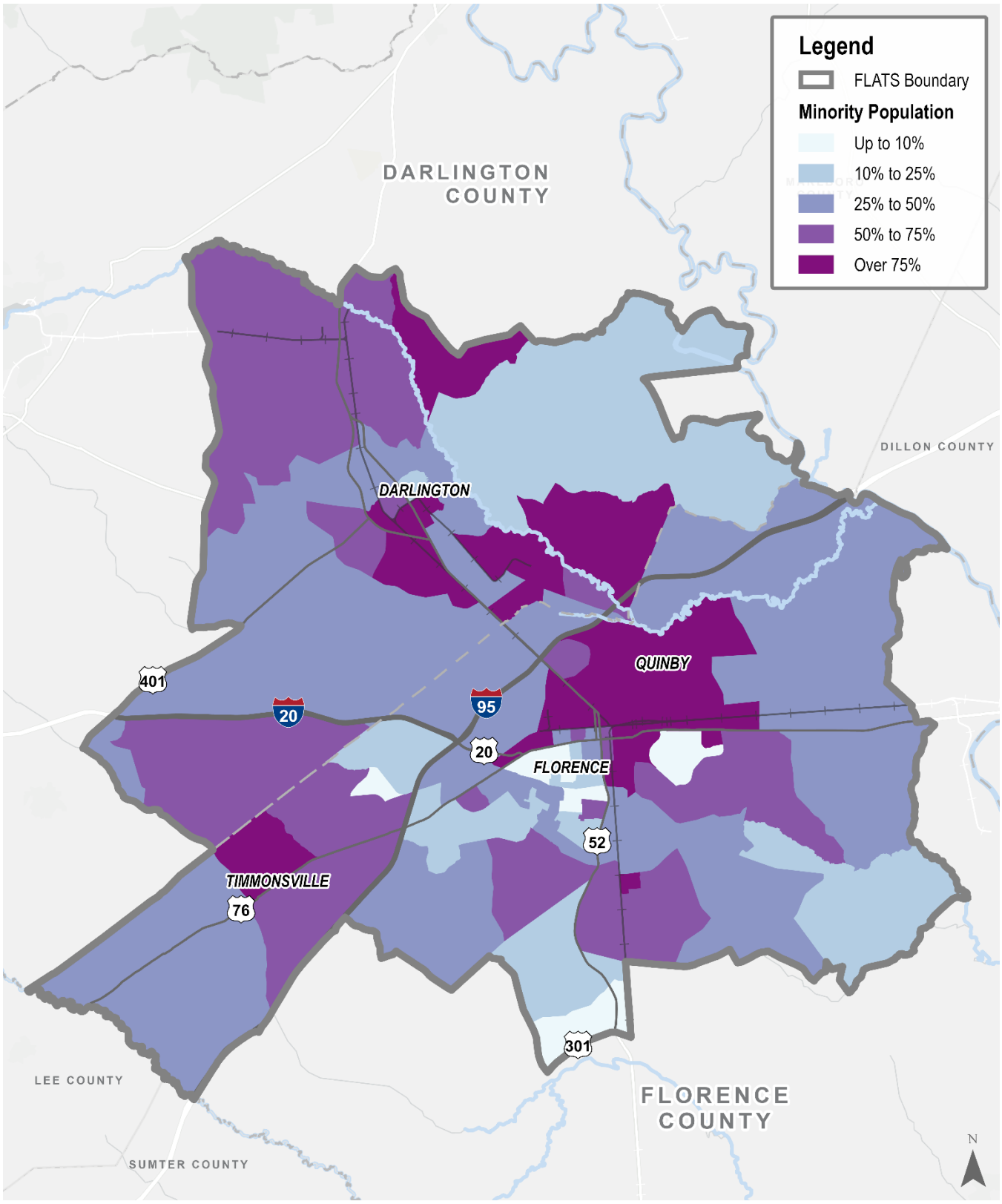
Approximately 47.3% of the Florence region's population is considered part of a minority race, compared to 32.8% for the state of South Carolina. Conversely, 2.7% of the region's population identifies as Hispanic or Latino, much lower than the statewide total of 17.6%. Table 3 shows minority and Hispanic populations within the region, while Figure 3 shows the minority population within the FLATS region.

Table 3: Minority Population 2019

Place	Total Population	% Racial Minority	% Hispanic/Latino
FLATS Area	143,104	47.3%	2.7%
Florence County	138,475	46.4%	2.5%
Darlington County	67,027	43.4%	1.9%
South Carolina	5,020,806	32.8%	17.6%

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

Figure 3: Minority Population Percentage (2019) by Census Block Group



Income and Poverty

The American Community Survey 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.

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 Florence region is $24,456 which is lower than the state's per capita of $29,426. Figure 4 illustrates the distribution of per capita income within the FLATS region by census block group. Figure 5 and Figure 6 shows individuals in poverty and households in poverty, respectively.

Table 4: Per Capita Income and Poverty (2019)

Place	Per Capita Income	% Population in Poverty	
		Individuals	Households
FLATS Area	$24,456	17.3%	17.5%
Florence County	$26,691	16.3%	18.2%
Darlington County	$24,262	17.8%	19.7%
South Carolina	$29,426	15.2%	14.9%

Figure 4: Per Capita Income (2019) by Census Block Group

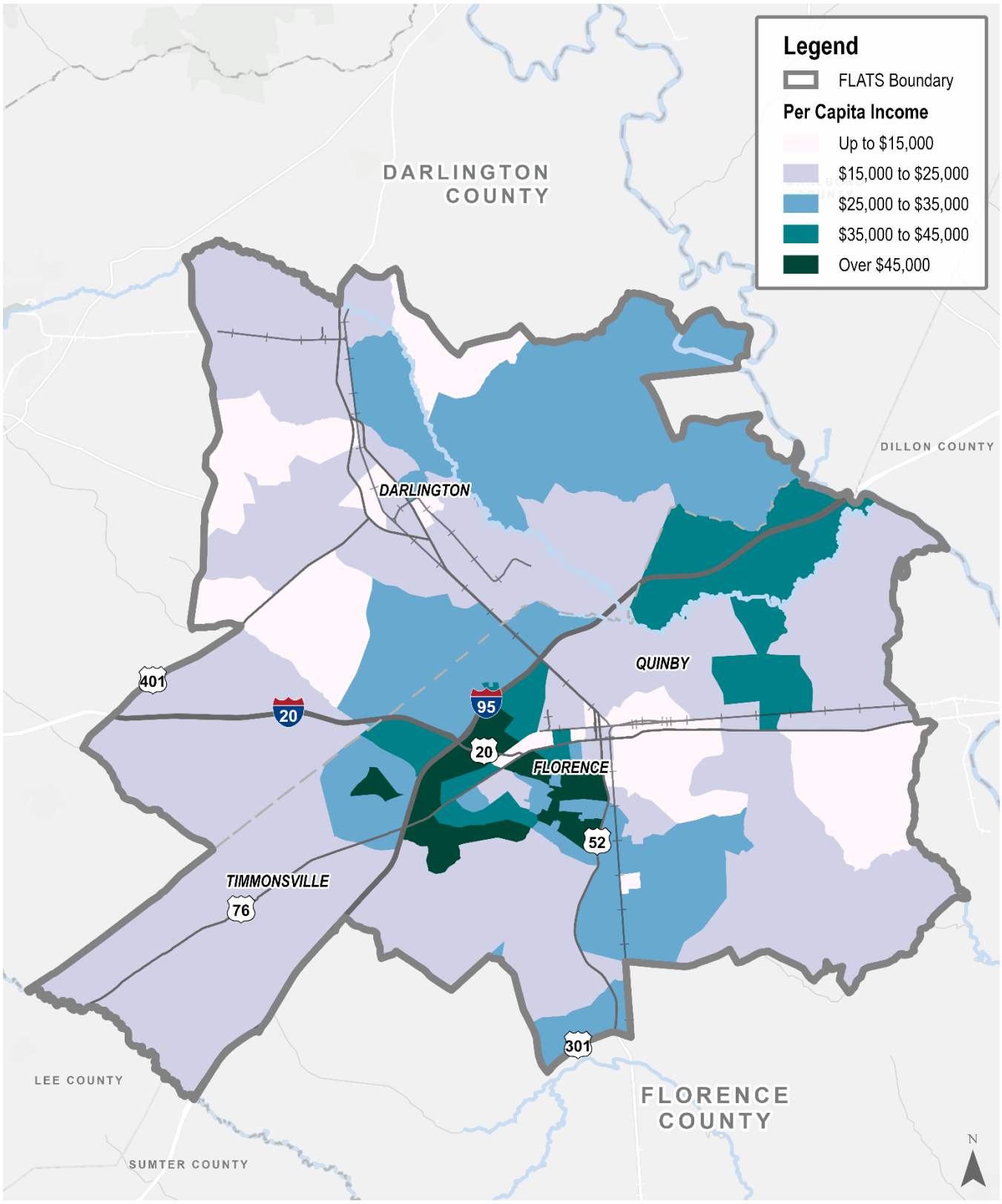


Figure 5: Individuals in Poverty (2019) by Census Block Group

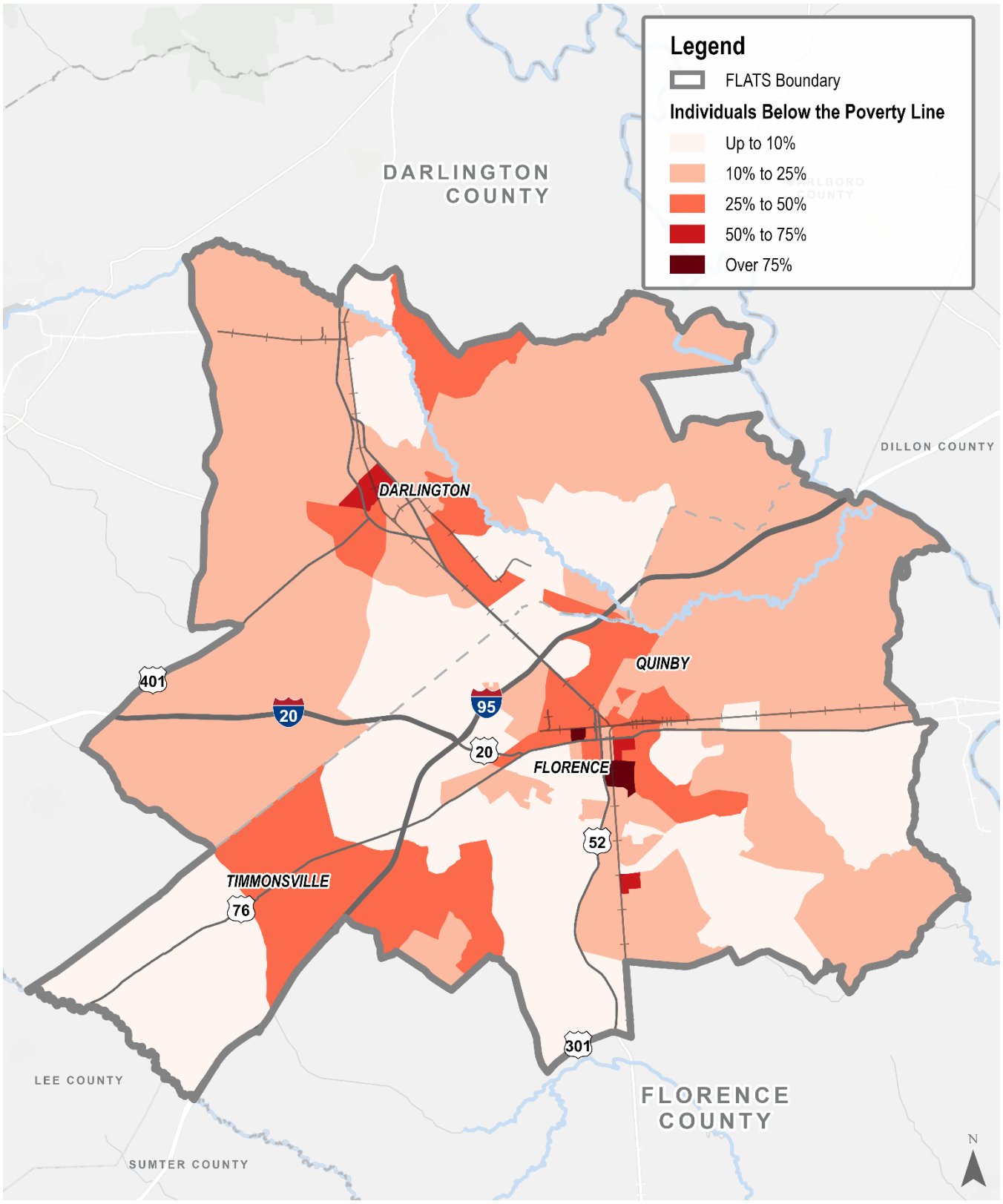
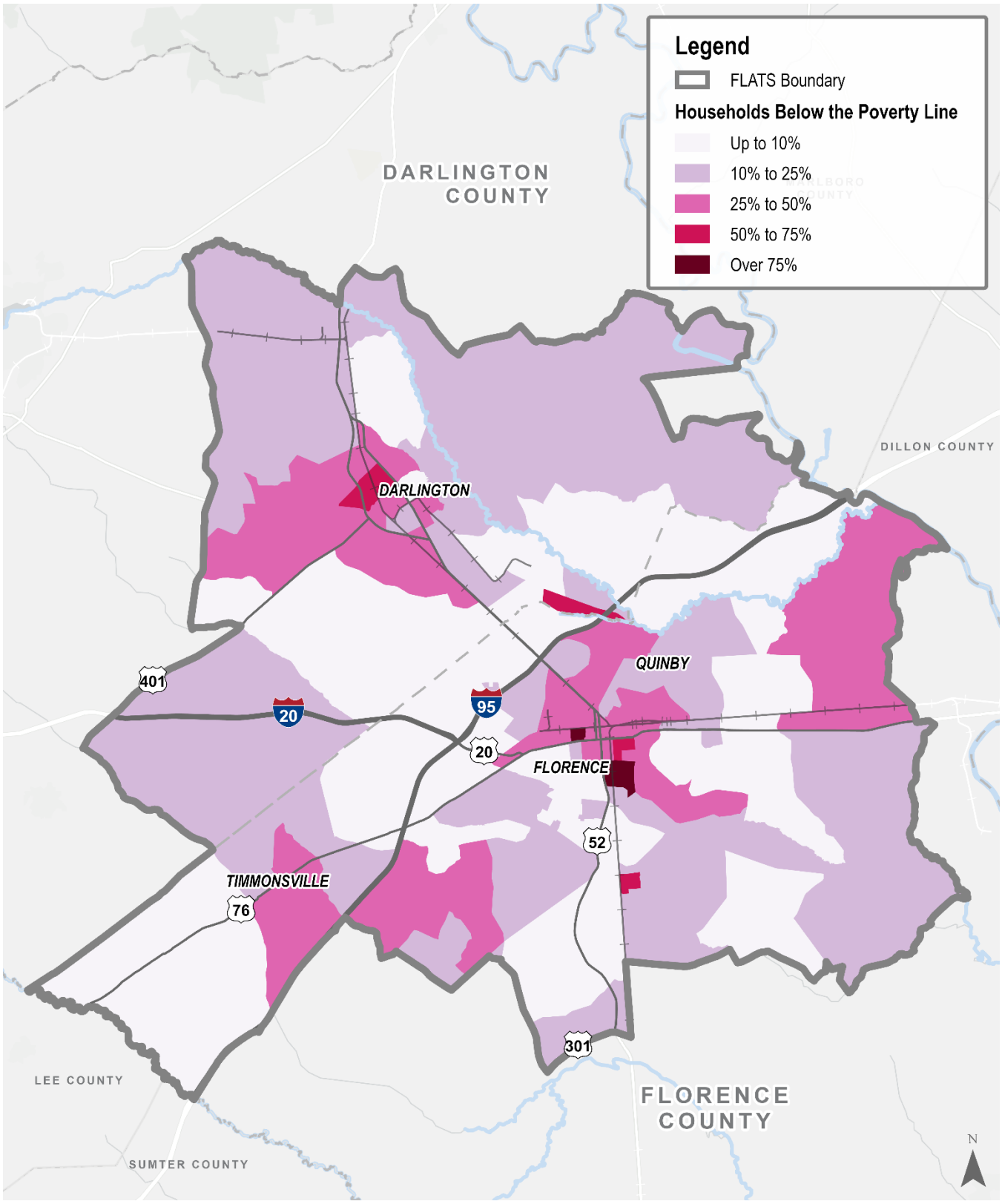


Figure 6: Households in Poverty (2019) by Census Block Group



Physical Characteristics

Wetlands

The variety of wetlands is one of the vital assets of the beautiful Pee Dee region. Moreover, diverse wetland ecosystems are home to various species of plants and animals including many threatened and endangered species. The Pee Dee region contains approximately 93,292 acres of wetlands. The majority of the wetlands are considered to be freshwater forest/shrub wetlands that occupy 82,058 acres which is 87.9% of all wetlands. Figure 7 illustrates the coverage of wetlands throughout the study area.

National Register of Historic Places

Many cultural heritage and historic places are located within the FLATS area. Table 5 and Figure 8 show a list of the national register of historic places, a total of 23 historic buildings or sites and 7 historic districts.

Table 5: National Register of Historic Places

Historic Sites and Buildings

1	Red Doe Plantation
2	Poynor Junior High School
3	Bonnie Shade House
4	U.S. Post Office
5	Arthur Goodson House
6	John L. Hart House
7	Evan J. Lide House
8	John W. Lide House
9	Wilds Hall (Peter A. Wilds House)
10	White Plains (Thomas P. Lide House/Blackmon House)
11	Mrs. B. F. Williamson House
12	Wilds - Edwards House
13	South Carolina Western Railway Station
14	Charles S. McCullough House
15	Clarence McCall House
16	Manne Building
17	Nelson Hudson House
18	Edmund H. Deas House
19	Julius A. Daragan House
20	First Baptist Church
21	Florence Public Library
22	Smith-Cannon House
23	Florence National Cemetery

Historic Districts

Darlington Downtown Historic District
Florence Downtown Historic District
St John's Historic District
Darlington Industrial Historic District
West Broad Street Historic District
Cashua Street - Spring Street Historic District
Oaklyn Plantation

Figure 7: Wetlands within the FLATS Area

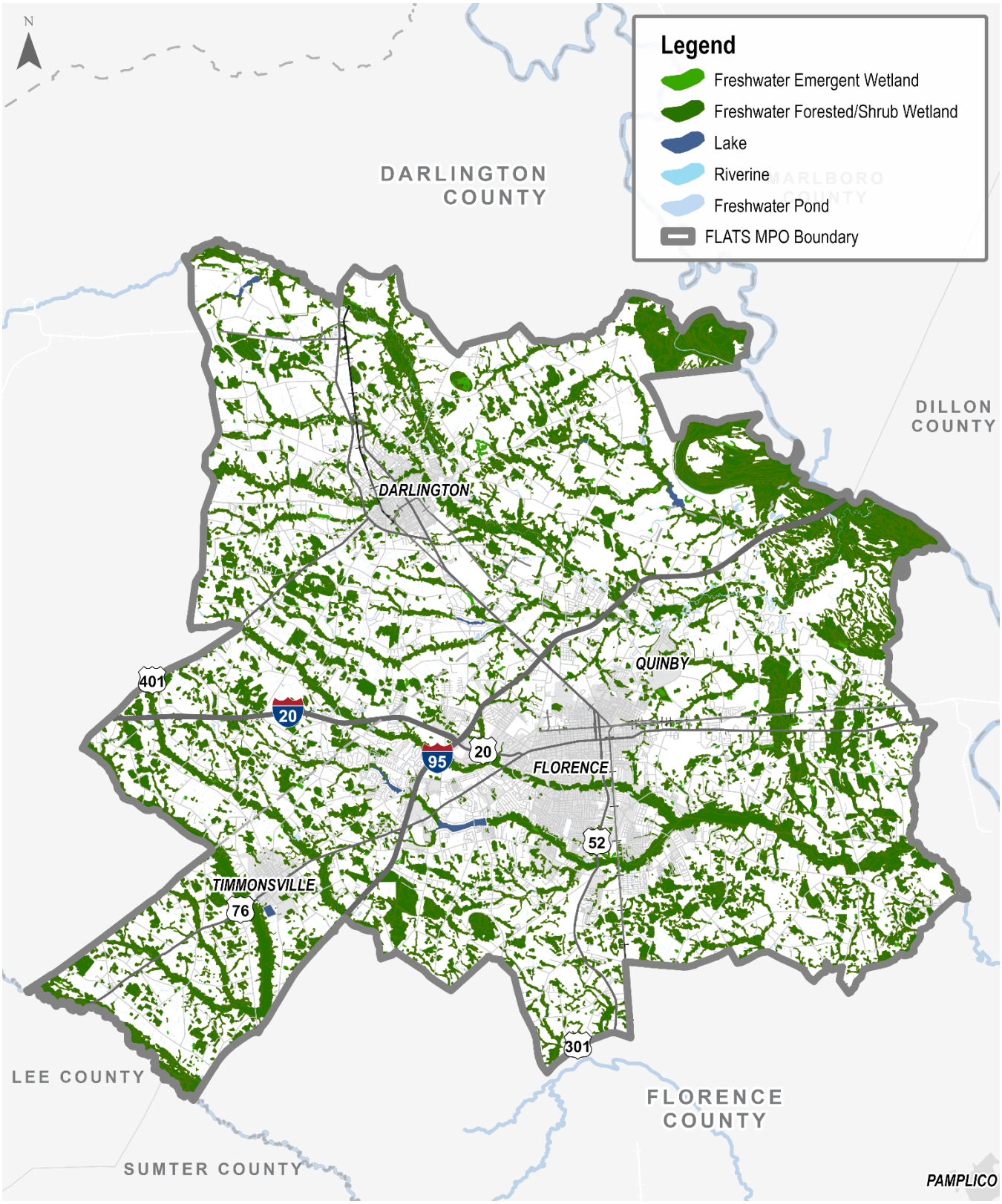
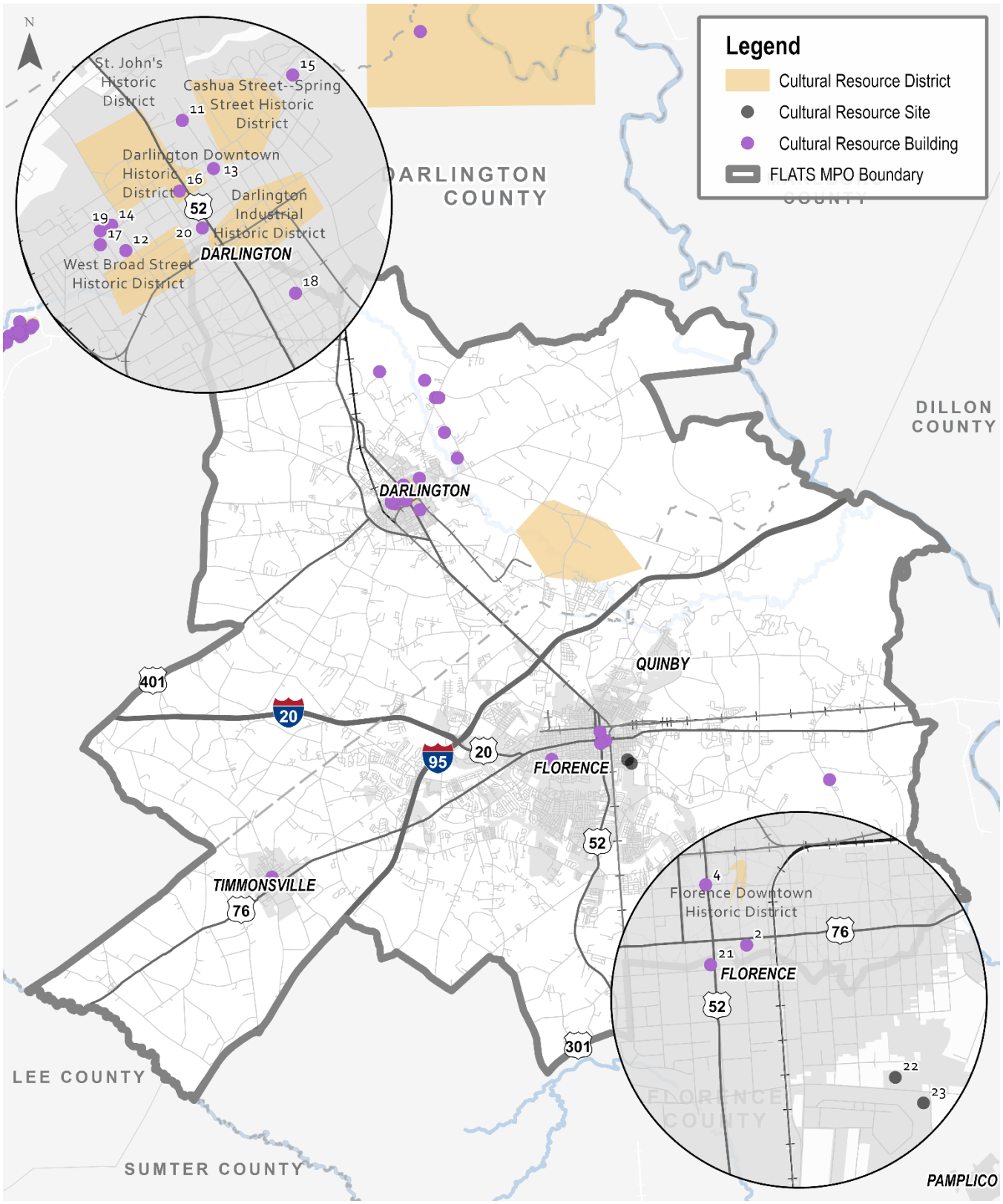


Figure 8: National Register of Historic Places



Transportation Characteristics

Vehicle Ownership

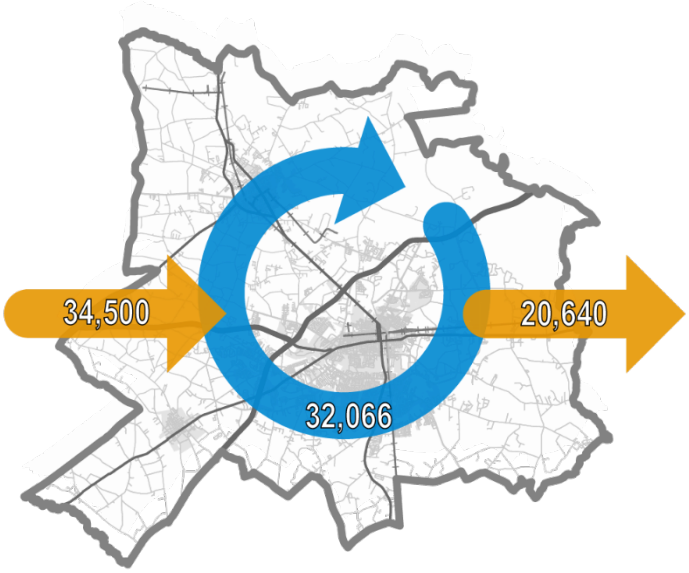
Within the Florence region, approximately 8.4% of households do not have a personal vehicle available to them which is higher than the 6.3% that has been reported statewide. Figure 9 illustrates the concentration of households without personal vehicles by Census block group. The highest percentage of households without personal vehicles is near the core of the City of Florence and City of Darlington.

Commuting Time and Patterns

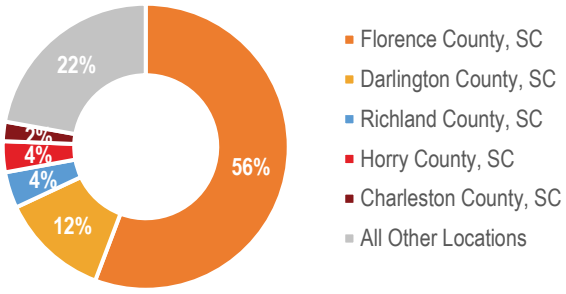
Commuting time refers to the travel time to work in minutes for workers 16 years and over who do not work at home. The average travel time to work within the Florence region is 22.1 minutes, which is shorter than the state average at 25.0 minutes. As shown in Figure 10, the area within the study area with the greatest travel time to work is the area southwest of the Town of Timmonsville.

Many individuals either commute into or live and work within the study area for work, as shown at right. Approximately 54.8% percent of workers travel less than ten miles while 23.2% travel over fifty miles.

The graphs below show the commuting patterns of those living and working in the study area. The majority of residents work in Florence County. Within both Florence and Darlington County, most workers work within their home county.



Where FLATS Residents Work



Where FLATS Workers Live

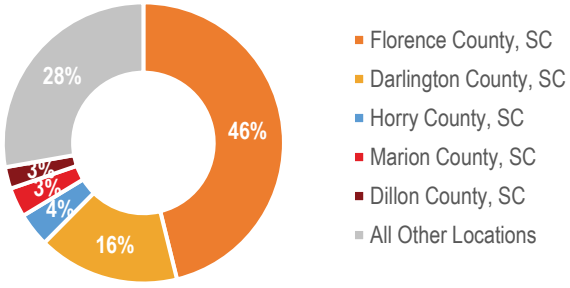


Figure 9: Households without Vehicles (2019) by Census Block Group

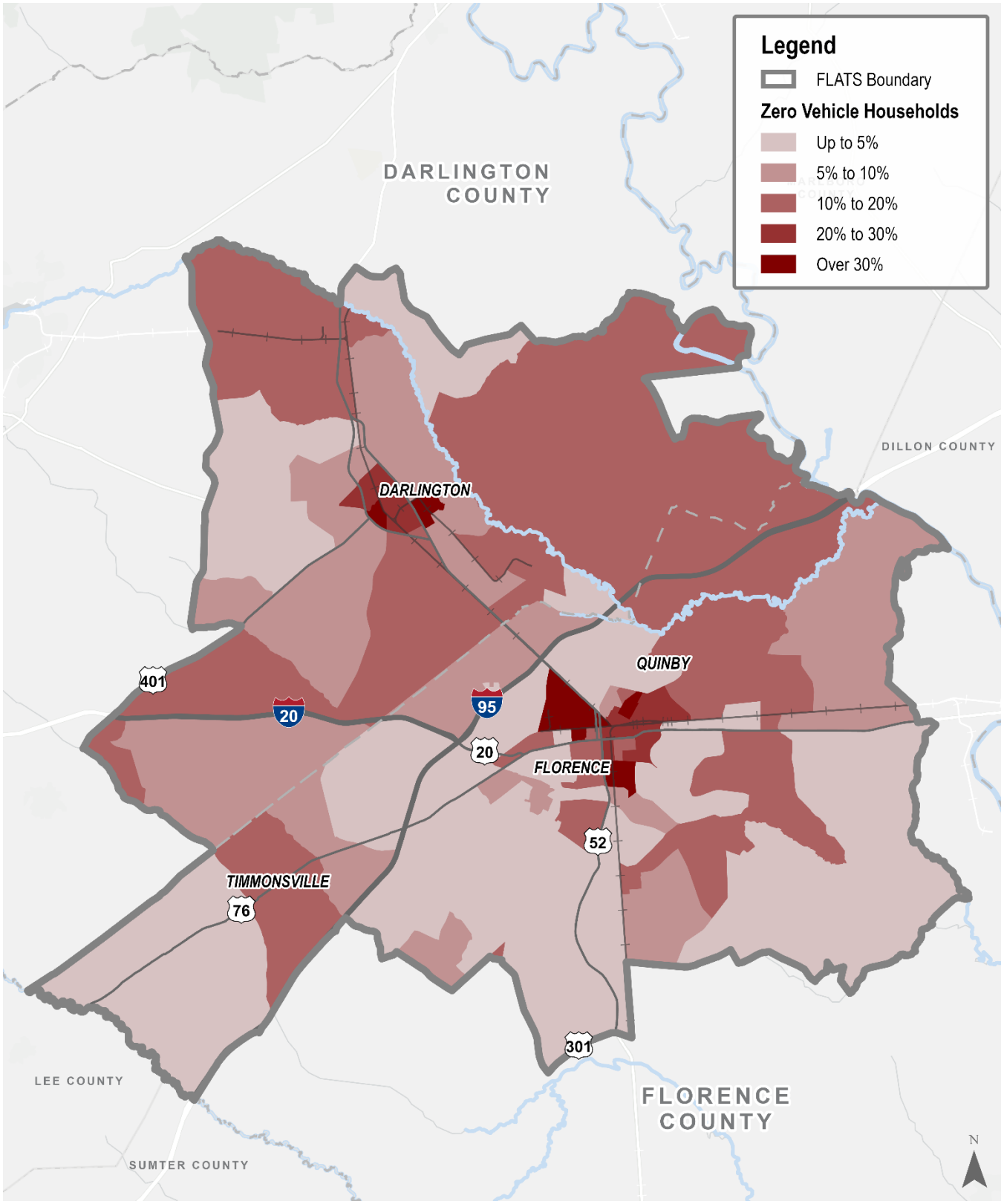
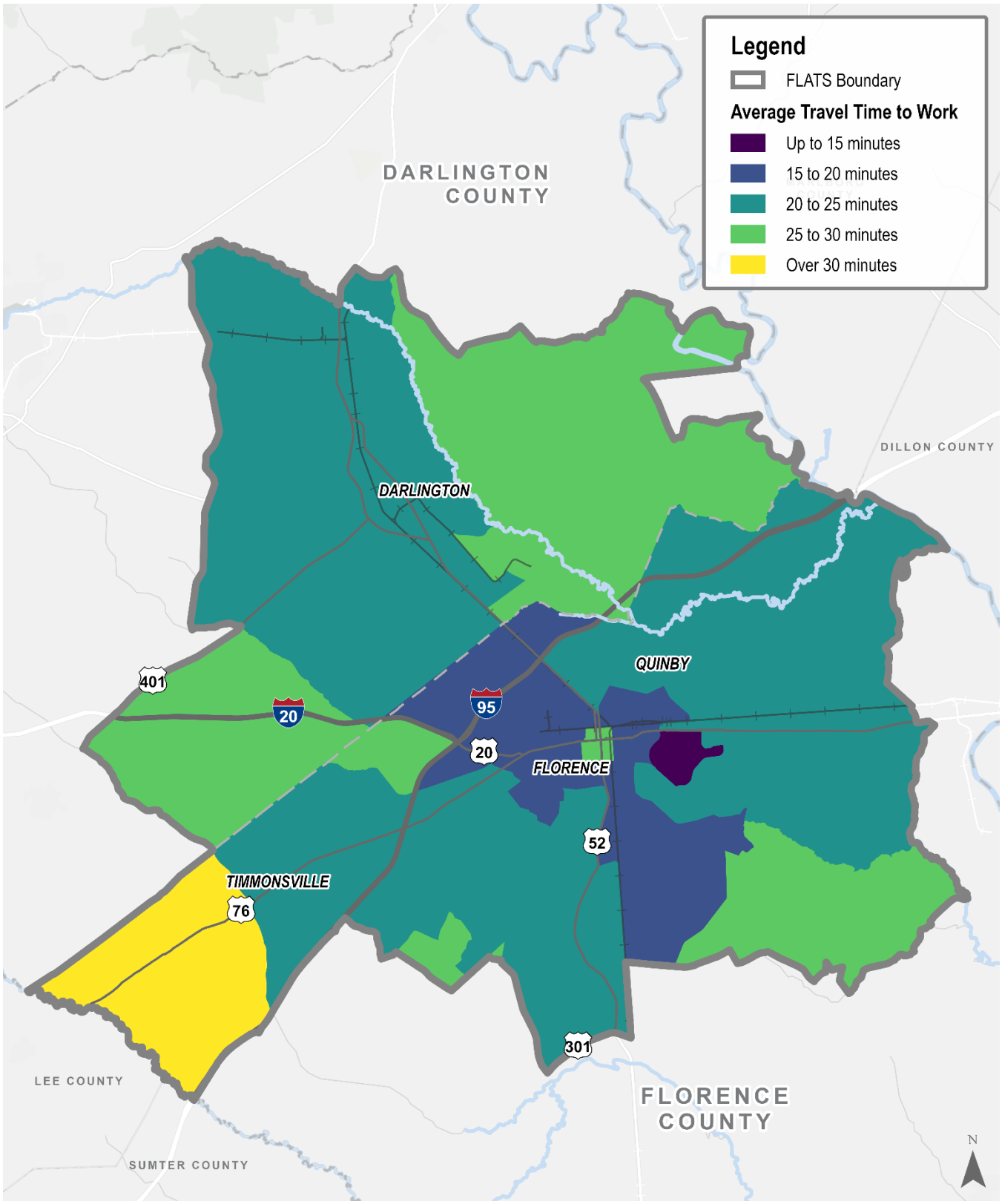

Legend
FLATS Boundary
Zero Vehicle Households
Up to 5%
5% to 10%
10% to 20%
20% to 30%
Over 30%
DARLINGTON COUNTY
DILLON COUNTY
DARLINGTON
QUINBY
FLORENCE
TIMMONSVILLE
401
20
95
20
52
76
301
LEE COUNTY
SUMTER COUNTY
FLORENCE COUNTY
N

Figure 10: Average Travel Time to Work (2019) by Census Tract



Introduction

Role in the Region

Though much has changed in Florence since its founding as a strategic transportation hub, local leaders continue to face the same pressure to create a transportation system that can efficiently move both people and goods. Today's challenge is complicated by limited funds and competing priorities that demand our attention as growth continues.

To develop a set of realistic and effective roadway recommendations, it was necessary to look beyond simply congestion relief to consider other important factors. The *FLATS 2045 LRTP* takes into account changing demographics, emerging trends, local desires, and available resources to transform a vision for a balanced transportation network into an implementable strategy. The update to the LRTP intentionally shifts the focus away from widening projects to focus more on complete streets, access management, and modernization projects. The *FLATS 2045 LRTP* relies on the region's guiding principles to make strategic investments on the highest priority projects.

The Existing System

Roadway Network

Within the Pee Dee region there are many highway and road systems under different jurisdictions. The South Carolina Department of Transportation is responsible for maintaining the Interstate Highway System, which moves people and freight efficiently through the region to other parts of the state and country. Other state, county, and municipal roadways support longer trips for through movements (arterials); distribute traffic to home, work, and recreation (collectors); and provide connection to farms and rural residences. The jurisdiction and classification of these roadways help determine which funding source may be used for maintenance and improvements. The street functional classification system primarily defines the street in terms of roadway design and character, as well as operational features for the movement of vehicles. The study area has about 1,753 centerline miles of functionally classified public roads. The functional classification can be seen in Figure 11.

Arterials

Arterials provide high mobility by operating at higher speeds (45 miles per hour (mph) and above), providing enhanced roadway capacity, having a greater degree of access control, and serving longer travel distances. Arterials can further be subdivided into categories including expressways and freeways, major arterials, and minor arterials.

Expressways and Freeways

Expressways and freeways provide the most mobility and the least access. These facilities primarily serve long distance travel and support regional and statewide mobility needs. FLATS is served by Interstate 20 and 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 from minor arterials and collectors to freeways and expressways. These facilities function to serve medium to long distance travel. Major arterials in the FLATS planning area include US 76 (Palmettos Street), US 52 (Irby Street), and Harry Byrd Highway.

Minor Arterials

Minor arterials are intended to support local travel needs. While these facilities provide a mobility function, they often have more closely spaced intersections and are designed for lower travel speeds and less traffic. Minor

arterials connect other minor arterials and collectors to major arterials, ultimately providing greater access to the surrounding land uses than a major arterial would.

In the FLATS planning area, minor arterials are typically two-lane, undivided roads with no paved shoulder. Where appropriate they provide left-turn lanes at intersections and range between 35 to 45 mph. The minor arterials in the planning area include Lamar Highway, Cherokee Road, and 2nd Loop Road.

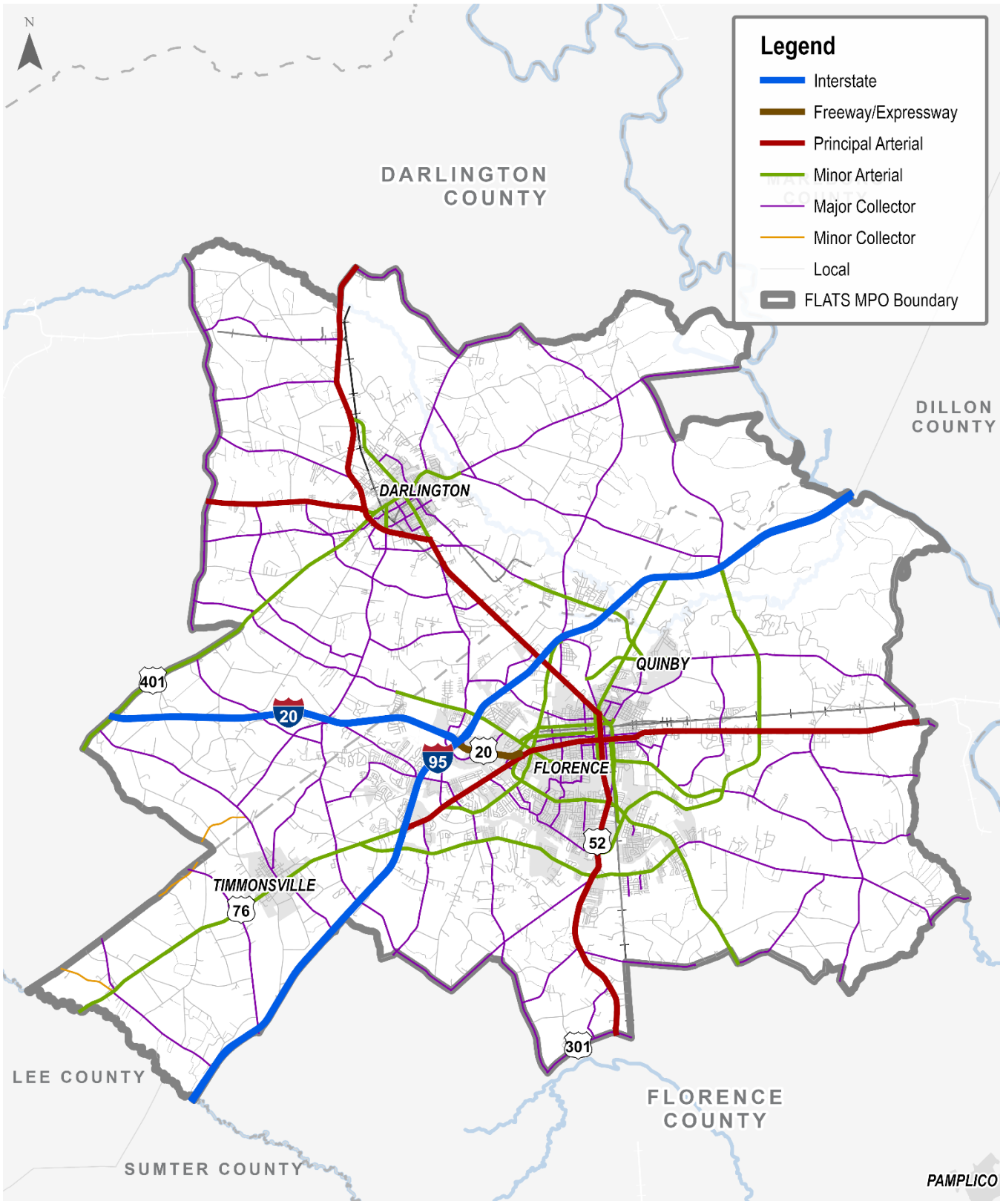
Collectors

While collectors provide less overall mobility, they provide enhanced access. Collectors typically operate at speeds below 35 mph, provide more frequent access to surrounding land uses, and serve shorter distance travel. These facilities connect local streets and residences to higher classified streets. 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 to three lanes and exclusive left-turning lanes at intersections with major and minor arterials. Throughout the planning area collector streets vary in characteristics to fulfill the unique needs of the surrounding land use context. Collector streets in the planning area include Cheeves Street, Ebenezer Road, and McIver Road.

Locals

Local streets provide the highest level of access and the least amount of vehicular mobility. These streets typically connect to one another or to collector streets and provide direct connections to individual residential properties. Locals serve very short distance travel and are not intended for through trips. Local streets have speed limits posted at or below 35 mph.

Figure 11: Functional Classification



Roadway Safety

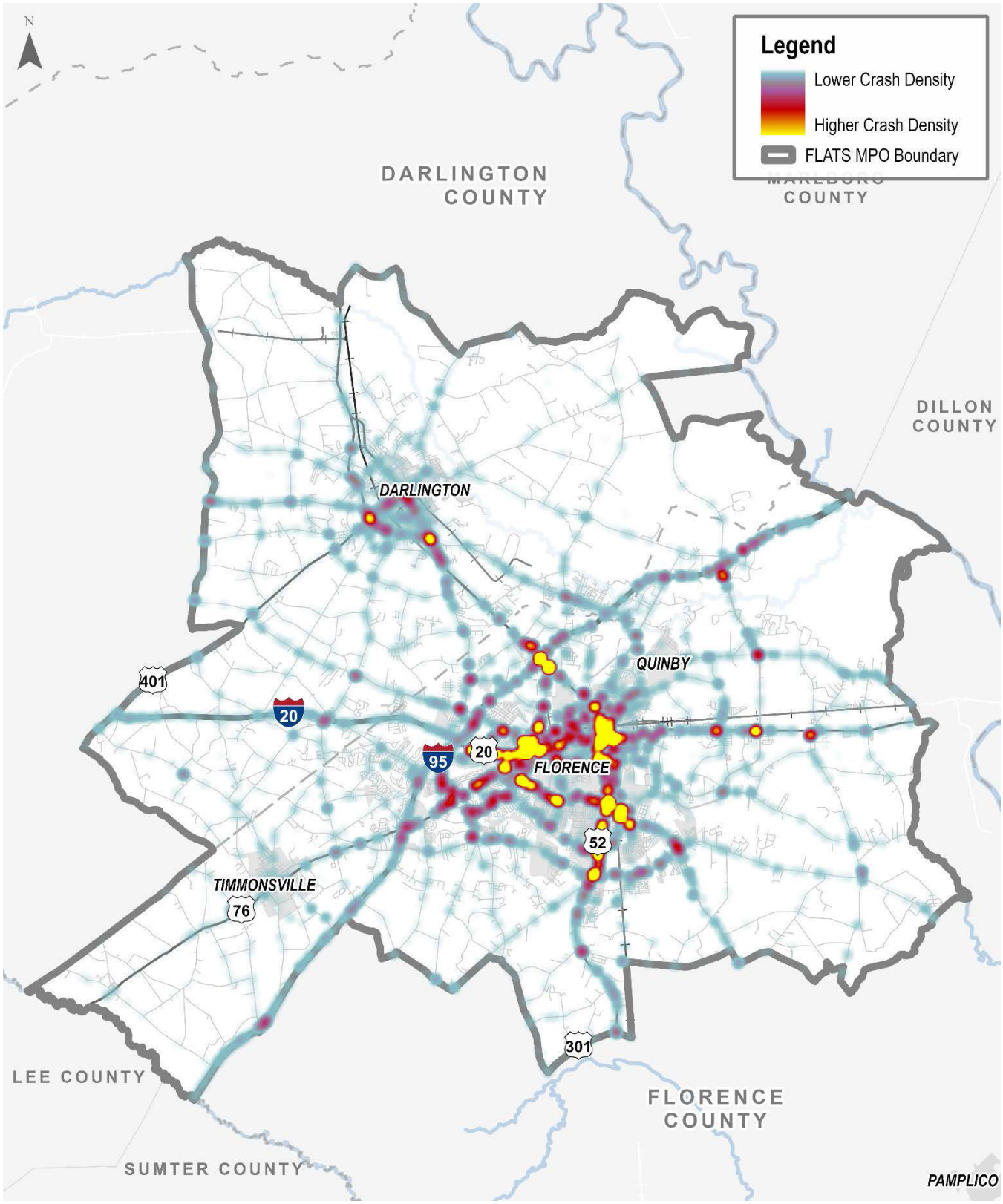
A priority of the long-range transportation planning process is considering the safety of travelers in the region. The key federal legislation that dedicates funding to invest in safety across the nation is the recently enacted Infrastructure Investment and Jobs Act (IIJA), otherwise known as the Bipartisan 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 *FLATS 2045 LRTP* assesses existing safety and security conditions and provides recommendations for future consideration and improvements.

Crash History

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. This fatality rate has actually increased since 2014, when it was 1.66 statewide. In the study area, there were nearly 26,000 crashes between 2016 and 2021. Of the 25,917 crashes 138 were fatal crashes and 6,586 resulted in a serious injury. Given the quantity and severity of crashes, it is essential that the *FLATS 2045 LRTP* identifies solutions for reducing the number of crashes, fatalities, and serious injuries.

The *FLATS 2045 LRTP* used crash data to identify a series of corridors with a high number of roadway departure crashes and designated them as "modernization" projects. These corridors are often two-lane undivided roadways in the more rural parts of the planning area. Common characteristics of these corridors are narrow travel lanes and little to no shoulder.

Figure 12: Functional Classification



Roadway Operations

Corridor congestion is related to several factions; however, it is often the result of bottlenecks along the corridor or at intersections. Aside from individual bottleneck locations, congestions frequently result from too many people trying to use a route that is already at or over capacity. Volume-to-capacity (V/C) ratios were used to identify congested corridors. V/C ratios are calculated by dividing the traffic volume of a roadway segment by the theoretical capacity of a roadway. While V/C can be tied to level of service (LOS), volume-to-capacity allows for more specific analysis. Table 6 describes the V/C ratio categories that were used to analyze roadways for the LRTP. Figure 13 and Figure 14 were used to determine future improvements needed to alleviate congestion and improve the overall transportation network.

Table 6: Volume-to-Capacity Ratio Categories

Category	Description
Below Capacity V/C < 0.80	A roadway with a V/C less than 0.80 typically operates with efficiency and is not considered congested
At/Approaching Capacity 0.80 ≤ V/C < 1.00	A V/C that approaches 1.0 indicates a roadway is becoming more congested. This kind of roadway may operate effectively during non-peak hours but not during peak periods
Over Capacity V/C > 1.00	The roadways that fall into this category represent the most congested corridors in the study area. These roadways are congested during non-peak hours and most likely operate in gridlock conditions during peak periods.

Figure 13: 2019 Base Year Congestion

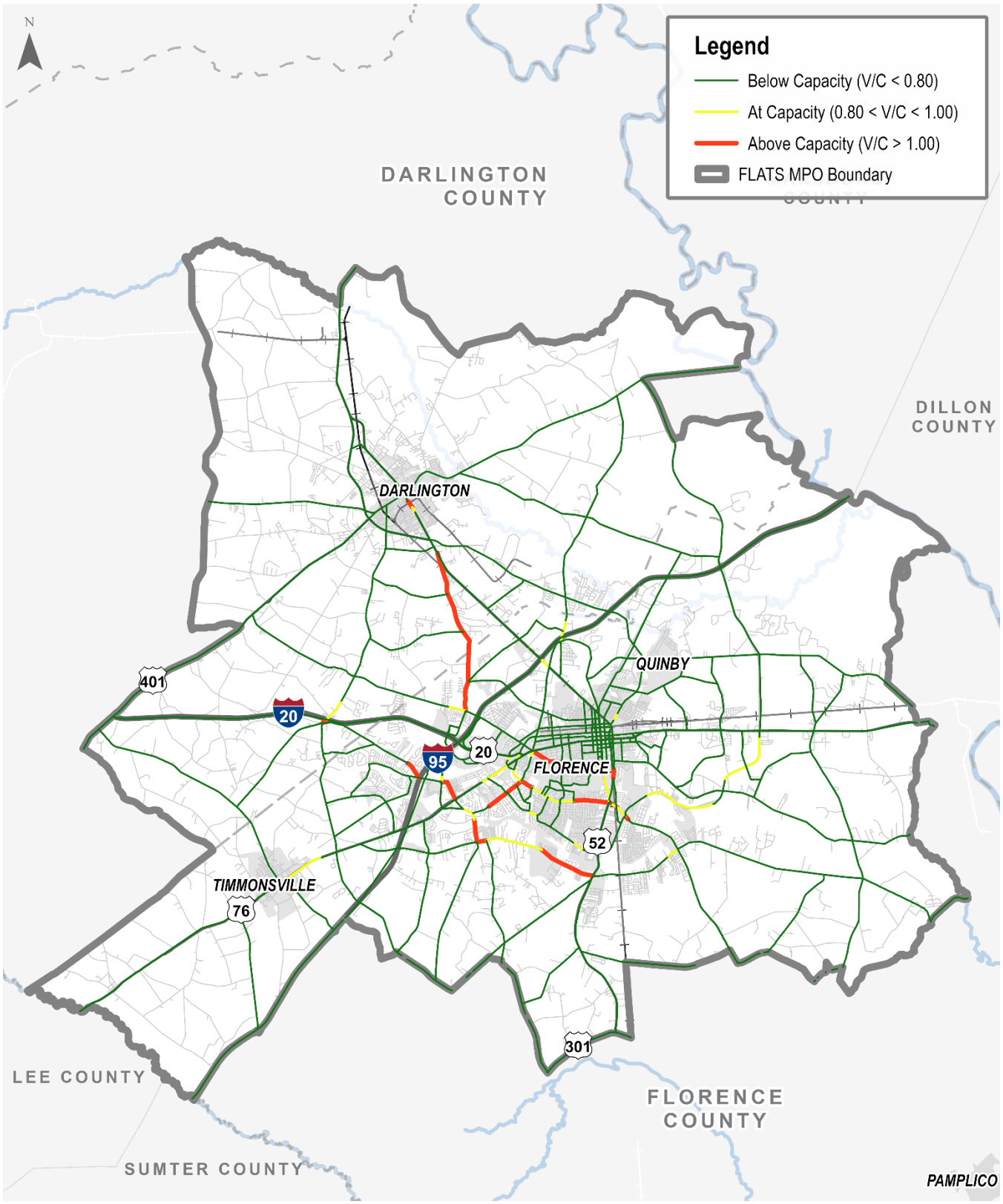
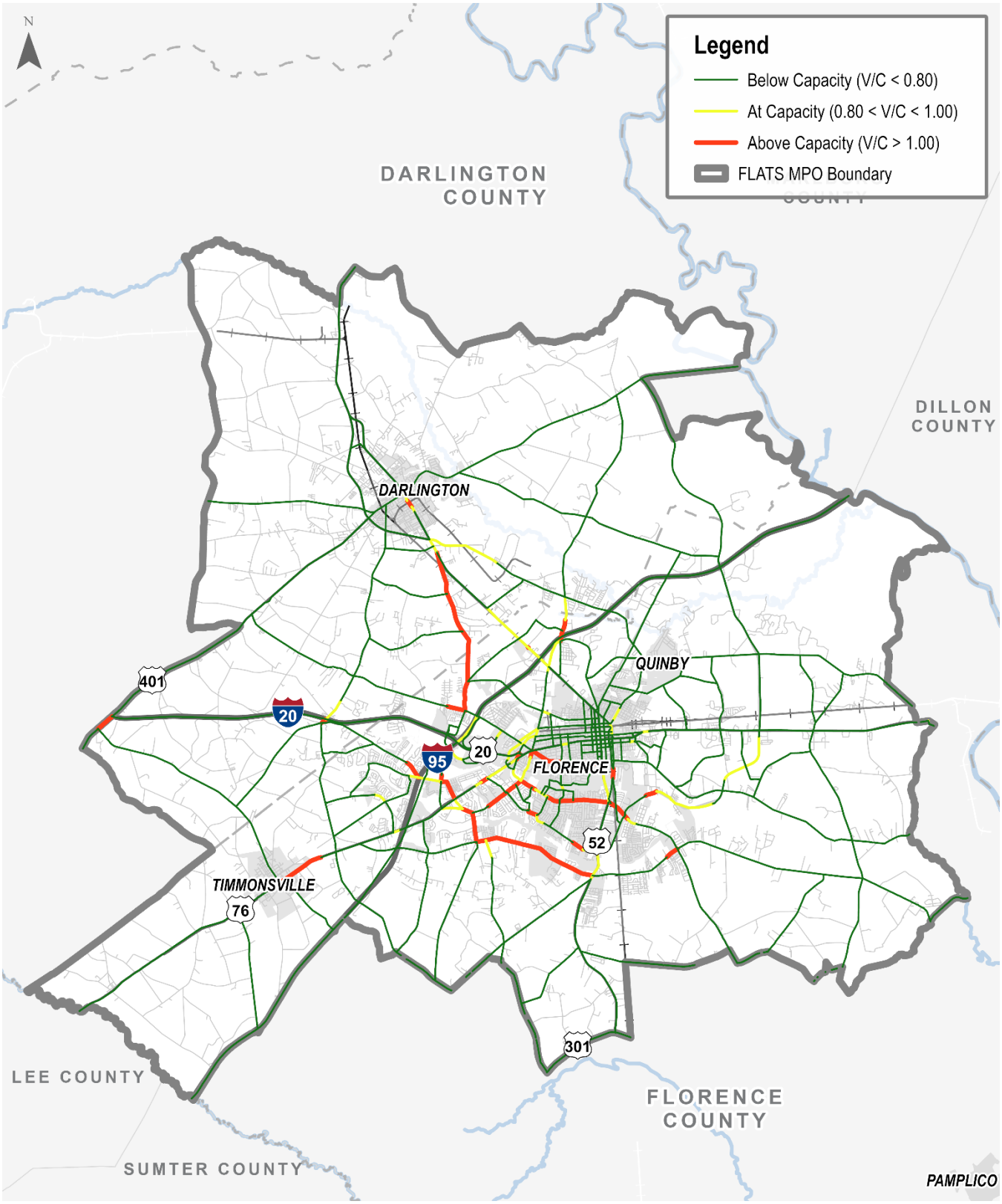


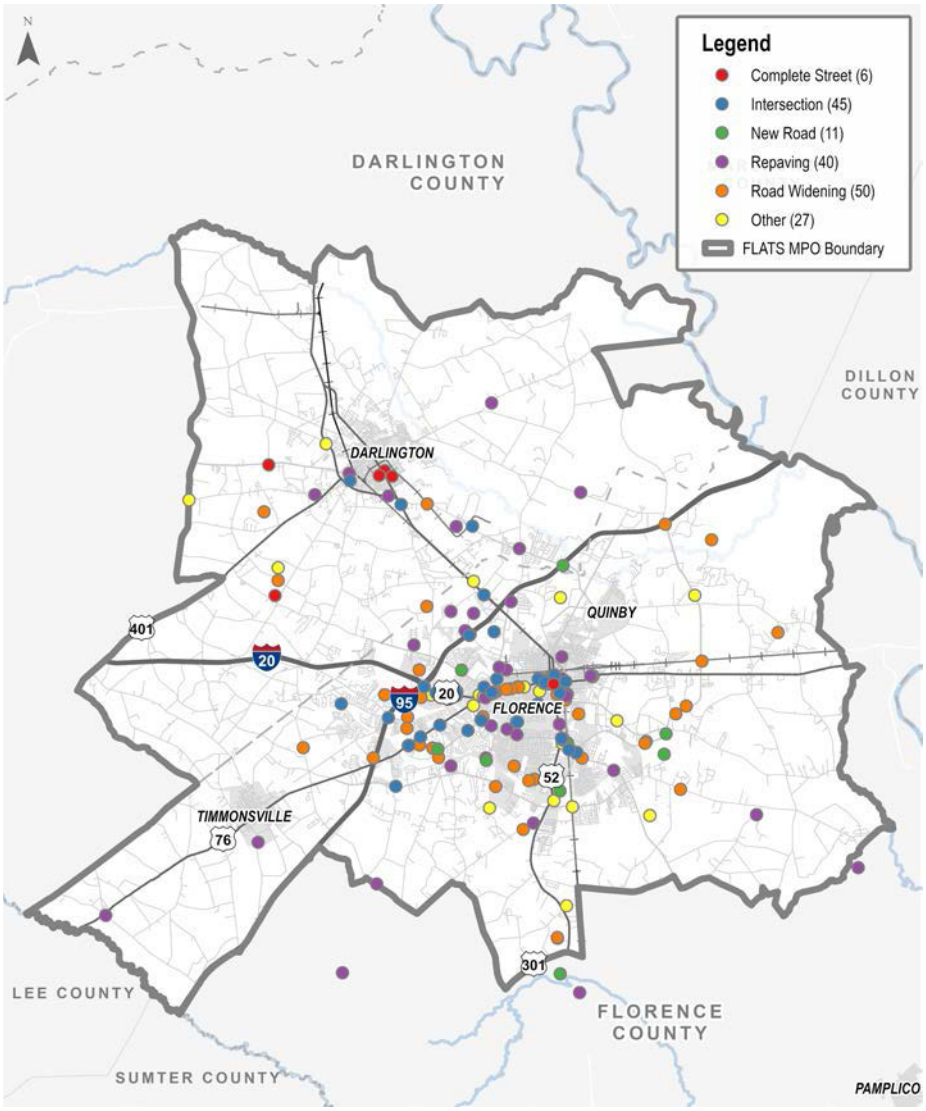
Figure 14: 2045 Congestions with Existing + Committed Projects



Outreach Spotlight – Public Perception and Insight

Sometimes traffic problems are not always the product of congestion. Problems could be created by providing a lack of alternative routes, confusing roadway configuration, or frustrating commutes during peak hours. While these problems cannot be measured with traditional, quantitative traffic analysis methods, the public can provide valuable insight into the planning process.

A component of public outreach was collecting information during an online survey. The survey gathered information on the public's perception of transportation problems in the existing transportation system and gauged the community's appetite for potential transportation solutions. The following map shows roadway issues identified by online participants.



Recommendations

The *FLATS 2045 LRTP* acknowledges that regional decisions can enhance mobility and safety for motorists, bicyclists, and pedestrians alike. Developing the system-level recommendations began with a review of previous plans, followed by discussions with stakeholders, members of the public, and a review of available data and analysis. These sources indicated that, even as the need persists to move traffic more efficiently, there is a great demand for enhanced bicycle and pedestrian facilities, as well as corridor modernization to enhance safety. The plan for roadways coordinates closely with other modal elements, notably through an emphasis on incidental projects for bicyclists and pedestrians.

One of the unique demands in sustaining a successful and balanced transportation network is blending access and connectivity while preserving mobility. This blending begins with the roadway recommendations. These recommendations also provide a starting point for advancing the concept of complete streets by incorporating bicycle, pedestrian, and transit improvements incidentally.

The map on the following page identifies the universe of projects in the FLATS region that were identified through previous planning efforts or the *FLATS 2045 LRTP* outreach efforts and needs assessment. Each of these projects were evaluated with the project prioritization process, which is described later in this chapter, which helped form the list of projects that can reasonably be funded by the year 2045. This list of projects, or the financially constrained project list, is outlined in Chapter 6. It is no surprise that there is a gap between projected funding and the cost to plan, design, and construct all of the projects that were identified as needs during the *FLATS 2045 LRTP* planning process. Only a portion of the needs identified in this plan can be addressed, while the remainder of projects will need to be considered and reevaluated in future plans.

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 *FLATS 2045 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 *FLATS 2045 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.

Figure 15: Corridor Recommendations

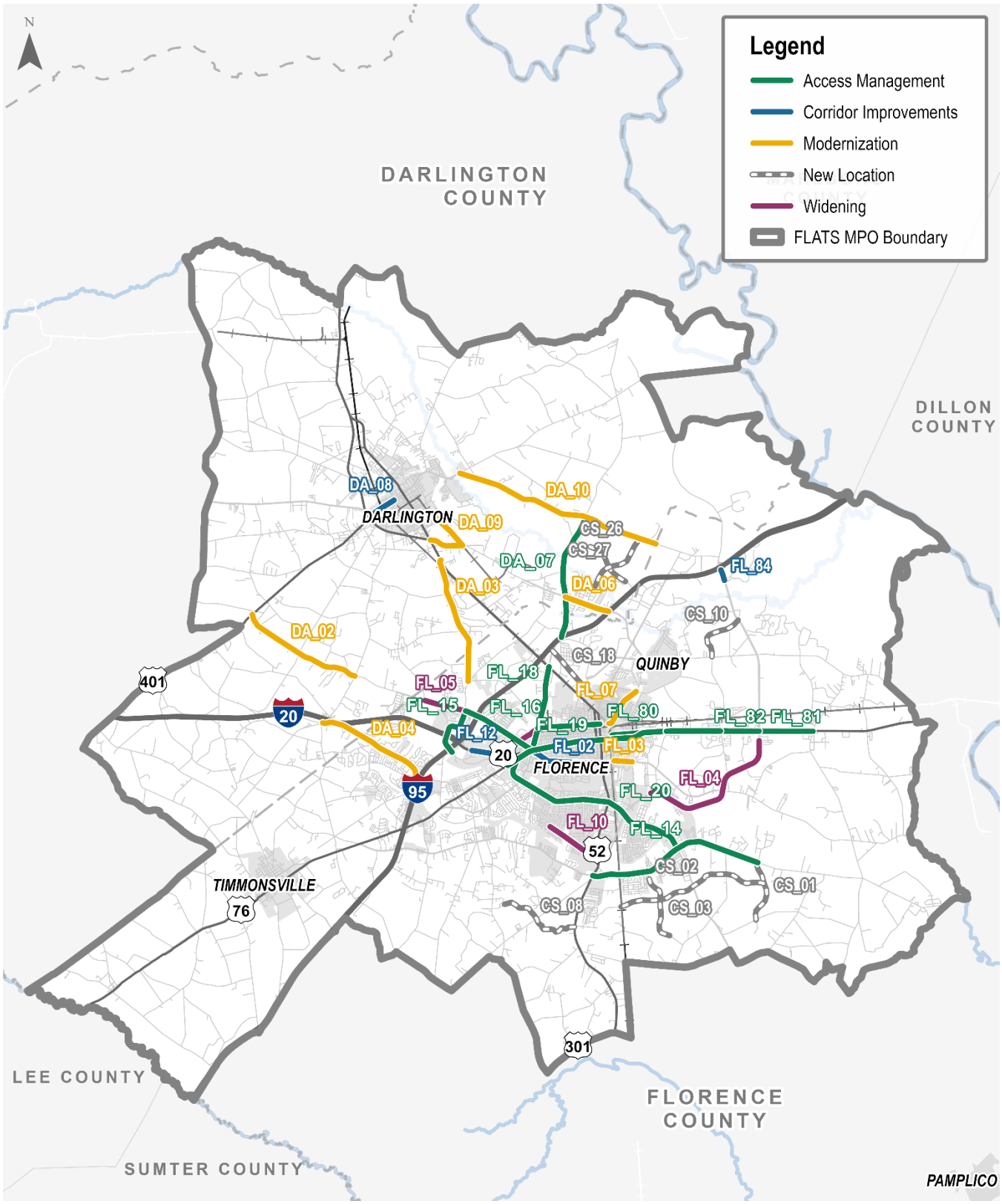
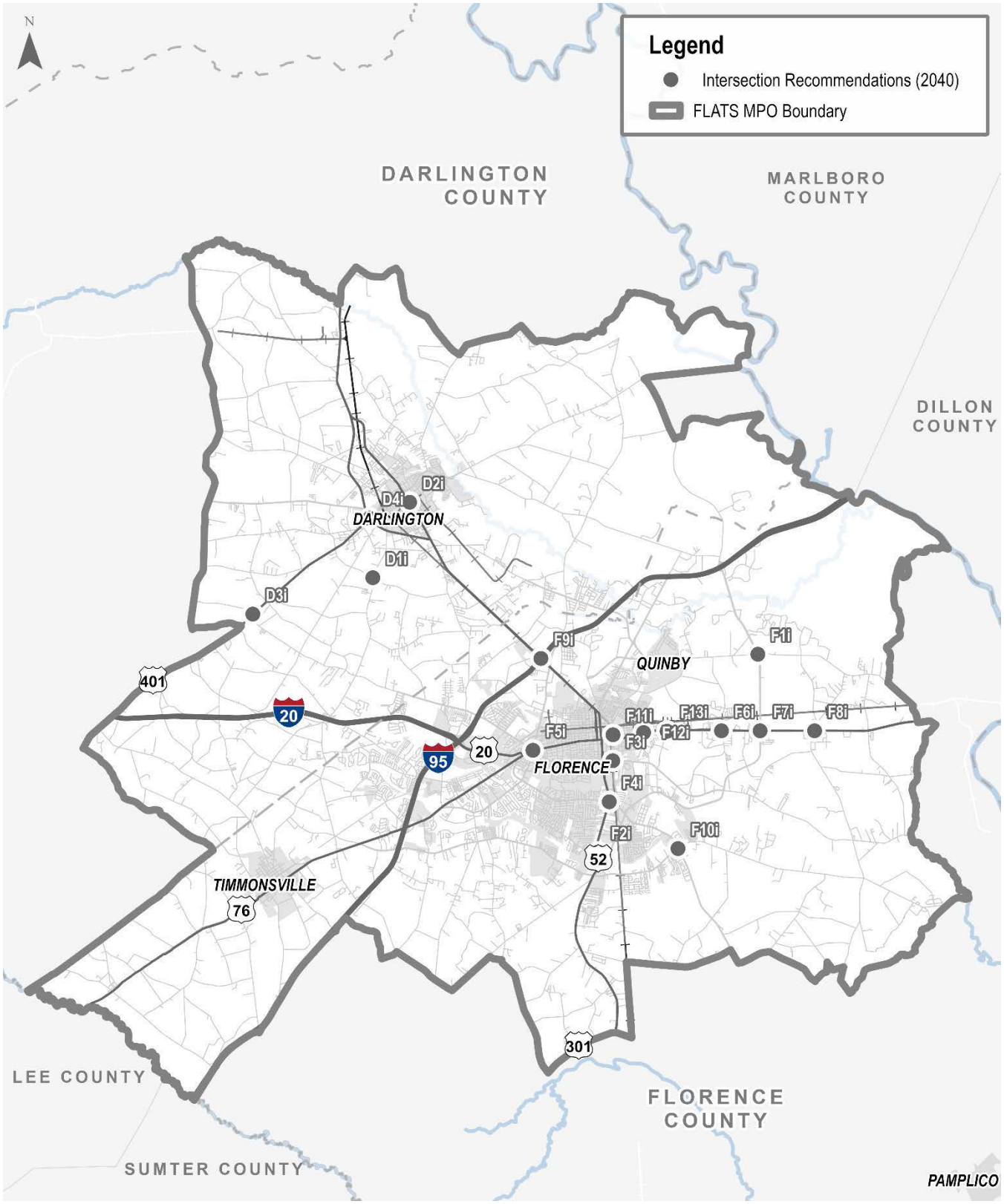


Figure 16: Intersection Recommendations



Prioritization Process

In order to best understand how to allocate the region's limited financial resources, it is crucial to evaluate the recommendations quantitatively 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, detailed in Planning Directive 15, 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, FLATS can more successfully position itself to acquire state and federal funding. Table 7 outlines the prioritization criteria, definition, and percentage of the score. Tables 8, 9, and 10 show the projects by the rank received during prioritization.

Table 7: Prioritization Criteria and Associated Weights

		Percentage of Score Based on Project Type		
Evaluation Criteria	**Definition**	**Corridor and Widening**	**New Location**	**Intersections**
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%	40%	35%
Located on or Connected to a Priority Network	The priority network score is based on a project's location in relationship to defined priority network.	25%	15%	15%
Public Safety	The public safety score is based on crash rates.	10%	-	25%
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%	20%	5%
Truck Traffic	The truck traffic score is based on current truck percentages.	10%	-	10%
Financial Viability	The financial viability score is based on estimated project cost in comparison to the annual Guideshare/Regional Mobility Program allocation.	5%	10%	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%	15%	5%

Table 8: Corridor and Widening Projects

ID	Project Route	From	To	Project Type	Rank
FL_19	Palmetto St (US 76)	Second Loop Rd	Freedom Blvd	Access Mgmt.	1
FL_13	E. Cheves St	E. Palmetto St	S. Church St	Access Mgmt.	2
FL_80	City Gateway District (US 76)	Church St	South McCall Blvd	Access Mgmt.	3
FL_81	University District (US 76)	Freedom Blvd	Francis Marion Rd	Access Mgmt.	4
FL_82	Emerging District (US 76)	South McCurdy Rd	Freedom Blvd	Access Mgmt.	5
FL_83	Aviation District (US 76)	South McCall Blvd	South McCurdy Rd	Access Mgmt.	6
FL_12	David H. McLeod Blvd	I-95 NB Ramp	Woody Jones Blvd	Corridor Imp.	7
FL_02	Cherokee Rd	W Palmetto St	S. Coit St	Corridor Imp.	8
DA_03	N. Ebenezer Rd	Pisgah Rd	Main St (US 52)	Modernization	9
FL_20	Second Loop Rd/Pamplico Hwy (SC 51)	W. Palmetto St (US 76)	Howe Springs Rd	Access Mgmt.	10
FL_84	N. Williston Rd	N. Williston Rd/I-95	Alex Lee Blvd	Corridor Imp.	11
FL_18	N. Cashua Dr	W. Palmetto St (US 76)	Lucas St (US 52)	Access Mgmt.	12
FL_21	W. Darlington St	N. Cashua Dr	N. Irby St	Access Mgmt.	13
FL_16	Hoffmeyer Rd	N. Ebenezer Rd	S. Cashua Dr	Access Mgmt.	14
FL_03	E. National Cemetery Rd	S. Church St	Stockade Dr	Modernization	15
FL_14	E. Howe Springs/Claussen Rd	Secretariat Dr	S. Irby St	Access Mgmt.	16
DA_06	McIver Rd	Charleston Rd	I-95	Modernization	17
FL_15	Ebenezer Rd	Hoffmeyer Rd	Radio Dr	Access Mgmt.	18
FL_07	Oakland Ave	E. Lucas St	Wilson Rd	Modernization	19
DA_07	S. Charleston Rd	Pocket Rd	I-95	Access Mgmt.	20
DA_08	Pearl Street	Lamar Hwy	Wells St	Corridor Imp.	21
FL_11	W. Darlington St	N. Cashua Dr	Hoffmeyer Rd	Widening	22
DA_09	E. McIver/Old Florence Rd	Old Florence Rd/E. McIver Rd	E. McIver Rd/S. Main St	Modernization	23
FL_10	Third Loop Rd	S. Irby St	Marsh Ave	Widening	24
FL_04	Freedom Blvd	South of Palmetto St	West of Turner Rd	Widening	25
FL_05	Hoffmeyer Rd	Anderson Farm Rd	N. Ebenezer Rd	Widening	26
DA_04	Southborough Rd	N. Sally Hill Rd	Pine Needles Rd	Modernization	27
DA_10	Pocket Rd	Cashua Ferry Rd	E. Pocket Rd	Modernization	28
DA_02	Hoffmeyer Rd	Timmonsville Hwy (SC 340)	Lamar Hwy (US 401)	Modernization	29

Table 9: Intersection Projects

ID	Project Location	Rank
F4i	S. Irby St & Second Loop Rd/Pamplico Hwy	1
F9i	W. Lucas St & I-95 On/Off Ramps	2
F12i	E. Palmetto St & Cheves St	3
F5i	W. Palmetto St & S Cashua Dr/Hoffmeyer Rd/Cherokee Rd	4
F2i	S. Irby St & Third Loop Rd/Freedom Blvd	5
D4i	Lamar Hwy & S. Governor Williams Hwy	6
F6i	E. Palmetto St & N. Williamston Rd/S. McCurdy Rd	7
F13i	E. Palmetto St & S. McCall Blvd	8
F7i	E. Palmetto St & N. Williston Rd/Freedom Blvd	9
D2i	S. Main St & SCRF Railroad Crossing	10
F8i	E. Palmetto St & Francis Marion Rd/N. Price Rd	11
D3i	Lamar Hwy & E. Seven Pines St/Hoffmeyer Rd	12
F11i	S. Church St & E. Cheves St	13
F1i	N. Williston Rd & E. Old Marion Hwy	14
F3i	Cherokee Rd/E. National Cemetery Rd & Barringer St	15
F10i	Pamplico Hwy & E. Howe Springs Rd/Claussen Rd	16
D1i	Timmonsville Hwy & Rogers Rd	17

Table 10: New Location Projects

ID	Project Location	Rank
CS_08	Sage Rd to S. Irby St	1
CS_18	N. Cashua Dr to N. Douglas St	2
CS_27	Ellis Rd to Pocket Rd	3
CS_10	E Old Marion Hwy to N Willston Rd (327)	4
CS_26	Nursery Rd to Camp Sexton Rd	5
CS_03	Devon Rd to Gray Ln	6
CS_01	Secretariat Dr to Flowers Rd	7
CS_02	Bannockburn Rd to CS_01	8

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Introduction

Throughout the nation, cities and regions are increasingly recognizing the need to invest in cycling, walking, and public transit as means to provide a balanced transportation network that accommodates both recreational and utilitarian travel. At the same time, demographic shifts and new economic realities have caused a shift in consumers' attitudes toward active transportation, and today an increasing share of residents are actively searching for ways to lead an active lifestyle, cut their commute costs, or live a more sustainable life. Although most people in the region and across the United States choose to travel by automobile, many others do not have that option, and investments in these modes can help improve their mobility and economic opportunities. As the region continues to grow and travel demand continues to increase, shifting travel patterns toward more sustainable, active travel modes is one sure way to stabilize regional congestion and travel times. For this reason, transportation plans no longer focus solely on roadway solutions.

Benefits of Biking, Walking, and Taking Transit

Biking, walking, and transit are key elements to any healthy community's transportation system. When an environment is conducive to these active transportation modes, it provides benefits for both individuals and their communities. The potential for increased walking, in particular, is large since 25% of all trips in the United States are less than one mile in length. Features that contribute to making transportation more active include a healthy mix of land uses, appropriately sized and located facilities, accessibility features such as curb ramps, and design features to make walking and biking more attractive.

The recommendations in this chapter work together with other regional plans to emphasize the importance of a functional active transportation network throughout the entire study area. This focus recognizes the variety of benefits of active transportation and how it contributes to the community. These benefits include:

- **Health benefits** – Regular physical activity helps prevent or reduce the risk of a variety of chronic diseases, obesity, and mental health problems such as depression.
- **Transportation benefits** – Many streets carry more traffic than they were designed to handle, resulting in congestion, wasted time, pollution, and driver frustration. Many of the trips that Americans make every day are short enough to be accomplished on foot or by bike.
- **Environmental benefits** - Motor vehicles create substantial air pollution. According to the EPA, transportation is responsible for nearly 80% of carbon monoxide emissions in the U.S.
- **Economic benefits** – Car ownership consumes a major portion of many family incomes. When safe facilities and efficient transit services are provided, people can spend less on transportation, putting more money back into local economies.
- **Quality of life benefits** – The walkability and bikeability of a community is an indicator of its livability, which helps attract businesses and grow tourism related activity. By providing appropriate facilities and amenities, communities contribute to a healthy sense of identity and sense of place.
- **Social justice** –For those who do not have the option to drive, such as adolescents, elderly, those unable to afford a car, and people with certain disabilities, these facilities and services provide another transportation choice and break down barriers to accessing jobs, healthcare, education and recreation.

Bicycle and Pedestrian

The bicycle network in Florence and the surrounding area is limited. Less than 4 miles of wide outside lanes exist, and the region does not have any bicycle lanes. Of the priorities identified in the 2004 Bikeway Master Plan, only portions of the Rail Trail Spur have been completed. The Rail Trail Spur is a 10-foot multi-use path. Although a high priority project for improving connectivity to important destinations, including West Florence High School, the length of new trail added to the current network has been minimal (less than 2.0 miles). In Darlington and Florence County, from 2016 to 2020, there were 47 crashes that resulted in the death of pedestrian or bicyclist according to the National Highway Traffic Safety Administration.

City of Florence Trail System

In 2004, the Florence City Council with support of the Parks, Beautification and Leisure Services Commission established a vision for protecting natural corridors and open space within the City of Florence. The vision was to utilize natural features to link natural areas, parks, cultural features, and historic sites for conservation, recreation, and alternative transportation. The key link in the system is Jeffries Creek, which serves as a potential green necklace around the City. In total, the trail system includes rail trail connections, urban connections, and "Freedom Florence" connections, as highlighted in a brochure produced by the City of Florence. The recommendations in Figure 16 build on and formalize many of the connections in the brochure.

Bikeway Master Plan (2004)

The Florence Area Transportation Study completed a Bikeway Master Plan in 2004. The bicycle and pedestrian element of the LRTP has evolved as product of community input and outreach, including coordination with stakeholders, local officials, and the general public. Since the Bikeway Master Plan was completed in 2004, there has been a great shift in how bike infrastructure is designed. The 2004 plan placed a heavy emphasis on wide outside lanes and signed routes, both of which, don't create a facility friendly for all ages and abilities. As a part of the *FLATS 2045 LRTP*, the project team worked with members of the community and new guidance from NACTO to update the recommendations to better accommodate users of all ages and abilities.

A New Era for Bicycle and Pedestrian Planning

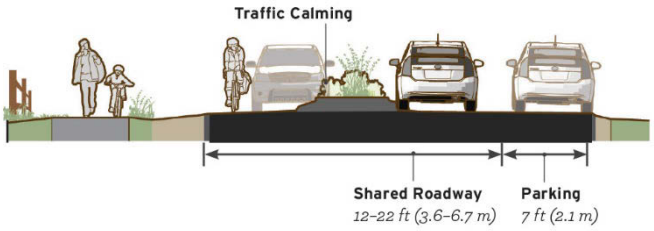
As mentioned in Chapter 3, SCDOT released a new departmental directive for complete streets in 2021. This new policy will help reduce bicycle and pedestrian injuries and fatalities on roadways both across the State and locally in the FLATS region. SCDOT implementation of the complete streets policy has been swift and includes early updates to the Roadway Design Manual, guidance for accommodating bicycle infrastructure through resurfacing projects, and possible creation of active transportation plans. The creation of an active transportation plan will be a critical next step for the FLATS region to ensure that the needs of residents to travel safely on foot, bike, or bus are met. The *FLATS 2045 LRTP* took an initial step to modernize the 2004 Bikeway Mater Plan, but a more robust and concerted effort to plan for active transportation should be completed on the heels of the LRTP.

Planning for All Ages and Abilities

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 *FLATS 2045 LRTP* provides a blend of bicycle and pedestrian recommendations to complement the region's overall transportation network.

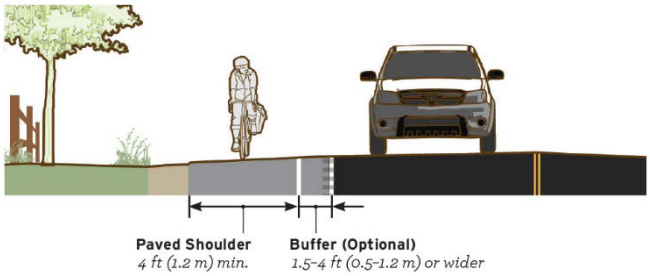
Sidewalks and multi-use pathways along roadways provide standard connections between destinations. The facilities for bicycles are more varied than pedestrian facilities due to their proximity to roadways. The different types of bicycle and pedestrian facilities and improvements can be found below.

Bicycle Facility Recommendations



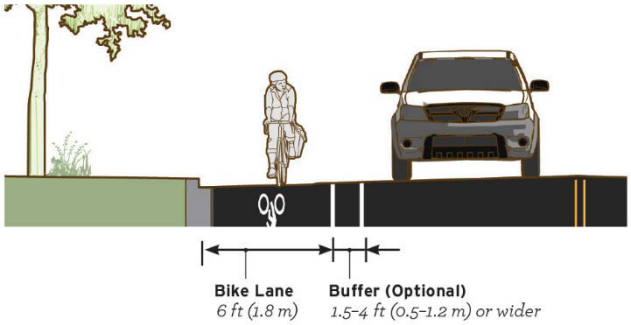
Shared Lane Markings (Bicycle Boulevard)
A shared lane marking indicates the shared space for both motor vehicles and bicycles. The best use of shared land markings is typically on low-speed, space-constrained roadways. A shared-lane marking is usually best accompanied by additional signage.

- Between 100 feet to 250 feet



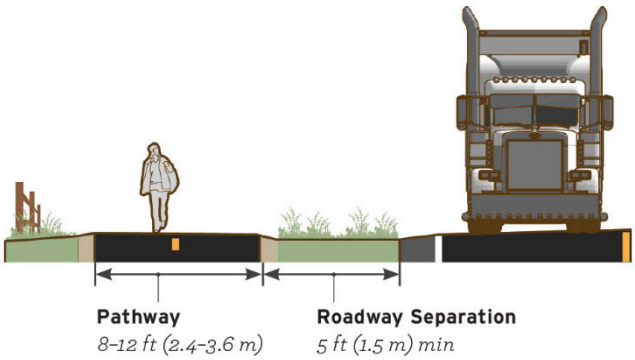
Paved Shoulder
A paved shoulder uses the extra pavement beyond the typical travel lane. The shoulder is designated by striping to indicate to both cyclists and vehicles the boundary.

- 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 5 feet to 6 feet wide
- Separation for a buffer is a minimum of 2 feet wide



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 8 feet to 12 feet wide
- Shared with cyclists and pedestrians

Outreach Spotlight – Alternative Mode Appetite

During the online outreach conducted as part of the planning process, participants placed over 250 map markers with ideas for improving walking, biking, and taking transit in the FLATS area. Sixty-five percent of the bicycle improvement markers indicated the desire for new bike lanes, while nearly 50% of the transit ideas were for new routes.

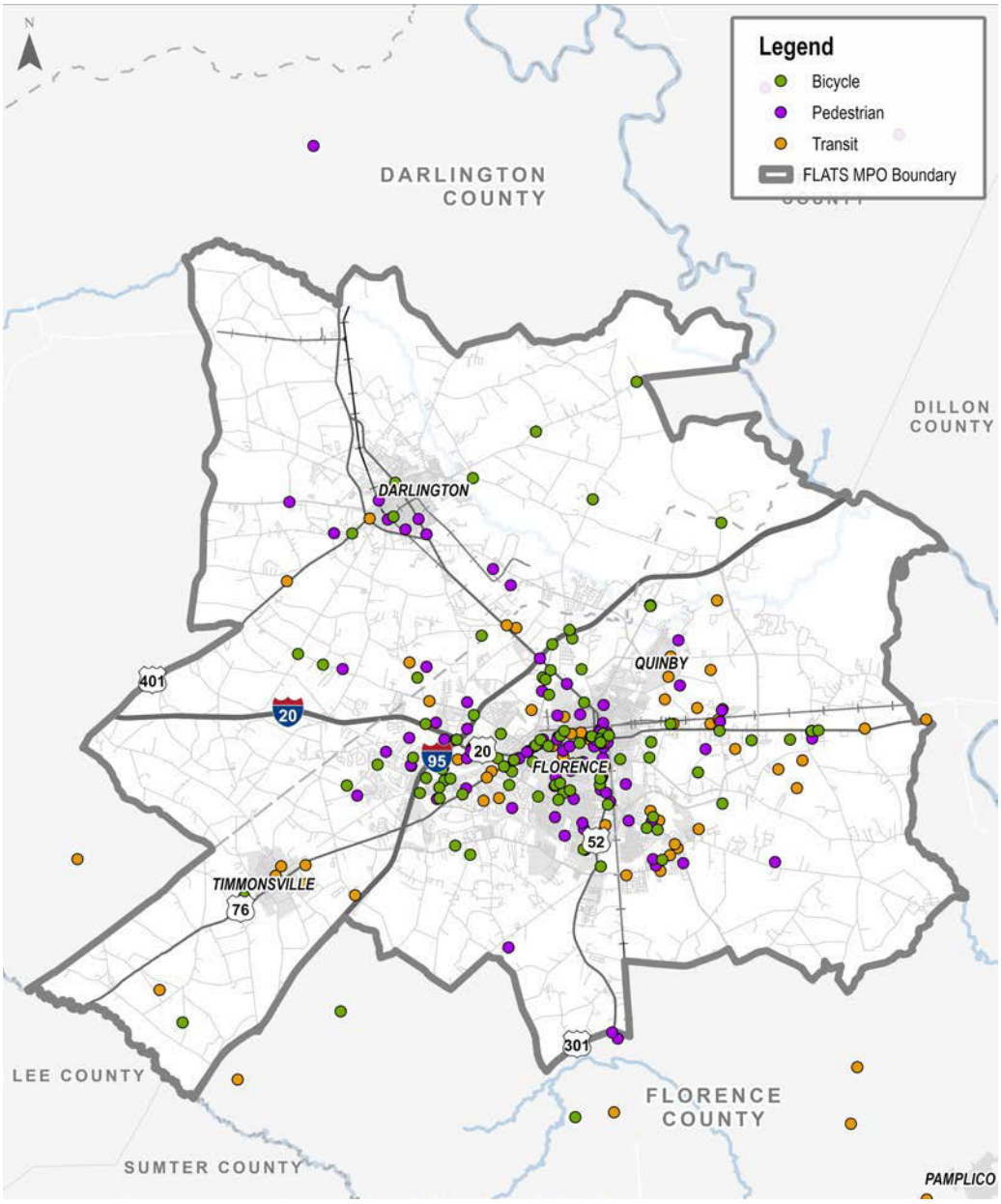
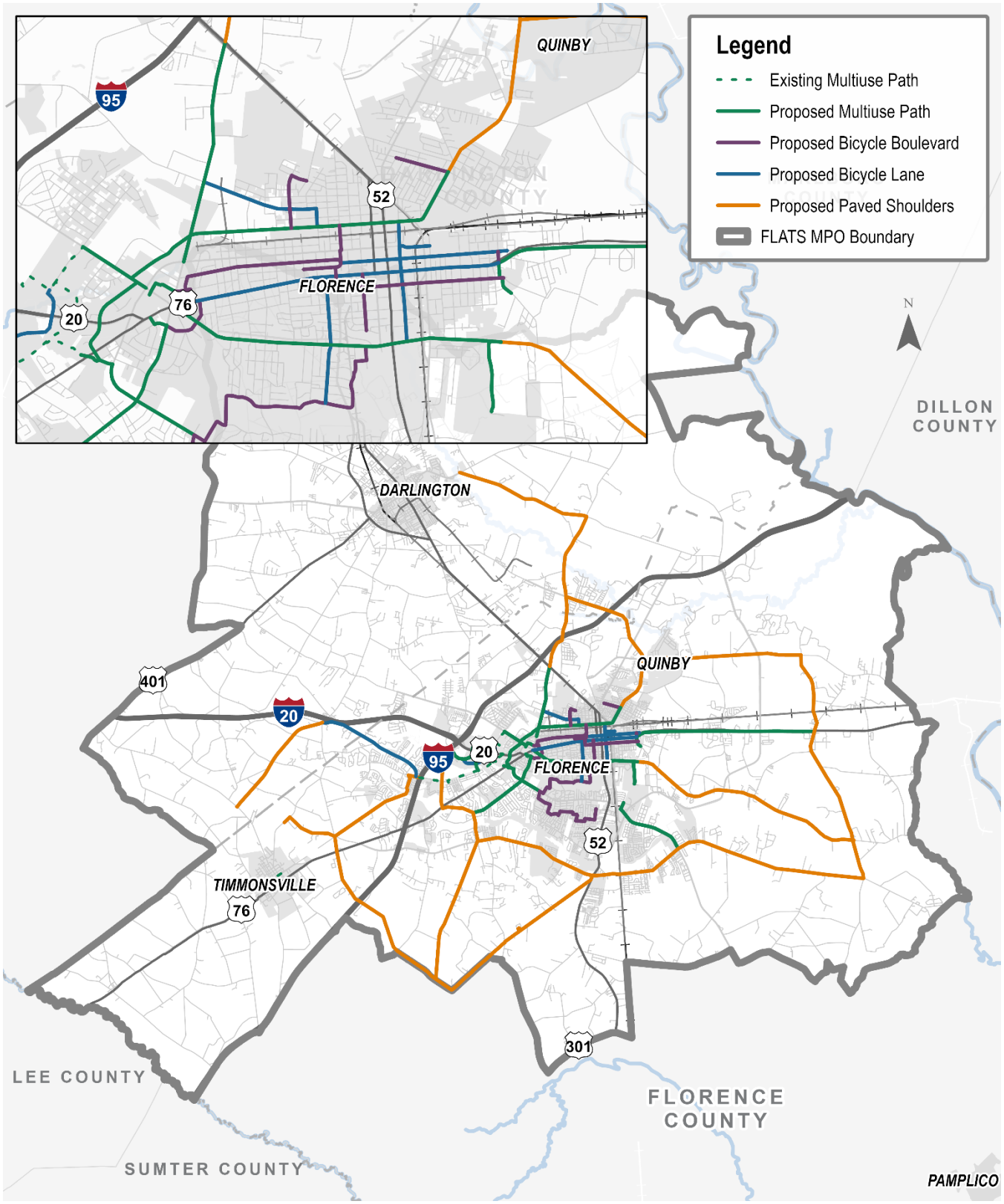


Figure 16: Bicycle Recommendations



Transit

Public transportation in the Florence area is provided by the Pee Dee Transportation Authority (PDRTA). PDRTA provides fixed-route bus service, fixed route commuter service, and paratransit (dial-a-ride) services. In addition, private transportation and taxicab companies provide local transportation services, and Greyhound and Amtrak provide intercity bus and train services.

PDRTA serves six counties and operates 25 total routes and serves more than 700 daily passengers. Within the FLATS area, PDRTA operates seven fixed-routes including Routes 1, 2, 3, 4, and 7, two Downtown shuttles, DART, and the Florence Darlington Commuter.

Coordination with Previous and Upcoming Planning Efforts

Transit planning requires continual assessment of ridership trends, demographic shifts, technological advancements, and managerial processes. Aspects of these assessments are performed regularly by Pee Dee Regional Transportation Authority (PDRTA) as part of state and federal reporting guidelines. Previous planning efforts also have documented this type of information. Transit planning as part of a long-range transportation plan at the MPO-level presents existing conditions and outlines best practices to fulfill that vision. Additional discussion has been ongoing between FLATS and PDRTA staff about an upcoming transit plan. Where PDRTA has undertaken more detailed study, the *FLATS 2045 LRTP* should incorporate those recommendations.

Previous planning efforts considered during the development of the transit chapter include:

- 2035 FLATS Long Range Transportation Plan
- Pee Dee Regional Transit Plan
- PDRTA Marketing Plan
- Florence County Transit Assessment Report
- South Carolina Statewide Comprehensive Multimodal Plan
- Downtown Florence Transportation Hub Feasibility Study

Transit Recommendations and Best Practice Guiding Principles

While the *FLATS 2045 LRTP* does not directly suggest recommendations on behalf of PDRTA, the following section presents a series of four best practice guiding principles that can ensure that future improvements align with the regional transportation vision. FLATS staff coordinate regularly with PDRTA to understand anticipated improvements and service changes.

The vision for transit in the FLATS area is for it to become a preferred and viable mode of transportation. The guiding principles described below represent best practices for achieving this vision. The principles promote a system that supports regional land use, improves mobility, and benefits the environment. The findings and recommendations that follow are based on the need to balance the issues identified for other elements presented in the *FLATS 2045 LRTP* and to support these guiding principles.

Land Use & Transportation Integration
The transit system should support the local and regional land use vision.

Making transit an option for both captive and choice ridership will hinge on land uses, as described above, that make traveling by transit a viable alternative to personal automobile use. Well-designed and properly implemented transit can be central to developing or redeveloping activity centers and can target growth to specific corridors.

Mobility & Accessibility
Mobility should be provided for both choice and captive riders.

Mobility improvements should provide access to more locations, reduce travel times, add more frequent and reliable service, and incorporate different types of service (such as radial routes, circulator routes, demand-

response, rail, etc.). Mobility should be measured by improved transit service that enhances the quality of life for both captive and choice riders.

Culture & Environment

Transit improvements should promote improvement in air quality while minimizing impacts to social, cultural, and natural resources.

Transit ridership can reduce the use of private automobiles, which in turn can lower congestion, improve air pollution, and reduce energy consumption. To maximize the functionality of transit and to reduce negative consequences, transit service provided in a particular area should be in line with the intensity and type of surrounding land use.

System Preservation

Investments in the transit system should be evaluated, planned, and implemented as part of a long-term goal to promote a balanced and fiscally sustainable network that meets the region's growing travel needs.

Transit service is an important link in a multimodal transportation system that allows the region's travel demand to become more balanced across the travel modes, reducing the need for expensive roadway capacity projects. Passenger amenities, such as bus shelters, bus pull-offs, lighting, bicycle racks, and sidewalks should be planned in a way that supports multimodal corridors and encourages active travel. Additionally, the upkeep of the transit, in this case buses, is crucial to preserving the overall system.

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Introduction

Freight transportation is the movement of commodities and goods across a variety of modes including truck, rail, air, marine, and pipeline. The movement of commodities and goods are often thought of as secondary to the movement of people; however, freight transportation and the ability to move goods efficiently directly impacts the economic productivity of the region.

Chapter 5 of the *FLATS 2045 LRTP* outlines the existing conditions and considerations to enhance the safe and efficient movement of goods and commodities. The impact of freight and aviation are contributors to the local economy and the decisions made locally affect both the region and the state. As the region grows, the transportation system will need to balance the movement of people and goods with financial and environmental constraints.

Planning Considerations

FAST Act Freight Planning Goals

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.

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. The Statewide Freight Plan was reviewed for this section of the *FLATS 2045 LRTP*, and recommendations incorporated as appropriate.

Relevance to the Region

Freight has played a critical role throughout the history of the region. In the mid-1800s, the introduction of railroad made the Florence area an economic center for freight and aviation. The greater Pee Dee region has also capitalized on the trends.

Both state and federal planning priorities continue to reinforce the importance of aviation and freight planning at the regional scale to ensure the safe and efficient movement of goods and commodities through a variety of modes. The *FLATS 2045 LRTP* reflects these local, state, and federal priorities through the roadway recommendations and plan goals. An overarching goal of the LRTP is to promote economic growth and long-term viability for Florence and the surrounding area.

Freight Modal Profiles

The Federal Highway Administration (FHWA) maintains a dataset that tracks freight movement between states and metropolitan areas by all modes of transportation. The Freight Analysis Framework or FAF, organizes the state of South Carolina into three distinct FAF zones: Charleston, Greenville, and the Remainder of South Carolina. The FAF zones can be seen in Figure 17. The FLATS area is encompassed in the Rest of South Carolina zone. While the FLATS area is only a small portion of the Rest of South Carolina, the trends associated with freight can provide insight. In 2021, the most recent version of the Freight Analysis Framework data was released. The base year for FAF Version 5 is 2017 with modal and commodity projections estimated to horizon year 2050.

Summary of FAF

Historically, the freight movement through the FLATS region has predominantly been conducted by truck. This aligns with national trends for the movement of freight. Figure 18 shows the mode split by value of goods transported in 2017. Around $112 billion worth of goods were transported to, from, and within the Rest of South Carolina FAF Zone. By value, trucking made up 83% or $92 billion of all goods moved in this zone. The category “multiple modes & mail” includes shipments made by intermodal transport or multiple modes (i.e. from ship to truck) and by parcel delivery services like the U.S. Postal Service. This category comprised of 10% of the value of all goods moved and is the second most common mode of freight in the Rest of South Carolina. The “other” category refers to modes like flyway aircraft or shipments which a mode cannot be determined for.

Figure 17: Freight Analysis Framework Zones

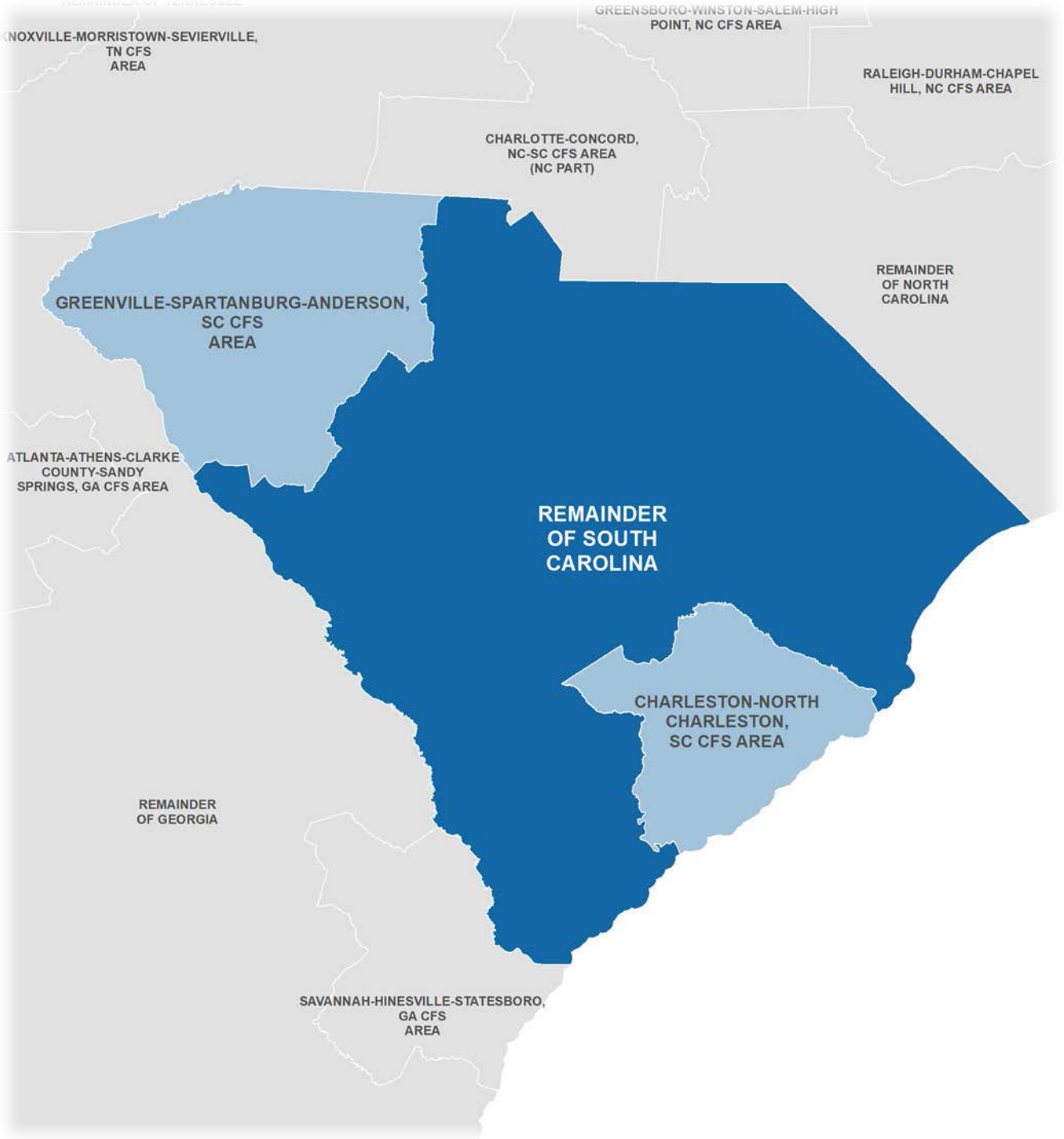


Figure 18: Freight Shipments by Mode and Value in 2017 (the Rest of South Carolina FAF Zone)

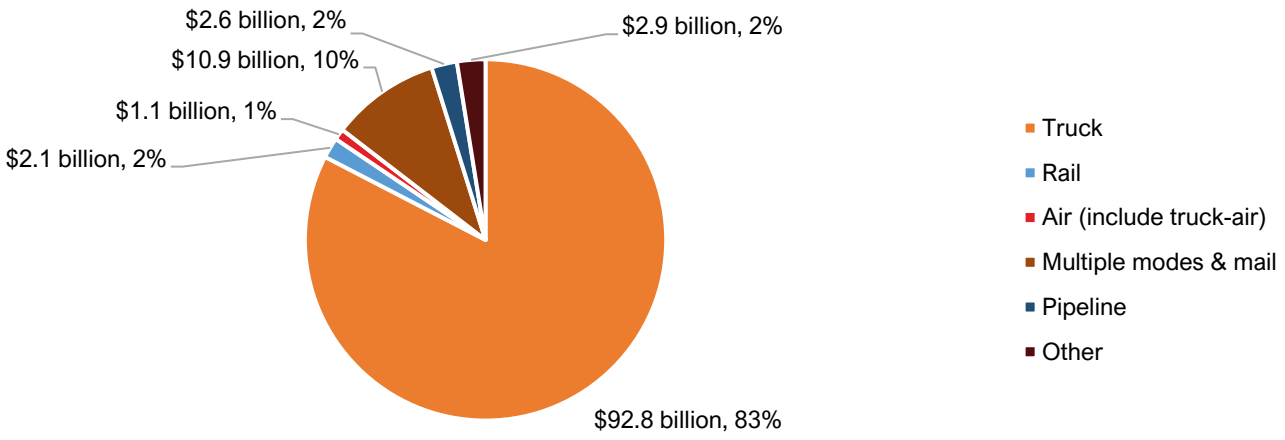


Figure 19 illustrates the mode split by weight of goods transported in the Rest of South Carolina. In 2017, approximately 134 million tons of goods were transported to, from, and within the FAF zone. Trucking is still the predominate mode of transportation when considering the good transported by weight. 84% of all tonnage is transported by truck in the Rest of South Carolina. Behind trucking, pipeline is the second most common mode of transportation making up 11% of the total tonnage. A pipeline typically moves low-value and heavy commodities relatively long distances. While air cargo represents a small portion of freight moved by weight, it makes up the second highest value per ton across all modes. Nationally, air cargo shipments have been increasing. This is likely due to the increased demand from consumers to receive same-day deliveries and potentially a more general shift towards e-commerce. The FLATS region should continue to monitor the local, regional, and national trends to better position the community for new demands.

Figure 19: Freight Shipments by Mode and Weight in 2017 (the Rest of South Carolina FAF Zone)

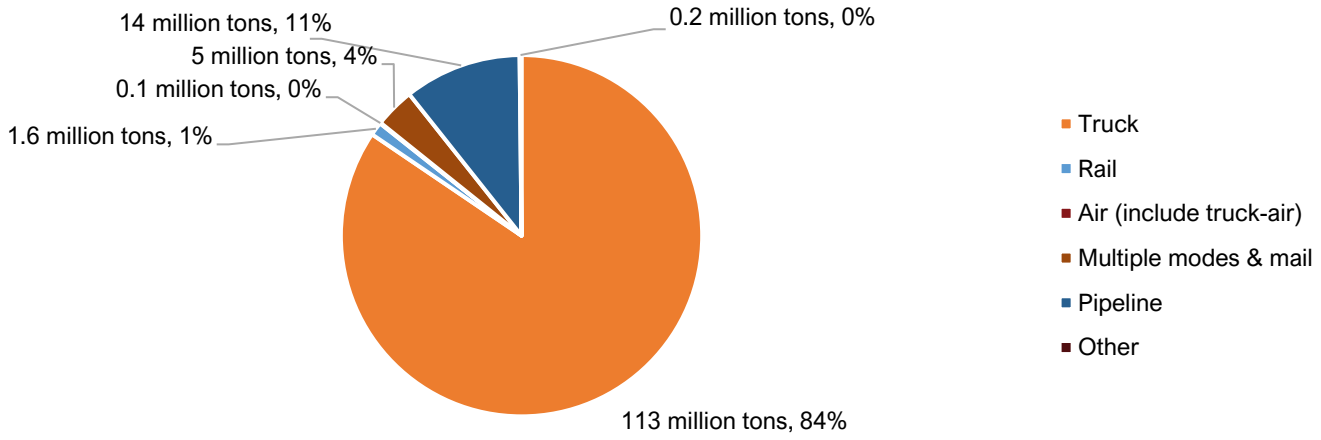


Table 11: 2017 Freight Mode by Value per Ton (the rest of South Carolina FAF Zone)

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 includes mode split projects till year 2045. The observations in 2017 are consistent with the projections for 2045 meaning that trucking is still the predominant mode of transportation for goods. In the Remainder of South Carolina, freight volumes are expected to increase significantly both in terms of value and weight. The following table shows the current value and weight percentage and the projected value and weight in 2045 by mode. The percentage change illustrates the difference between the base year and future year projections.

The total value of goods transported to, from, and within the Remainder of South Carolina by truck is anticipated to increase by 46%, but the weight is only expected to increase by 33%. This is a good indicator that future freight shipments throughout the FAF zone will be high-value and low-weight goods.

Table 12: Percent Change in Freight Shipments by Value and Weight between 2017 and 2045 (the Rest of South Carolina by FAF Zone)

Mode	Value ($ billion)			Weight (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%**

Highways

On highways, trucks are the most common mode for transporting goods and commodities. Due to their ability to transport a variety of goods over short and long distance, trucks spend the majority of travel time on highways.

In the 2020 Freight Plan Update, SCDOT established a Statewide Freight Network. The network consists of highways and roads projected to carry at least one million tons of freight by year 2040. By establishing the statewide network, SCDOT aims to provide and identify appropriate connectivity to high-freight area generators, key intermodal facilities, and the South Carolina Interstate Network. Figure 20 shows the highways in the FLATS area identified on the statewide network

The following roadways are located on the Statewide Freight Network: I-20, I-95, US-20, US-52, US-76, US-301, and SC-34. The network provides coverage throughout the majority of the study area. Currently, the infrastructure in place in the FLATS area is supportive of the movement of goods and commodities through truck.

Aviation

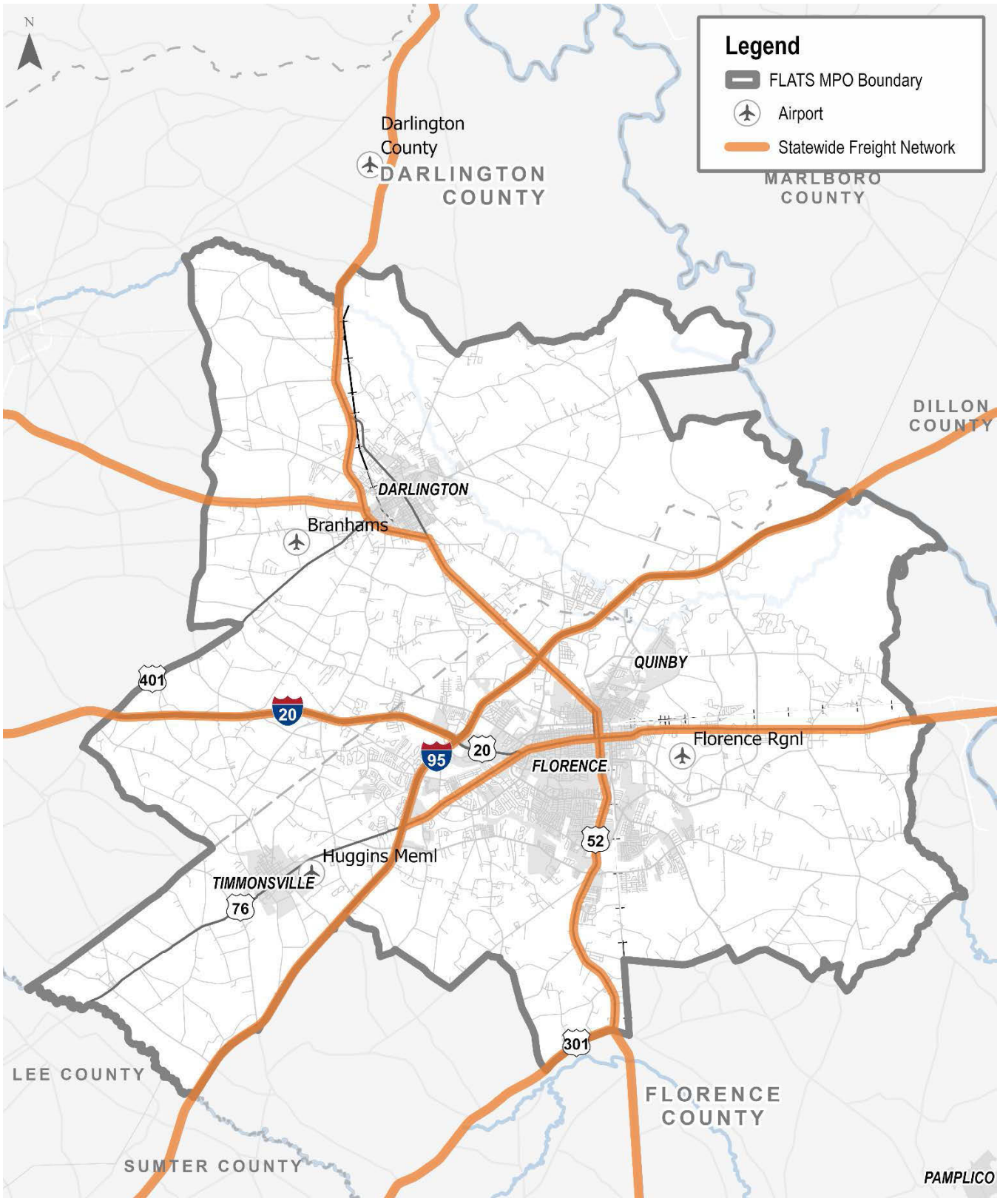
Aviation is another mode of freight that moves cargo and people. In South Carolina, aviation needs are fulfilled through a combination of small and large airports. There are seven airports in the FLATS area as shown in Figure 20. East of downtown Florence is the Florence Regional Airport. The Florence Regional Airport is served by one commercial airline that provides regional service to Charlotte-Douglass Internal Airport. Ultimately, aviation is not a significant mover of people or cargo in the Florence area.

Rail

The groundwork for economic industry in Florence was largely due to the interconnectedness of railroad throughout the area. The growth in the region was directly tied to freight mobility and connections via rail. Traditionally, rail is used to transport heavier commodities. While the highway network has enhanced efficiencies and reduced the dependence on rail for moving goods, the FLATS region continues to rely on its robust rail network to connect industry with consumers.

In the MPO area, CSX Transportation, the South Carolina Central Railroad, and Amtrak are all operational. Florence is home to a crucial CSX switching yard north of downtown. The South Carolina Central Railroad is a Class III shortline railroad. The line connects Florence with Bishopville through Darlington and Hartsville. The Amtrak passenger rail connects Florence with Greenville, Spartanburg, Myrtle Beach, and Columbia. The annual station ridership in fiscal year 2021 was 20,475.

Figure 20: Freight Infrastructure



Commodity Flows

The Freight Analysis Framework also estimates the value and weight of over 40 commodity types moving in and out of the area. Figure 21 shows the top commodities moved by weight within the Rest of South Carolina FAF zone. Figure 22 shows the top commodities moved by value within the same zone. By weight, the most prominent commodities moved are gravel, logs, and coal. The three aforementioned commodities make up over 40% of all commodities moved by weight in 2017. When looking at commodities moved by value, the three top commodities are mixed freight, plastic or rubber, and motorized vehicles. The top three commodities comprise of over 30% of all commodities by value.

Figure 21: Commodities Moved by Weight in 2017 (the Rest of South Carolina FAF Zone)

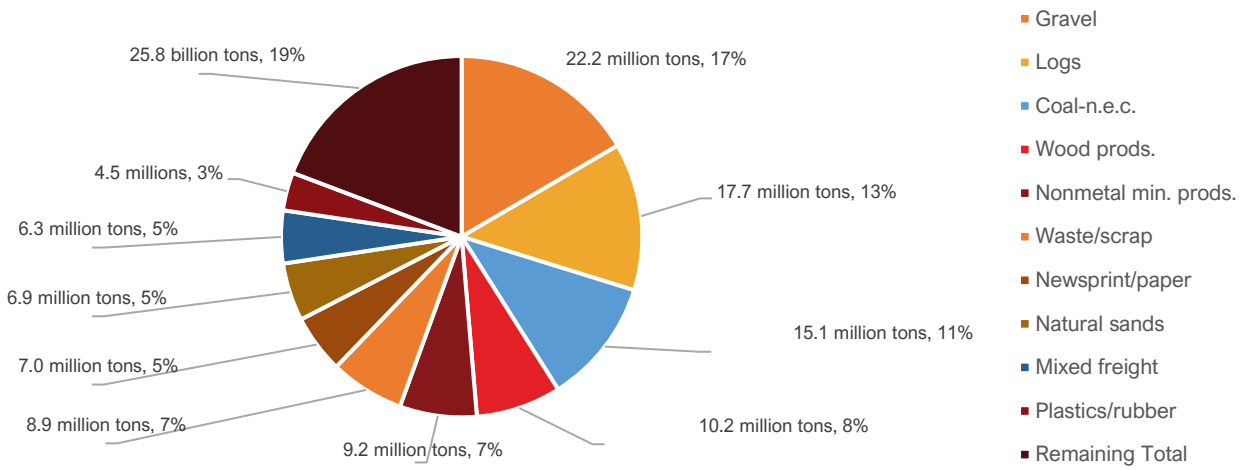


Figure 22: Commodities Moved by Value in 2017 (the Rest of South Carolina FAF Zone)

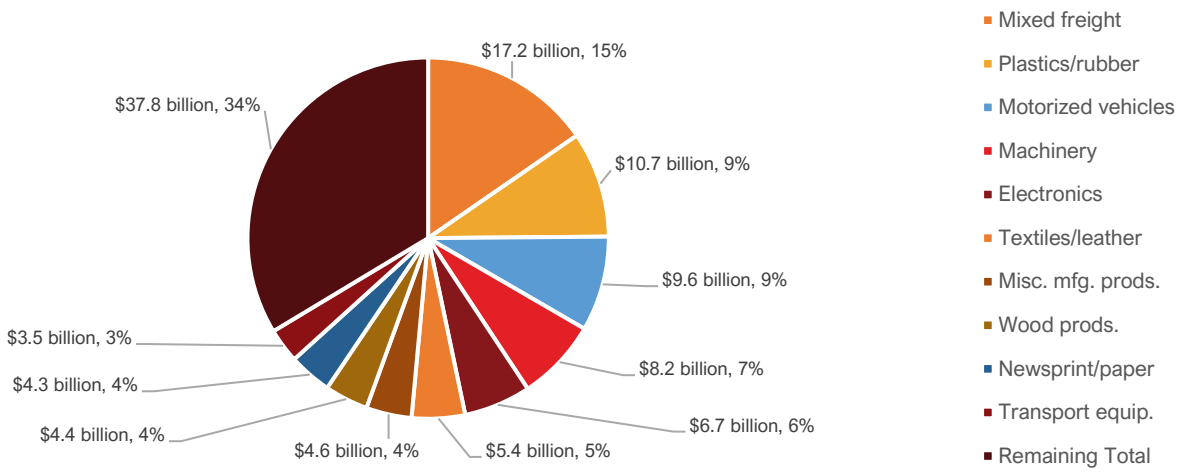


Figure 23 and Figure 24 show the projected estimates for the top ten commodities moved by weight and value in 2045. The movement of commodities is expected to grow and shift significantly over time. The weight and value of goods increases by 24% and 60% respectfully. The only commodity that is expected to decrease in terms of total tonnage is waste and scrap metal. By weight, the top ten commodities moved in 2017 match the projected top ten commodities in 2045.

Figure 23: Commodities Moved by Weight in 2045 (the Rest of South Carolina FAF Zone)

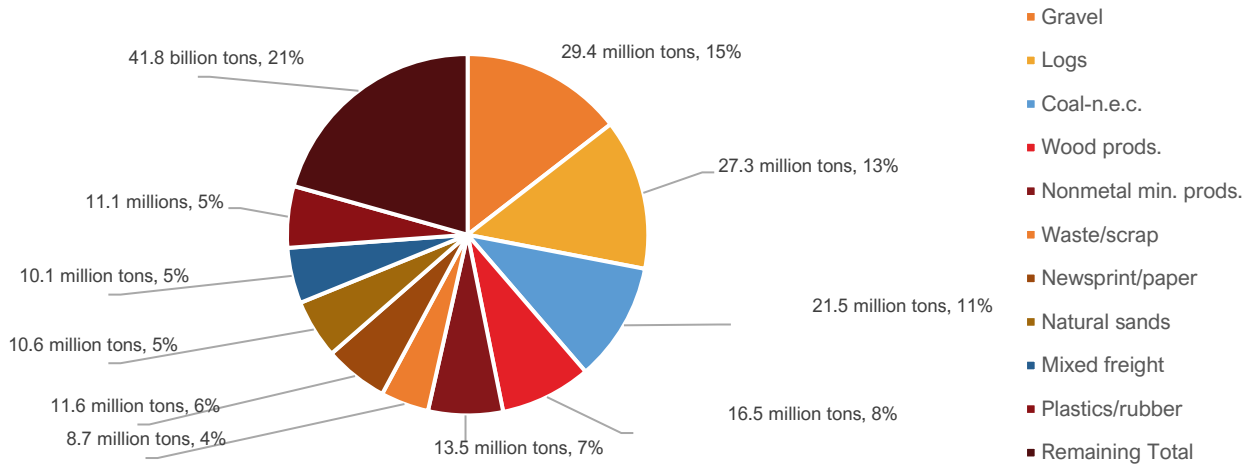


Figure 24: Commodities Moved by Value in 2045 (the Rest of South Carolina FAF Zone)

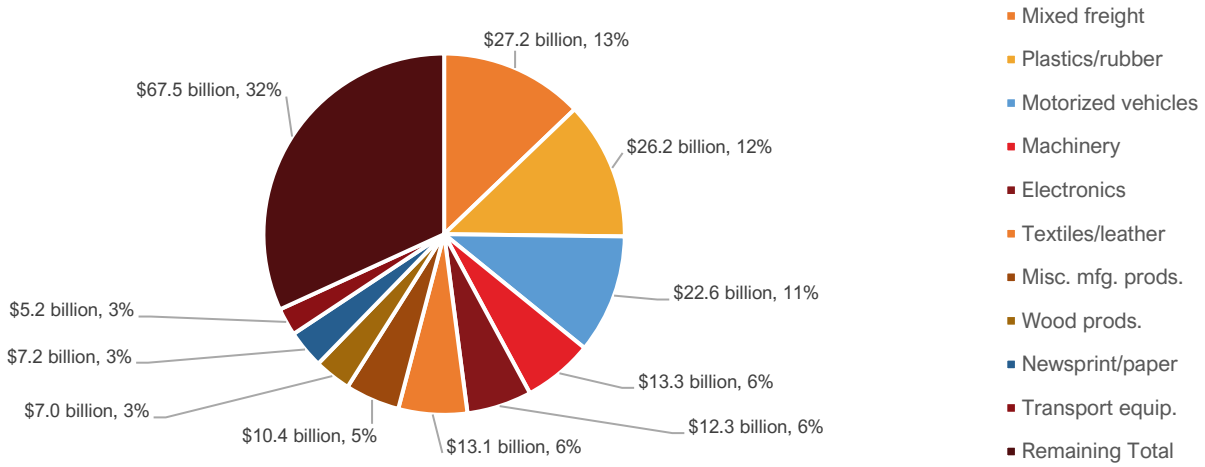


Table 13: Top 10 Commodities by Weight 2017 vs. 2045

	Within the given FAF Zone		Outbound from the given FAF Zone		Inbound to the given FAF Zone	
	Commodity	Tons	Commodity	Tons	Commodity	Tons
2017		**79,418.8**		**54,715.2**		**65,607.6**
	Gravel	19,703.1	Coal-n.e.c.	11,379.1	Coal	9,442.8
	Logs	17,674.1	Wood prods.	7,069.4	Coal-n.e.c.	8,322.4
	Waste/scrap	7,756.5	Newsprint/paper	6,358.4	Gravel	5,642.8
	Nonmetal min. prods.	6,154.3	Plastics/rubber	3,833.7	Basic chemicals	3,763.3
	Natural sands	4,914.0	Nonmetal min. prods.	3,100.0	Nonmetal min. prods.	3,670.4
	Mixed freight	4,406.2	Gravel	2,538.0	Cereal grains	3,063.0
	Coal-n.e.c.	3,698.5	Base metals	2,476.3	Mixed freight	2,774.4
	Wood prods.	3,152.6	Natural sands	2,038.0	Base metals	2,192.0
	Other ag prods.	3,010.8	Mixed freight	1,939.7	Plastics/rubber	2,150.1
	Cereal grains	1,903.4	Other foodstuffs	1,341.2	Other foodstuffs	2,064.2
2045		**110,982.3**		**91,602.4**		**95,556.6**
	Logs	27,298.7	Coal-n.e.c.	16,149.2	Coal-n.e.c.	12,152.3
	Gravel	25,918.8	Wood prods.	11,447.5	Gravel	11,098.5
	Nonmetal min. prods.	8,599.4	Newsprint/paper	10,556.4	Basic chemicals	10,035.3
	Waste/scrap	7,490.4	Plastics/rubber	9,421.2	Mixed freight	5,162.4
	Natural sands	7,382.5	Nonmetal min. prods.	4,946.9	Nonmetal min. prods.	5,009.9
	Mixed freight	7,091.3	Base metals	4,557.0	Live animals/fish	4,510.4
	Coal-n.e.c.	5,447.7	Gravel	3,507.6	Plastics/rubber	4,467.4
	Wood prods.	5,077.7	Natural sands	3,303.8	Wood prods.	3,134.5
	Other ag prods.	2,838.9	Mixed freight	3,019.2	Chemical prods.	3,000.6
	Cereal grains	1,938.6	Basic chemicals	2,686.2	Other foodstuffs	2,921.6

Table 14: Top 10 Commodities by Value 2017 vs. 2045

	Within the given FAF Zone		Outbound from the given FAF Zone		Inbound to the given FAF Zone	
	Commodity	Value	Commodity	Value	Commodity	Value
2017		**30,406.8**		**81,952.4**		**97,065.3**
	Mixed freight	9,246.4	Plastics/rubber	9,041.5	Mixed freight	12,101.9
	Motorized vehicles	1,745.4	Mixed freight	8,038.6	Machinery	8,491.5
	Machinery	1,711.8	Motorized vehicles	7,802.3	Textiles/leather	7,605.9
	Plastics/rubber	1,615.1	Machinery	6,532.0	Motorized vehicles	7,286.9
	Alcoholic beverages	1,403.1	Electronics	5,355.0	Pharmaceuticals	7,185.4
	Electronics	1,388.4	Textiles/leather	4,751.1	Plastics/rubber	5,970.4
	Coal-n.e.c.	1,204.3	Newsprint/paper	3,862.4	Electronics	5,895.9
	Wood prods.	1,142.9	Misc. mfg. prods.	3,702.4	Basic chemicals	3,929.3
	Waste/scrap	1,032.0	Transport equip.	3,444.3	Misc. mfg. prods.	3,405.5
	Furniture	936.0	Wood prods.	3,233.0	Transport equip.	3,240.9
2045		**51,454.0**		**160,497.5**		**185,861.0**
	Mixed freight	14,881.4	Plastics/rubber	22,398.4	Mixed freight	22,299.3
	Plastics/rubber	3,785.1	Motorized vehicles	19,379.0	Pharmaceuticals	20,240.8
	Motorized vehicles	3,179.6	Mixed freight	12,344.1	Machinery	15,626.3
	Machinery	2,837.7	Textiles/leather	11,589.0	Textiles/leather	14,634.1
	Electronics	2,793.7	Machinery	10,478.3	Electronics	12,492.3
	Misc. mfg. prods.	2,112.1	Electronics	9,515.2	Plastics/rubber	12,196.3
	Alcoholic beverages	1,887.0	Misc. mfg. prods.	8,236.1	Motorized vehicles	12,007.1
	Wood prods.	1,840.8	Basic chemicals	7,086.2	Basic chemicals	9,472.4
	Coal-n.e.c.	1,773.8	Newsprint/paper	6,475.2	Misc. mfg. prods.	8,618.7
	Furniture	1,738.7	Pharmaceuticals	5,410.1	Transport equip.	7,805.0

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Introduction

In accordance with state and federal requirements, the *FLATS 2045 LRTP* is required to be "financially constrained," or to show that all proposed projects can realistically be funded during the life of the plan. Due to limited funding for transportation projects, it is critical that measures be taken to ensure that appropriate projects and programs are prioritized and eventually implemented. To do this, it is essential to pair a reasonable expectation of future funding levels with a series of estimated project costs, and to have a consistent set of assumptions that address needs for all modes of travel. The financially constrained plan allows FLATS and supporting agencies to focus on near-term opportunities and to identify strategies that translate into plan implementation.

Transportation planning has a rich history of balancing a technical approach to transportation planning with the engagement of the public and elected leaders in the decision-making process. However, there is often a disconnect between public policy and these approaches. This can make it difficult to evaluate how well the transportation system addresses the community's needs and how well future transportation projects may improve the quality of life in the community. The *FLATS 2045 LRTP* serves as the region's long-range transportation strategy.

This chapter discusses the process used to determine financial constraint, including project prioritization and estimated revenues. The overall condition of the region is also explored through a discussion of performance measurement.

Financial Plan Development

The Fixing America's Surface Transportation Act (FAST Act), Public Law 114-94, was signed into law on December 4, 2015. The FAST Act funds transportation programs for fiscal years 2016 through 2020 and is the first long-term surface transportation authorization enacted in a decade that provides funding certainty for surface transportation. The FAST Act supports critical transportation projects to ease congestion and facilitate freight movement on major roads by establishing and funding new policies and programs. The FAST Act builds off the prior Federal legislation, Public Law 112-141, the Moving Ahead for Progress in the 21st Century Act (MAP-21) and continues to place an emphasis on performance evaluation and addressing national priorities as identified in Chapter 7.

Horizon Years

The financially constrained plan, required by the FAST Act and MAP-21 for regional long-range transportation plans, shows proposed investments that are realistic in the context of reasonably anticipated future revenues over the life of the plan as well as during a series of funding periods. Meeting this test is referred to as "financial constraint." The funding periods identified for the *FLATS 2045 LRTP* are as follows:

- 2022-2025
- 2026-2030
- 2031-2035
- 2036-2045

The 2022-2025 and a portion of the 2026-2030 funding period includes the committed projects and associated funding from the State Transportation Improvement Program (STIP). Projects and funding levels identified during that time period have already been identified as priority projects through previous planning efforts and have been discussed in previous chapters of this document. Table 15 includes the projects that are currently programmed in the FLATS TIP, and as such are considered in the 2022-2025 horizon band. As such, they are not re-evaluated as part of this plan. Projects in the STIP are reflected in the table below. The remaining funding periods help divide the remainder of the projected revenues and projects into time bands that are less than or equal to ten years in

length. Projects that cannot be funded within the 2045 financially constrained plan are considered part of the unfunded vision plan.

Table 15: 2021-2027 Transportation Improvement Program (TIP) Projects

Project	Phase	Total Cost
Holly Circle	Preliminary Engineering; Right-of-Way; Construction	$4,500,000
US 52 with S-13 Operational Improvements		$700,000
S-29 with S-167 Operational Improvements		$700,000
S-12 with S-92 Operational Improvements		$700,000

Future Funding

Roadway Capital Funding

Based on the current and anticipated population trends in the FLATS area, the annual Guideshare, recently renamed Regional Mobility Program, revenue has increased since the previous long range plan. Currently, the FLATS MPO receives $4 million in Regional Mobility Program revenue annually. Approximately $114 million in Regional Mobility Program revenue is anticipated to be available during the life of the plan. Once the baseline funding levels have been established, the next step is to determine which projects can reasonably expected to be funded. 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 3. As a result, the higher rated projects were considered for implementation prior to lower scoring projects.

Table 16 shows the forecasted capital roadway revenues and costs for the *FLATS 2045 LRTP*, which assumes the continuation of current state and federal funding. State and federal funding includes Regional Mobility Program 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 16: 2022-2045 Forecasted Capital Roadway Revenues and Costs

Period	Total Revenue	Total Cost	Balance
2022 - 2025	$16,000,000	$4,500,000	$11,500,000
2026 - 2030	$20,000,000	$29,113,000	$2,387,000
2031 - 2035	$24,000,000	$26,273,000	$114,000
2036 - 2045	$54,000,000	$53,348,000	$766,000
Total	**$114,000,000**	**$113,234,000**	**$766,000**

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

The following tables and figures group projects into funding periods. Figure 25 and Table 17 show the roadway capital projects that can reasonably expect to be funded with in the plan horizon of 2045. The financially constrained plan is not able to fully fund the identified roadway needs. Following the financial constraint, the identified needs that remain unfunded total over $750 million. The full unfunded vision list can be found in the Appendix.

Figure 25: Map of Financially Constrained Projects by Horizon Year

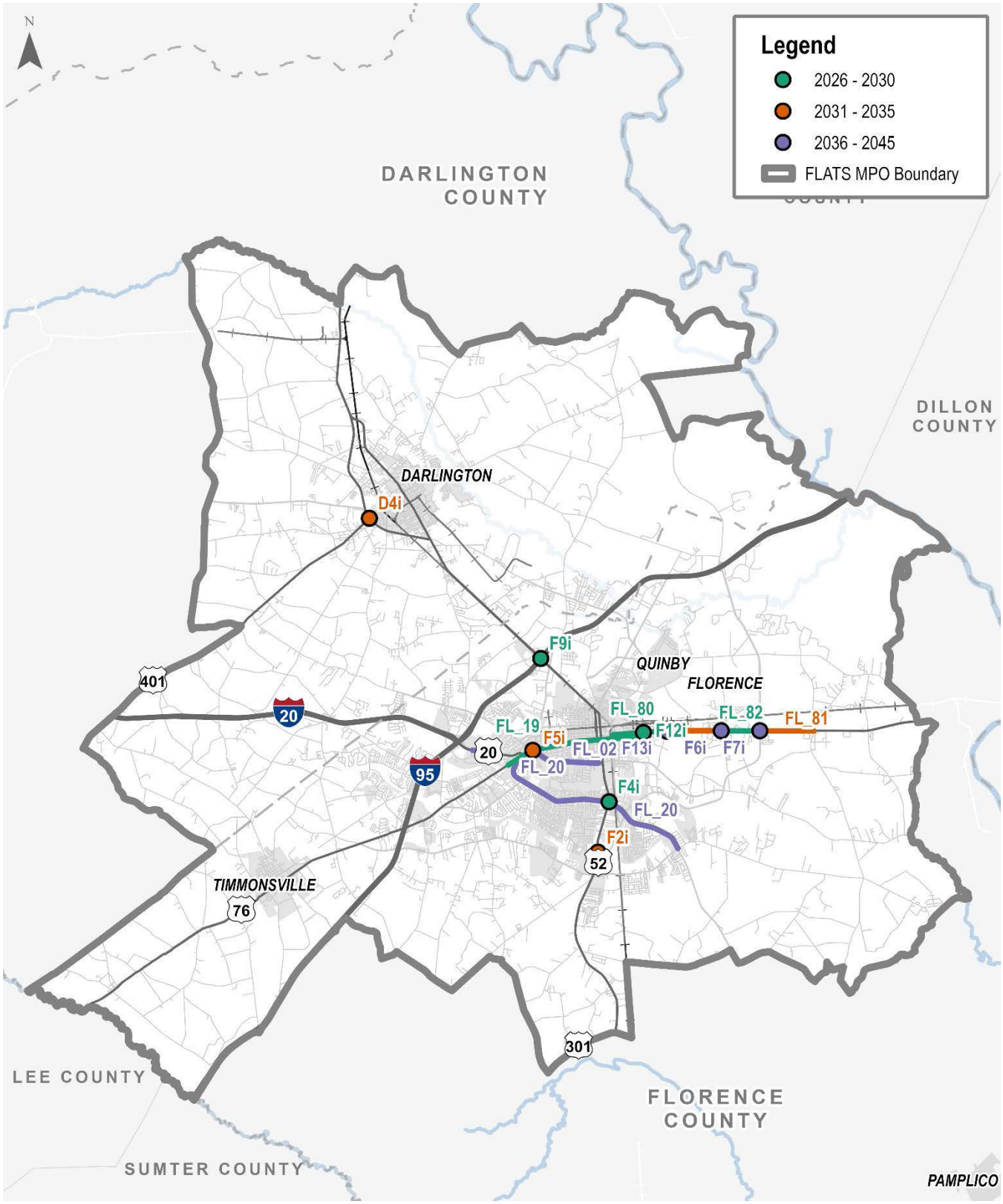


Table 17: List of Financially Constrained Projects by Horizon Year

	ID	Project Name	Project Extents	Project Cost (YOE)
2026-2030	F4i	S Irby St & Second Loop Rd/Pamplico Hwy		$4,179,000
	FL_19	Palmetto St (US 76)	Second Loop Rd to Freedom Blvd	$9,958,000
	FL_13	E. Cheves St	E. Palmetto St to S. Church St	$2,997,000
	F9i	W Lucas St & I-95 On/Off Ramps		$4,179,000
	FL_80	City Gateway District (US 76)	Church St to South McCall Blvd	$3,812,000
	F12i	E Palmetto St & Cheves St		$1,353,000
	FL_82	Emerging District (US 76)	S. McCurdy Rd to Freedom Blvd	$2,635,000
2031-2035	FL_81	University District (US 76)	Freedom Blvd to Francis Marion Rd	$4,823,000
	F5i	W Palmetto St & S Cashua Dr/Hoffmeyer Rd/Cherokee Rd		$17,303,000
	F2i	S Irby Street & Third Loop Road/Freedom Blvd		$1,246,000
	FL_83	Aviation District (US 76)	S. McCall Blvd to McCurdy St	$1,655,000
	D4i	Lamar Hwy & S Governor Williams Hwy		$1,246,000
2036-2045	FL_81	David H. McLeod Blvd	I-95 NB Ramp to Woody Jones Blvd	$2,981,000
	F6i	E Palmetto St & N Williamston Rd/S McCurdy Rd		$153,000
	FL_02	Cherokee Rd	W. Palmetto Street to S. Coit Street	$21,919,000
	F13i	E Palmetto St & S McCall Blvd		$333,000
	FL_7I	E Palmetto St & N Williston Rd/Freedom Blvd		$677,000
	FL_20	Second Loop Rd/Pamplico Hwy (SC 51)	W. Palmetto St (US 76) to Howe Springs Rd	$27,285,000

Roadway Maintenance Funding

Maintenance funding in the FLATS 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, such as the projects denoted “modernization” in Chapter 3.

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 2045 horizon year of the LRTP, the total maintenance funding available for the FLATS region is approximately $311 million. The maintenance costs generated annually are assumed to equal the revenue available. FLATS should continue to monitor maintenance funding trends. Finally, Florence County’s 2020 Pennies for Progress includes $78.5 million for resurfacing projects across the County.

Table 18: 2022-2045 Forecasted Roadway Maintenance Revenues

Period	Total Revenue*
2022 - 2025	$61,978,000
2026 - 2030	$32,885,806
2031 - 2035	$61,724,708
2036 - 2045	$154,508,699
Total	**$311,097,212**

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

Bicycle and Pedestrian

Table 17 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. FLATS 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 FLATS area are eligible to 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.

Table 19: 2022-2045 Forecasted Bicycle and Pedestrian 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 Pee Dee Regional Transportation Authority (PDRTA). 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 *FLATS 2045 LRTP*.

Table 20: 2022-2045 Forecasted Transit Capital and Operating Revenues

Period	Capital Revenue	Operating Revenue
2022 - 2025	$1,908,000	$933,333
2026 - 2030	$2,472,590	$1,209,513
2031 - 2035	$2,850,304	$1,394,278
2036 - 2045	$7,134,853	$3,490,145
Total	$14,365,746	$7,027,269

Alternative Funding Sources

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 Regional Mobility Program (formerly Guideshare) revenues alone will not sufficiently fund the identified transportation projects in *FLATS 2045 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 not currently implemented within the FLATS area but can be considered 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. SCDOT, on behalf of Florence and Darlington County, administers the program. The Florence CTC can distribute approximately $2.9 million annually to local and state projects. The Darlington CTC receives around $1.8 annually to fund state and local projects.

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 Florence County, 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 Florence County 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 or BUILD 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. FLATS 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 FLATS should consider pursuing:

- **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 FLATS MPO should continue to opportunistically pursue grant funding for transportation improvements.

Introduction

In 2010, the MAP-21 legislation transformed the transportation federal aid program by establishing new requirements for performance management and performance-based planning and programming, designed to ensure the most efficient investment of federal transportation funds. The FAST Act (2015) continued the performance management and performance-based planning and programming requirements of MAP-21 with minor changes. Pursuant to this legislation, state Departments of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs) must apply a transportation performance-based planning approach when carrying out their federally-required transportation planning and programming activities. Performance-based planning & programming or "performance management" is a strategic approach that uses system generated information to make investment and policy decisions to achieve goals set for the multimodal transportation system. Specifically, Performance-Based Planning & Programming (PBPP) refers to the application of performance management as standard practice in the planning and programming decision-making process. These requirements outline a systematic and objective-driven approach to transportation decision-making that supports national goals for the federal-aid highway and public transportation programs.[1]

The Transportation Performance Management approach focuses investment on the achievement of the following national performance areas:

- Safety Performance
- Pavement and Bridge Performance
- System and Freight Performance
- Transit Asset Management Performance
- Public Transportation Agency Safety Plans

On May 27, 2016, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) issued the Final Rule on Statewide and Nonmetropolitan Transportation Planning and Metropolitan Transportation Planning (The Planning Rule).[2] This regulation requires states and MPOs to adhere to the planning and transportation performance management provisions of MAP-21 and the FAST Act. The recent passage of the Bipartisan Infrastructure Law (BIL, known also as the Infrastructure Investment and Jobs Act, IIJA) on November 15, 2021 continues the commitment to performance-based planning set forth by MAP-21 and the FAST Act.

MPOs in South Carolina may establish their own performance measures and targets or adopt the statewide measures and targets set by South Carolina Department of Transportation (SCDOT).[3] In accordance with The Planning Rule, the selection of performance measures and targets must be coordinated and agreed upon between an MPO and SCDOT. As part of the metropolitan transportation planning process, the MPO also must publish a System Performance Report.[4]

The System Performance Report presents the baseline or current condition and performance of the transportation system with respect to these performance measures and targets, and future conditions as data is available.

Role of the FLATS System Performance Report

The FLATS System Performance Report is an important component of the Transportation Performance Management (TPM) approach set forth by FHWA and FTA. Maintaining a systematic and representative performance management approach allows the FLATS MPO to evaluate how well its transportation system addresses current needs and prepare itself to meet future opportunities and challenges. Since funding for

[1] 23 USC §150 (b)
[2] 23 CFR §450.314
[3] 23 CFR §450.306
[4] 23 CFR §450.324

transportation projects is limited, it is important that the right projects and programs are being implemented in order to address the current and projected needs of the region.

This initial system performance report establishes a baseline document which the MPO will update with each successive long range plan update. The system performance report and subsequent updates will evaluate the condition and performance of the transportation system with respect to the required performance targets: Highway Safety, Pavement and Bridges, and System Performance. In addition, the report will document the transit asset, safety, and reliability performance and targets that are reported by transit agencies to FTA on an annual basis.

While FHWA will determine whether SCDOT has met or made significant progress toward meeting performance targets, it will not directly assess MPO progress toward meeting targets. However, FHWA and FTA will review MPO performance as part of ongoing transportation planning reviews, including certification reviews and the Federal Planning Finding associated with the approval of the six-year Statewide Transportation Improvement Program (STIP). If an MPO does not meet or achieve its established targets, the MPO is encouraged to develop a statement that describes how the MPO will work with the State and other partners to meet targets during the next performance period. Each performance area in this report includes a section called "Strategies to Maintain and Improve System Performance."

Highway Safety | PM 1

In March of 2016, the Highway Safety Improvement Program (HSIP) and the Safety Performance Management Measures Rule (Safety PM Rule) were finalized and published in the Federal Register. The Safety Performance Measures Final Rule supports the HSIP by requiring MPOs to set targets for safety-related performance measures and report progress to state DOTs.

The Safety Performance Management Final Rule establishes five performance measures monitored and reported for all types of public roadways:[5]

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled (VMT)
- Number of serious injuries
- Rate of serious injuries per 100 million vehicle miles traveled (VMT)
- Number of combined non-motorized fatalities and non-motorized serious injuries

Safety performance targets are provided annually by the States to FHWA as five-year rolling averages for each safety performance measure.

Safety Performance

MPOs can either choose to set performance targets or commit to help implement the state's targets by planning for and programming safety projects. Rather than setting its own safety targets, FLATS has chosen to support SCDOT's safety targets. The performance figures that FLATS has reported for the five safety measures reflect a five-year average from 2022 to 2026. The 2020-2024 five-year averages are included in this report for reference purposes.

The FLATS safety targets are shown in Table 21. The 2022-2026 targets were adopted on **December 9th, 2025** and are in effect until February 26, 2027. The FLATS MPO supports the state's safety performance targets through its planning and programming activities.

[5] 23 CFR Part 490, Subpart B

Table 21: FLATS MPO Highway Safety (PM1) Performance Targets

Performance Measure	FLATS Baseline 2020-2024 5-Year Average	SC Baseline 2020-2024 5-Year Average	South Carolina 2022-2026 Targets
Number of Fatalities	30.2	1089.0	1059.0
Fatality Rate*	1.72	1.86	1.87
Number of Serious Injuries	76.6	2650.4	2549.0
Serious Injury Rate*	4.35	4.52	4.50
Number of Non-Motorized Fatalities & Serious Injuries	17.6	467.2	467.9
Note: *Rate calculated annually per 100 million vehicle miles traveled (VMT)			

Strategies to Maintain and Improve Safety Performance

- Identify the region's high-crash locations and the crash factors involved at those locations
- Prioritize safety as part of intersection improvements for all mode users.
- Implement bicycle and pedestrian projects that provide a greater degree of separation
- Continue to coordinate with SCDOT as part of major arterial improvements
- Prioritize the modernization of rural roads with limited to no shoulder and narrow lanes

Relevant Recommendations

As part of the recommendation development process, SCDOT crash data was used to identify the high-crash locations in the study area. In accordance with Act 114 and Planning Directive 15 (PD-15), the prioritization process considered public safety based on crash rates and locations. This data-driven prioritization process demonstrates that projects considered to be high-priority are directly responsive to both state and federal goals. The following list illustrates a few examples of projects that are responsive to high-crash locations:

- FL_19: Palmetto St (US 76) from Second Loop Road to Freedom Blvd | Access Management
- FL_12: David H. McLeod Blvd from I-95 NB Ramp to Woody Jones Rd | Corridor Improvements
- F9i: W. Lucas St and I-95 On/Off Ramps | Intersection Improvements

Pavement and Bridge Conditions | PM2

Effective May 20, 2017, the FHWA published a final rule establishing performance measures for state DOTs to use in managing pavement and bridge performance on the National Highway System (NHS). State DOT targets are set based on asset management analyses and reflect investment strategies that work toward achieving a state of good repair over the life cycle of facilities. State DOTs may establish additional measures and targets that reflect asset management objectives.

The Final Rule establishes the following Pavement Performance Measures: [6]

- Percent of Interstate pavements in Good condition
- Percent of Interstate pavements in Poor condition
- Percent of non-Interstate NHS pavements in Good condition
- Percent of non-Interstate NHS pavements in Poor condition

The Final Rule also establishes the following Bridge Performance Measures: [7]

- Percent of NHS bridges by deck area classified as in Good condition
- Percent of NHS bridges by deck area classified as in Poor condition

Pavement and bridge condition performance is assessed and reported over a four-year performance period. The PM2 rule requires states to establish two-year and four-year performance targets for each PM2 measure. Current two-year targets represent desired pavement and bridge condition at the end of calendar year 2023, while the current four-year targets represent desired condition at the end of calendar year 2025.

State DOT requirements for setting pavement and bridge condition targets are as follows:

- Percent of Interstate pavements in good and poor condition: Four-year targets required
- Percent of non-Interstate NHS pavements in good and poor condition: Two-year and four-year targets required
- Percent of NHS bridges by deck area in good and poor condition: Two-year and four-year targets required

MPOs may either support the state DOT's four-year targets or establish their own targets within 180 days of the DOT's establishment of its targets.[8]

Pavement and Bridge Performance

Rather than setting its own pavement and bridge performance targets, the FLATS MPO has chosen to support SCDOT's pavement and bridge targets and will continue to coordinate with SCDOT in the development of pavement and bridge targets. While these targets are only directly applicable to the NHS network, the FLATS MPO emphasizes these performance areas for all roadways within its jurisdiction.

The SCDOT PM2 – Pavement and Bridge Condition Performance Targets were adopted by the FLATS Policy Committee on **December 9th, 2025**. The FLATS MPO Pavement and Bridge Condition Performance Targets are shown in Table 22.

[6] 23 CFR Part 490, Subpart C
[7] 23 CFR Part 490, Subpart D
[8] 23 CFR Part 490

Table 22: FLATS MPO Pavement and Bridge Condition (PM2) Performance Targets

NHS Classification	Federal Bridge/Pavements Performance Metrics	Baseline 2021	2023 2-YR Target	Actual 2023	2025 4-YR Target
INTERSTATE	% of Pavements in **Good** Condition	75.8%	77%	**70.7%**	78%
	% of Pavements in ***Poor*** Condition	*0.2%*	*2.5%*	***0.6%***	*2.5%*
NON-INTERSTATE NHS	% of Pavements in **Good** Condition	38.8%	36%	**38.6%**	38%
	% of Pavements in ***Poor*** Condition	*1.6%*	*10%*	***1.9%***	*10%*
NHS BRIDGES	% of Deck Area in **Good** Condition	38.5%	35%	**33.6%**	34%
	% of Deck Area in ***Poor*** Condition	*4.3%*	*6%*	***4.4%***	*6%*

Strategies to Maintain and Improve Safety Performance

- Implement a data-driven prioritization process and direct funding based on pavement need
- Continue to coordinate with SCDOT to ensure bridge maintenance is completed on a regular and needed basis

Relevant Recommendations

As part of the prioritization process, pavement quality index (PQI) and bridge condition data were used to evaluate corridor and widening projects in addition to intersection projects. The data-drive process ensures that projects considered to be high-priority projects address state and federal goals. The following list identifies a few examples of projects on the NHS network that will likely incorporate enhancements to the existing pavement conditions and/or bridges:

- FL_12: David H. McLeod Blvd from I-95 NB Ramp to Woody Jones Rd | Corridor Improvements
- FL_13: E Cheeves St from Palmetto St to S. Church St | Access Management

System Performance | PM 3

Effective May 20, 2017, FHWA published a final rule establishing measures that report on the performance of the Interstate and non-Interstate NHS to carry out the National Highway Performance Program (NHPP)[9], and freight movement on the Interstate system to carry out the National Highway Freight Program (NHFP).[10]

The Final Rule establishes the following system performance measures:

- Percent of reliable person-miles traveled on the Interstate
- Percent of reliable person-miles traveled on the non-Interstate NHS
- Percentage of Interstate system mileage providing for reliable truck travel time – Truck Travel Time Reliability Index

Performance for the PM3 measures is reported over a four-year performance period. The PM3 rule requires states to establish two-year and four-year performance targets for each PM3 measure. The current two-year targets represent expected performance at the end of calendar year 2023, while the current four-year targets represent expected performance at the end of calendar year 2025.

State DOT requirements for setting system performance targets are as follows:

- Percent of person-miles on the Interstate system that are reliable: Two-year and four-year targets required
- Percent of person-miles on the non-Interstate NHS that are reliable: Four-year targets required
- Truck Travel Time Reliability (TTTR): Two-year and four-year targets required

MPOs are required to either support the state four-year targets or establish their own targets within 180 days of the state DOT's target establishment.[11] Regardless of which targets the MPO chooses to adopt, the targets must be reevaluated and readopted every four years and reflected within the Long Range Transportation Plan.

System Performance

Rather than setting its own system performance targets, the FLATS MPO has chosen to support the SCDOT's system performance targets and will continue to coordinate with SCDOT in the development of system performance targets. Table 23 presents SCDOT's statewide system performance targets. The FLATS Policy Committee adopted SCDOT's performance targets on **December 9th, 2025**.

Table 23: FLATS MPO Highway Performance (PM3) Targets

NHS Classification	Statewide/Freight Mobility Performance Metrics	Baseline 2021	2-Year Target 2023	Actual 2023	4-Year Target 2025
Interstate	% of Person-Miles Traveled that are Reliable	95.9%	89.1%	**94.4%**	89.1%
Non-Interstate NHS	% of Person-Miles Traveled that are Reliable	95%	85%	**93.1%**	85%
Interstate (Freight)	Truck Travel Time Reliability (TTTR) Index	1.31	1.45	**1.37**	1.45

[9] 23 CFR Part 490, Subpart E
[10] 23 CFR Part 490, Subpart F
[11] 23 CFR Part 490

Strategies to Maintain and Improve System Performance

- Continue to monitor travel time reliability as the region continues to grow
- Work with major regional employers to develop travel demand management strategies and alternative commute alternatives

Relevant Recommendations

In the study area, the movement of freight is a crucial component of the region's economy. As part of the prioritization process, SCDOT data was used to prioritize corridors that were on state freight network or were supportive of the freight network. In addition to prioritizing freight supportive corridors, highly congested corridors were also considered to be high-priority recommendations. The following project recommendations are supportive of PM3:

- F2i: S Irby Street & Third Loop Road/Freedom Blvd | Intersection Improvements
- F5i: W Palmetto St & S Cashua Dr/Hoffmeyer Rd/Cherokee Rd | Intersection Improvements
- FL_84: N. Williston Road from I-95 to Alex Lee Boulevard | Corridor Improvements
    - While this project is not on a dedicated Freight Route, it serves the highest volume of trucks among all project recommendations.

Transit Asset Management

This section presents the Transit Asset Management (TAM) plan performance targets adopted by the Pee Dee Regional Transit Authority (PDRTA)—which serves the FLATS MPO region—and the State of Good Repair (SGR) performance of their capital assets. The final TAM rule, which became effective October 1, 2016, defines transit asset management as "a strategic and systematic process of operating, maintaining, and improving public transportation capital assets effectively through the life cycle of such assets."[12] The PDRTA has adopted the SCDOT's TAM plan performance targets. The FLATS MPO has coordinated with PDRTA on transit asset management and will continue to do so as an integral part of the MPO's continuing, comprehensive, and cooperative (3-C) planning process.

Federal regulations require that metropolitan transportation plans include Transit Safety and Transit Asset Management performance targets for urbanized areas.[13] The FLATS MPO will include the most recent SCDOT TAM plan performance targets that have been adopted by PDRTA in this long range transportation plan. The FLATS MPO will support these targets through its planning and programming activities.

Transit agencies are required to set fiscal year performance targets and report SGR performance for each asset category to the FTA on an annual basis.[14] The FTA has established performance measures to approximate the SGR for each category of capital assets. Calculating performance measures helps transit agencies to quantify the condition of their assets, which facilitates setting targets that support local funding prioritization.

PDRTA's most recently adopted Transit Asset Management Plan Performance Targets were received on a memo dated January 31st, 2024 from The SCDOT Office of Intermodal and Freight Programs. These updated and adopted TAM Plan Performance Targets for the FLATS MPO are shown in Table 24. They were approved by the FLATS Policy Committee on June 14th, 2024.

[12] https://www.govinfo.gov/content/pkg/FR-2016-07-26/pdf/2016-16883.pdf
[13] 23 CFR Part 490
[14] https://www.transit.dot.gov/PerformanceManagement

Table 24: FLATS MPO Transit Asset Management Plan – Performance Targets

Revenue Vehicles	2023	2024	2025	2026	2027
Age - % of revenue vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark					
Bus	15%	15%	15%	15%	15%
Cutaway Bus	30%	30%	30%	30%	30%
Van	20%	20%	20%	20%	20%
Equipment	**2023**	**2024**	**2025**	**2026**	**2027**
Age - % of vehicles within a particular asset class that have met or exceeded their Useful Life Benchmark					
Non-Revenue/Service Auto	30%	30%	30%	30%	30%

Strategies to Maintain and Improve Performance Measures

- Continue to monitor transit asset condition as the transit systems continue to grow and age
- Implement a data-driven prioritization process and direct funding based on transit asset condition need

Transit Safety and Reliability

This section presents the transit safety targets adopted by the FLATS MPO Policy Committee. The final transit safety rule, which became effective July 19, 2018, requires public transportation systems that receive federal funds under FTA's Urbanized Area Formula Grants to develop safety plans that include the processes and procedures to implement Safety Management Systems, including transit safety performance targets for:

- Fatalities
- Injuries
- Safety Events
- System Reliability

Transit agencies are required to set fiscal year performance targets and report performance for each category to the FTA on a triennial basis.[15] The FTA has established performance measures to improve public transportation safety by guiding transit agencies to more effectively and proactively manage safety risks in their systems. Calculating performance helps transit agencies to quantify their safety risks and set targets that support local funding prioritization. As with the previous section, the FLATS MPO will include the specific targets adopted by the PDRTA in this long range transportation plan. The FLATS MPO will support these targets through its planning and programming activities. The FY26 Transit Safety Targets for the FLATS MPO are shown in Table 25 and were adopted by the FLATS Policy Committee on **December 9th, 2025**.

Table 25: FLATS MPO Transit Safety Targets for FY2026

Mode of Transit Service	Vehicle Revenue Miles (VRM)	Fatalities Reported	Fatalities (per 100K VRM)	Injuries (Total)	Injuries (per 100K VRM)	Safety Events (Total)	Safety Events (per 100K VRM)	System Reliability (Total mech failures)	System Reliability (Per 100K VRM)
Fixed Route	1,203,578	**0**	0	**12**	9.97	**5**	0.42	**95**	12,669
Demand Response	210,394	**0**	0	**2**	0.95	**1.5**	0.71	**12**	24,150

VRM=Vehicle Revenue Miles

Strategies to Maintain and Improve Performance Measures

- Identify the region's specific transit safety and reliability incidents and the factors involved in each incident
- Prioritize safety and reliability as part of each agency's transit operating procedures and decisions
- Complete a Transit Development Plan with a focus on system reliability and performance

[15] https://www.transit.dot.gov/PTASP-FAQs

Areas for Future Study

Throughout the planning process, the opportunity for future studies was identified. Where funding is available FLATS should consider partnering with partner agencies to undertake the efforts below:

- FLATS Regional Bicycle and Pedestrian Plan | A key outcome of the SCDOT Bicycle and Pedestrian Safety Action Plan is the creation of regional bicycle and pedestrian plans. FLATS staff should partner with SCDOT to develop a comprehensive regional plan. The current Bikeway Master Plan is outdated, and the FLATS region has changed substantially since then. This effort will allow FLATS staff to better advocate for bicycle and pedestrian improvements as a part of roadway projects, and truly implement complete streets for the residents of the Pee Dee region.
- **PDRTA Transit Development Plan** | Members of the public expressed a strong appetite for new and modified transit routes. FLATS and PDRTA could partner to further study needed service improvements or additions.
- **City of Florence and County of Florence Comprehensive Plan Integration** | Both the City and County are in the midst of updating their comprehensive plans. As the plans conclude, FLATS staff and their member jurisdictions should review the newly adopted comprehensive plans for consistency with the *FLATS 2045 LRTP* and make modifications as necessary.

Conclusion

The *FLATS 2045 LRTP* envisions a region that ensures equitable access to reliable transportation, provides a wide variety of travel options, and promotes a high quality of life throughout. This plan is a regional vision for mobility that supports economic development and social equity while complementing the natural and man-made qualities that make the Pee Dee region unique.

Included in *FLATS 2045 LRTP* are transportation strategies that consider the existing and future needs of residents, visitors, and employers. The creation of this financially-constrained plan ensures that the identified projects can reasonably be funded and implemented during the life of the LRTP and that the priorities expressed throughout the public involvement process will influence the region's transportation planning decisions.

But the *FLATS 2045 LRTP* is more than just a plan and a funding mechanism. With this document, the leaders and citizens of the Pee Dee region can set the stage for the region's future and how this region will accommodate its needs in the coming decades.

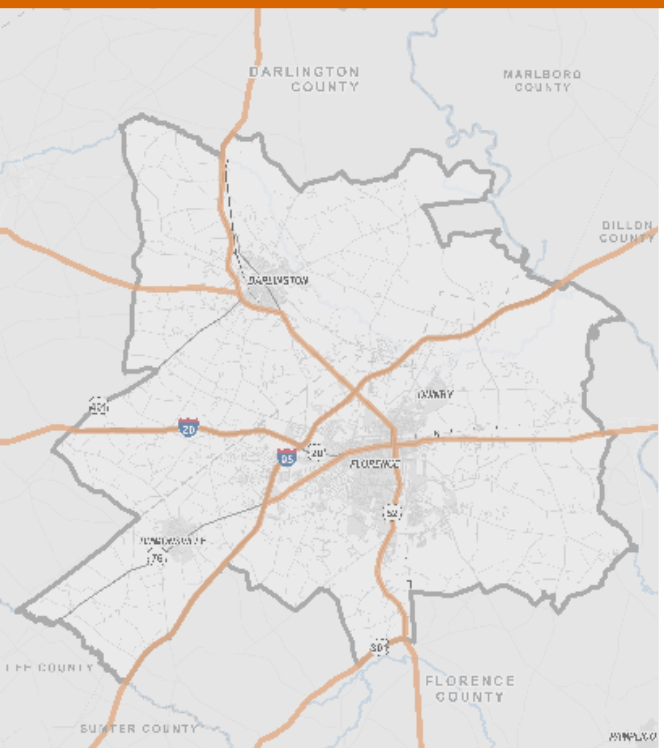
As the region moves forward and projects advance toward funding and implementation, FLATS will continue to work with SCDOT, FHWA, and FTA to determine how best to advance recommended projects and will continue to engage the public to adjust future planning efforts and project lists as necessary. Ultimately, continued collaboration between state, local agencies, and the general public will provide more opportunities to foster a safe and well-balanced multimodal transportation system that makes the Pee Dee region an attractive place to live.

Florence Area Transportation Study

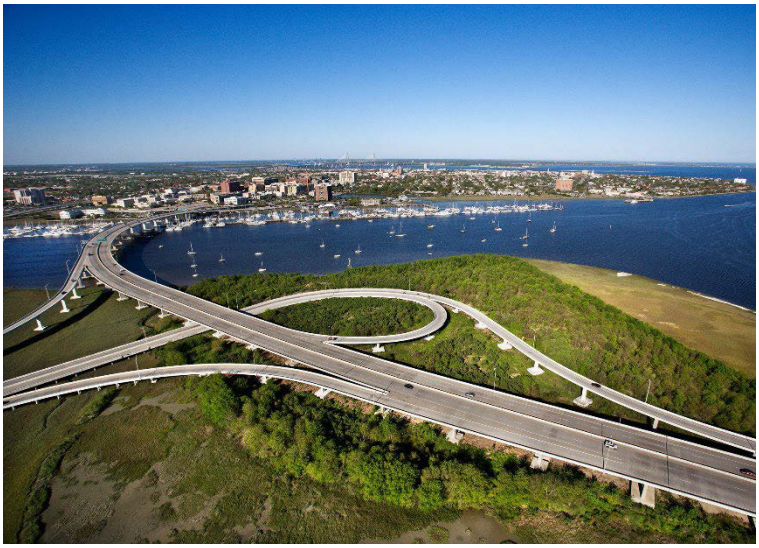
2045 Long Range Transportation Plan

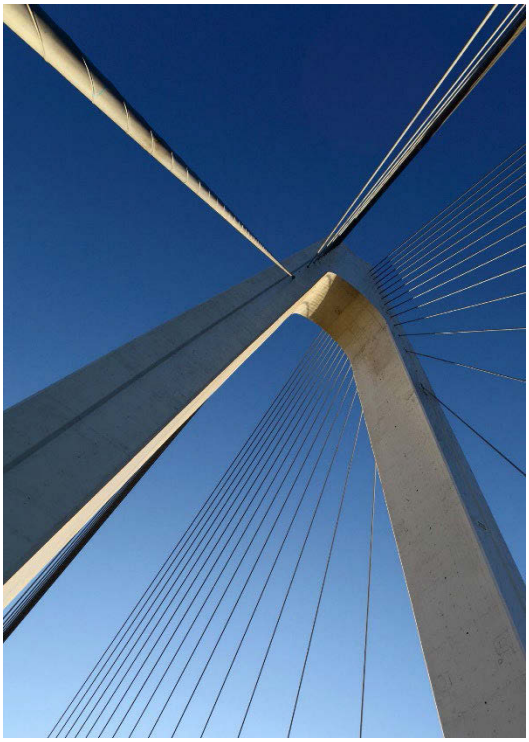
Appendix A: SCDOT System Performance Report

July 2022



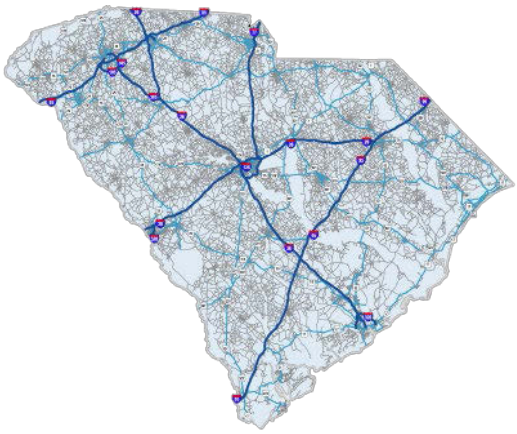
Florence Area Transportation Study
FLATS
Metropolitan Planning Organization

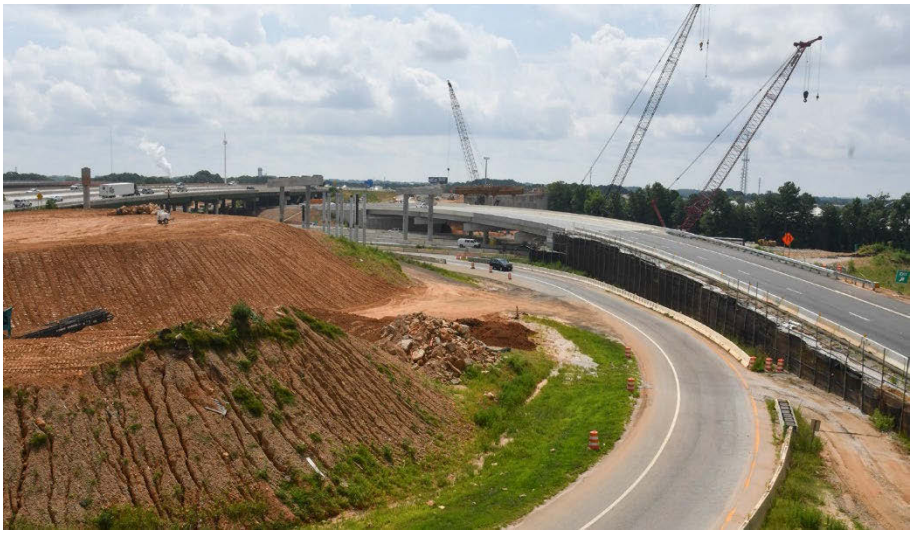




2024 STAMP System Performance Report

Date: November 2024
23 CFR 450.324 (f)(3-4)





SCDOT

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South Carolina Department of Transportation

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EXECUTIVE SUMMARY

Transportation Performance Management (TPM) requires agencies to use a coordinated, data-driven approach to make transportation investment decisions that support national goals established in federal surface transportation authorizations for the Nation's federal-aid highway and public transportation programs.

The Office of Planning, South Carolina Department of Transportation (SCDOT), South Carolina Department of Public Safety (SCDPS), 11 Metropolitan Planning Organizations (MPOs) and 10 Council of Government (COGs) have worked together to incorporate the Federal TPM requirements into planning and programming activities. SCDOT adopts and reports on targets for the Federal Highway Administration (FHWA) required performance measures. This report summarizes the progress of the mid-point (end of year 2023) of the second performance period of 2022-2025.

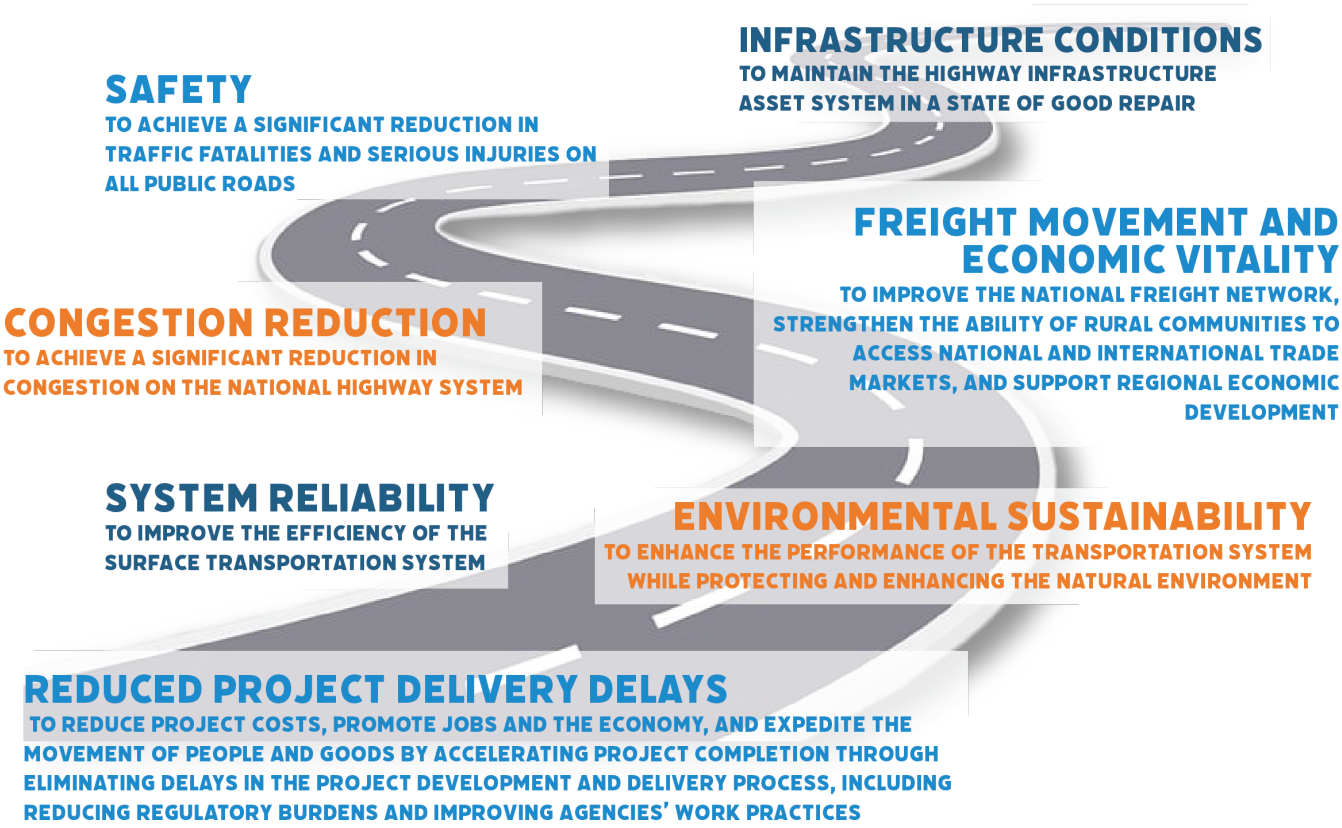
TPM Category	Performance Area	Performance Metric	Where the Metric Measured
PM1	Safety	Fatalities and Serious Injuries for motorized vehicles, bicyclist and pedestrians	Public roads
PM2	Infrastructure	Condition of pavement and bridges	National Highway System (NHS)
PM3	System Performance	Reliability of passenger travel	Interstate and Non-Interstate NHS System
PM3	System Performance	Reliability of truck travel	Interstate System
PM3	System Performance	Congestion and emissions	NHS in air quality non-attainment and maintenance areas

South Carolina set targets for the second performance period (2022-2025) based on planning investments and forecasted performance through the use of data driven metrics. A snapshot of progress towards those targets is shown in the table below. This document also includes the first performance period (2018-2021) for historical comparison in the sections that follow, along with safety measures, and regional measures for MPOs and COGs.

Performance Measure	*Baseline (2021)*	*2023 Target*	*2023 Actual*	*Progress from 2023 Target*	*2025 Target*
Interstate Pavement in Good Condition	75.8%	77.0%	70.7%	↓	78.0%
Interstate Pavement in Poor Condition	0.2%	2.5%	0.6%	↑	2.5%
Non-Interstate NHS Pavement in Good Condition	38.8%	36.0%	38.6%	↑	38.0%
Non-Interstate NHS Pavement in Poor Condition	1.6%	10.0%	1.9%	↑	10.0%
NHS Bridge Deck Area in Good Condition	38.5%	35.0%	33.6%	↓	34.0%
NHS Bridge Deck Area in Poor Condition	4.3%	6.0%	4.4%	↑	6.0%
Interstate Travel Time Reliability	95.9%	89.1%	94.4%	↑	89.1%
Non-Interstate NHS Travel Time Reliability	95.0%	85.0%	93.1%	↑	85.0%
Interstate Truck Travel Time Reliability	1.31	1.45	1.37	↑	1.45

PURPOSE OF REPORT

The United States Congress' Moving Ahead for Progress in the 21st Century (MAP-21), enacted in 2012, and the subsequent Fixing America's Surface Transportation Act (FAST Act), enacted in 2015, required state Department of Transportations (DOTs) to establish and use a performance based approach in planning and programming to provide in the transportation process and funding transportation investments. The performance based approach must be used to support the seven national goals established in MAP-21. The national goals are as follows:



The new federal surface transportation authorization, Bipartisan Infrastructure Law (BIL), was signed in November 2021, and provides funding through 2027. Performance management provisions associated with the new BIL, continue the previous transportation acts. To implement the performance management provisions, United States Department of Transportation (USDOT) established performance measures that transportation agencies are required to use across three broad areas of responsibility below:

SAFETY(PM1)
FATALITIES AND SERIOUS INJURY

INFRASTRUCTURE CONDITION (PM2)
NATIONAL HIGHWAY SYSTEM
BRIDGES AND PAVEMENTS

SYSTEM PERFORMANCE (PM3)
TRAFFIC CONGESTION, ON-ROAD MOBILE SOURCE EMISSIONS, AND FREIGHT MOVEMENT

In conjunction with the PM2 rule, FHWA also finalized a Transportation Asset Management Plan (TAMP) rule that requires states to develop and implement an asset management plan for National Highway System (NHS) roads and bridges within a state to improve and maintain those facilities. While the TAMP is not a performance measure rule, it does require states develop investment strategies that will lead to a program of projects that would make progress toward achieving desired performance levels for pavement and bridge condition. A link to SCDOT's Strategic 10-Year Asset Management Plan (STAMP) is below:
https://www.scdot.org/content/dam/scdot-legacy/performance/pdf/reports/STAMP.pdf

The focus of this *System Performance Report* is to highlight South Carolina's reporting and target setting approach, and performance within the current performance period of 2022-2025 for the measures listed below in Figure 1.

Figure 1. FHWA Required Performance Measures

Safety Measures	Bridge/Pavement Measures	System Performance Measures
•Number of Fatalities •Fatality rate (per 100 million VMT) •Number of Serious Injuries •Serious injury rate (per 100 million VMT) •Number of non-motorized fatalities and serious injuries	•% of pavements on the Interstate system in good condition •% of pavements on the Interstate system in poor condition •% of pavements on the non-Interstate NHS in good condition •% of pavements on the non-Interstate NHS in poor condition •NHS bridges in good condition by % of deck area •NHS bridges in poor condition by % of deck area	•% of person miles traveled on the Interstate system that are reliable •% of person miles traveled on the Non-INterstate NHS system that are reliable •Truck travel time reliability index on the INterstate system •Annual hours of peak-hour excessive delay per capital (RFATS) •Percent of non-single occupant vehicle travel (RFATS) •Total emissions reduction (CMAQ projects)

This *System Performance Report* presents the baseline, performance/condition measures, targets and the progress made towards achieving those targets within the current performance period (January 1, 2022 – December 31, 2025) and also inclusive of the historical measures from the previous performance period (January 1, 2018 - December 31, 2021). The specific code locations for these federal rules are available here:

- Bridge and Pavement Performance Measures detailing definitions, methodology, and target setting approach for six bridge and pavement measures (23 CFR 490.300 and 490.400)
- System Performance Measures detailing definitions, methodology, and target setting approach for reliability, freight, congestion, and emission measures (23 CFR 490.500, 490.600, 490.700, 490.800)
- Asset Management Plans detailing the requirements for states to develop and implement risk-based TAMPs for the NHS to improve or preserve asset condition (23 CFR Part 515)
- Statewide and Metropolitan Transportation Planning detailing the process states and MPOs must follow when developing transportation plans and programs, including performance management requirements (23 CFR Part 450)

For each performance period, states establish two-year and four-year targets for PM2 and PM3 measures (while MPOs, if they elect to set their own targets, are required to only establish 4-year targets). PM1 targets are set on an annual basis with coordination from South Carolina Department of Public Safety (SCDPS) and reported in federal Highway Safety Implementation Plan (HSIP) reports. PM1 measures are included in this report for all-inclusiveness.

States are required to regularly monitor performance for each measure and report that information to FHWA biennially through three reports including: Baseline Report, Mid-Performance Report and Full Performance Report. FHWA makes a significant progress determination every two-years for the PM2 and PM3 measures to assess whether a state has achieved or made significant progress towards those targets if the performance is better than baseline or the performance is equal to or better than the target.

SCDOT PERFORMANCE

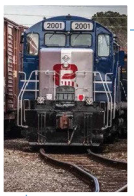
The commitment of SCDOT to the Governor, General Assembly, and citizens of South Carolina is to maintain the State Highway System in the highest state of good repair possible given the funding available. The Agency is responsible for planning, constructing, maintaining and operating the highway system in South Carolina, as well as the development of a statewide intermodal and freight program. To aid in our commitment, SCDOT uses asset and performance management principles that tie defined asset condition outcomes to specific levels of investment. In practical terms, this ensures that our pavement and bridge assets have the longest service life possible for the least practicable cost. This is extremely important in the state of South Carolina, in the most recent publishing of the 2023 Annual Report[1] we have:

- The 4th largest state highway maintained system in the United States
- Over 528 million tons of freight moving across SC annually,
- The 1st fastest growing population in the Nation,
- The deepest harbor (Charleston) on the Southeast coast,
- Over $29 billion generated from tourism, and
- A population of approximately 5.2 million people.

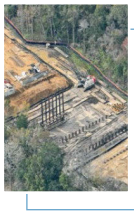
It is obvious that the highway system is vital to the increasing growth of South Carolina's economy. South Carolina's highway system interconnects ports with major cities and commercial hubs while promoting the efficient transfer of both goods and people within and across the state. South Carolina continues to attract new residents, tourists, and businesses. This growth has influenced SCDOT's ability to maintain and operate the transportation network. The agency has adopted transportation asset and performance management as a best management practice and fully embraced the concept for all of its programs. The agency has also aligned its major Multimodal Transportation Plan (MTP) goals in the Momentum 2050 Plan with the seven National Goals discussed in the above section.

MOMENTUM 2050
Moving South Carolina Forward

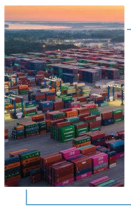
Continuing System Recovery



Support Freight Movement



Address Urban & Rural Mobility



Deepend Multimodal Partnerships

Performance measures are indicators of progress toward attaining a goal, objective or target (a desired level of future performance). This *System Performance Report* provides a snapshot of select measures that are used to inform decisions and provide feedback on the performance of SCDOT, our partners and South Carolina's transportation system. The sections that follow, detail performance measures, performance levels, and statewide targets for SCDOT.

[1] https://www.scdot.org/content/dam/scdot-legacy/performance/pdf/reports/2023%20SCDOT%20Annual%20Report%20-%20publishing.pdf

PM1 STATEWIDE SAFETY

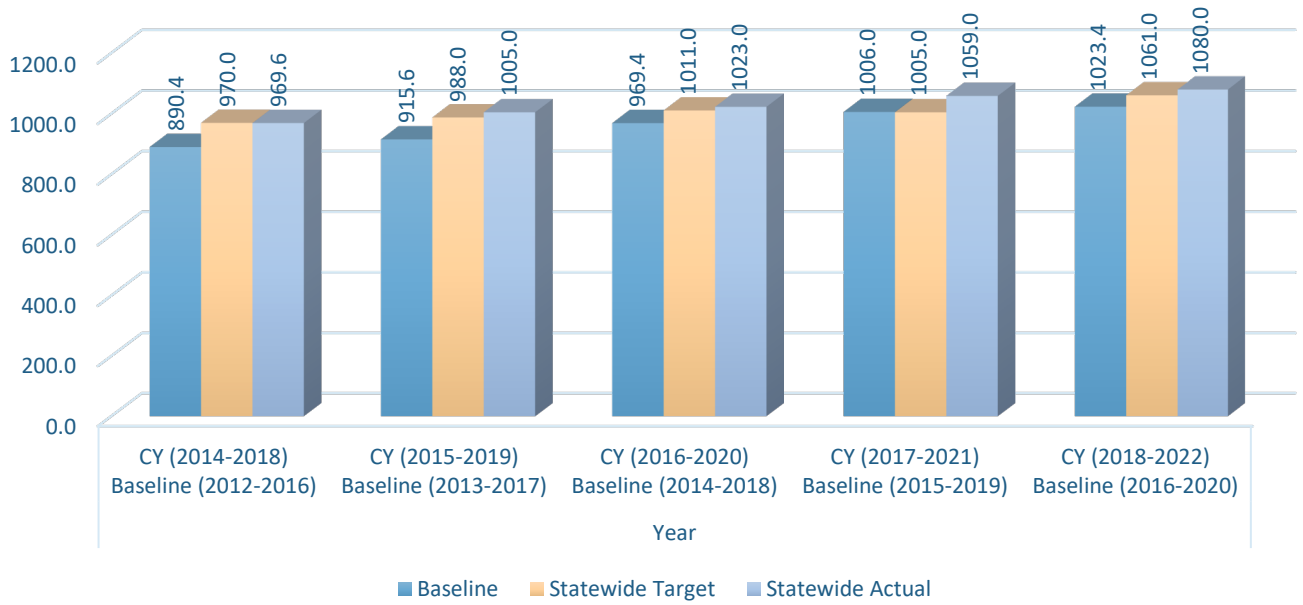
Transportation Safety is among the Department's highest commitments to residents, business and visitors. Safety improvements save lives, enhance quality of life and support the state's economic competitiveness. Safety spans all transportation modes and is effected by many factors such as driver behaviors, infrastructure condition, weather, technology, enforcement and education.

Effective April 14, 2016, FHWA established highway safety performance measures in conjunction with the Highway Safety Improvement Program (HSIP). Safety performance targets were developed in coordination with the South Carolina Department of Public Safety (SCDPS) and reported annually to FHWA in the state's Highway Safety Improvement Program (HSIP) Annual Report and to the National Highway Traffic Safety Administration (NHTSA) in the state's Highway Safety Plan (HSP) developed by SCDPS.
The performance measures are:

- Number of fatalities
- Rate of fatalities per 100 million vehicle miles traveled
- Number of Serious Injuries
- Rate of Serious Injuries per 100 million vehicle miles traveled
- Number of combined non-motorized fatalities and non-motorized serious injuries

The most recently assessed safety targets were for the five-year rolling average from Calendar Year (CY) 2018-2022. South Carolina's statewide safety performance targets for this time period are shown in Figure 2 through Figure 6 that follow, including actual performance, baseline and historical look back. The numbers and rates of fatalities and non-motorized fatalities on a 5-year rolling average have continued to climb while numbers and rates of serious injuries have declined. SCDOT's long term vision is zero deaths on South Carolina roadways. To advance this vision, safety is addressed through the Strategic South Carolina Highway Safety Plan (SHSP)[2], South Carolina Department of Public Safety Triennial Highway Safety Plan (HSP)[3], (HSIP)[4] and the SCDOT Pedestrian and Bicycle Safety Action Plan (PBSAP)[5].

Figure 2. Number of Statewide Fatalities



[2] https://www.scdot.org/content/dam/scdot-legacy/performance/pdf/reports/BR1_SC_SHSP_Dec20_rotated.pdf
[3] https://www.nhtsa.gov/sites/nhtsa.gov/files/2024-01/SC_FY24-26_HSP-tag.pdf
[4] https://highways.dot.gov/sites/fhwa.dot.gov/files/2024-04/HSIP%28South%20Carolina%29%202023%20Report.pdf
[5] https://www.scdot.org/content/dam/scdot-legacy/projects/pdf/SC%20Pedestrian%20and%20Bicycle%20Safety%20Action%20Plan.pdf

Figure 3. Rate of Fatalities Statewide (per 100 million VMT)

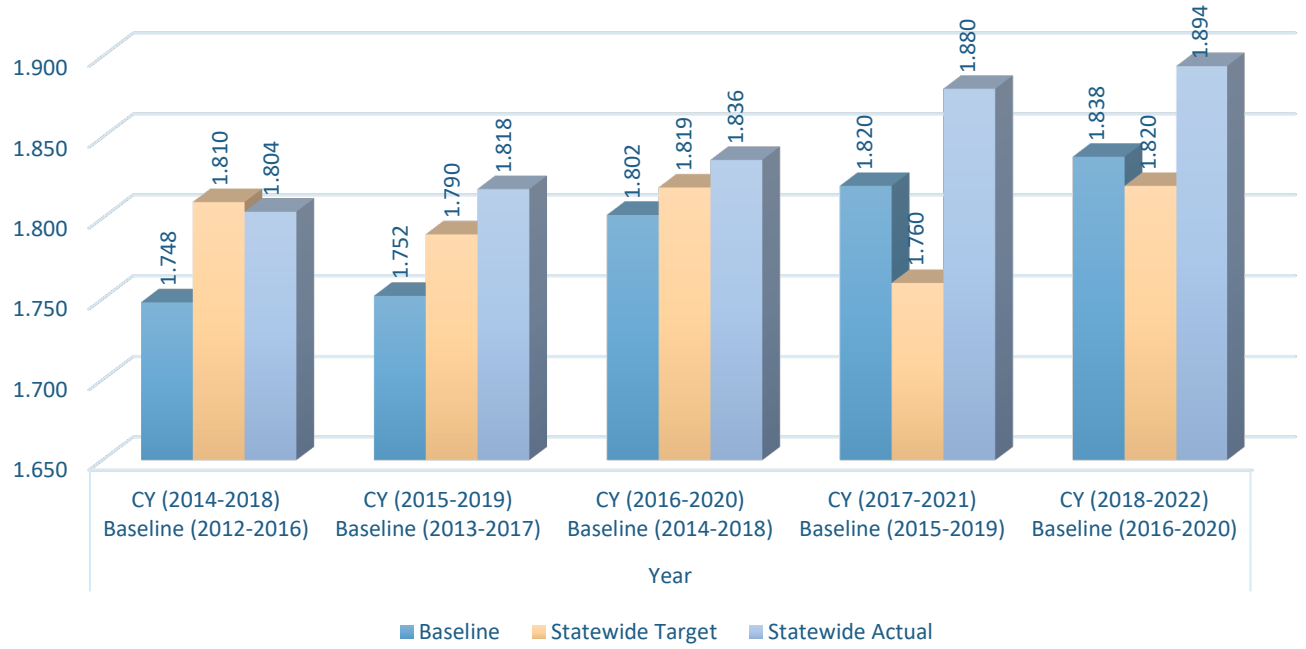


Figure 4. Number of Serious Injuries Statewide

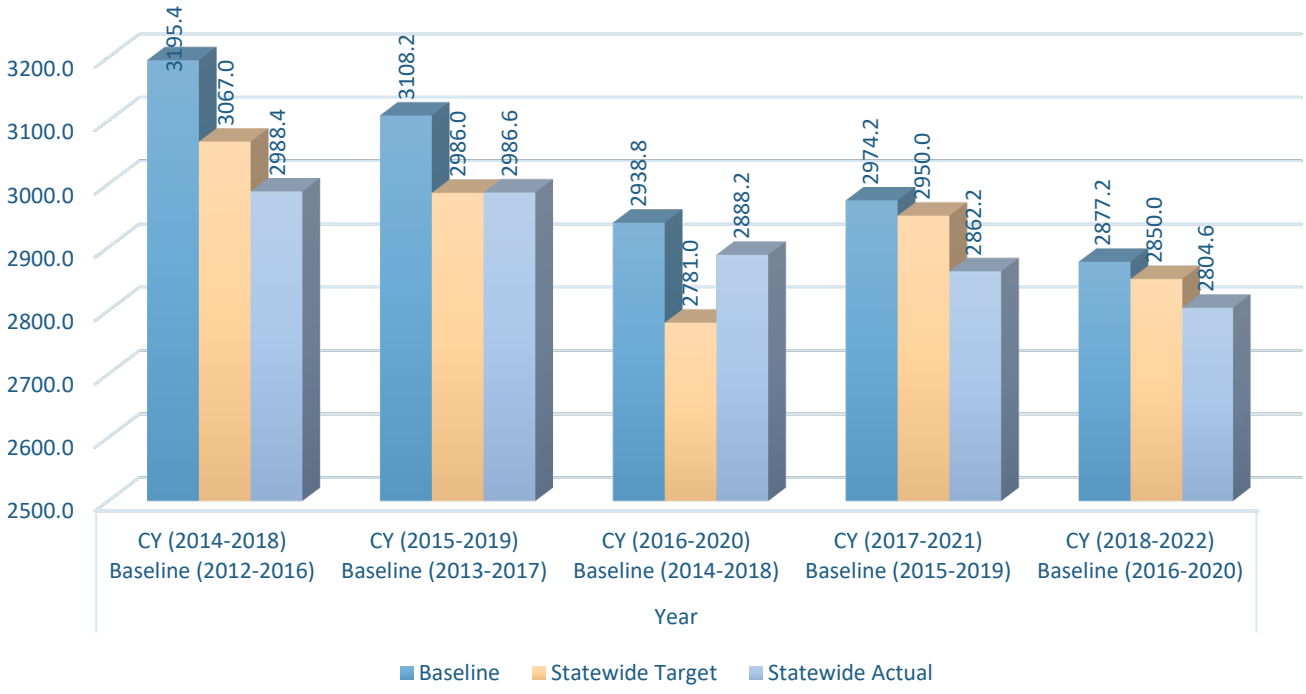


Figure 5. Rate of Serious Injuries Statewide (per 100 million VMT)

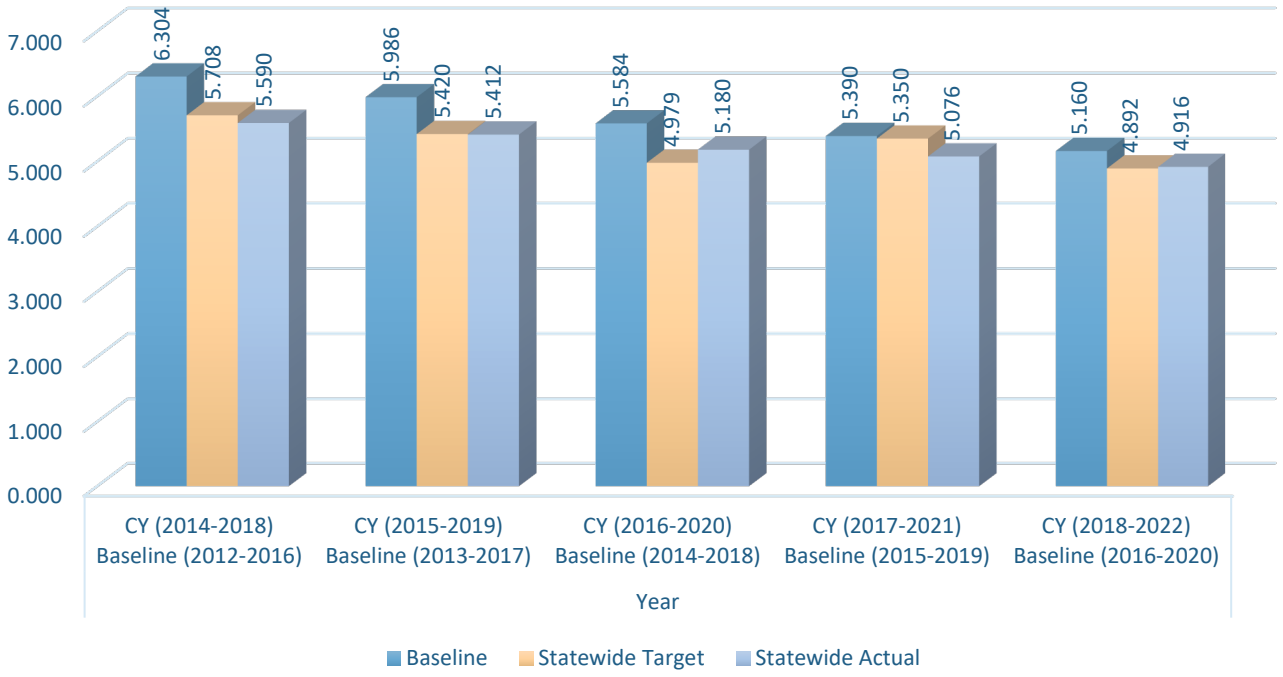
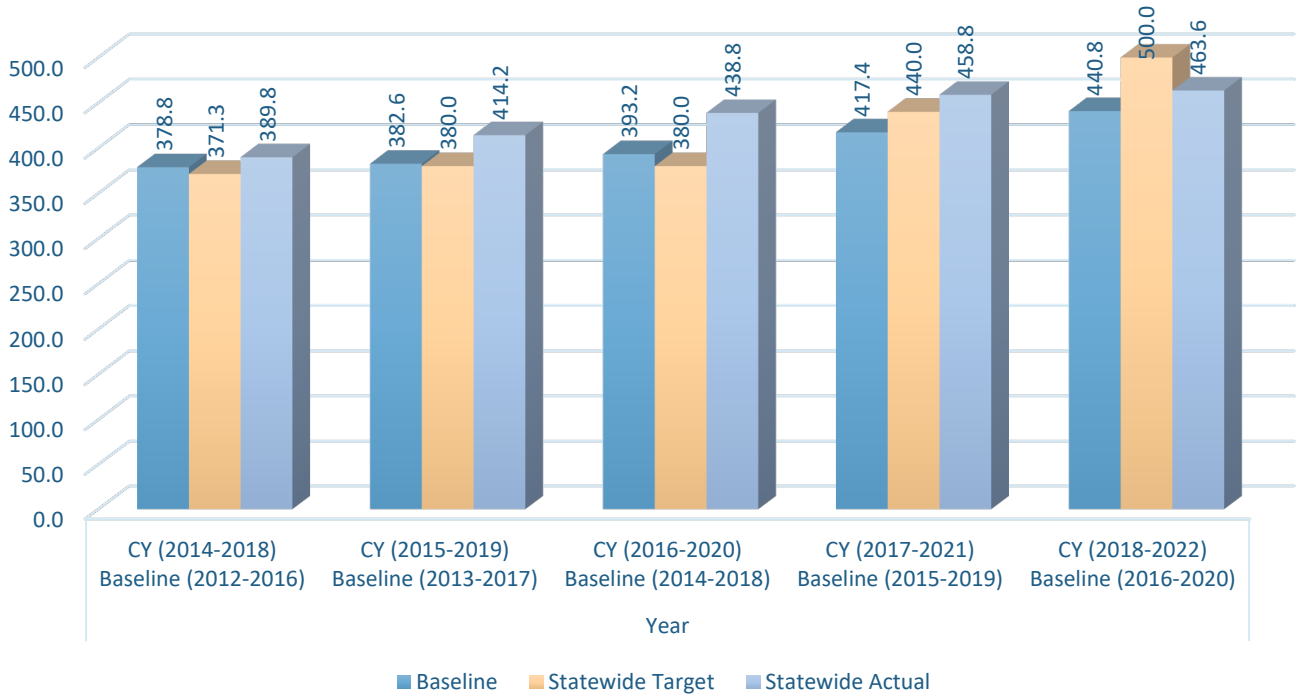
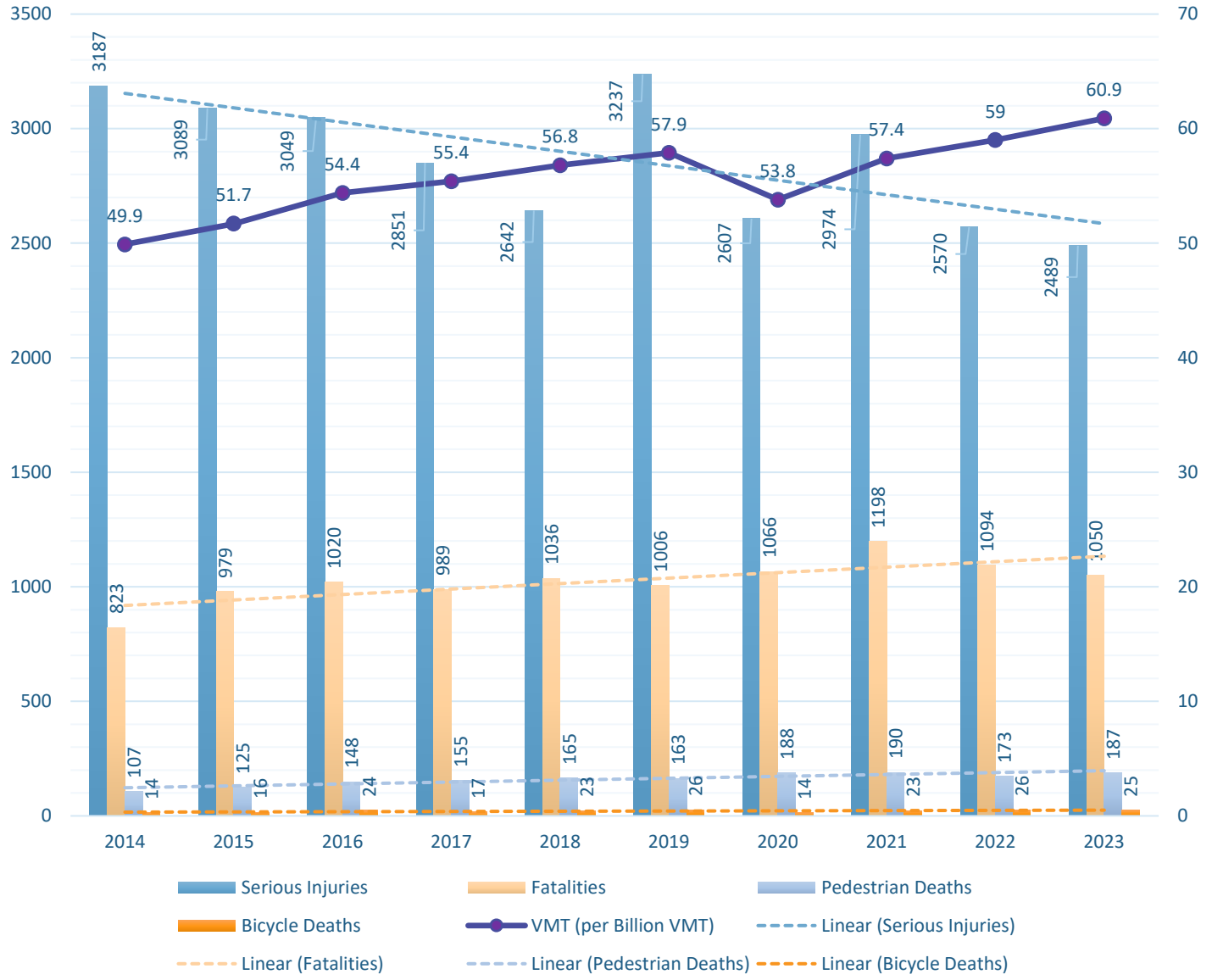


Figure 6. Number of Non-Motorized Fatalities and Serious Injuries Statewide



The total number of serious injuries, fatalities, pedestrian and bicycle deaths by calendar year are shown in Figure 7. Fatalities have increased over time until 2021 and have since been declining. Serious Injuries have generally decreased over time while bicycle and pedestrian deaths continue a trend of increase. A relationship is seen between increasing VMT and the general increasing trend of fatalities Despite safer highway design, safer motor vehicles, increased safety belt usage, public education, enforcement and improved emergency response and treatments, there is still more work to do.

Figure 7. Calendar Year Trends from 2014-2023 Statewide



MPO and COG SAFETY

It is essential that federal, state, regional and local safety partners and other stakeholders work together to improve safety. SCDOT collaborates with the local MPO and COG partners to reduce fatalities and serious injuries by targeting projects and resources to areas with a data driven approach to tackle areas with the greatest potential for improvement. Figures 8 through 11 show the baseline (2019-2023) data for combined fatal and serious injuries by share for each MPO and COG area and the Fatality and Serious Injury rates (per 100 million VMT) for each region. See Appendix A for data tables.

Figure 8. MPO Share of Fatal and Serious Injuries (2019-2023)

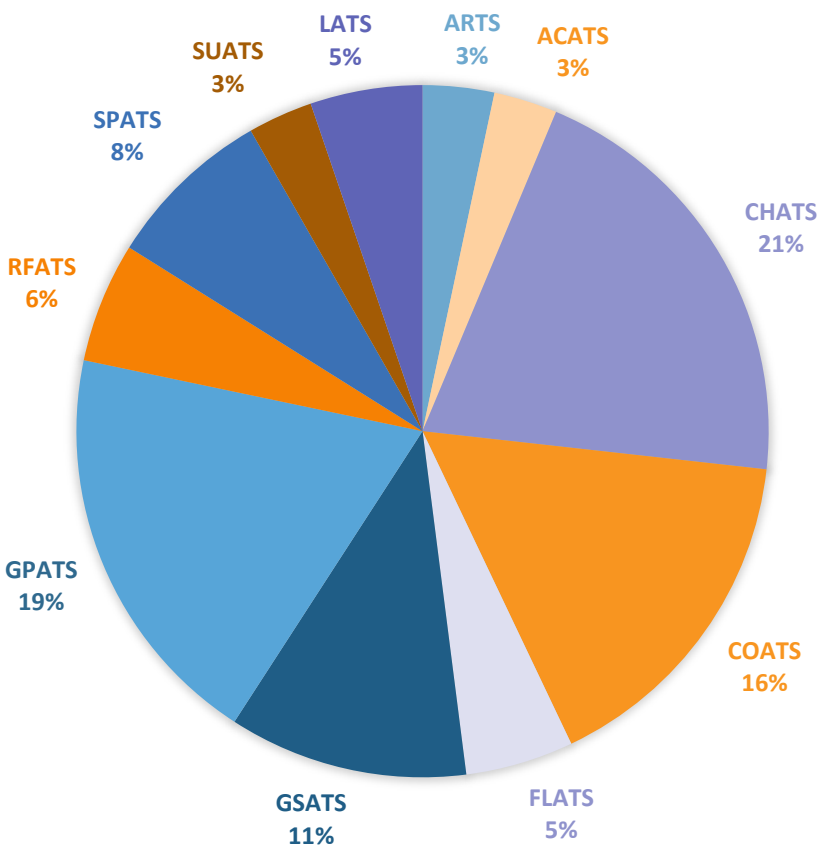


Figure 9. MPO Fatality and Serious Injury Rates (2019-2023)

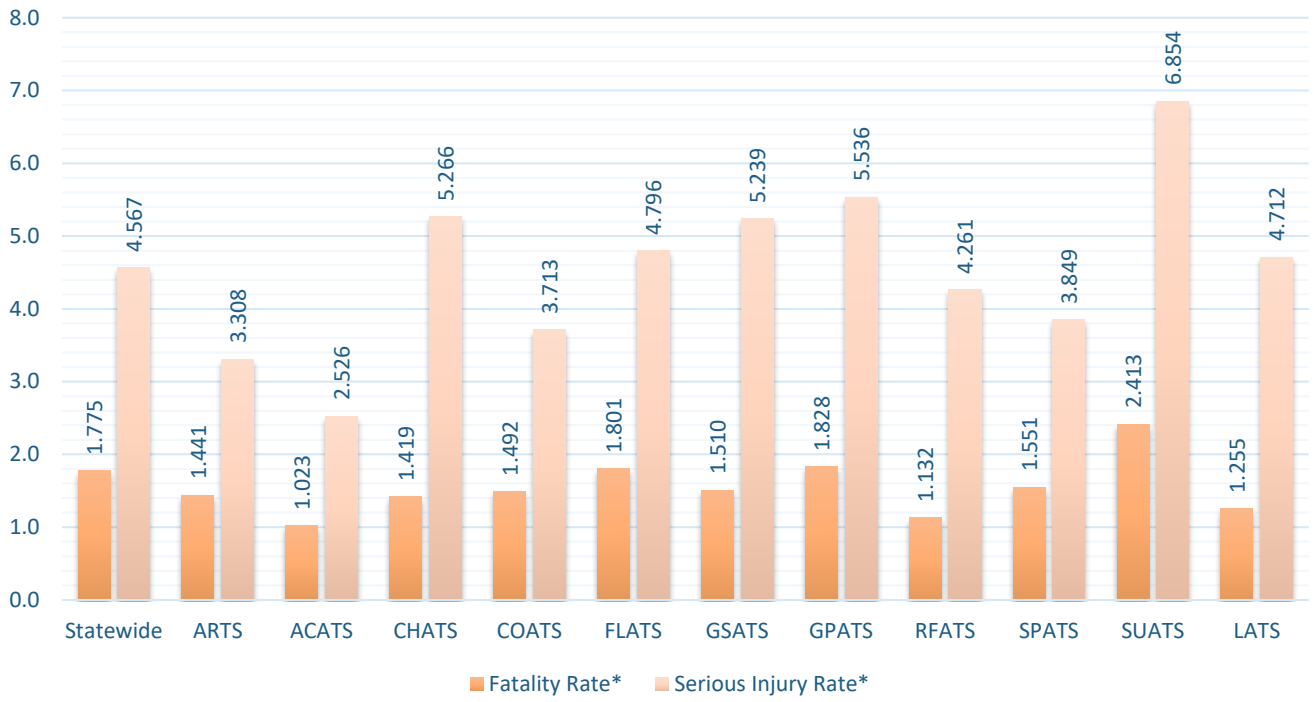


Figure 10. COG Share of Fatal and Serious Injuries (2019-2023)

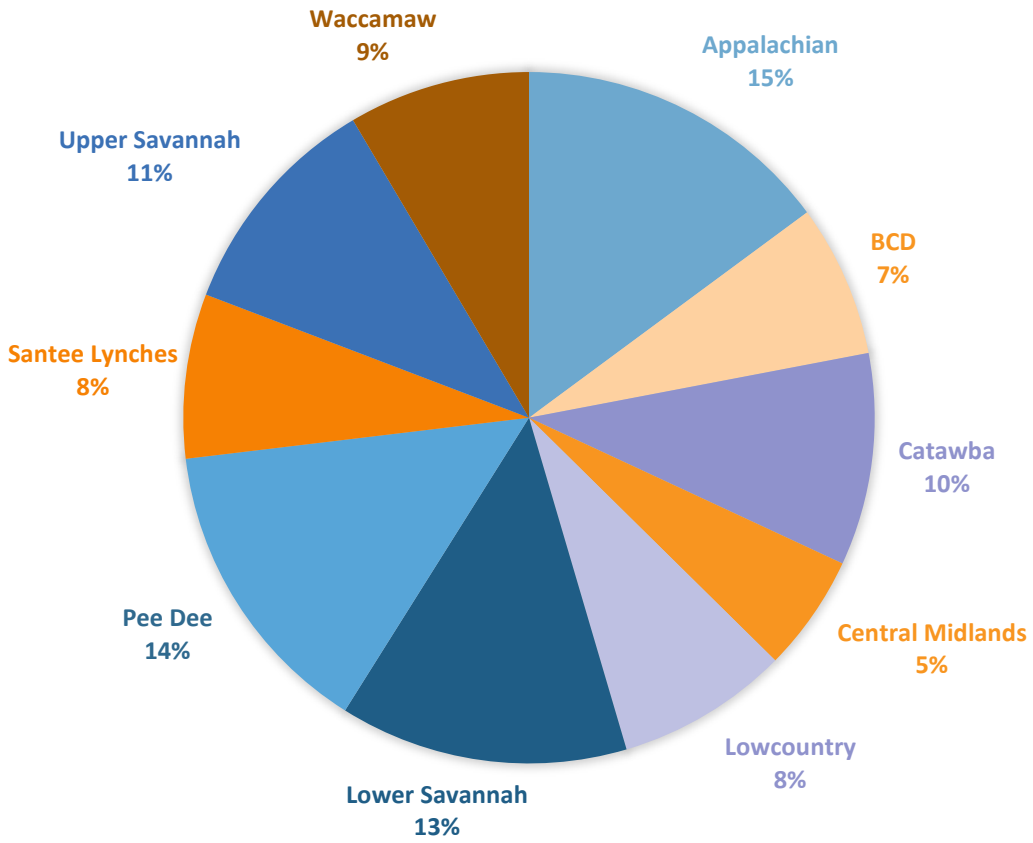
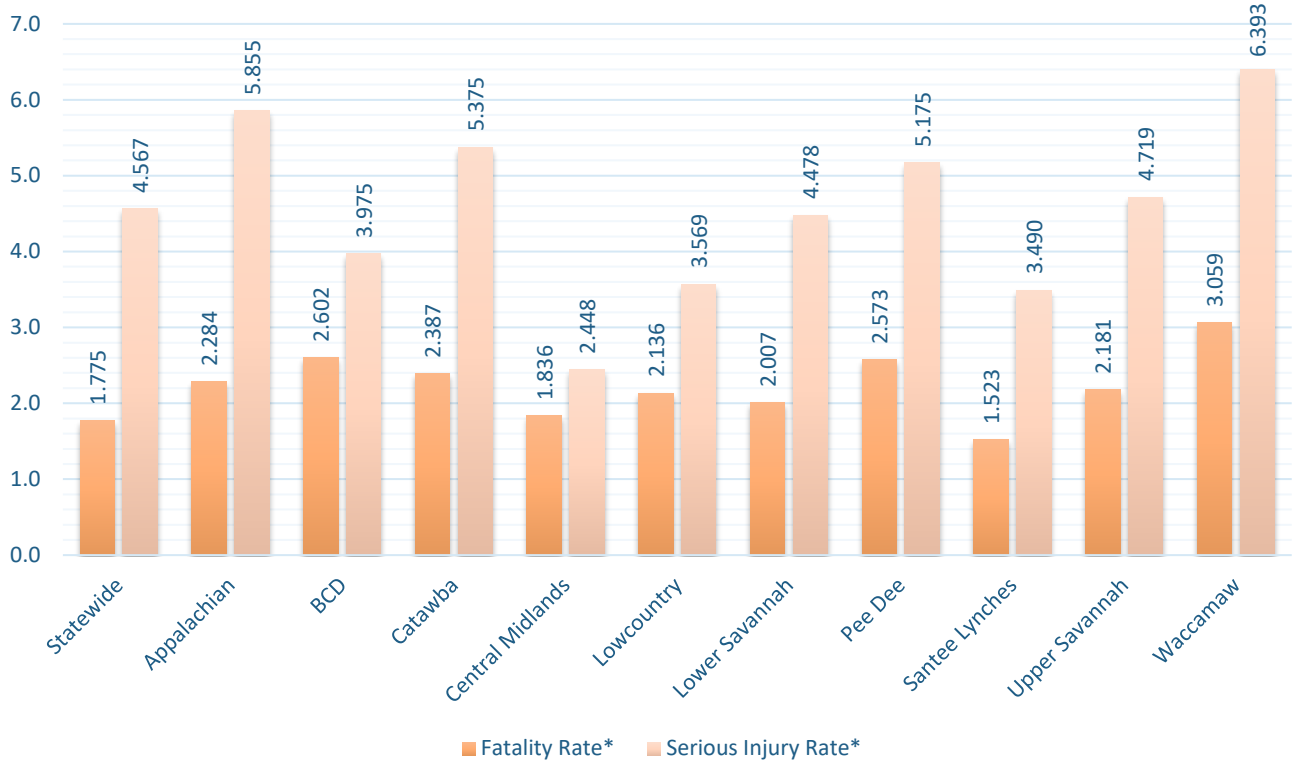


Figure 11. COG Fatality and Serious Injury Rates (2019-2023)



PM2 STATEWIDE PAVEMENT CONDITION

SCDOT has made measureable and positive progress implementing the strategic priorities of the STAMP that are key to aligning with SCDOTs internal and external efforts towards achievable results. The Ten-Year Plan is addressing infrastructure needs across the state, which was initiated in 2017. The largest single area of this investment is for paving. At the update of the 2023 Annual Report over 7,300 miles of paving had advanced to construction. The major road networks or primary routes have improved their measure of good and poor pavements since implementation of the plan.

The two-year and four-year performance targets (Figures 13-16), for both interstates and non-interstate NHS pavements were determined based on current performance, historic performance data and predicted trends. Since the establishment of MAP-21, state DOT's are required to report the performance measures in the Federal Pavement Metric. This metric is calculated to determine if the section is good, fair or poor with respect to: Pavement Roughness, Rutting, Present Serviceability Rating, Faulting and Cracking (concrete pavements only). The thresholds for good, fair and poor condition are established by federal regulation. Conditions are assessed for 0.1 mile long pavement sections using the criteria. An individual section is rated as being in overall good condition when all metrics are good. An individual section is rated as being in poor overall condition when two or more metrics are poor. Any other combination would fall into the fair category. Lane miles are tabulated for all sections to determine the overall percentage of good, fair and poor for each pavement system. When pavement is in good condition, it means no major investment is needed. Pavement in fair condition suggests only minor investment is needed, and pavement in poor condition suggest major reconstruction is needed. A minimum threshold in MAP-21 established the percentage of lane-miles of Interstate System in poor condition shall not exceed 5% (23 CFR 490.315). All pavement metrics were met with exception of the 2-year actual condition of 70.7% for Interstate pavements in good condition, coming in below the target of 77%. A combination of factors including distress data, project cost inflation used to forecast future work, and material shortages, particularly cement used to fully reconstruct roads effected the actual condition performance. The overall trend from 63.2% in 2019 to 70.7% for year 2023 for pavements on the Interstate in good condition has seen significant progress since implementation of the STAMP/10-Year Plan

The National Highway System (NHS) in South Carolina includes only 13,260 lane miles, approximately 15% of the total SCDOT roadway inventory lane miles of about 90,682

Figure 12. South Carolina Roadway Network Inventory

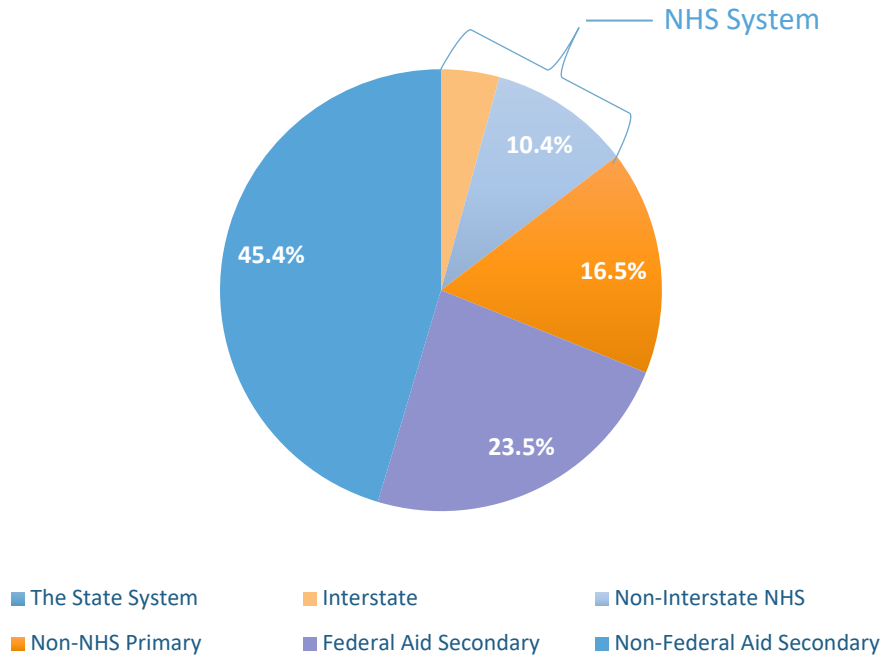


Figure 13. Interstate Pavements in Good Condition (Federal Metric)

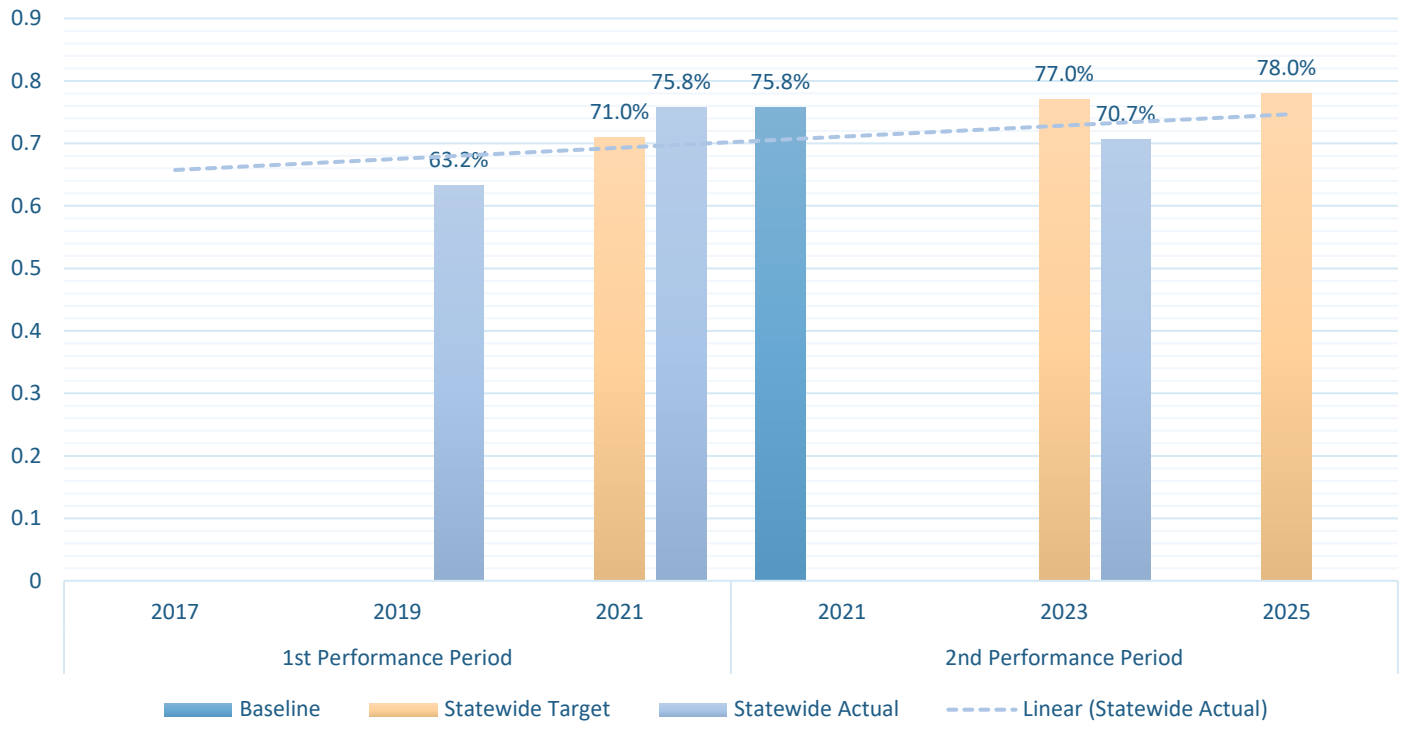


Figure 14. Interstate Pavements in Poor Condition (Federal Metric)

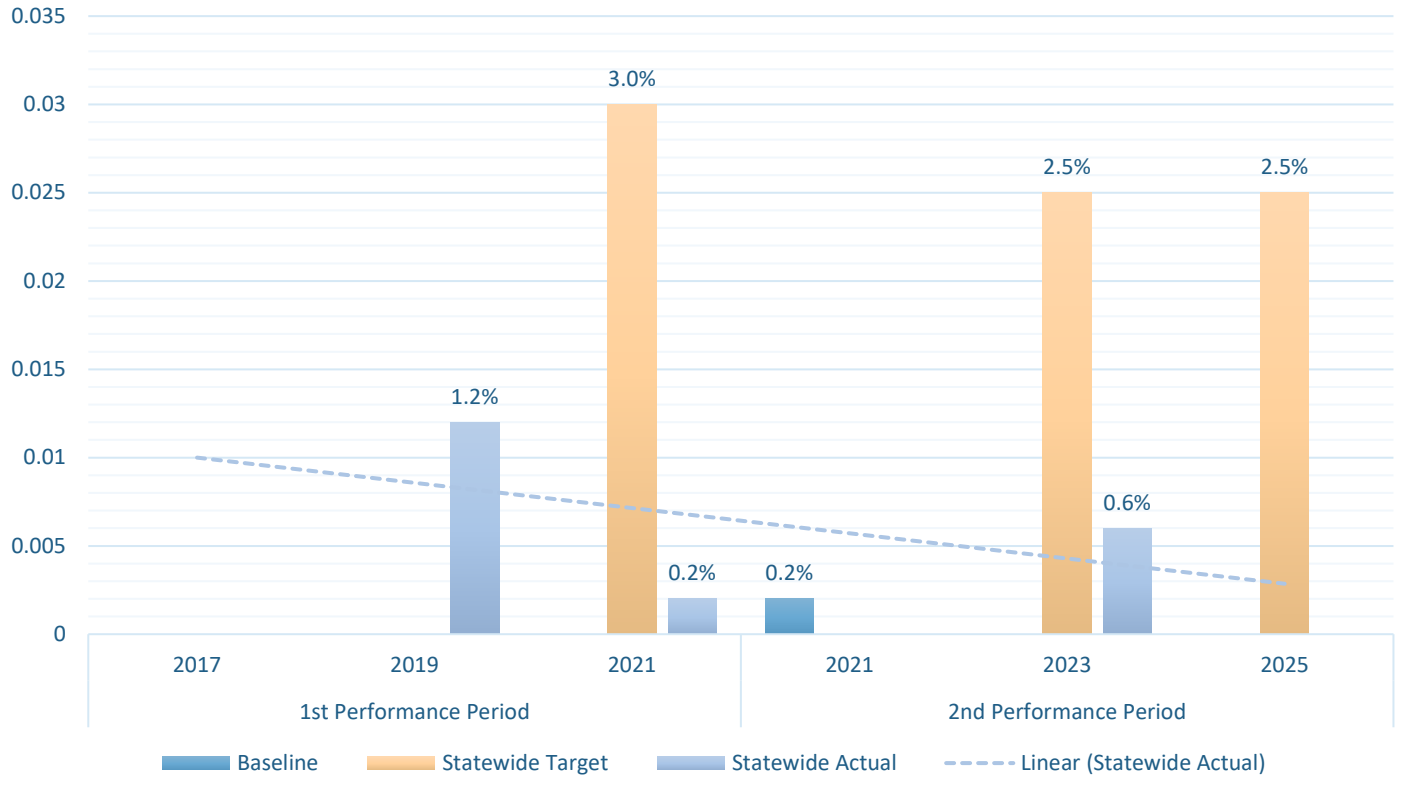


Figure 15. Non-Interstate NHS Pavements in Good Condition (Federal Metric)

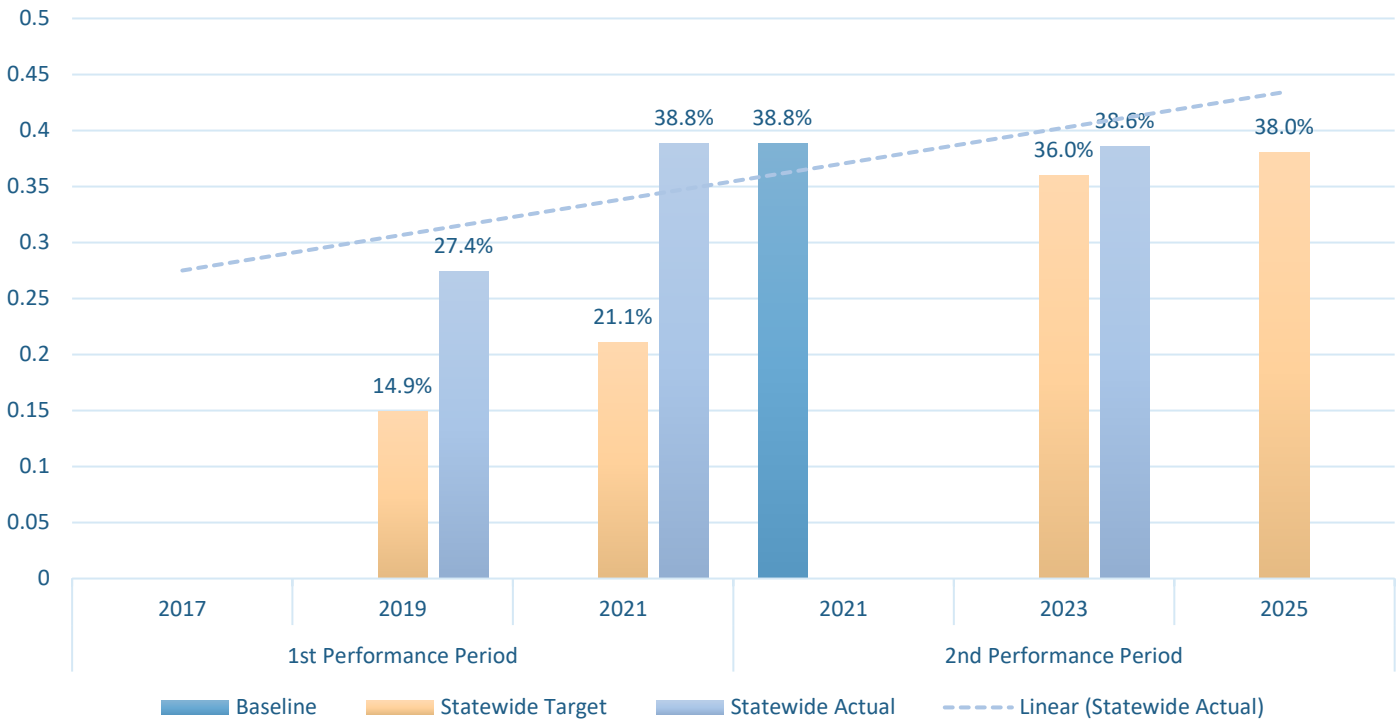
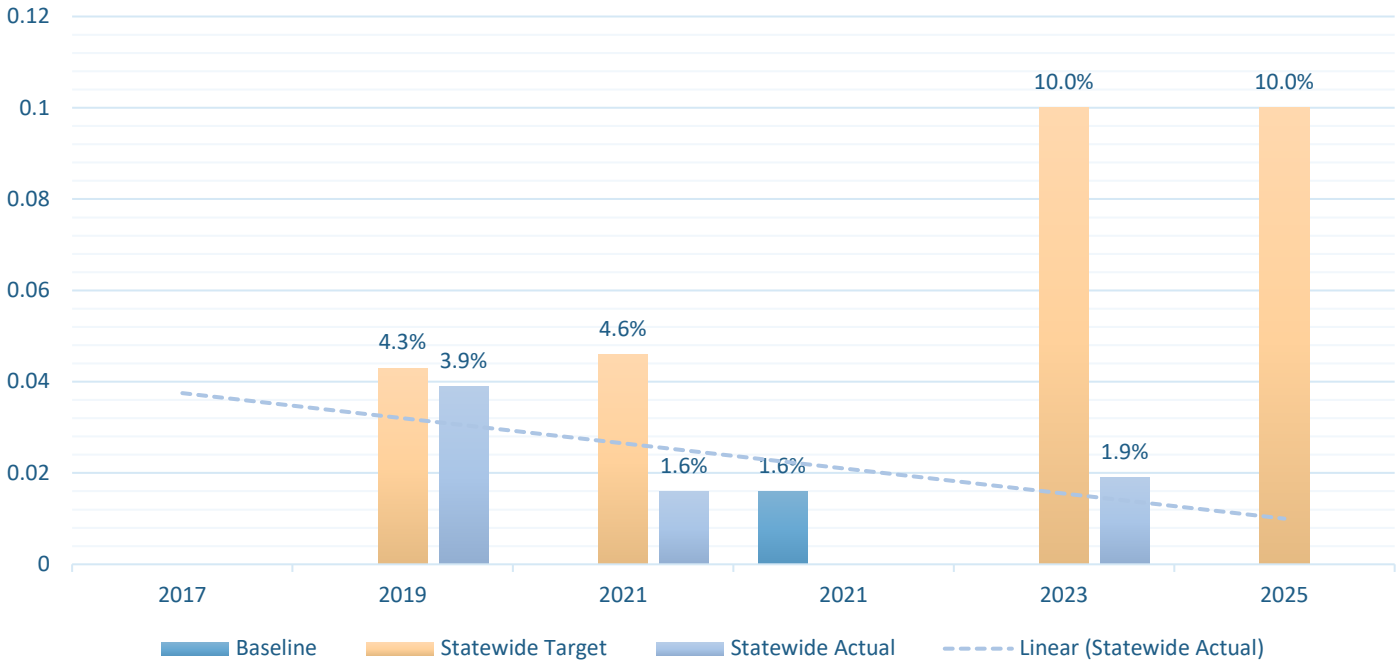


Figure 16. Non-Interstate NHS Pavements in Poor Condition (Federal Metric)



MPO and COG PAVEMENT CONDITION

MPO and COG regional pavement conditions on the Interstate and Non-Interstate NHS are shown in Figure 19-22 and 25-28. In the following figures the pavement conditions are shown in the metric of Pavement Quality Index (PQI) instead of the Federal Metric required for Transportation Performance Management (TPM) reporting. PQI is used to evaluate the pavement surface characteristics and was developed for South Carolina to reflect the types of pavement deterioration typically found within the State. The PQI metric is the preferred performance metric for reporting throughout the agency and for project selection criteria. Data sourced for these charts was aggregated from the SCDOT Performance Viewer, finalized PQI year-end 2023 data, see Appendix A for tables. Figures 17, 18, 23 and 24 show centerline mile inventory by region (note that SUATS, GSATS, and Wacamaw COG have no Interstate miles).

Figure 17. MPO Interstate Centerline Miles and Percentage

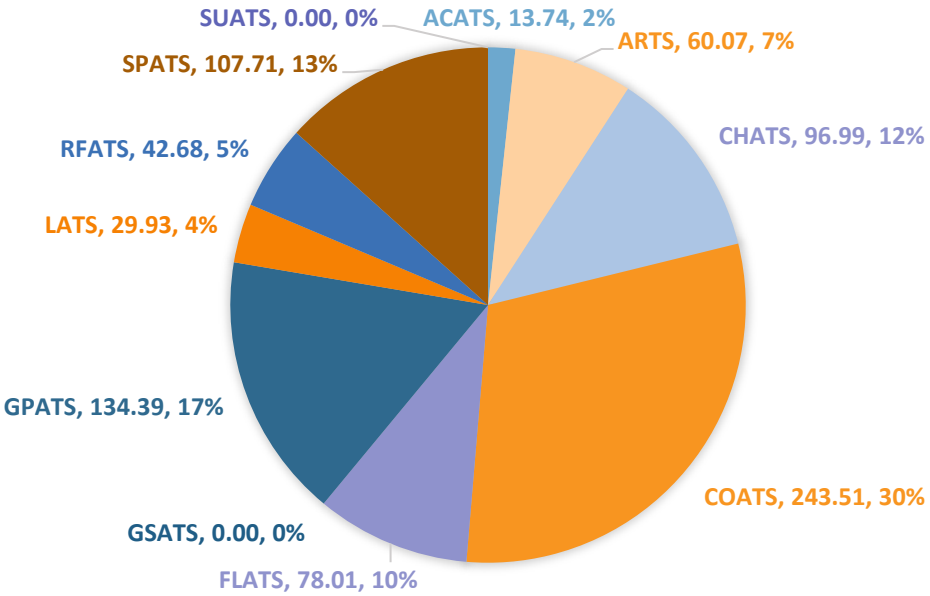


Figure 18. MPO Non-Interstate NHS Centerline Miles and Percentage

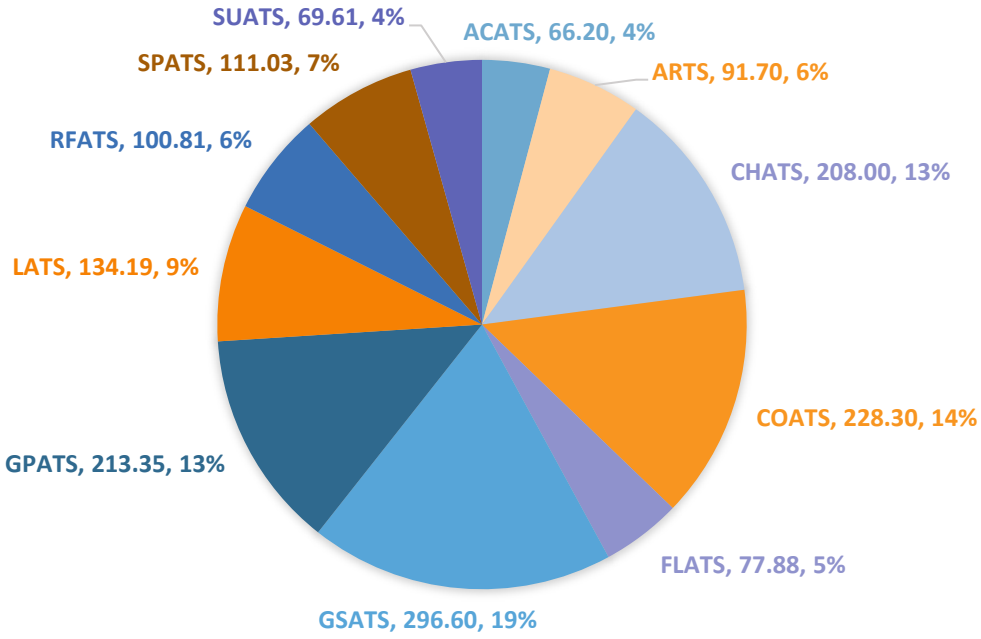


Figure 19. MPO Interstate Pavements in Good Condition (PQI)

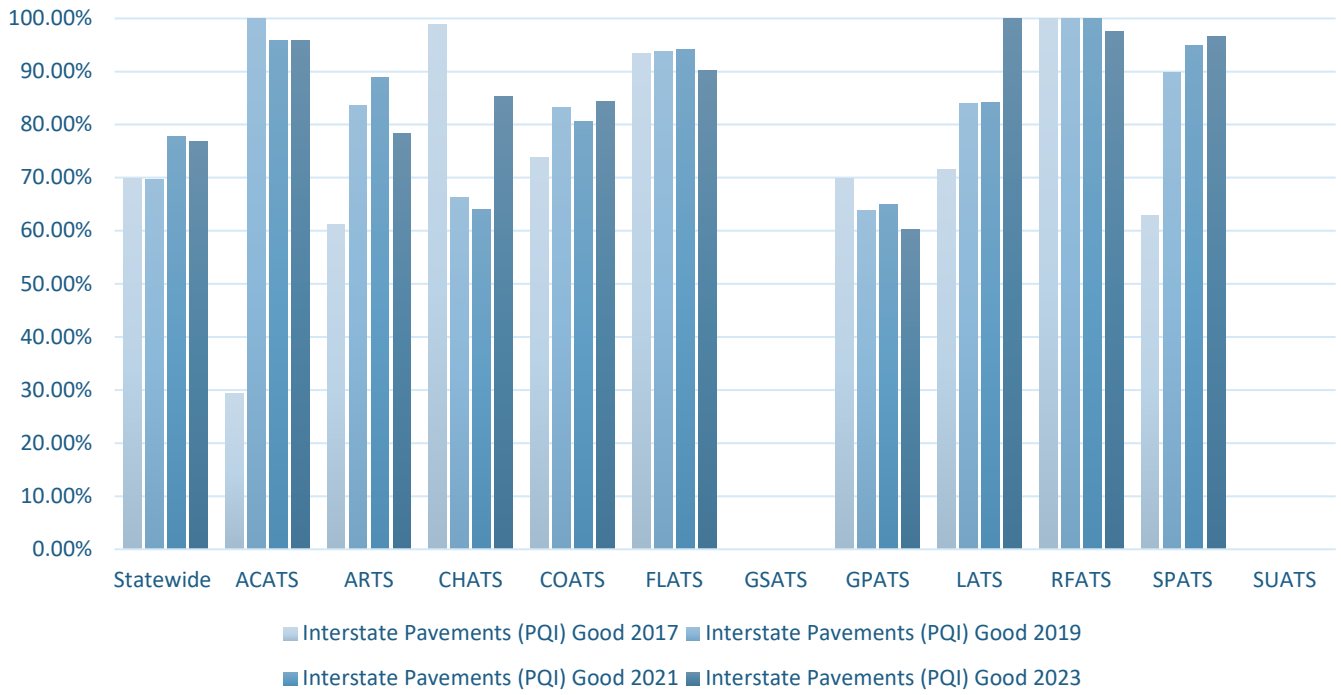


Figure 20. MPO Interstate Pavements in Poor Condition (PQI)

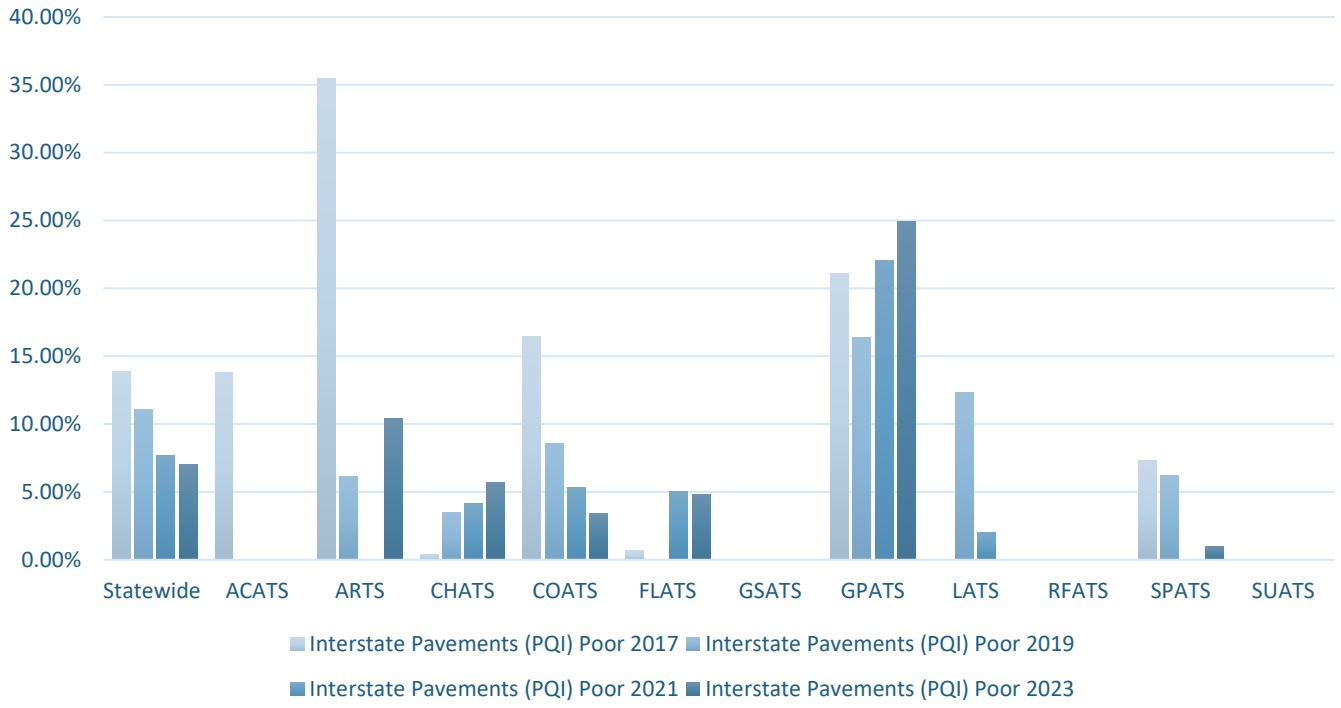


Figure 21. MPO Non-Interstate NHS Pavements in Good Condition (PQI)

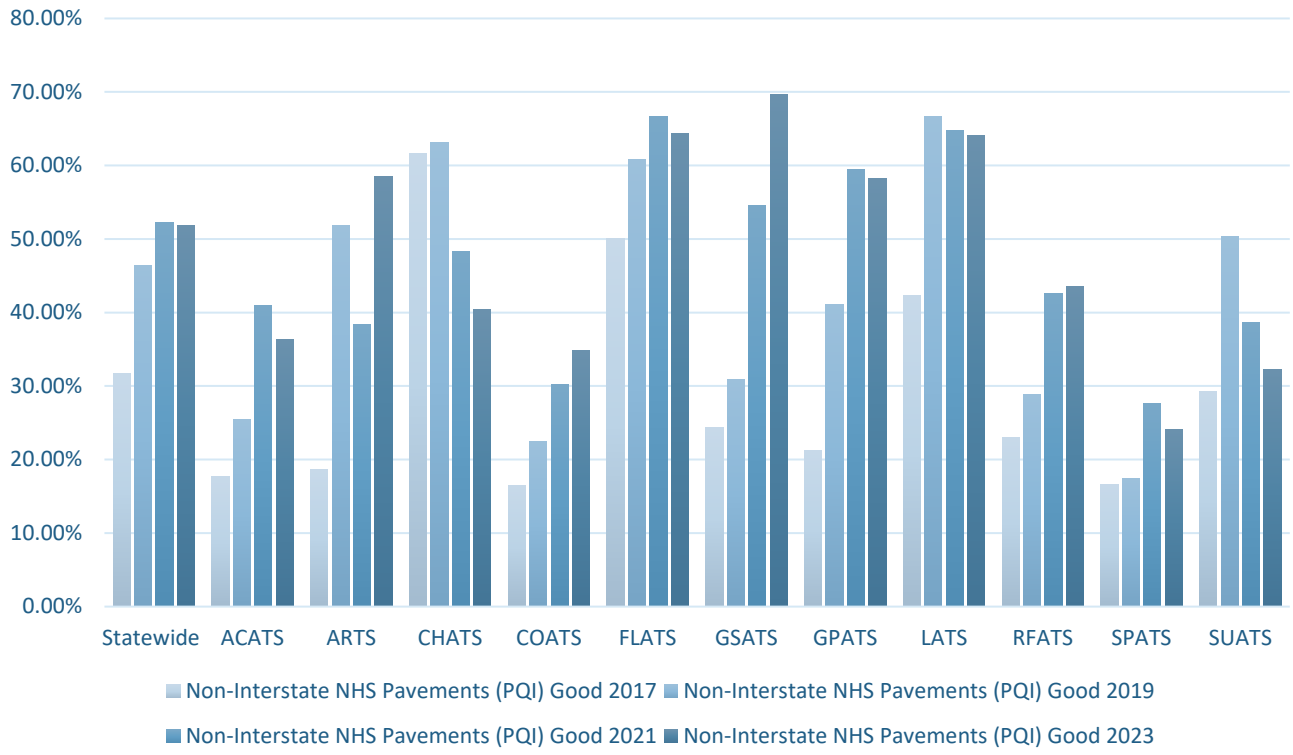


Figure 22. MPO Non-Interstate NHS Pavements in Poor Condition (PQI)

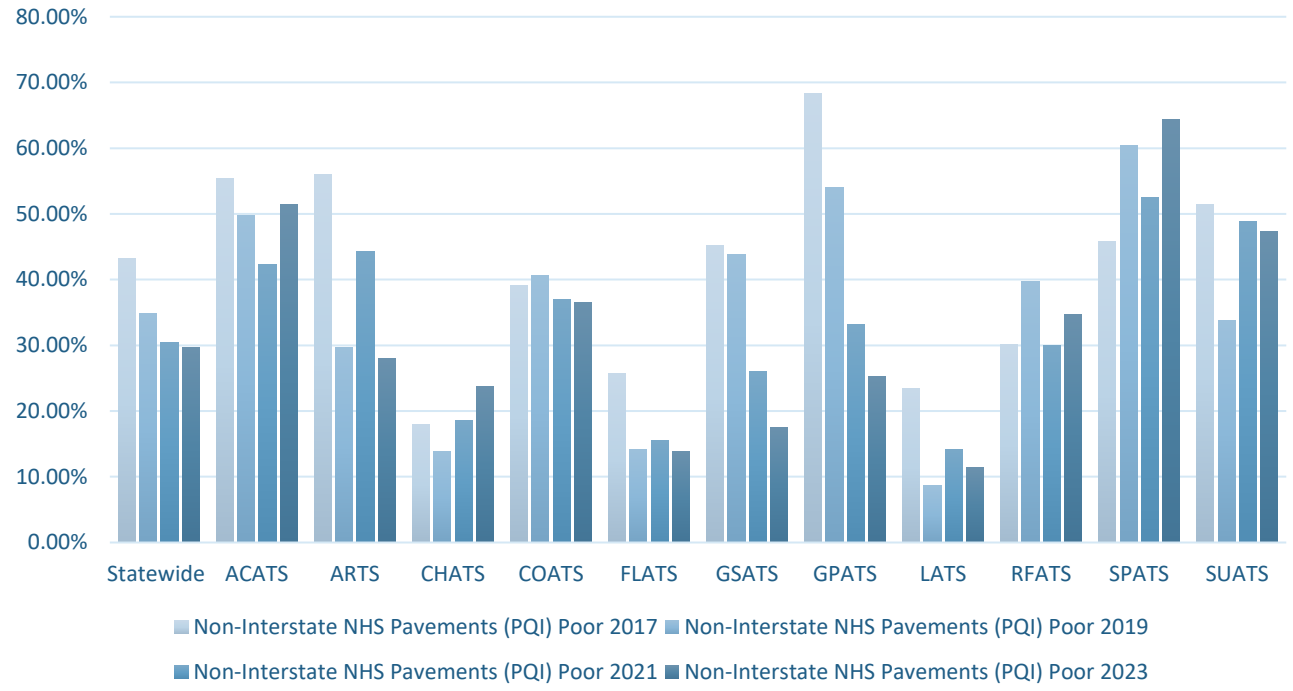


Figure 23. COG Interstate Centerline Miles and Percentage

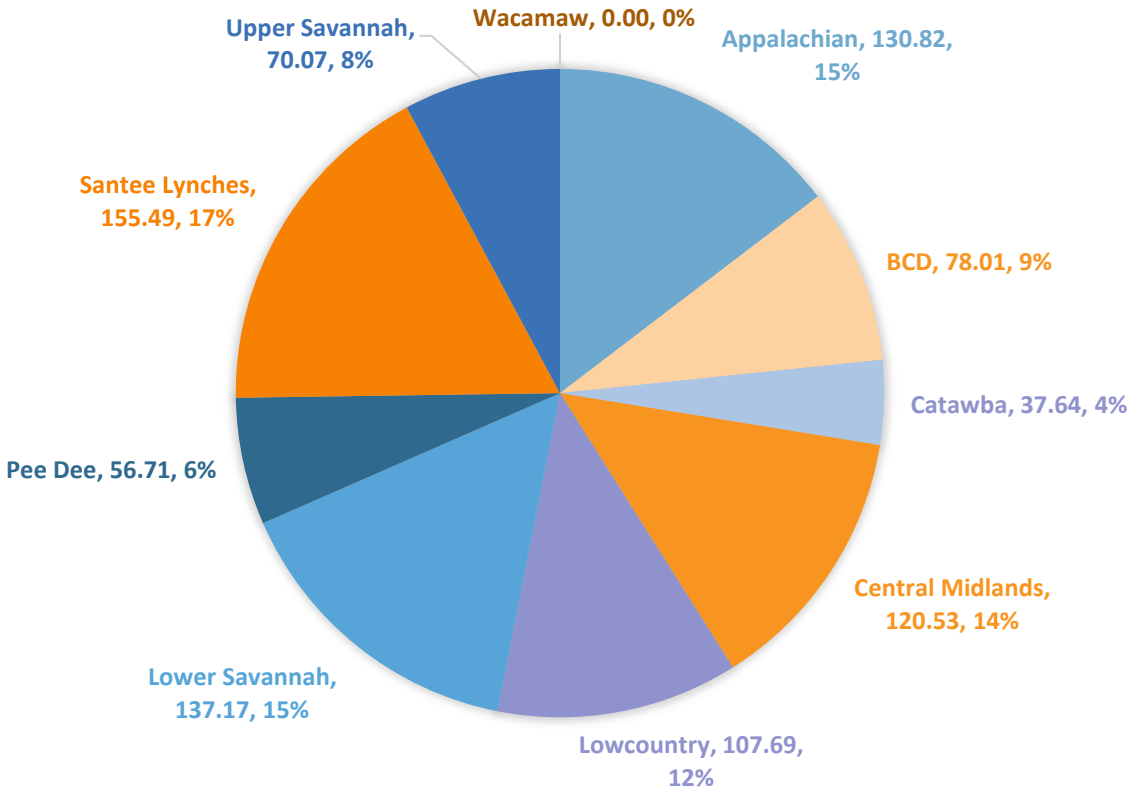


Figure 24. COG Non-Interstate NHS Centerline Miles and Percentage

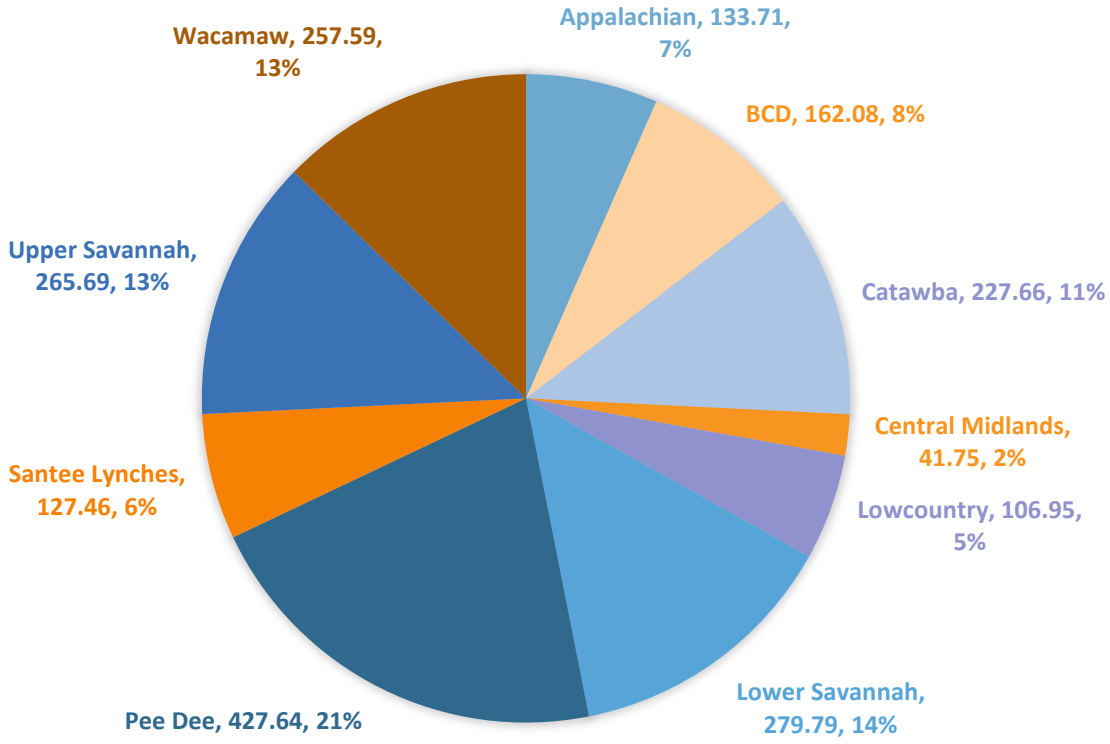


Figure 25. COG Interstate Pavements in Good Condition (PQI)

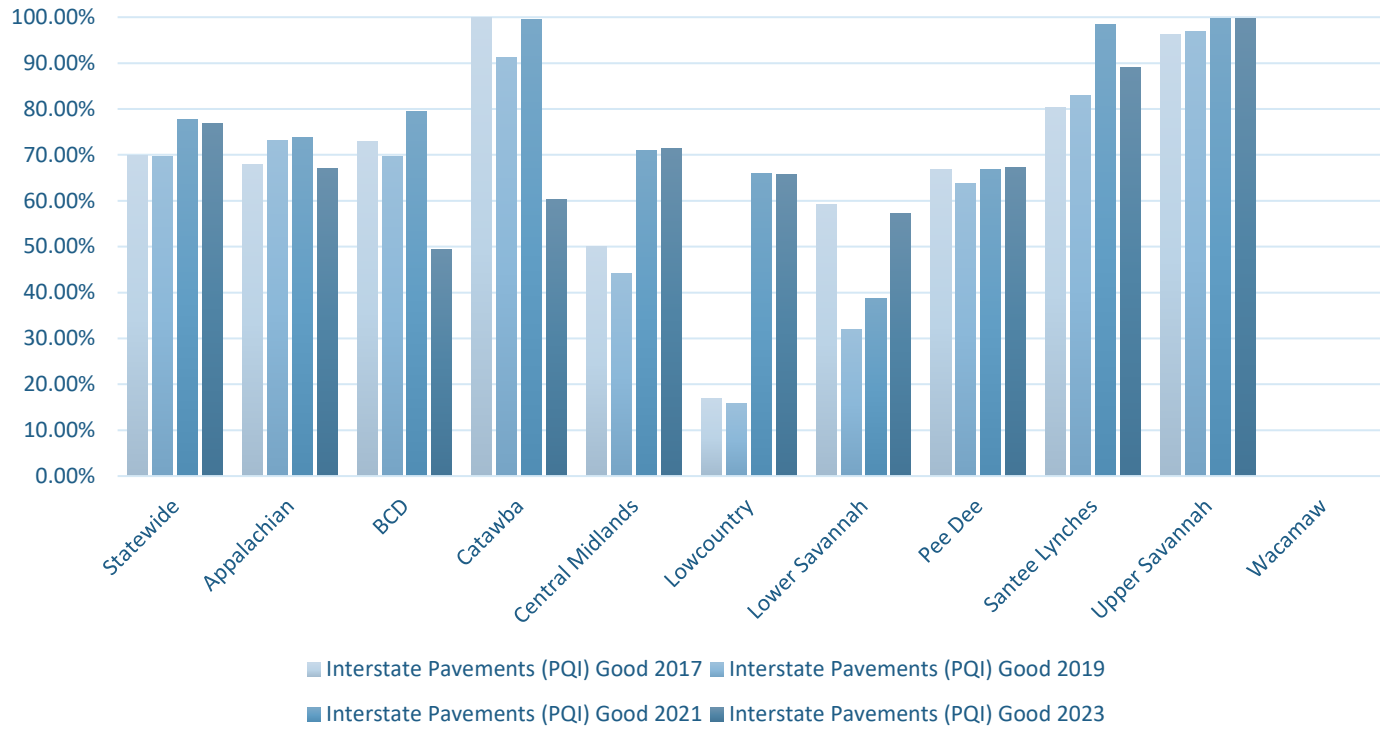


Figure 26. COG Interstate Pavements in Poor Condition (PQI)

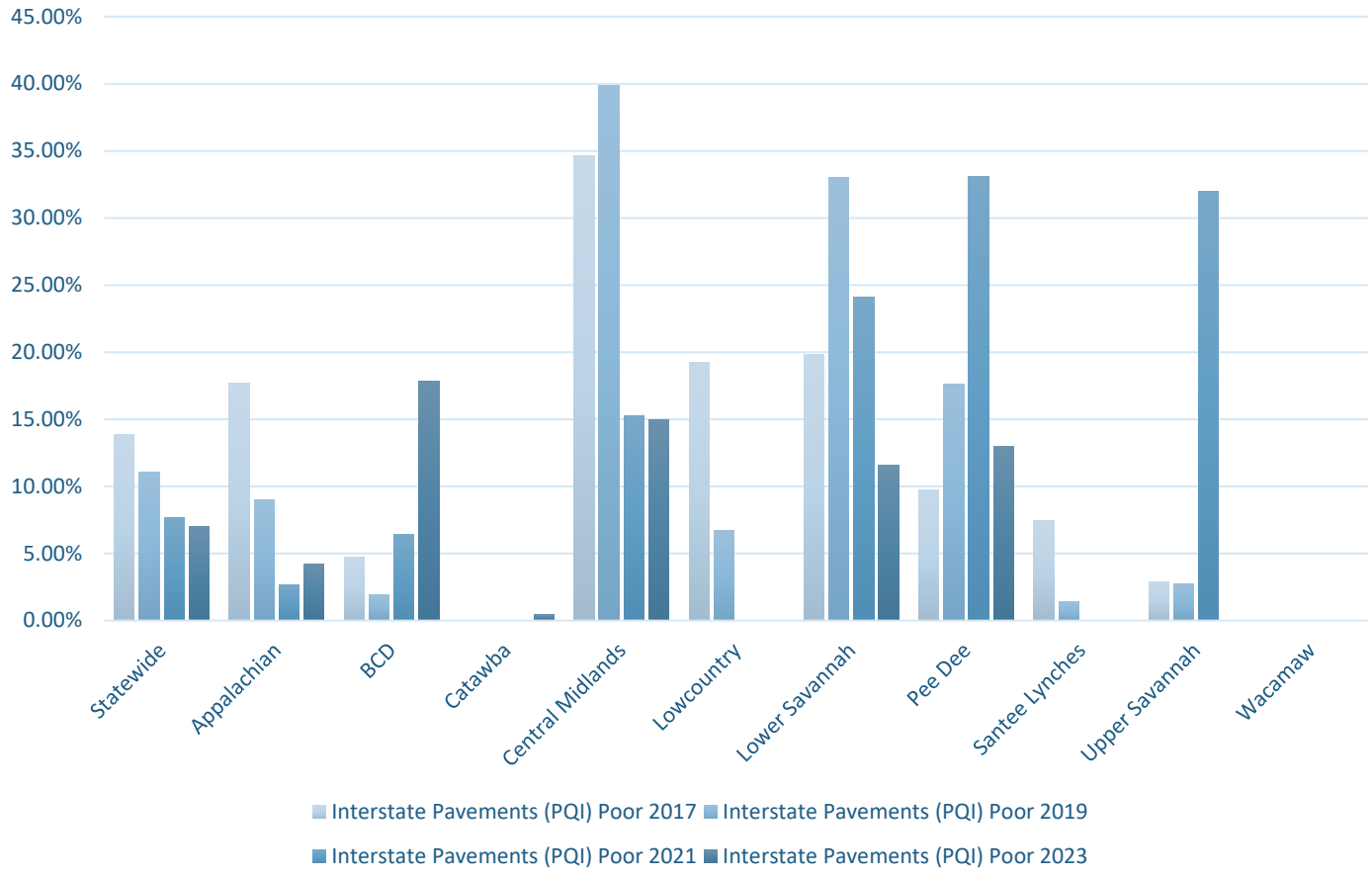


Figure 27. COG Non-Interstate NHS Pavements in Good Condition (PQI)

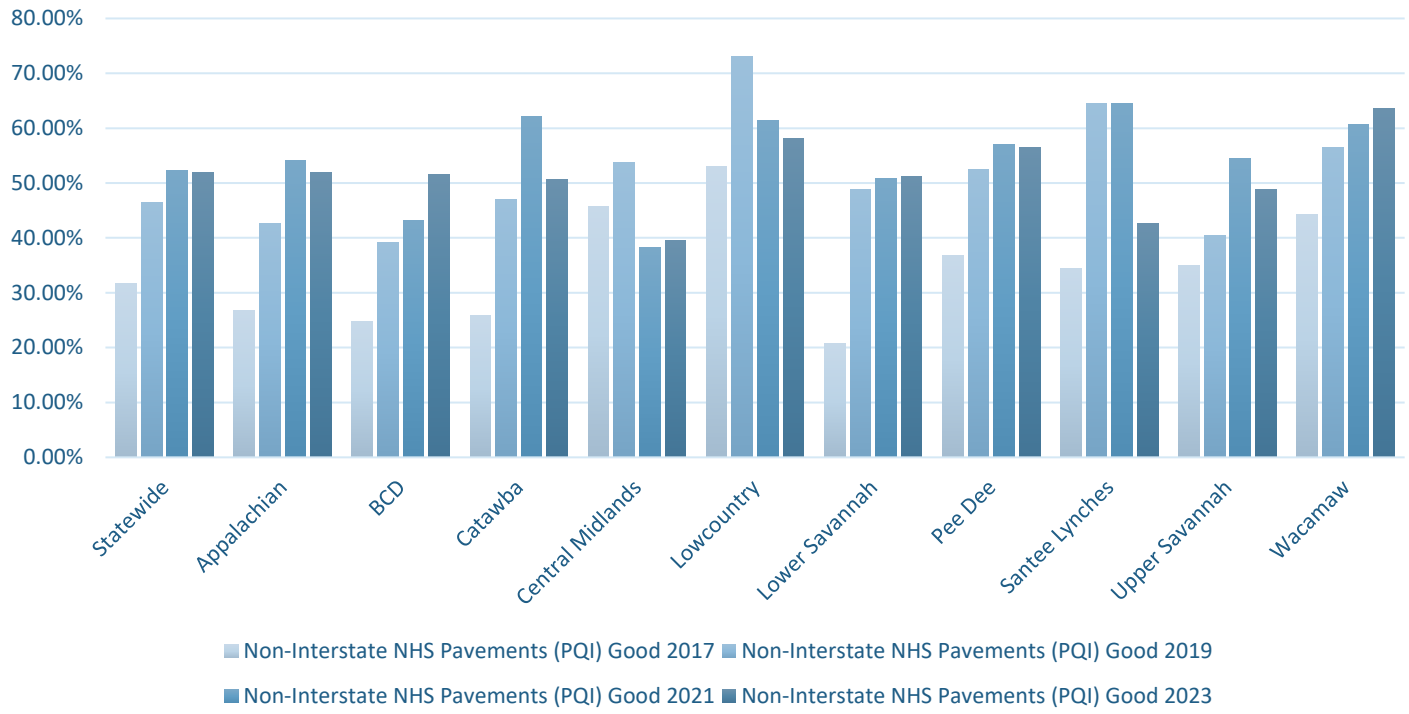
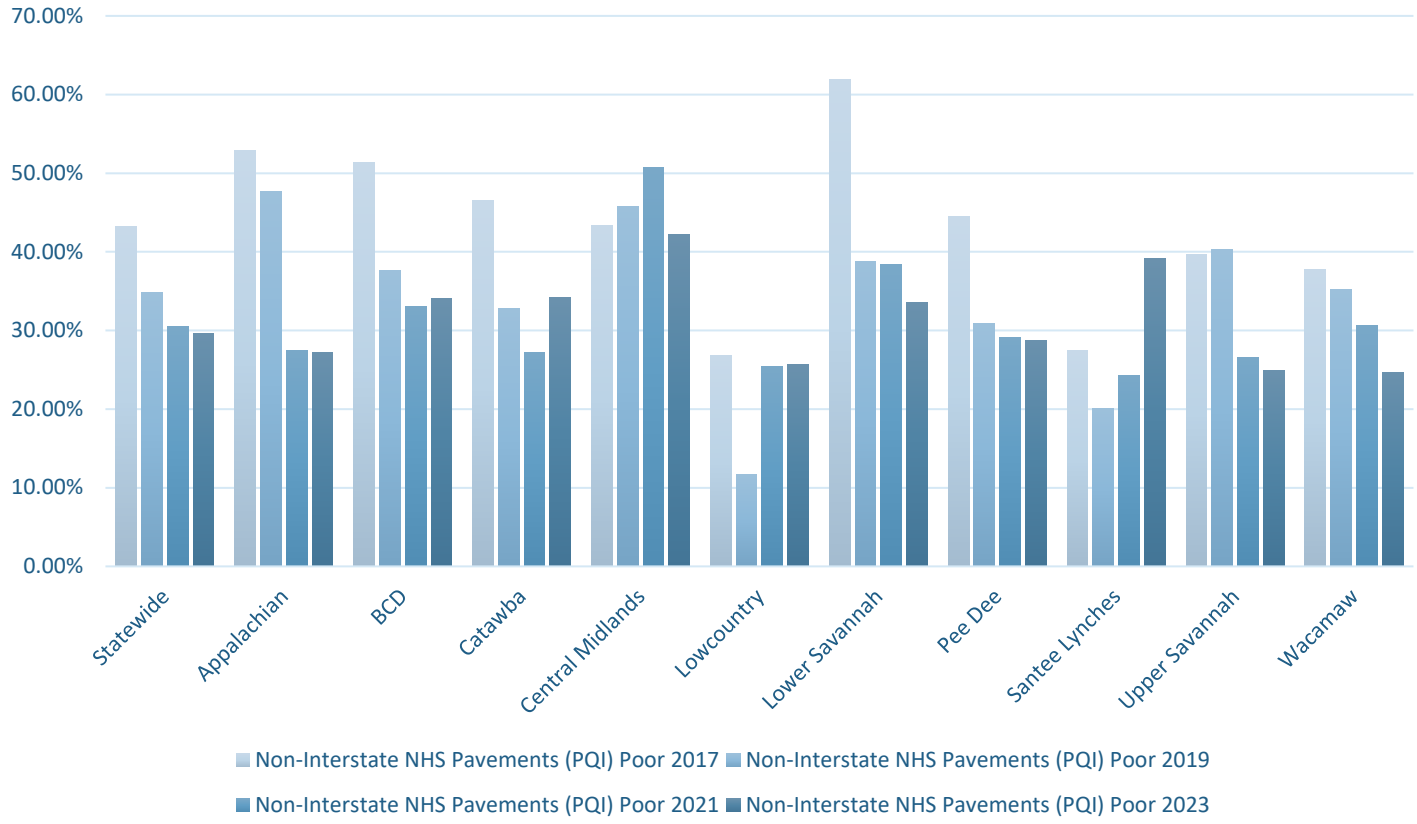


Figure 28. COG Non-Interstate NHS Pavements in Poor Condition (PQI)



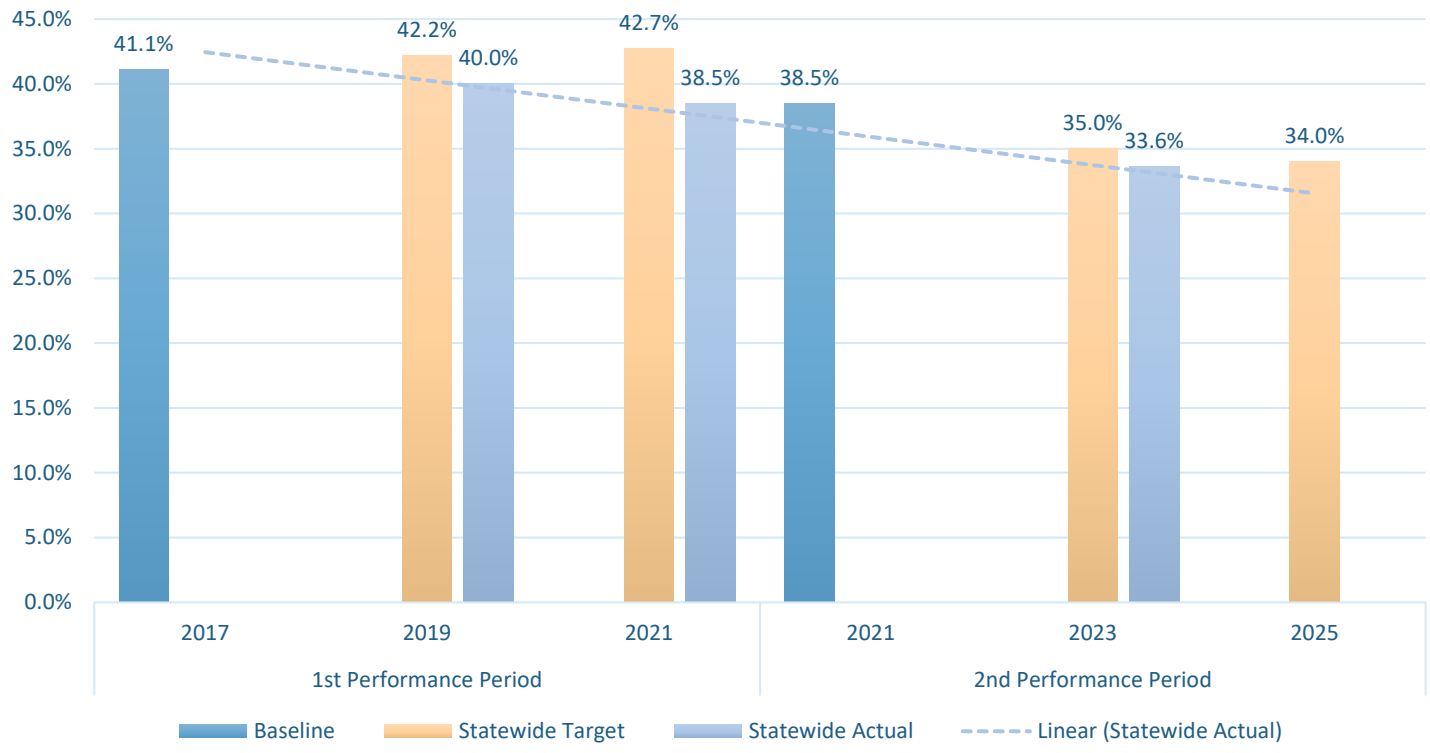
PM-2 STATEWIDE BRIDGE CONDITION

SCDOT's Bridge Program was completely restructured in the middle of SFY 2022, changes to the program are detailed in the 2022 STAMP[6] update. The agency has targeted load-restricted bridges in poor condition on the network that create inefficiencies and unnecessary delays. Additionally, new sub-category programs in the were created to set aside specific funds for Bridge Rehabilitation, Bridge Reactionary Maintenance, Bridge Maintenance and Bridge Inspection to create a more balanced approach to bridge management.

Bridge condition measures refer to the percentage of bridges by deck area on the NHS that are in good condition or poor condition. The measures assess the condition of four bridge components: deck, superstructure, substructure, and culverts. Each component has a metric rating threshold to establish good, fair or poor condition. If the lowest of the four metrics is greater than or equal to seven, the structure is classified as good. If the lowest rating is less than or equal to four, the structure is classified as poor. If the lowest rating is five or six, it is classified as fair. The percent is determined by summing the total deck area of good or poor NHS bridges and dividing the total deck area of the bridges carrying the NHS. Deck area is computed using structure length and either deck width or approach roadway width. The minimum percent poor condition level on NHS bridges shall not exceed 10% for 3 consecutive years (23 CFR 490.411). SCDOT expects the percentage of good deck area on the NHS to decrease during the performance period. At the mid-point of the current performance period (end of 2023), the actual 2-year target of 33.6% was slightly lower than the expected 35.0% of deck are of bridges on the NHS classified as in good condition. A declining target is appropriate given available funding, age and condition of the inventory, and the need to minimize life cycle costs. Significant progress was made on meeting the statewide percentage of bridges on the NHS classified in poor condition and remains well below the threshold of 10%. See Figures 29 and 30.

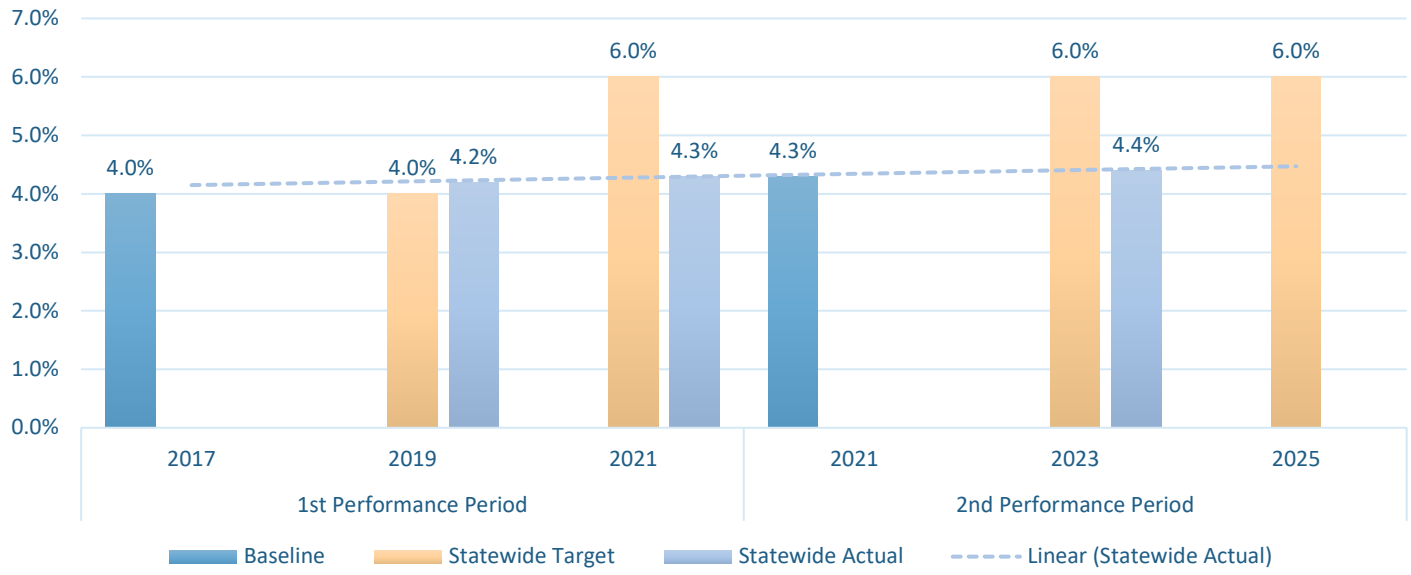
The National Highway System (NHS) in South Carolina includes 1,780 bridges, approximately 22% of the total SCDOT inventory of about 8,445 bridges

Figure 29. NHS Bridges in Good Condition (% Overall Deck Area)



[6] https://www.scdot.org/content/dam/scdot-legacy/performance/pdf/reports/STAMP.pdf

Figure 30. NHS Bridges in Poor Condition (% Overall Deck Area)



MPO AND COG BRIDGE CONDITION

MPO and COG regional bridge conditions are shown in Figure 32, 33, 35 and 36 with statewide actuals conditions and targets compared over time. For data used to create these figures see Appendix A.

Figure 31. MPO NHS Bridge Inventory by Square Footage of Deck Area

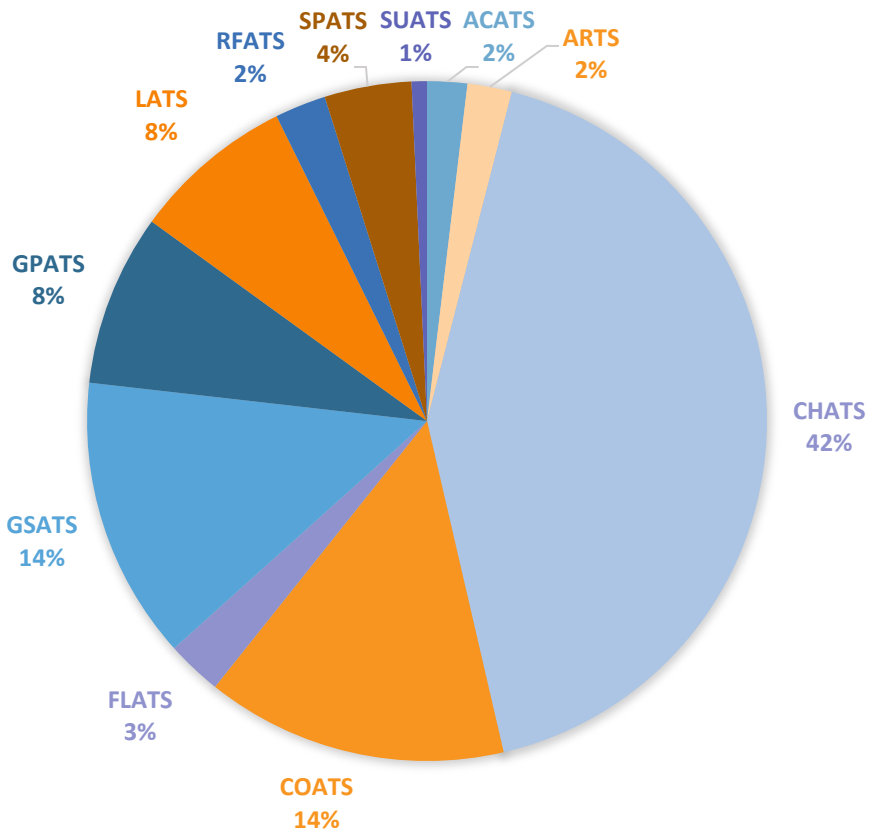


Figure 32. MPO NHS Bridges in Good Condition (SF Deck Area)

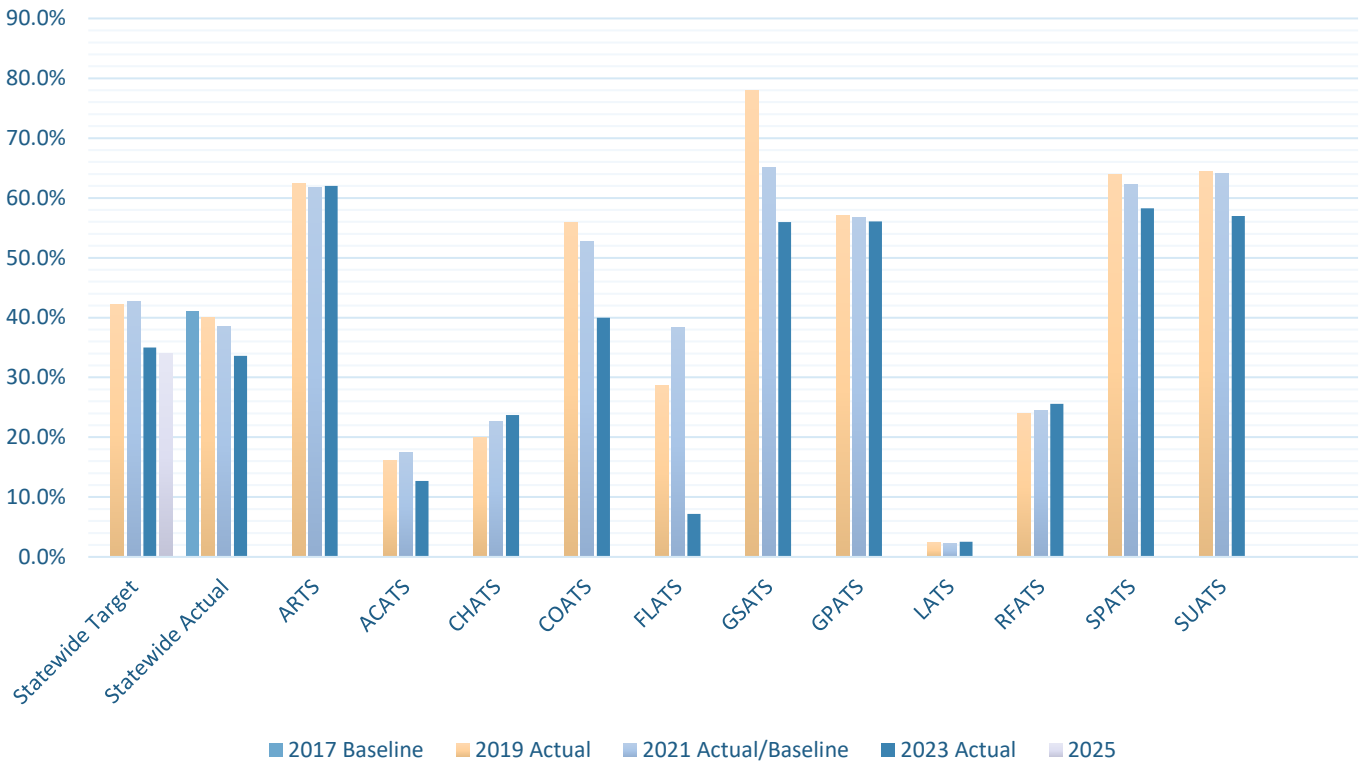


Figure 33. MPO NHS Bridges in Poor Condition (SF Deck Area)

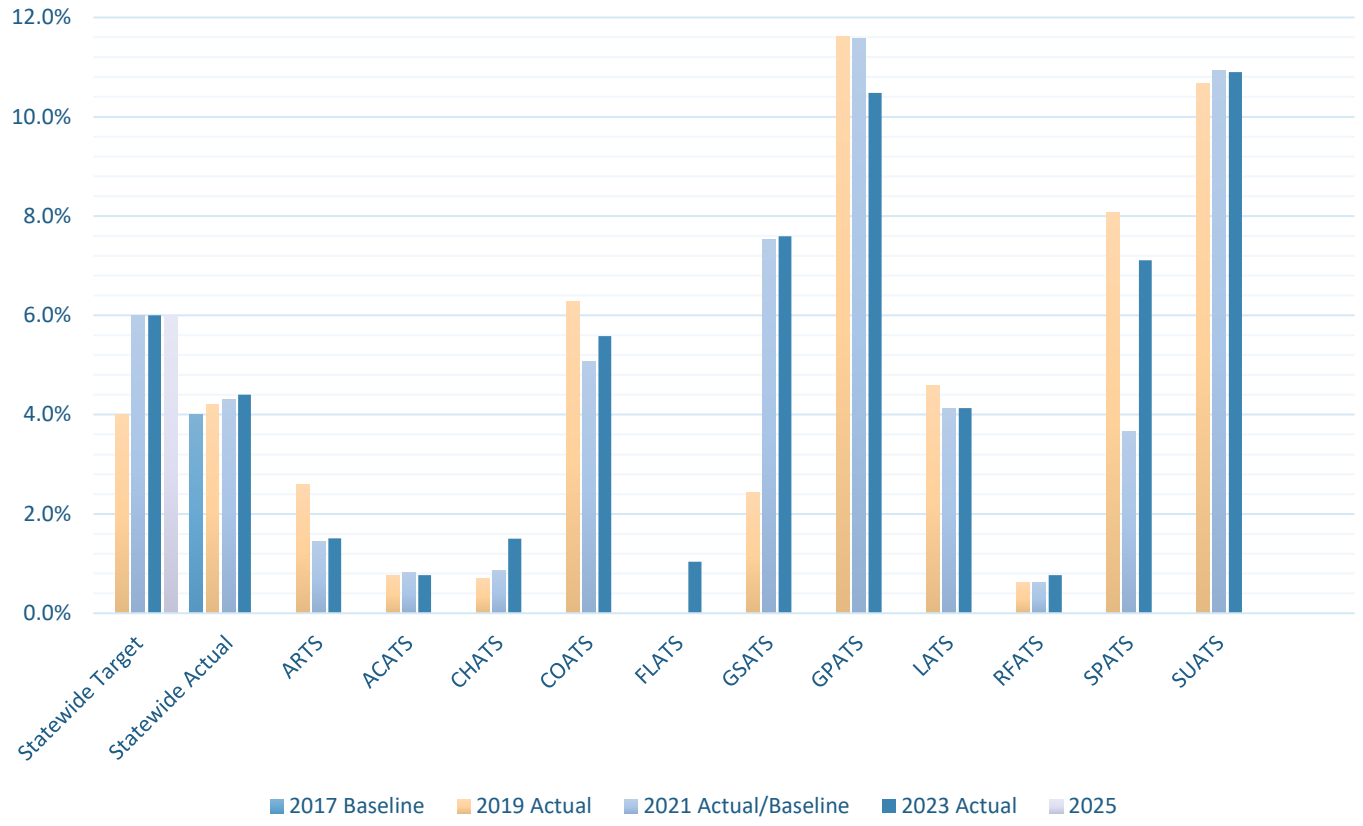


Figure 34. COG NHS Bridge Inventory by Square Footage of Deck Area

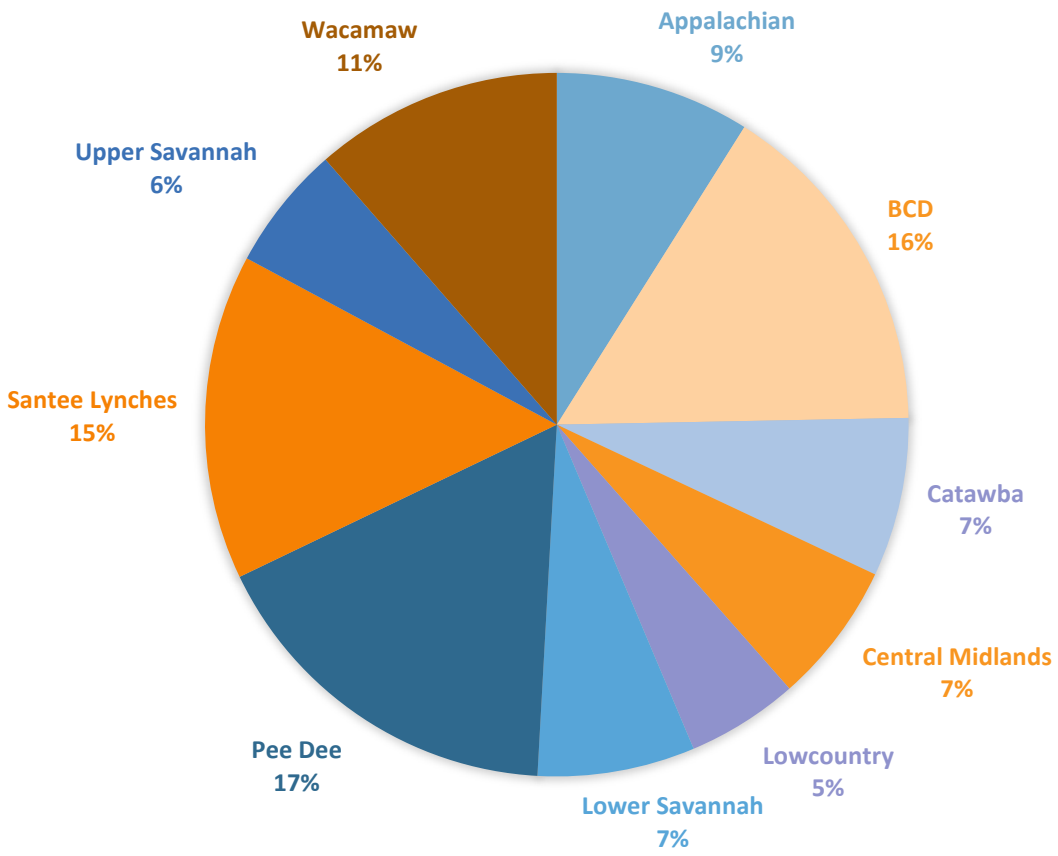


Figure 35. COG NHS Bridges in Good Condition (SF Deck Area)

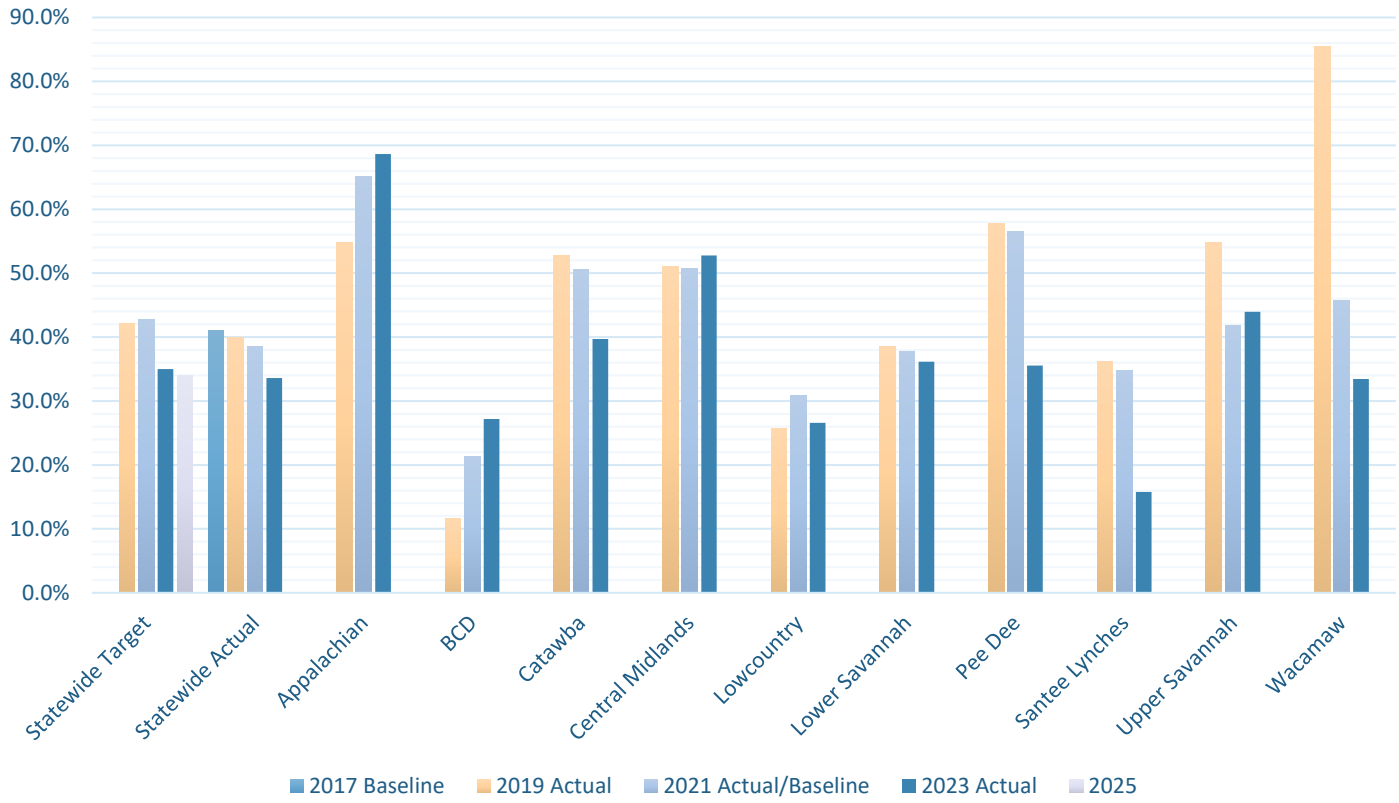
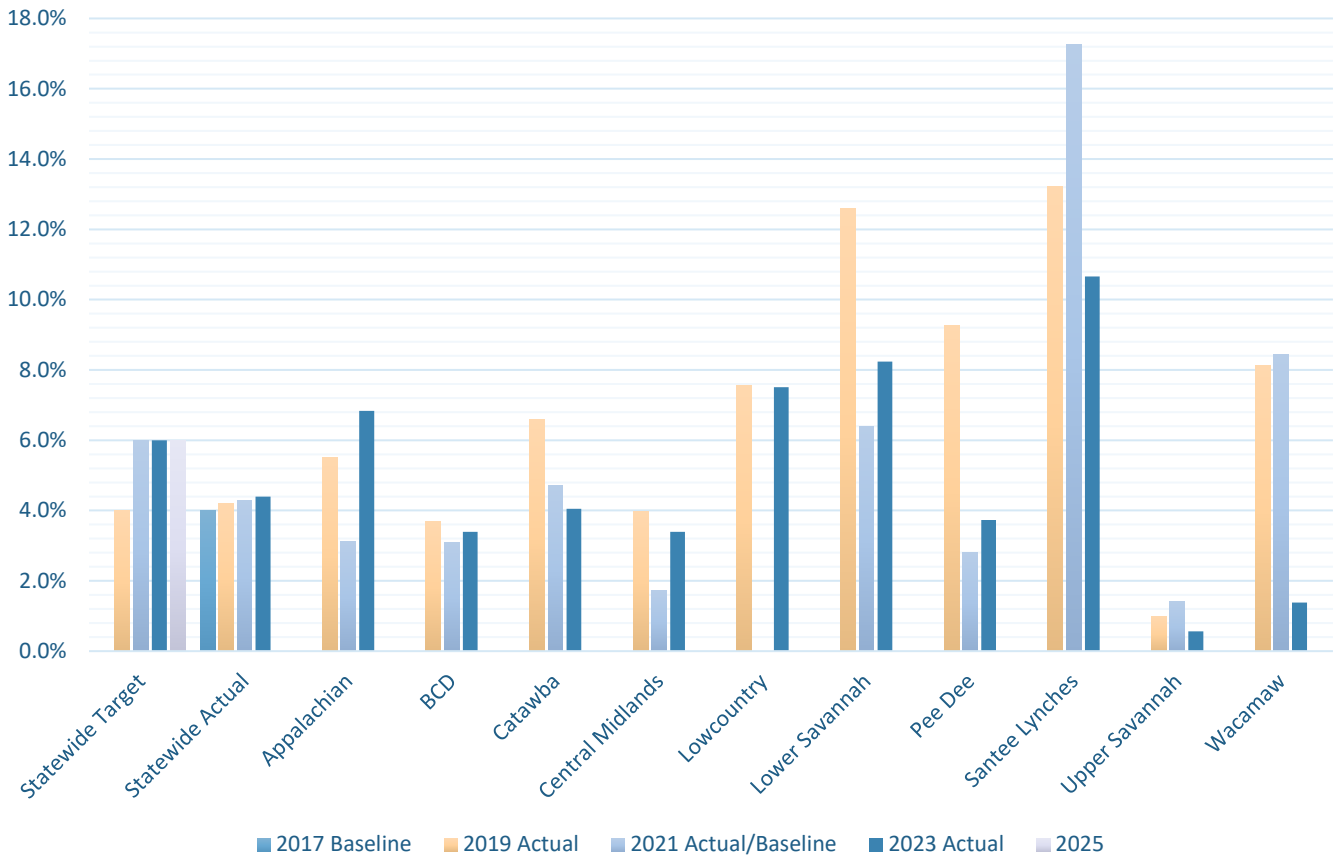


Figure 36. COG NHS Bridges in Poor Condition (SF Deck Area)



PM3 STATEWIDE MOBILITY

FHWA established measures to assess the performance and reliability of the National Highway System and freight movement on the interstate. Travel time reliability is how consistent or predictable travel conditions are for a trip or on a certain road. Some roads have very repeatable and consistent conditions day-to-day and are considered "reliable", while others are more inconsistent with delays and travel times and are considered "unreliable". A congested road is still considered reliable if the congestion is consistent and there are predictable travel times at certain times of the day. Level of Travel Time Reliability (LOTTR) measures the variability of travel times that occur on a facility or trip over a period of time. Reliability measures the benefit of traffic management and is significant to everyone who uses the transportation network, whether they're motor vehicle users, transit, freight or others.

LOTTR is defined as the ratio of longer travel times (80th percentile) to a "normal" travel time (50th percentile) using data from the Federal Highway Administration's National Performance Management Research Data Set (NPMRDS). Data is collected in 15-minute segments during four time periods:

- Morning Peak (6am-10am) Monday-Friday
- Midday (10am-4pm) Monday-Friday
- Afternoon Peak (4pm-8pm) Monday-Friday
- Weekends (6am-8pm)

The ratio is expressed as a percentage of the person miles traveled that are reliable through the sum of the number of reliable person miles traveled divided by the sum of total person miles traveled. For an example of how travel time reliability is measure see Figure 37. Performance is reported for percent person miles traveled on the Interstate and the Non-Interstate NHS that are reliable in Figure 38 and 39.

Figure 37. Calculating Travel Time Reliability Measure

Length	0.5 miles	0.5 miles	1.00 miles	1.00 miles	5.0 miles
6am-10am					
10am-4pm					
4pm-8pm					
Weekend					
Reliable?	*No*	*Yes*	*No*	*Yes*	*Yes*

6.5 reliable miles = 81.3% Reliable
8.00 total miles

SCDOT's travel time reliability approach includes factors such as anticipated growth in vehicle miles traveled, and major projects. Evaluations for this performance period indicated that both reliability on the Interstate and Non-Interstate NHS would decline relative to 2021 baseline conditions. Baseline conditions in 2021 may not be fully indicative of post pandemic travel patterns, which was reflected in projected targets.

Figure 38. Percent Person-Miles Traveled on the Interstate that are Reliable

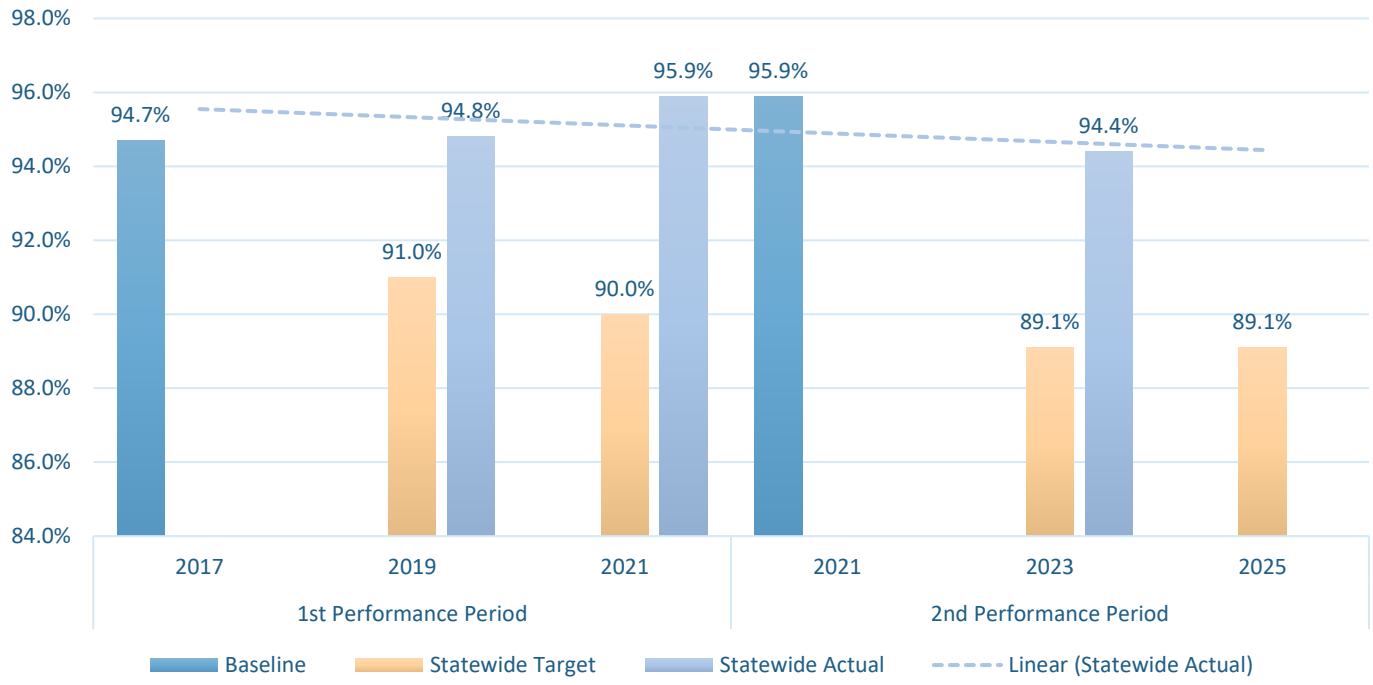
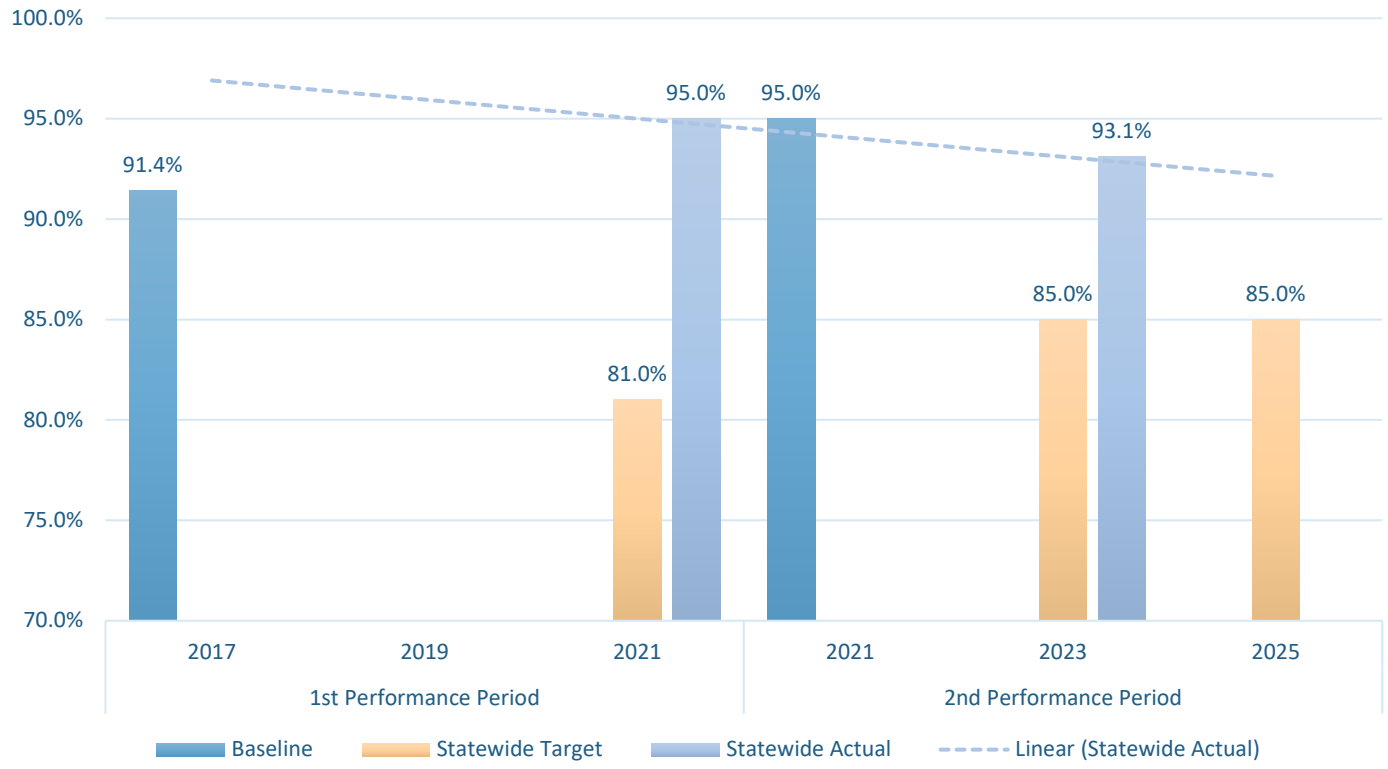


Figure 39. Percent Person-Miles Traveled on the Non-Interstate NHS that are Reliable



MPO AND COG MOBILITY

MPO and COG regional mobility conditions are shown in Figure 40 through 43 with comparison to the statewide actual conditions and targets over time. For data used to create these figures see Appendix A.

Figure 40. Percent of Person-Miles Traveled on the Interstate that are Reliable (MPO)

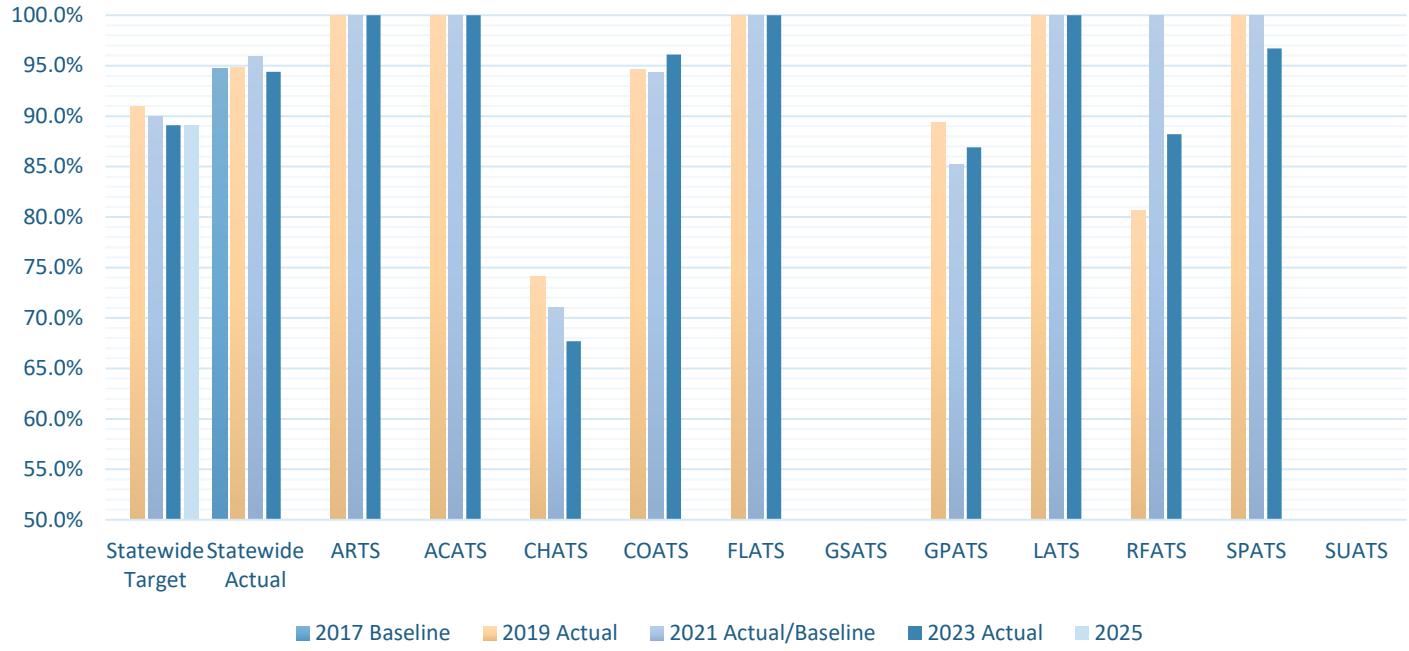


Figure 41. Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable (MPO)

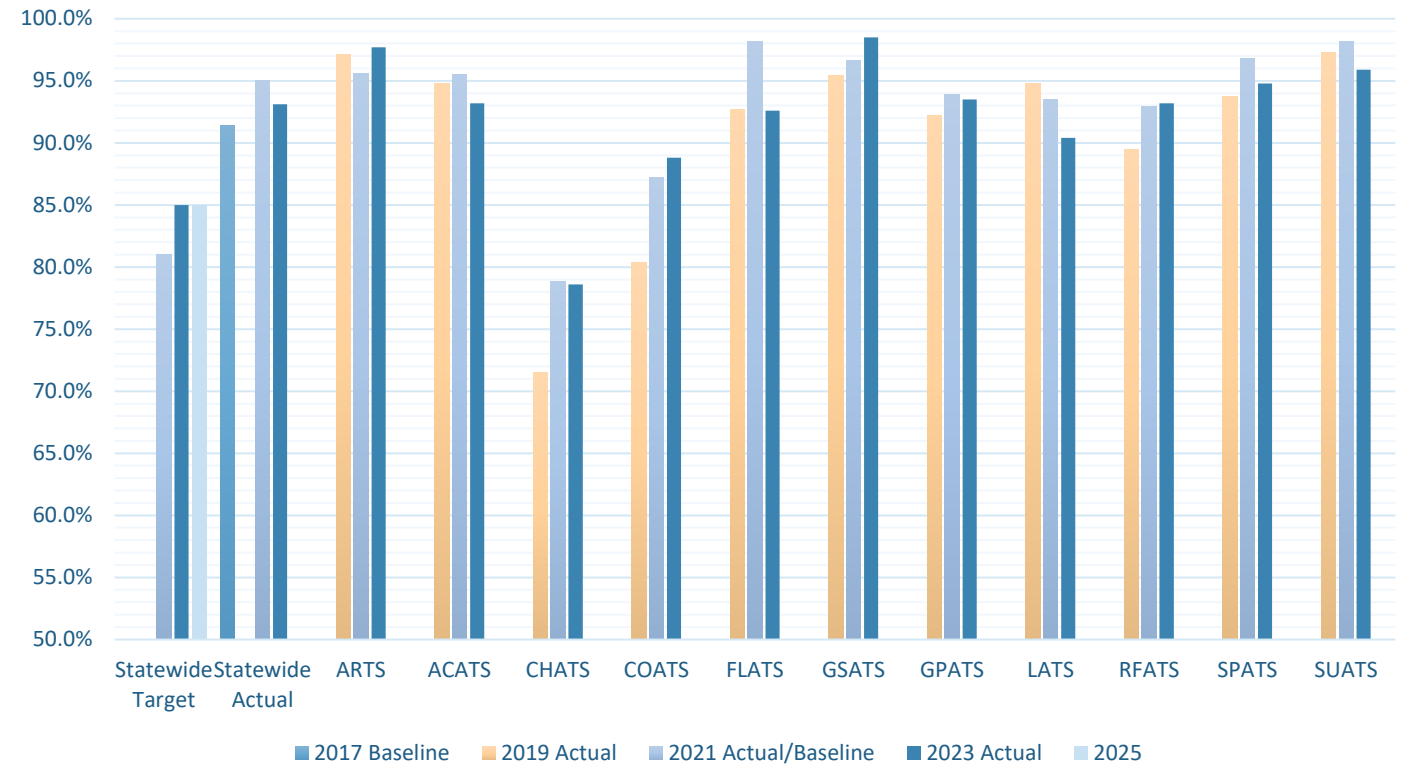


Figure 42. Percent of Person-Miles Traveled on the Interstate that are Reliable (COG)

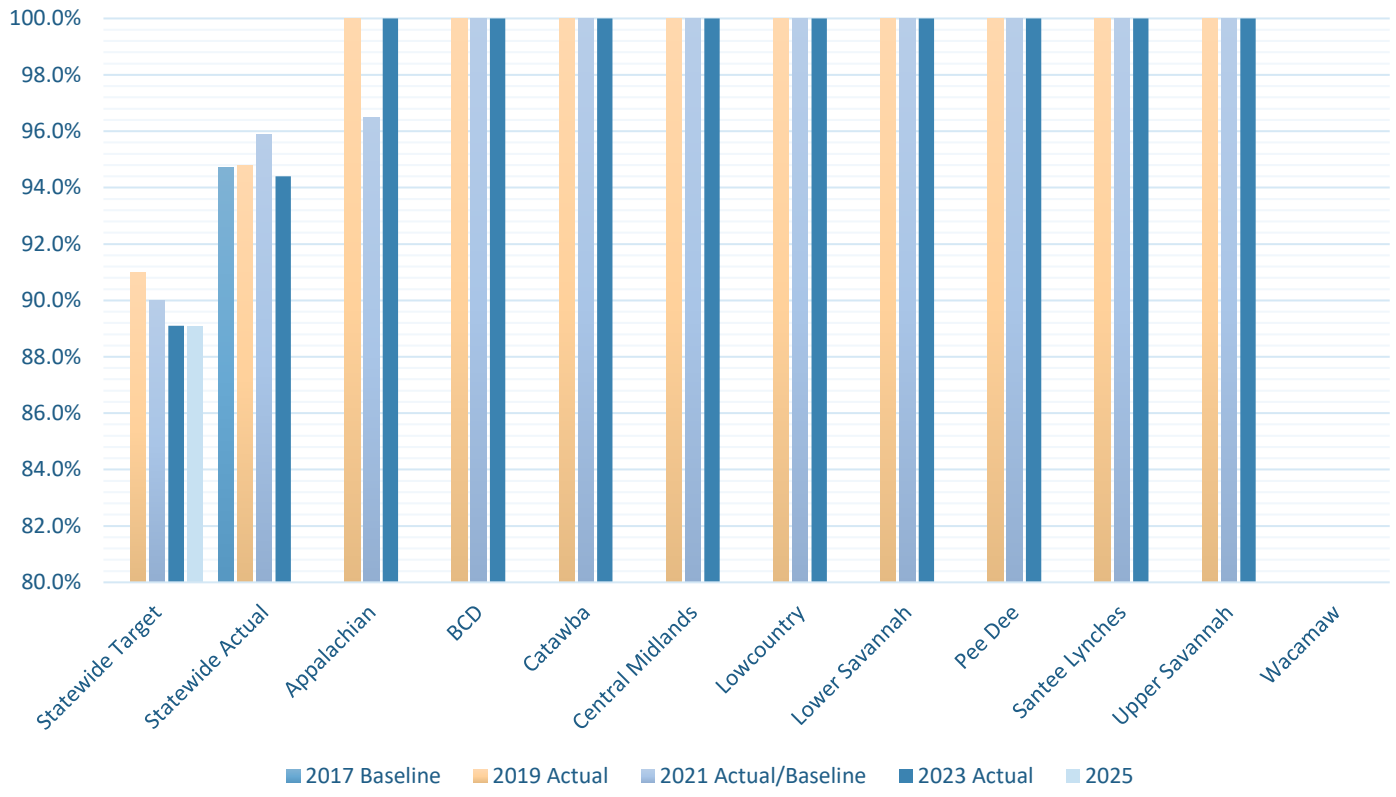
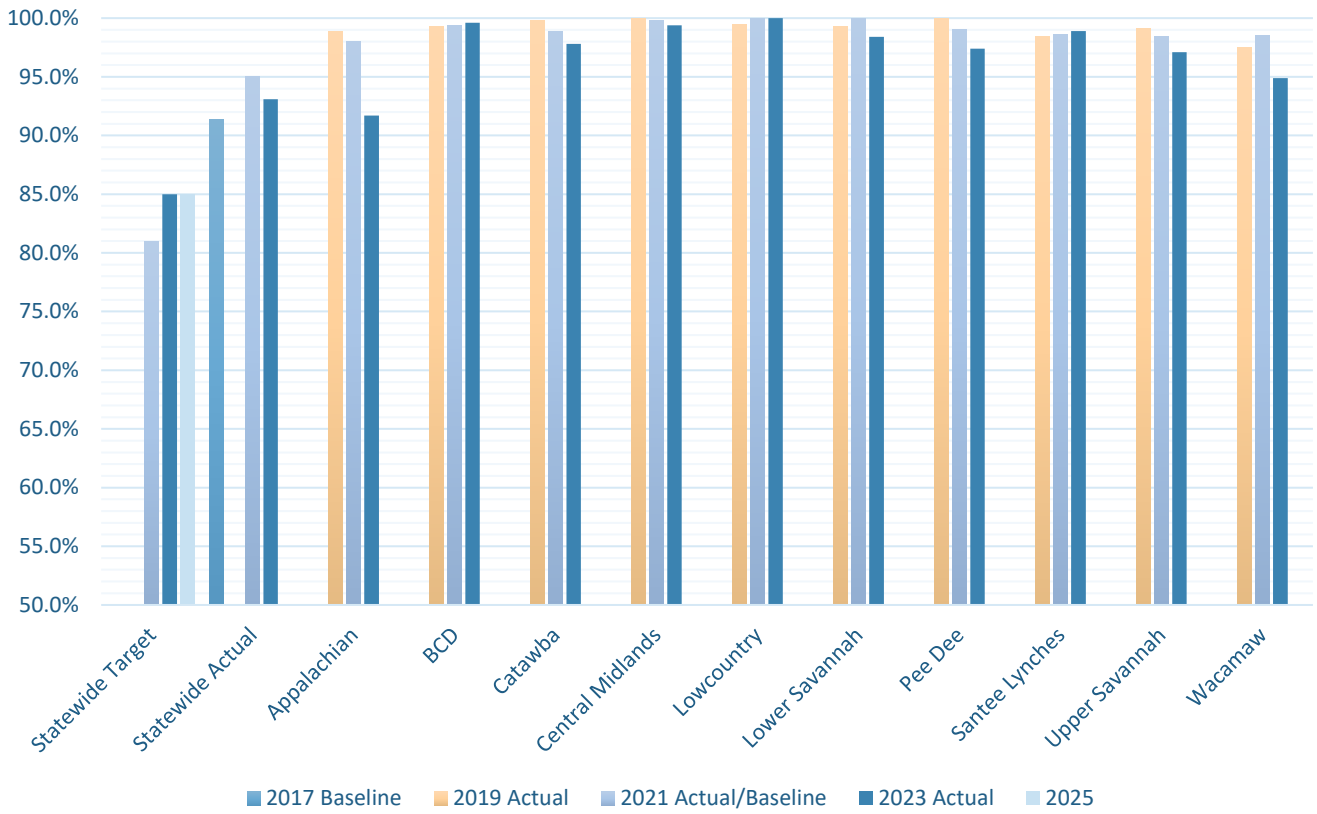


Figure 43. Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable (COG)



PM3 FREIGHT MOBILITY (TTTR)

The freight movement performance measure assesses reliability for trucks traveling on the Interstate system. A Truck Travel Time Reliability (TTTR) index is generated based on the ratio of actual truck travel times to normal travel times. A lower TTTR value means better performance, i.e., more reliable truck travel.

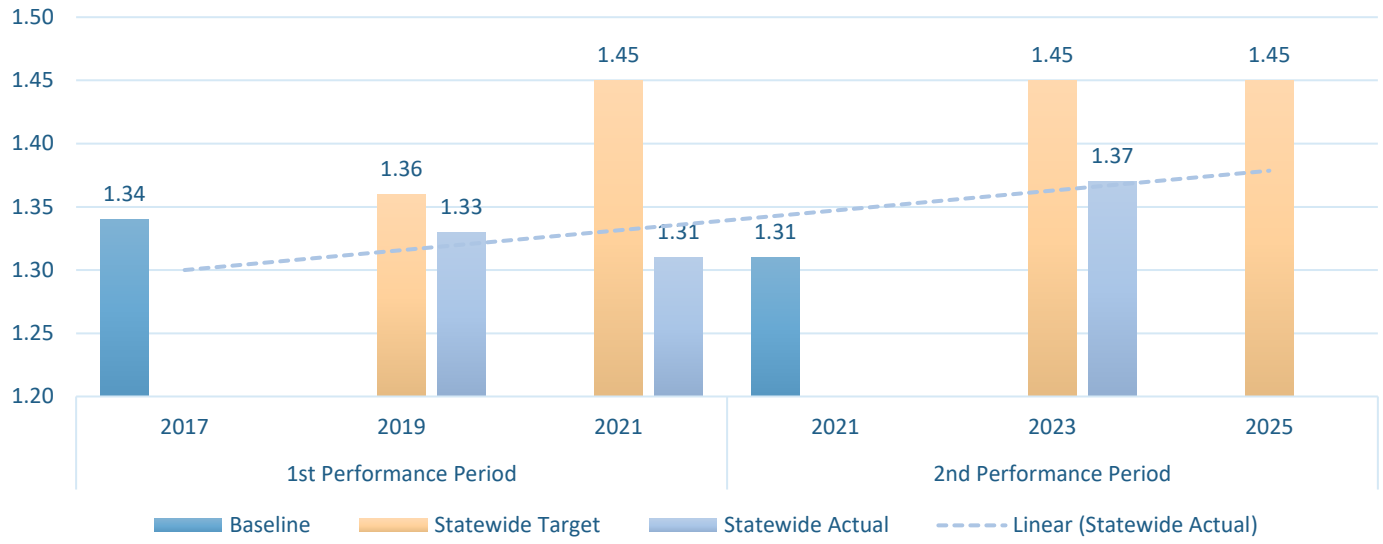
FHWA defines Level of Truck Travel Time Reliability (LOTTTR) as the percent of truck-miles on the Interstate System that are reliable. LOTTTR is calculated as the ratio of the longer travel times (95th percentile) to a "normal" travel time (50th percentile), using NPMRDS or equivalent data. Data is collected in 15-minute segments during five time periods:

- Morning Peak (6am-10am) Monday-Friday
- Midday (10am-4pm) Monday-Friday
- Afternoon Peak (4pm-8pm) Monday-Friday
- Weekends (6am-8pm)
- Overnight (8pm-6am)

The segments are then used to create the TTTR index for the entire system using a weighted aggregate calculation for the worst performing times of each segment.

Any roadway segment or corridor that has a reliability index of 1.5 or greater during any time period is considered to be unreliable. TTTR Index in Figure 44 shows overall freight reliability on the Interstate in South Carolina. In the MPO and COG Freight Mobility section that follows the graph shows the consistently unreliable regions of the Interstate System that are responsible for making 4.1% of the Interstate's unreliable, the majority of which are located in three MPO's: Charleston (CHATS), Greenville-Pickens (GPATS) and Columbia (COATS). Addressing unreliable sections and pinch points of System to System Interchanges is a top priority for the agency. As future freight volume increases, economic growth and increased work zone and interstate capacity projects are in construction, it is forecasted that TTTR index will increase above the baseline. Current and future interstate projects will benefit interstate TTTR in the long term, but SCDOT anticipates lower truck reliability will be difficult to achieve in the short term.

Figure 44. Interstate Truck Travel Time Reliability Index (TTTR)



MPO AND COG FREIGHT MOBILITY

MPO and COG regional freight mobility conditions are shown in Figure 45 and 46, with a comparison to the statewide actual conditions over time. For data used to create these figures see Appendix A.

Figure 45. Interstate Freight TTTR Index (MPO)

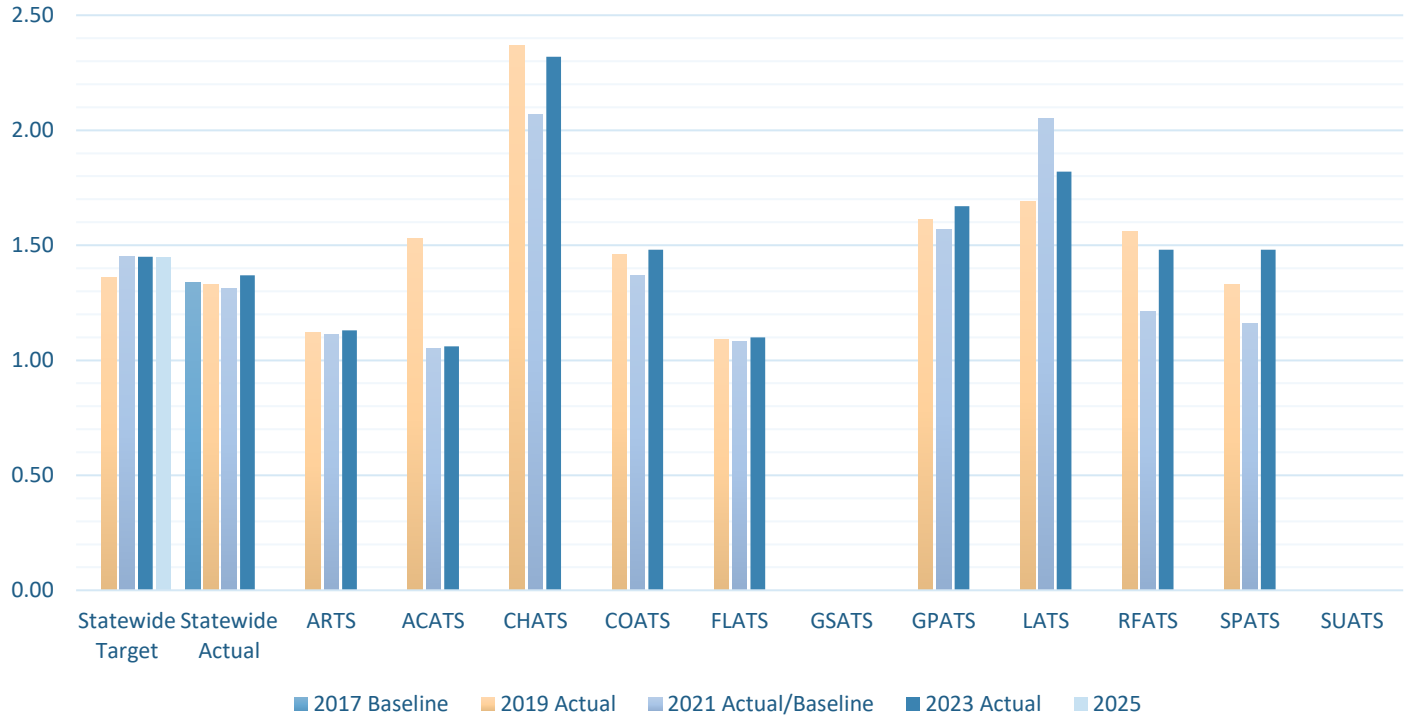
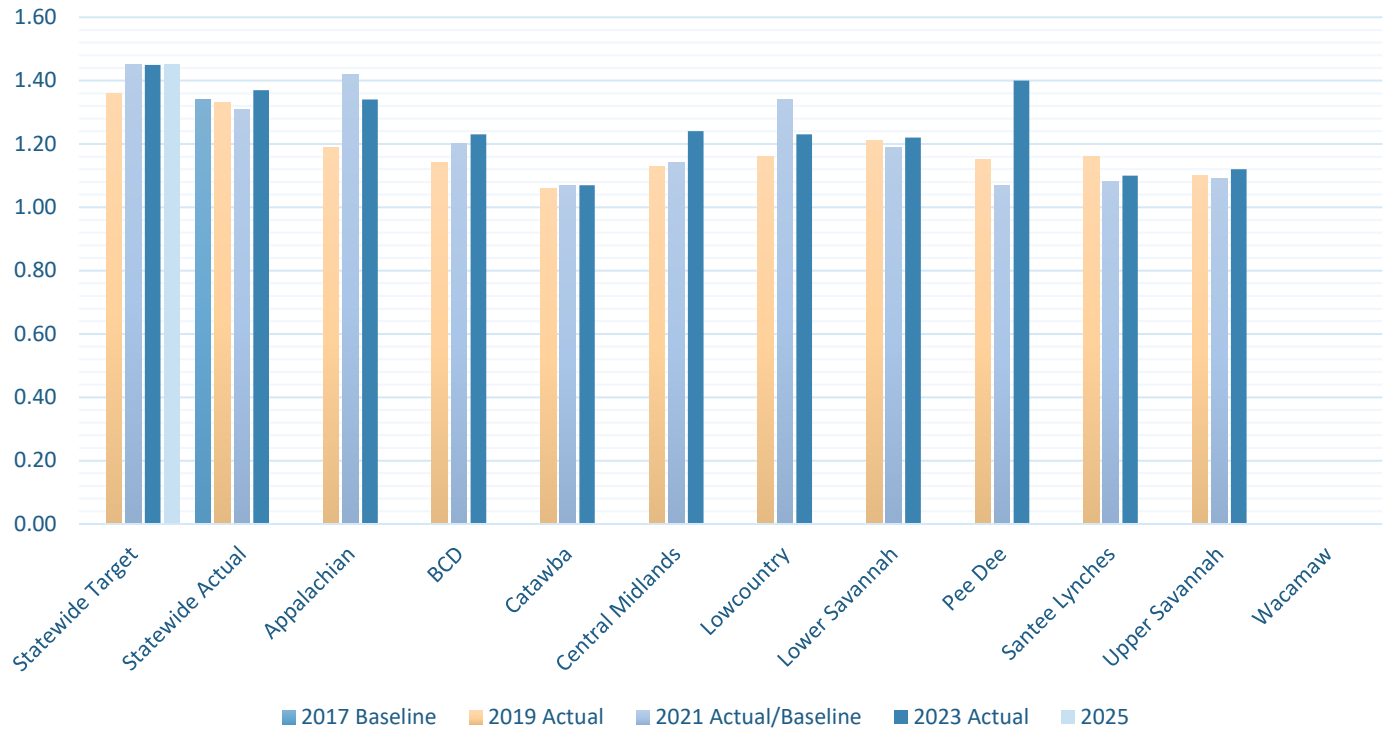


Figure 46. Interstate Freight TTTR Index (COG)

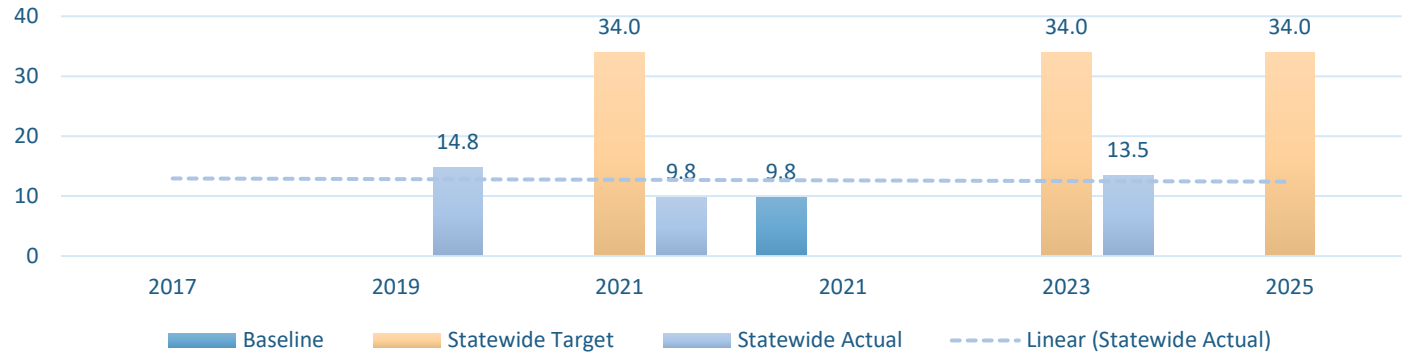


PM3 CONGESTION MITIGATION & AIR QUALITY IMPROVEMENT PROGRAM

Congestion Mitigation and Air Quality Improvement Program (CMAQ) measures apply to MPOs that are within the boundaries of each U.S. Census Bureau-designated Urbanized Area (UZA) that contains a NHS road, has a population of more than one million, and contains any part of nonattainment or maintenance area for emissions which applies to one MPO area of the state, Rock Hill and Fort Mill Area Transportation Study (RFATS). SCDOT works in conjunction with NCDOT, RFATS and other relative MPOs to develop the targets with NCDOT taking the lead on data gathering and analysis due to most of the UZA being located in North Carolina. FHWA established measures, to assess the extent of congestion and projects aimed at emission reduction.

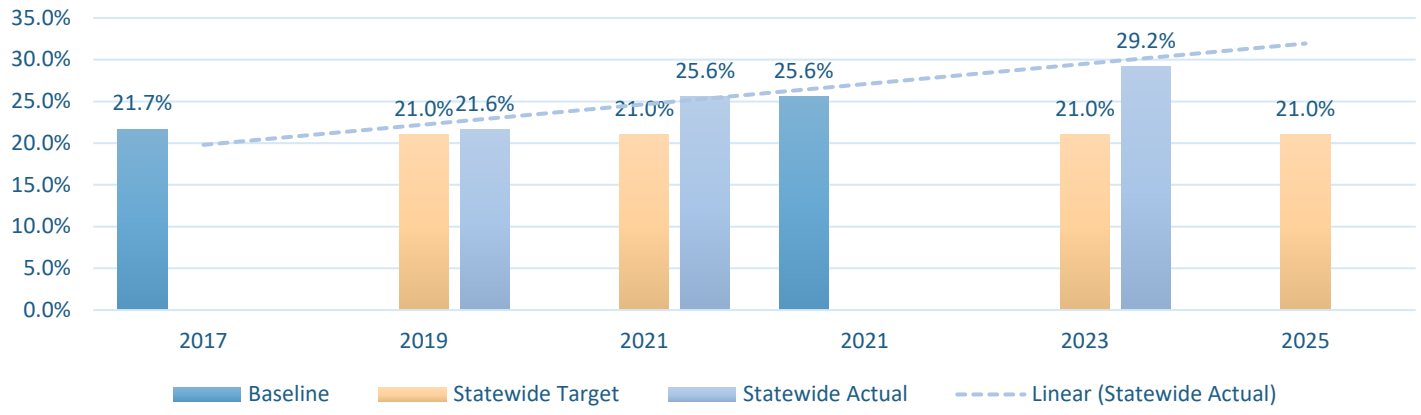
The extent of traffic congestion is measured by the number of transportation system users that are affected by congestion. This metric is measured by the annual hours of Peak Hour Excessive Delay (PHED) per capital on the NHS in the Charlotte, NC-SC Urbanized Area. The threshold for excessive delay is based on the travel times at 20 miles per hour or 60% of the posted speed limit travel time, whichever is greater. And measured in 15-minutes intervals. Peak travel hours are defined as 6:00 to 10:00 a.m. on weekday mornings; the weekday afternoon period is 3:00 to 7:00 p.m. or 4:00 to 8:00 p.m. The total excessive delay metric is weighted by vehicle volumes and occupancy. Thus, PHED is a measure of person-hours of delay experienced on NHS roads on an annual basis. The targets in Figure 47 reflect an anticipated return to pre-pandemic traffic delays, above the 2021 baseline. Uncertainty remains as the continuing impacts of widespread telework and more flexible work schedules have kept actual conditions better than pre-pandemic performance trends.

Figure 47. Annual Hours of Peak Hour Excessive Delay per Capita - Charlotte, NC-SC Urbanized Area (hours)



Measuring Non-Single Occupancy Vehicle (Non-SOV) travel, within an urbanized area, recognizes investments within the Charlotte, NC-SC region that increase multimodal solutions and vehicle occupancy levels as strategies to reduce congestion and criteria pollutant emissions. Modes of transportation recognized include carpooling, vanpooling, public transportation, commuter rail, walking, bicycling and tele-commuting. See Figure 48 below.

Figure 48. Percent of Non-Single Occupancy Vehicle Travel - Charlotte, NC-SC Urbanized Area



On-road emission reduction measures represents the cumulative target period reductions in kg/day for CMAQ funded projects within the boundary of the planning area. Total emission reduction for Nitrogen Oxides (NOx), Figure 49, and Volatile Organic Compounds (VOC), Figure 50, performance measures represent the estimated reductions benefit resulting from CMAQ projects authorized for funding in the performance period. These benefits are highly dependent on the project type and project delivery schedules. Projects planned to be completed in the first half of the performance period have shifted to the remainder of the performance period due to delays with utility coordination, right-of-way phase and other project delivery delays.

Figure 49. Total Emission Reduction (NOx) - Charlotte, NC-SC Urbanized Area (kg/day)

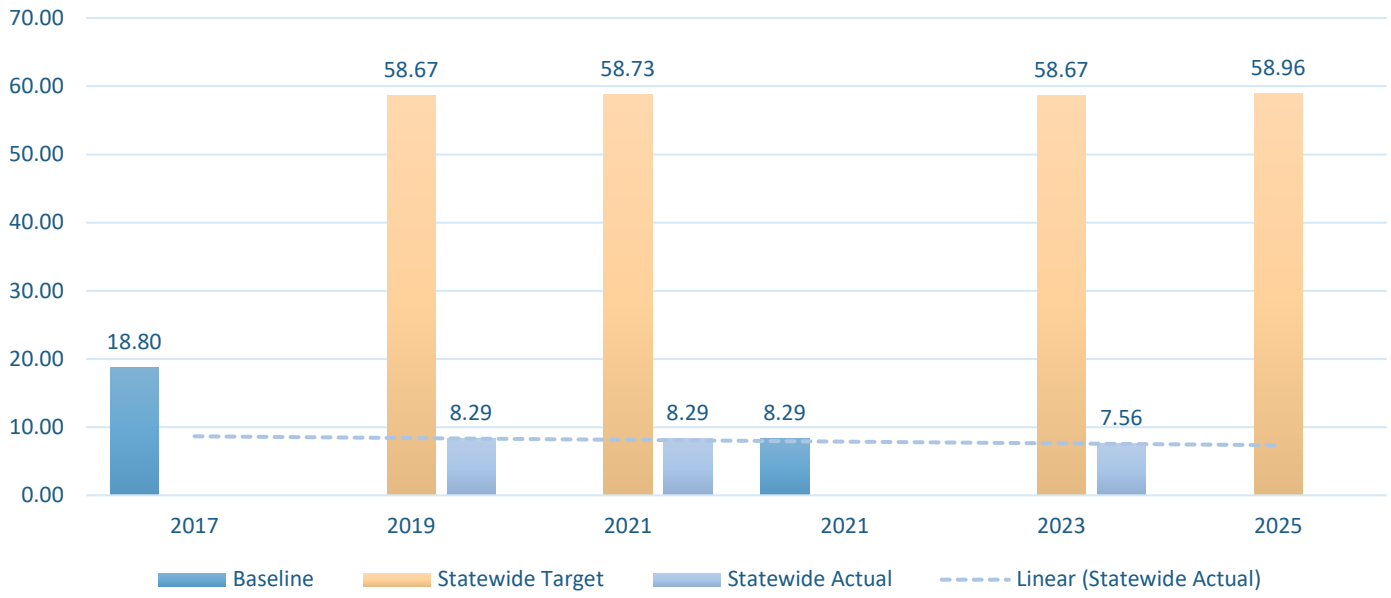
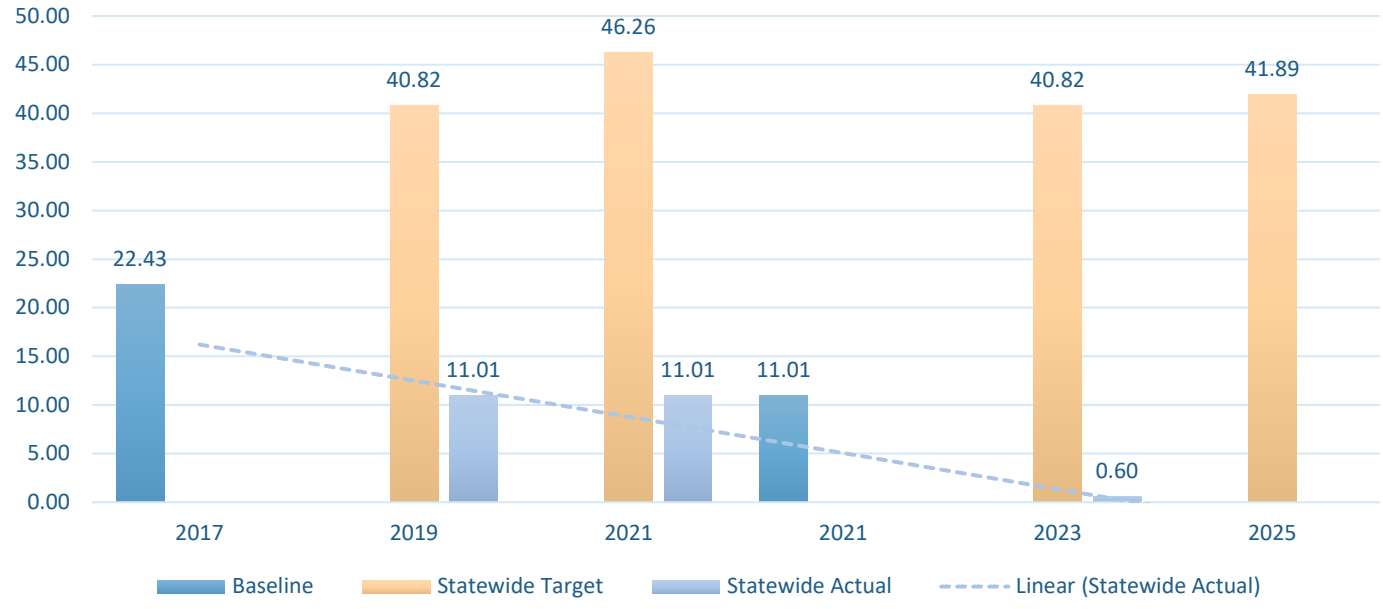


Figure 50. Total Emission Reduction (VOC) - Charlotte, NC-SC Urbanized Area (kg/day)



APPENDIX

(Note – Some cells are purposely left blank in the tables that follow)

Number of Fatalities Statewide	Year				
	CY (2014-2018) Baseline (2012-2016)	CY (2015-2019) Baseline (2013-2017)	CY (2016-2020) Baseline (2014-2018)	CY (2017-2021) Baseline (2015-2019)	CY (2018-2022) Baseline (2016-2020)
Baseline	890.4	915.6	969.4	1006.0	1023.4
Statewide Target	970.0	988.0	1011.0	1005.0	1061.0
Statewide Actual	969.6	1005.0	1023.0	1059.0	1080.0

Rate of Fatalities	Year				
	CY (2014-2018) Baseline (2012-2016)	CY (2015-2019) Baseline (2013-2017)	CY (2016-2020) Baseline (2014-2018)	CY (2017-2021) Baseline (2015-2019)	CY (2018-2022) Baseline (2016-2020)
Baseline	1.748	1.752	1.802	1.820	1.838
Statewide Target	1.810	1.790	1.819	1.760	1.820
Statewide Actual	1.804	1.818	1.836	1.880	1.894

Number of Serious Injuries Statewide	Year				
	CY (2014-2018) Baseline (2012-2016)	CY (2015-2019) Baseline (2013-2017)	CY (2016-2020) Baseline (2014-2018)	CY (2017-2021) Baseline (2015-2019)	CY (2018-2022) Baseline (2016-2020)
Baseline	3195.4	3108.2	2938.8	2974.2	2877.2
Statewide Target	3067.0	2986.0	2781.0	2950.0	2850.0
Statewide Actual	2988.4	2986.6	2888.2	2862.2	2804.6

Rate of Serious Injuries	Year				
	CY (2014-2018) Baseline (2012-2016)	CY (2015-2019) Baseline (2013-2017)	CY (2016-2020) Baseline (2014-2018)	CY (2017-2021) Baseline (2015-2019)	CY (2018-2022) Baseline (2016-2020)
Baseline	6.304	5.986	5.584	5.390	5.160
Statewide Target	5.708	5.420	4.979	5.350	4.892
Statewide Actual	5.590	5.412	5.180	5.076	4.916

Number of Non-Motorized Fatalities and Serious Injuries	Year				
	CY (2014-2018) Baseline (2012-2016)	CY (2015-2019) Baseline (2013-2017)	CY (2016-2020) Baseline (2014-2018)	CY (2017-2021) Baseline (2015-2019)	CY (2018-2022) Baseline (2016-2020)
Baseline	378.8	382.6	393.2	417.4	440.8
Statewide Target	371.3	380.0	380.0	440.0	500.0
Statewide Actual	389.8	414.2	438.8	458.8	463.6

MPO Study Area	Total F&SI	Percent Total F&SI Overall	Traffic Fatalities	Fatality Rate*	Serious Injuries	Serious Injury Rate*	Non-Motorized Fatalities and Serious Injuries
Statewide				1.775		4.567	
ARTS	88.800	3%	23.0	1.441	52.8	3.308	13.0
ACATS	79.000	3%	20.0	1.023	49.4	2.526	9.6
CHATS	544.400	20%	97.2	1.419	360.6	5.266	86.6
COATS	430.400	16%	106.8	1.492	265.8	3.713	57.8
FLATS	134.400	5%	31.4	1.801	83.6	4.796	19.4
GSATS	297.200	11%	56.6	1.510	196.4	5.239	44.2
GPATS	509.600	19%	112.0	1.828	339.2	5.536	58.4
RFATS	149.400	6%	28.2	1.132	106.2	4.261	15.0
SPATS	208.400	8%	54.0	1.551	134.0	3.849	20.4
SUATS	80.600	3%	18.8	2.413	53.4	6.854	8.4
LATS	139.400	5%	26.0	1.255	97.6	4.712	15.8

COG Study Area	Total F&SI	Percent Total F&SI Overall	Traffic Fatalities	Fatality Rate*	Serious Injuries	Serious Injury Rate*	Non-Motorized Fatalities and Serious Injuries
Statewide				1.775		4.567	
Appalachian	250.200	15%	65.0	2.284	166.6	5.855	18.6
BCD	119.800	7%	43.6	2.602	66.6	3.975	9.6
Catawba	167.000	10%	47.6	2.387	107.2	5.375	12.2
Central Midlands	91.800	5%	36.0	1.836	48.0	2.448	7.8
Lowcountry	135.600	8%	46.2	2.136	77.2	3.569	12.2
Lower Savannah	226.800	13%	65.8	2.007	146.8	4.478	14.2
Pee Dee	238.400	14%	71.6	2.573	144.0	5.175	22.8
Santee Lynches	129.400	8%	37.0	1.523	84.8	3.490	7.6
Upper Savannah	180.000	11%	52.4	2.181	113.4	4.719	14.2
Waccamaw	143.000	9%	42.4	3.059	88.6	6.393	12.0

Interstate Pavements in Good Condition (Fed Metric)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline				75.8%		
Statewide Target			71.0%		77.0%	78.0%
Statewide Actual		63.2%	75.8%		70.7%	

Interstate Pavements in Poor Condition (Fed Metric)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline				0.2%		
Statewide Target			3.0%		2.5%	2.5%
Statewide Actual		1.2%	0.2%		0.6%	

Non-Interstate NHS Pavements in Good Condition (Fed Metric)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline				38.8%		
Statewide Target		14.9%	21.1%		36.0%	38.0%
Statewide Actual		27.4%	38.8%		38.6%	

Non-Interstate NHS Pavements in Poor Condition (Fed Metric)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline				1.6%		
Statewide Target		4.3%	4.6%		10.0%	10.0%
Statewide Actual		3.9%	1.6%		1.9%	

MPO Region - Interstate Centerline Miles	Centerline Miles	Percentage
ACATS	13.74	2%
ARTS	60.07	7%
CHATS	96.99	12%
COATS	243.51	30%
FLATS	78.01	10%
GSATS	0.00	0%
GPATS	134.39	17%
LATS	29.93	4%
RFATS	42.68	5%
SPATS	107.71	13%
SUATS	0.00	0%

MPO Region Non-Interstate NHS Centerline Miles	Centerline Miles	Percentage
ACATS	66.20	4%
ARTS	91.70	6%
CHATS	208.00	13%
COATS	228.30	14%
FLATS	77.88	5%
GSATS	296.60	19%
GPATS	213.35	13%
LATS	134.19	8%
RFATS	100.81	6%
SPATS	111.03	7%
SUATS	69.61	4%

COG Region - Interstate Centerline Miles	Centerline Miles	Percentage
Appalachian	130.82	15%
BCD	78.01	9%
Catawba	37.64	4%
Central Midlands	120.53	13%
Lowcountry	107.69	12%
Lower Savannah	137.17	15%
Pee Dee	56.71	6%
Santee Lynches	155.49	17%
Upper Savannah	70.07	8%
Wacamaw	0.00	0%

COG Region Non-Interstate NHS Centerline Miles	Centerline Miles	Percentage
Appalachian	133.71	7%
BCD	162.08	8%
Catawba	227.66	11%
Central Midlands	41.75	2%
Lowcountry	106.95	5%
Lower Savannah	279.79	14%
Pee Dee	427.64	21%
Santee Lynches	127.46	6%
Upper Savannah	265.69	13%
Wacamaw	257.59	13%

MPO Interstate Pavements (PQI) Good	Years			
	2017	2019	2021	2023
Statewide	69.87%	69.72%	77.69%	76.79%
ACATS	29.34%	100.00%	95.85%	95.78%
ARTS	61.20%	83.52%	88.91%	78.29%
CHATS	98.94%	66.35%	64.09%	85.30%
COATS	73.88%	83.21%	80.60%	84.36%
FLATS	93.31%	93.87%	94.22%	90.13%
GSATS				
GPATS	69.91%	63.88%	64.94%	60.18%
LATS	71.57%	83.90%	84.20%	100.00%
RFATS	100.00%	100.00%	100.00%	97.51%
SPATS	62.85%	89.77%	94.83%	96.68%
SUATS				

MPO Interstate Pavements (PQI) Poor	Years			
	2017	2019	2021	2023
Statewide	13.90%	11.07%	7.65%	7.02%
ACATS	13.83%	0.00%	0.00%	0.00%
ARTS	35.47%	6.16%	0.00%	10.38%
CHATS	0.40%	3.48%	4.13%	5.67%
COATS	16.45%	8.56%	5.30%	3.43%
FLATS	0.67%	0.00%	5.00%	4.79%
GSATS				
GPATS	21.12%	16.35%	22.05%	24.95%
LATS	0.00%	12.29%	1.98%	0.00%
RFATS	0.00%	0.00%	0.00%	0.00%
SPATS	7.29%	6.23%	0.00%	0.98%
SUATS				

MPO Non-Interstate NHS Pavements (PQI) Good	Years			
	2017	2019	2021	2023
Statewide	31.67%	46.43%	52.20%	51.85%
ACATS	17.66%	25.40%	40.94%	36.40%
ARTS	18.62%	51.87%	38.38%	58.48%
CHATS	61.62%	63.08%	48.30%	40.39%
COATS	16.48%	22.48%	30.27%	34.80%
FLATS	50.13%	60.86%	66.72%	64.36%
GSATS	24.42%	30.91%	54.62%	69.67%
GPATS	21.22%	41.13%	59.39%	58.20%
LATS	42.38%	66.71%	64.72%	64.06%
RFATS	23.05%	28.82%	42.53%	43.61%
SPATS	16.66%	17.47%	27.63%	24.05%
SUATS	29.32%	50.37%	38.68%	32.25%

MPO Non-Interstate NHS Pavements (PQI) Poor	Years			
	2017	2019	2021	2023
Statewide	43.22%	34.84%	30.50%	29.62%
ACATS	55.35%	49.74%	42.28%	51.46%
ARTS	55.93%	29.65%	44.34%	28.04%
CHATS	17.89%	13.84%	18.58%	23.78%
COATS	39.14%	40.56%	36.94%	36.57%
FLATS	25.67%	14.09%	15.50%	13.83%
GSATS	45.22%	43.88%	26.07%	17.55%
GPATS	68.37%	53.98%	33.14%	25.27%
LATS	23.43%	8.61%	14.17%	11.35%
RFATS	30.14%	39.68%	29.93%	34.72%
SPATS	45.78%	60.36%	52.50%	64.31%
SUATS	51.44%	33.85%	48.90%	47.31%

COG Interstate Pavements (PQI) Good	Years			
	2017	2019	2021	2023
Statewide	69.87%	69.72%	77.69%	76.79%
Appalachian	67.95%	73.19%	73.69%	67.11%
BCD	72.99%	69.74%	79.37%	49.34%
Catawba	100.00%	91.21%	99.55%	60.20%
Central Midlands	50.11%	44.09%	70.98%	71.49%
Lowcountry	16.82%	15.84%	65.98%	65.66%
Lower Savannah	59.17%	32.04%	38.63%	57.33%
Pee Dee	66.81%	63.69%	66.87%	67.31%
Santee Lynches	80.30%	82.95%	98.46%	89.07%
Upper Savannah	96.24%	96.96%	99.68%	99.75%
Wacamaw				

COG Interstate Pavements (PQI) Poor	Years			
	2017	2019	2021	2023
Statewide	13.90%	11.07%	7.65%	7.02%
Appalachian	17.69%	9.03%	2.68%	4.24%
BCD	4.74%	1.92%	6.45%	17.83%
Catawba	0.00%	0.00%	0.00%	0.45%
Central Midlands	34.63%	39.88%	15.28%	14.96%
Lowcountry	19.25%	6.69%	0.00%	0.00%
Lower Savannah	19.86%	33.02%	24.11%	11.60%
Pee Dee	9.71%	17.63%	33.13%	12.99%
Santee Lynches	7.46%	1.43%	0.00%	0.00%
Upper Savannah	2.90%	2.75%	32.00%	0.00%
Wacamaw				

COG Non-Interstate NHS Pavements (PQI) Good	Years			
	2017	2019	2021	2023
Statewide	31.67%	46.43%	52.20%	51.85%
Appalachian	26.71%	42.67%	54.15%	52.01%
BCD	24.78%	39.24%	43.12%	51.55%
Catawba	25.80%	47.08%	62.22%	50.58%
Central Midlands	45.81%	53.67%	38.17%	39.45%
Lowcountry	53.02%	73.00%	61.47%	58.08%
Lower Savannah	20.79%	48.77%	50.82%	51.25%
Pee Dee	36.75%	52.47%	56.94%	56.50%
Santee Lynches	34.49%	64.56%	64.51%	42.58%
Upper Savannah	34.91%	40.35%	54.40%	48.90%
Wacamaw	44.27%	56.49%	60.59%	63.59%

COG Non-Interstate NHS Pavements (PQI) Poor	Years			
	2017	2019	2021	2023
Statewide	43.22%	34.84%	30.50%	29.62%
Appalachian	52.84%	47.67%	27.46%	27.17%
BCD	51.36%	37.60%	33.10%	34.06%
Catawba	46.49%	32.81%	27.25%	34.15%
Central Midlands	43.29%	45.80%	50.77%	42.14%
Lowcountry	26.87%	11.68%	25.45%	25.65%
Lower Savannah	61.94%	38.71%	38.38%	33.53%
Pee Dee	44.44%	30.91%	29.16%	28.74%
Santee Lynches	27.49%	20.02%	24.23%	39.21%
Upper Savannah	39.64%	40.35%	26.55%	24.86%
Wacamaw	37.78%	35.25%	30.57%	24.65%

NHS Bridges in Good Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	41.1%			38.5%		
Statewide Target		42.2%	42.7%		35.0%	34.0%
Statewide Actual		40.0%	38.5%		33.6%	

NHS Bridges in Poor Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	4.0%			4.3%		
Statewide Target		4.0%	6.0%		6.0%	6.0%
Statewide Actual		4.2%	4.3%		4.4%	

MPO NHS Bridges	Square Footage Deck Area	Number	Percentage
ACATS	522625	35	2%
ARTS	580078	44	2%
CHATS	11627783	147	42%
COATS	3936459	173	14%
FLATS	722926	61	3%
GSATS	3692822	108	13%
GPATS	2245373	151	8%
LATS	2119872	48	8%
RFATS	667130	35	2%
SPATS	1135581	93	4%
SUATS	199744	16	1%

COG NHS Bridges	Square Footage Deck Area	Number	Percentage
Appalachian	1184293	84	9%
BCD	2082239	98	11%
Catawba	966203	85	10%
Central Midlands	860469	58	6%
Lowcountry	679518	58	6%
Lower Savannah	957638	89	10%
Pee Dee	2249035	149	17%
Santee Lynches	1978970	110	12%
Upper Savannah	759670	85	10%
Wacamaw	1510327	74	8%

MPO NHS Bridges in Good Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Statewide Baseline	41.1%			38.5%		
Statewide Target		42.2%	42.7%		35.0%	34.0%
Statewide Actual		40.0%	38.5%		33.6%	
ARTS		62.4%	61.8%		62.0%	
ACATS		16.2%	17.4%		12.7%	
CHATS		19.9%	22.6%		23.7%	
COATS		55.9%	52.7%		40.0%	
FLATS		28.6%	38.4%		7.2%	
GSATS		78.0%	65.1%		56.0%	
GPATS		57.1%	56.8%		56.1%	
LATS		2.4%	2.3%		2.6%	
RFATS		23.9%	24.5%		25.6%	
SPATS		63.9%	62.2%		58.3%	
SUATS		64.41%	64.01%		56.99%	

MPO NHS Bridges in Poor Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Statewide Baseline	4.0%			4.3%		
Statewide Target		4.0%	6.0%		6.0%	6.0%
Statewide Actual		4.2%	4.3%		4.4%	
ARTS		2.6%	1.4%		1.5%	
ACATS		0.8%	0.8%		0.8%	
CHATS		0.7%	0.9%		1.5%	
COATS		6.3%	5.1%		5.6%	
FLATS		0.0%	0.0%		1.0%	
GSATS		2.4%	7.5%		7.6%	
GPATS		11.6%	11.6%		10.5%	
LATS		4.6%	4.1%		4.1%	
RFATS		0.6%	0.6%		0.8%	
SPATS		8.1%	3.7%		7.1%	
SUATS		10.7%	10.9%		10.9%	

COG NHS Bridges in Good Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Statewide Baseline	41.1%			38.5%		
Statewide Target		42.2%	42.7%		35.0%	34.0%
Statewide Actual		40.0%	38.5%		33.6%	
Appalachian		54.7%	65.2%		68.6%	
BCD		11.6%	21.3%		27.2%	
Catawba		52.8%	50.6%		39.7%	
Central Midlands		51.0%	50.7%		52.8%	
Lowcountry		25.7%	30.8%		26.6%	
Lower Savannah		38.6%	37.8%		36.2%	
Pee Dee		57.8%	56.5%		35.5%	
Santee Lynches		36.2%	34.8%		15.8%	
Upper Savannah		54.8%	41.9%		44.0%	
Wacamaw		85.5%	45.7%		33.5%	

COG NHS Bridges in Poor Condition (Deck Area)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Statewide Baseline	4.0%			4.3%		
Statewide Target		4.0%	6.0%		6.0%	6.0%
Statewide Actual		4.2%	4.3%		4.4%	
Appalachian		5.5%	3.1%		6.8%	
BCD		3.7%	3.1%		3.4%	
Catawba		6.6%	4.7%		4.1%	
Central Midlands		4.0%	1.7%		3.4%	
Lowcountry		7.6%	0.0%		7.5%	
Lower Savannah		12.6%	6.4%		8.2%	
Pee Dee		9.3%	2.8%		3.7%	
Santee Lynches		13.2%	17.3%		10.7%	
Upper Savannah		1.0%	1.4%		0.6%	
Wacamaw		8.1%	8.4%		1.4%	

Percent of Person-Miles Traveled on the Interstate that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	94.7%			95.9%		
Statewide Target		91.0%	90.0%		89.1%	89.1%
Statewide Actual		94.8%	95.9%		94.4%	

Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	91.4%			95.0%		
Statewide Target			81.0%		85.0%	85.0%
Statewide Actual			95.0%		93.1%	

Truck Travel Time Reliability Index	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	1.34			1.31		
Statewide Target		1.36	1.45		1.45	1.45
Statewide Actual		1.33	1.31		1.37	

MPO Percent of Person-Miles Traveled on the Interstate that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	94.7%			95.9%		
Statewide Target		91.0%	90.0%		89.1%	89.1%
Statewide Actual		94.8%	95.9%		94.4%	
ARTS		100.0%	100.0%		100.0%	
ACATS		100.0%	100.0%		100.0%	
CHATS		74.1%	71.0%		67.7%	
COATS		94.6%	94.3%		96.1%	
FLATS		100.0%	100.0%		100.0%	
GSATS						
GPATS		89.4%	85.2%		86.9%	
LATS		100.0%	100.0%		100.0%	
RFATS		80.7%	100.0%		88.2%	
SPATS		100.0%	100.0%		96.7%	
SUATS						

MPO Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	91.4%			95.0%		
Statewide Target			81.0%		85.0%	85.0%
Statewide Actual			95.0%		93.1%	
ARTS		97.1%	95.6%		97.7%	
ACATS		94.8%	95.5%		93.2%	
CHATS		71.5%	78.8%		78.6%	
COATS		80.4%	87.2%		88.8%	
FLATS		92.7%	98.2%		92.6%	
GSATS		95.4%	96.6%		98.5%	
GPATS		92.2%	93.9%		93.5%	
LATS		94.8%	93.5%		90.4%	
RFATS		89.5%	92.9%		93.2%	
SPATS		93.7%	96.8%		94.8%	
SUATS		97.3%	98.2%		95.9%	

COG Percent of Person-Miles Traveled on the Interstate that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	94.7%			95.9%		
Statewide Target		91.0%	90.0%		89.1%	89.1%
Statewide Actual		94.8%	95.9%		94.4%	
Appalachian		100.0%	96.5%		100.0%	
BCD		100.0%	100.0%		100.0%	
Catawba		100.0%	100.0%		100.0%	
Central Midlands		100.0%	100.0%		100.0%	
Lowcountry		100.0%	100.0%		100.0%	
Lower Savannah		100.0%	100.0%		100.0%	
Pee Dee		100.0%	100.0%		100.0%	
Santee Lynches		100.0%	100.0%		100.0%	
Upper Savannah		100.0%	100.0%		100.0%	
Wacamaw						

COG Percent of Person-Miles Traveled on the Non-Interstate NHS that are Reliable	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	91.4%			95.0%		
Statewide Target			81.0%		85.0%	85.0%
Statewide Actual			95.0%		93.1%	
Appalachian		98.9%	98.0%		91.7%	
BCD		99.3%	99.4%		99.6%	
Catawba		99.8%	98.9%		97.8%	
Central Midlands		100.0%	99.8%		99.4%	
Lowcountry		99.5%	100.0%		100.0%	
Lower Savannah		99.3%	100.0%		98.4%	
Pee Dee		100.0%	99.0%		97.4%	
Santee Lynches		98.4%	98.6%		98.9%	
Upper Savannah		99.1%	98.4%		97.1%	
Wacamaw		97.5%	98.5%		94.9%	

MPO Truck Travel Time Reliability Index (Interstates)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	1.34			1.31		
Statewide Target		1.36	1.45		1.45	1.45
Statewide Actual		1.33	1.31		1.37	
ARTS		1.12	1.11		1.13	
ACATS		1.53	1.05		1.06	
CHATS		2.37	2.07		2.32	
COATS		1.46	1.37		1.48	
FLATS		1.09	1.08		1.10	
GSATS						
GPATS		1.61	1.57		1.67	
LATS		1.69	2.05		1.82	
RFATS		1.56	1.21		1.48	
SPATS		1.33	1.16		1.48	
SUATS						

COG Truck Travel Time Reliability Index (Interstates)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	1.34			1.31		
Statewide Target		1.36	1.45		1.45	1.45
Statewide Actual		1.33	1.31		1.37	
Appalachian		1.19	1.42		1.34	
BCD		1.14	1.2		1.23	
Catawba		1.06	1.07		1.07	
Central Midlands		1.13	1.14		1.24	
Lowcountry		1.16	1.34		1.23	
Lower Savannah		1.21	1.19		1.22	
Pee Dee		1.15	1.07		1.4	
Santee Lynches		1.16	1.08		1.1	
Upper Savannah		1.1	1.09		1.12	
Wacamaw						

PHED (hours)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline				9.8		
Statewide Target			34.0		34.0	34.0
Statewide Actual		14.8	9.8		13.5	

Non-SOV (%)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	21.7%			25.6%		
Statewide Target		21.0%	21.0%		21.0%	21.0%
Statewide Actual		21.6%	25.6%		29.2%	

Emissions Nox (kg/day)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	18.80			8.29		
Statewide Target		58.67	58.73		58.67	58.96
Statewide Actual		8.29	8.29		7.56	

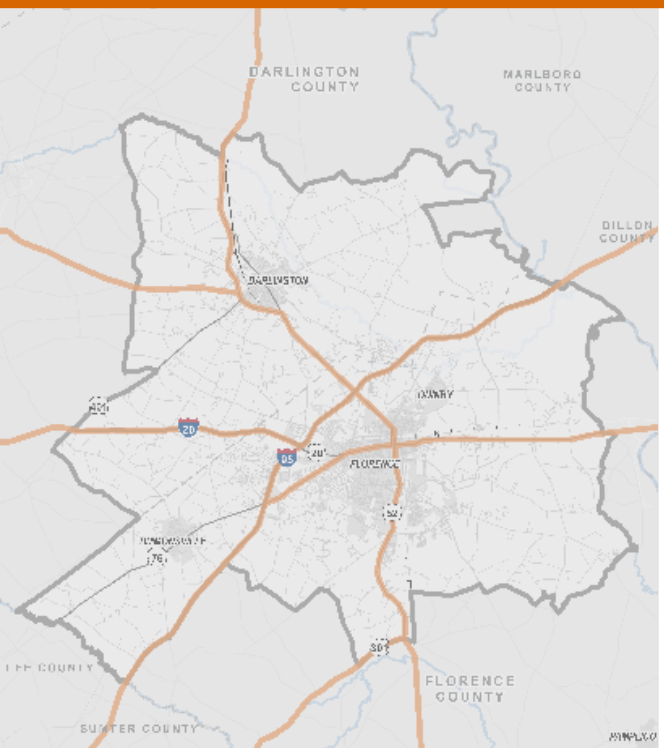
Emissions VOC (kg/day)	1st Performance Period			2nd Performance Period		
	2017	2019	2021	2021	2023	2025
Baseline	22.43			11.01		
Statewide Target		40.82	46.26		40.82	41.89
Statewide Actual		11.01	11.01		0.60	

Florence Area Transportation Study

2045 Long Range Transportation Plan

Appendix B: Project Sheets

July 2022



Florence Area Transportation Study
FLATS
Metropolitan Planning Organization

Intersection

Lamar Hwy. and S. Governor Williams Hwy.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the improvement of the intersec. on between Lamar Hwy. and S Governor Williams Hwy. The intersection does not experience existing congestion. The intersection accomodates 11% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 84 crashes occured at the intersection, 2 fatal and 27 serious injury.

Project Attributes

Project ID: D4i

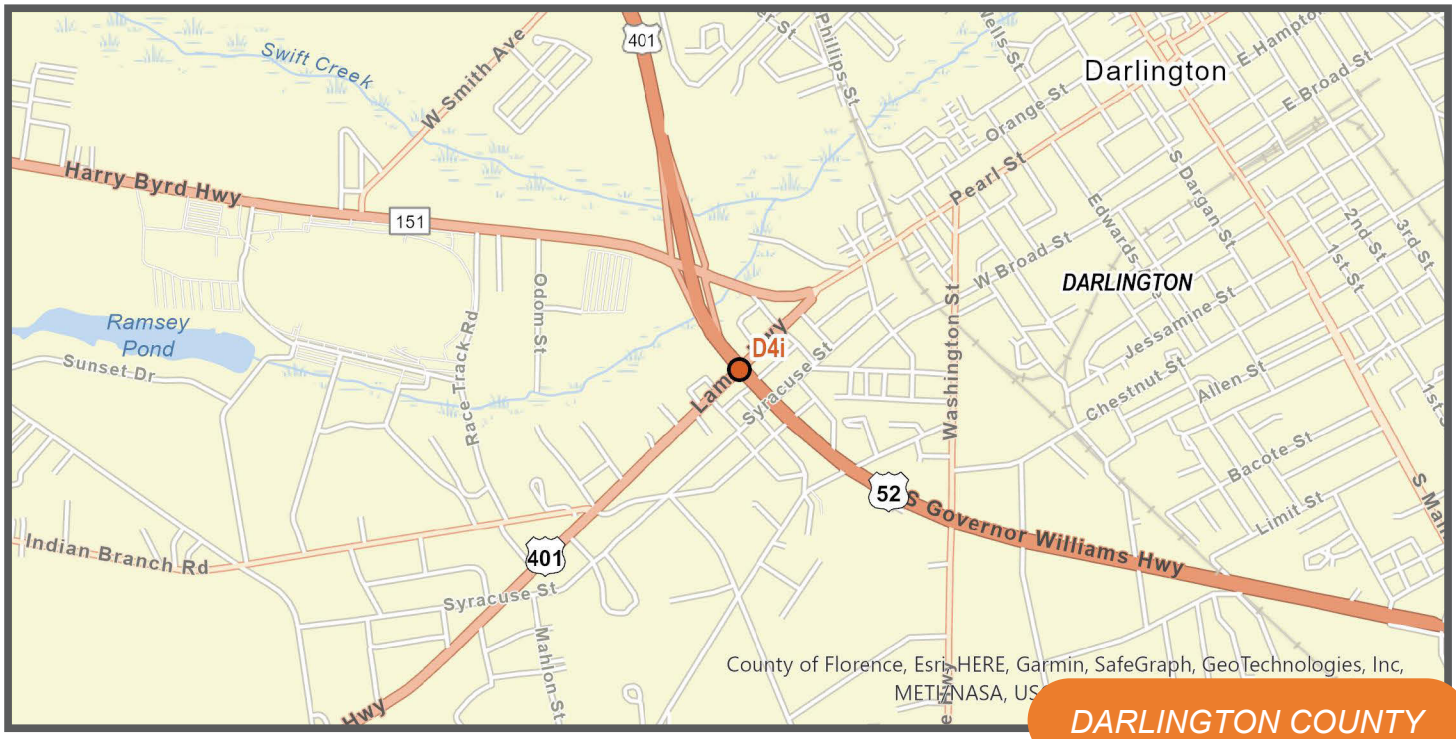
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $1,246,000

Horizon Year: 2031 - 2035



DARLINGTON COUNTY

Intersection

S. Irby St. and Third Loop Rd./ Freedom Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the improvement of the intersec. on between S. Irby St. and Third Loop Rd./Freedom Blvd. The intersection does not experience existing congestion. The intersection accomodates 4% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 180 crashes occured at the intersection, 0 fatal and 45 serious injury.

Project Attributes

Project ID: F2i

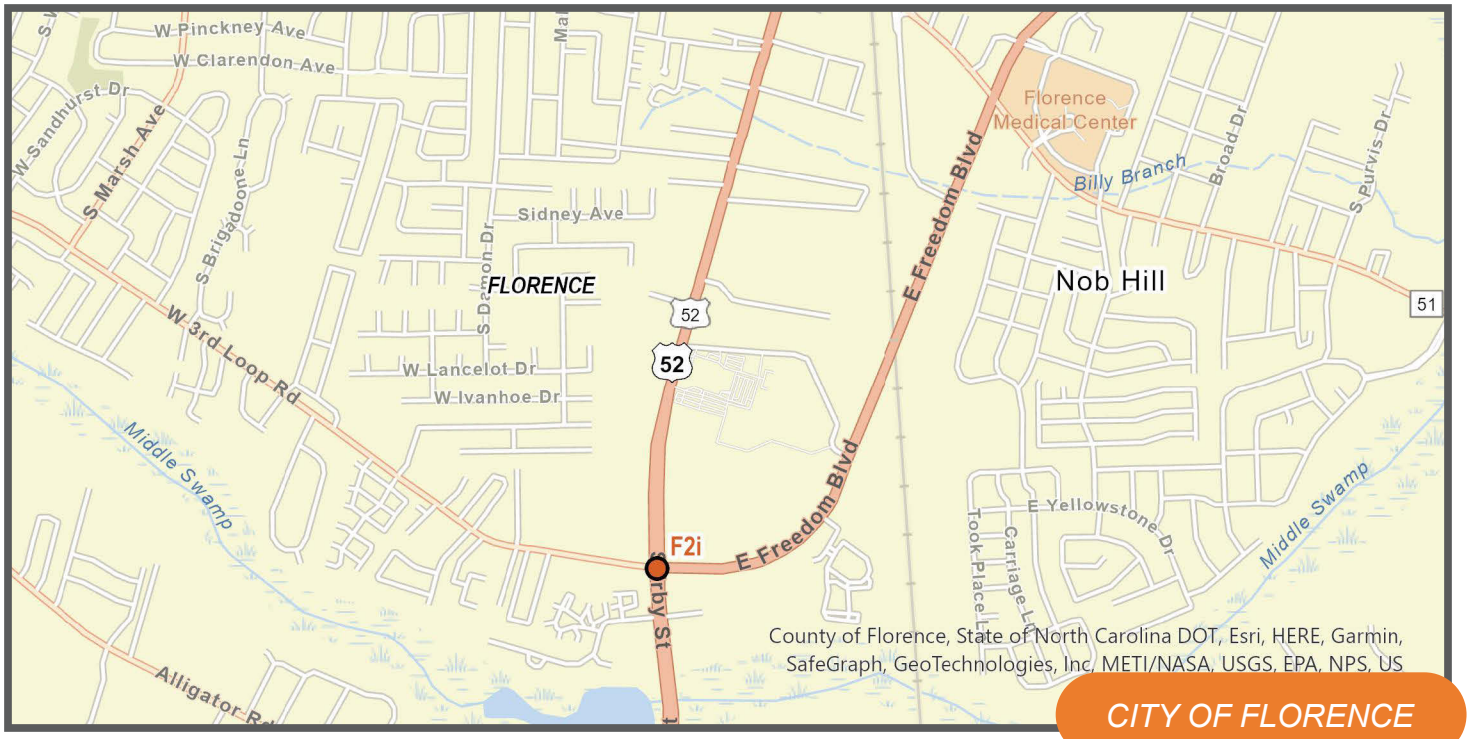
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $1,246,000

Horizon Year: 2031 - 2035



CITY OF FLORENCE

Intersection

S. Irby St. and Second Loop Rd./ Pamplico Hwy.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the improvement of the intersec. on between S. Irby St. and Second Loop Rd./Pamplico Hwy. The intersection does experience existing congestion. The intersection accomodates 3% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 237 crashes occured at the intersection, 0 fatal and 57 serious injury.

Project Attributes

Project ID: F4i

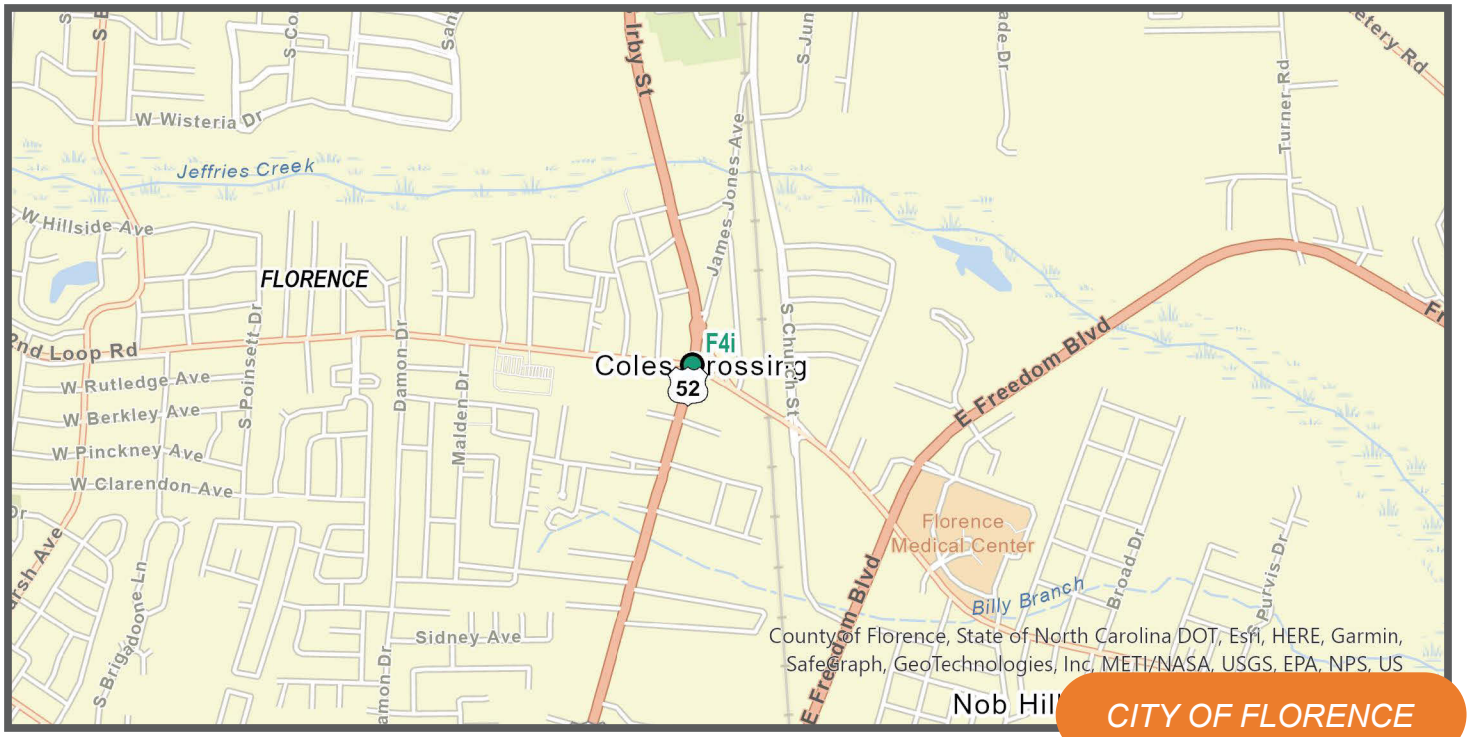
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $4,179,000

Horizon Year: 2026-2030



CITY OF FLORENCE

Intersection

W. Palmetto St. and S. Cashua Dr./Hoffmeyer Rd./Cherokee Rd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the improvement of the intersec. on between W. Palmetto St. and S. Cashua Dr./Hoffmeyer Rd./ Cherokee Rd. The intersection does not experience existing congestion. The intersection accomodates 2% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 202 crashes occured at the intersection, 0 fatal and 41 serious injury.

Project Attributes

Project ID: F5i

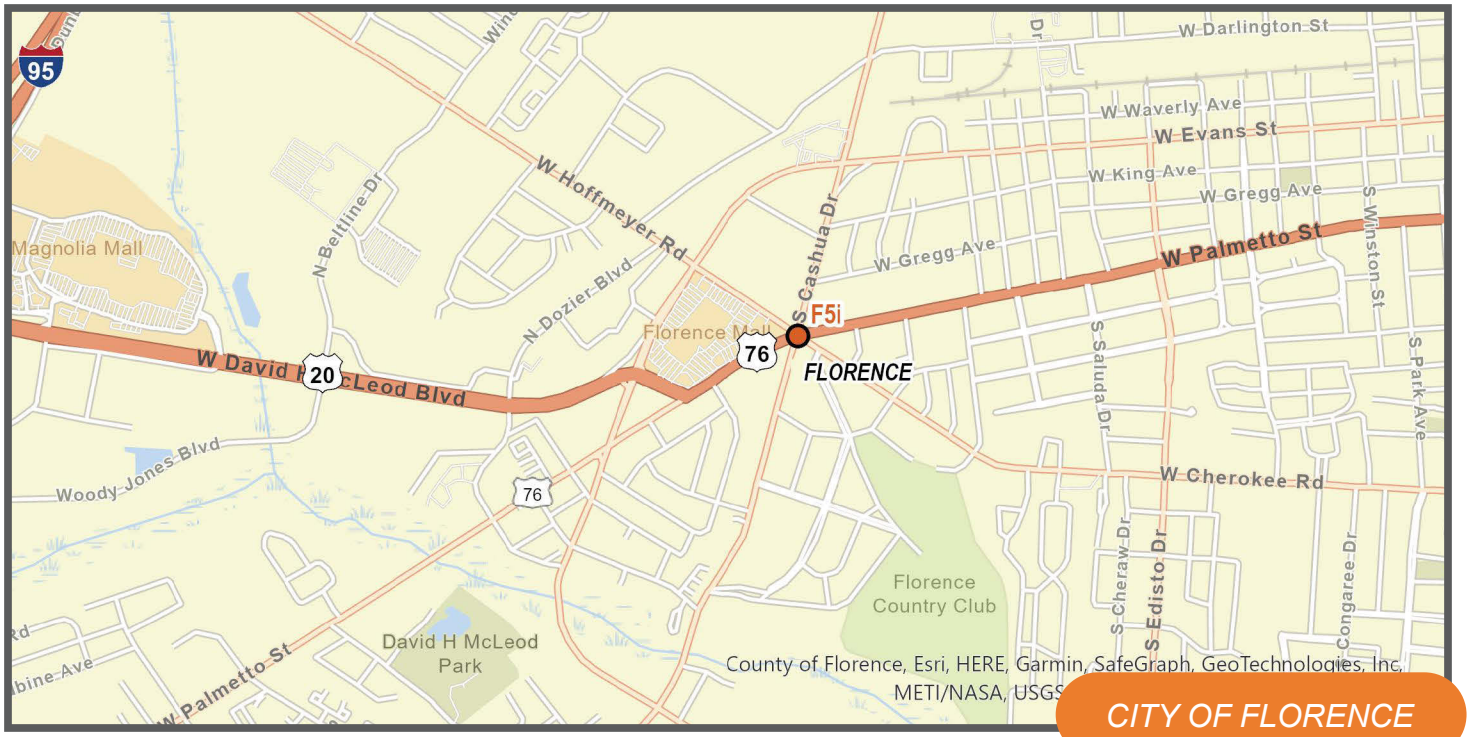
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $17,303,000

Horizon Year: 2031 - 2035



CITY OF FLORENCE

Intersection

E. Palmetto St. and N. Williamson Rd./S. McCurdy Rd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study including access management and safety changes within the intersection between E. Palmetto St. and N. Williamson Rd./S. McCurdy Rd. The intersection does not experience existing congestion. The intersection accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 67 crashes occured at the intersection, 0 fatal and 22 serious injury.

Project Attributes

Project ID: F6i

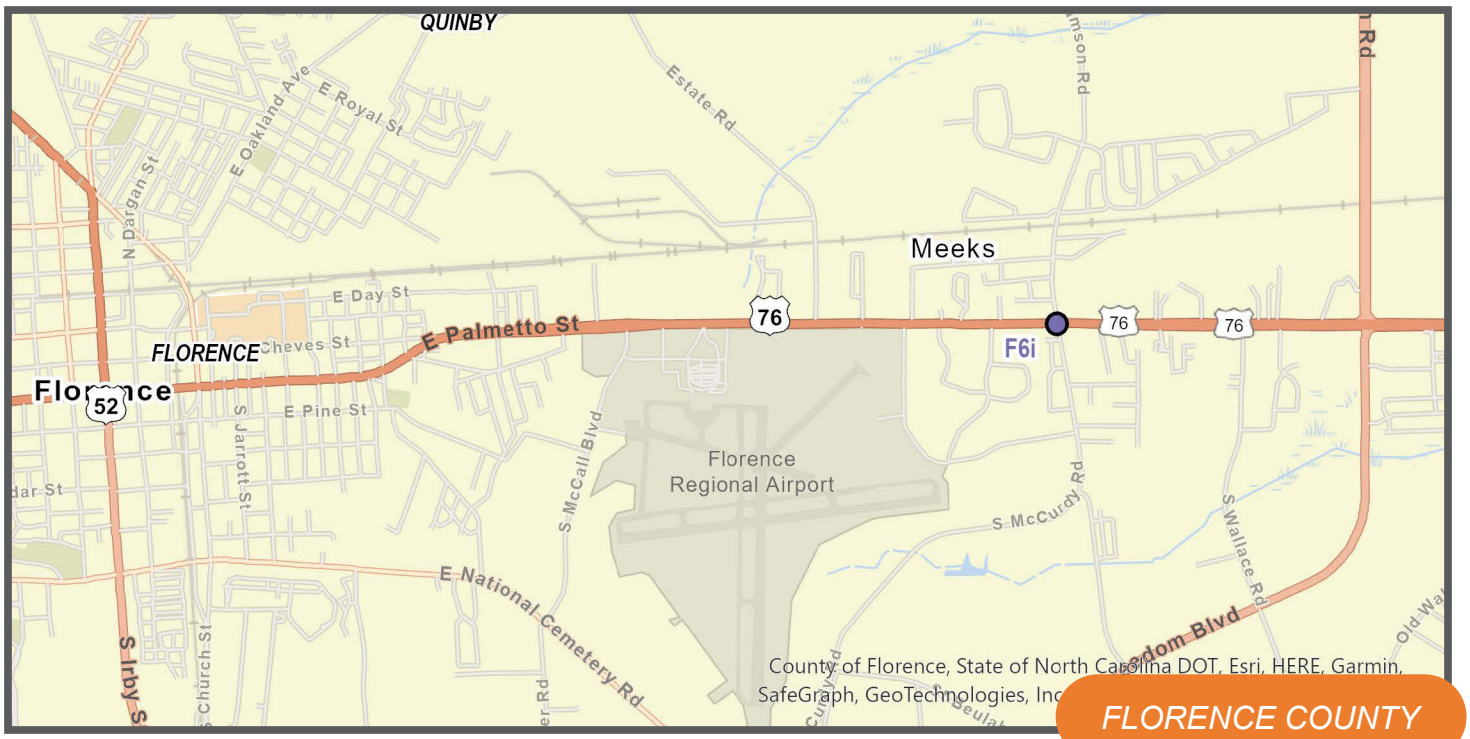
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $153,000

Horizon Year: 2036 - 2045



FLORENCE COUNTY

Intersection

E. Palmetto St. and N. Williston Rd./Freedom Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study including pedestrian and safety changes within the intersection between E. Palmetto St. and N. Williston Rd./Freedom Blvd. The intersection does not experience existing congestion. The intersection accomodates 9% truck traffic.

The project is along the NHS but not a designated freight corridor.

From January 2015 to March 2021, 111 crashes occured at the intersection, 0 fatal and 26 serious injury.

Project Attributes

Project ID: F7i

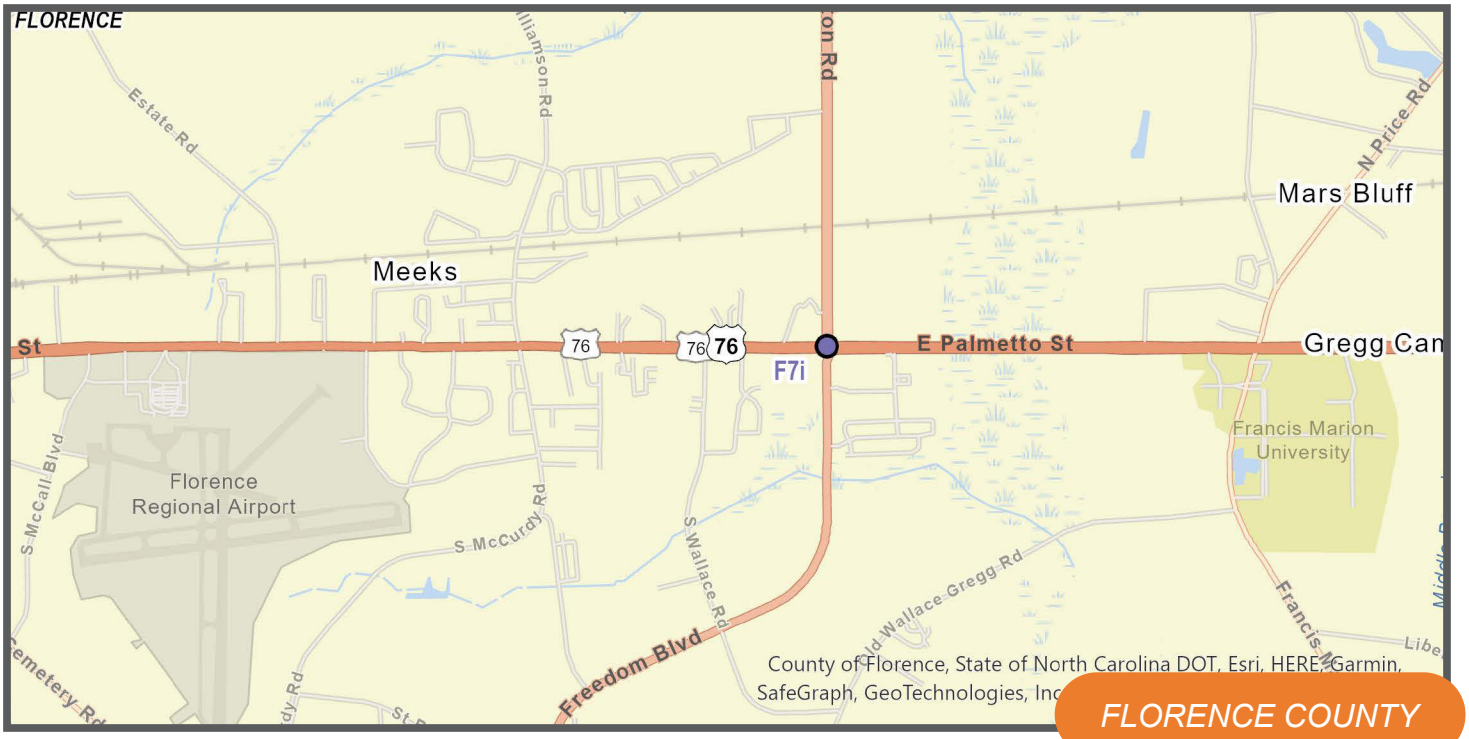
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $677,000

Horizon Year: 2036 - 2045



FLORENCE COUNTY

Intersection

W. Lucas St. and I-95 Off/On Ramps

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes improvements within the intersec. on between W. Lucas St. and I-95. The intersection does not experience existing congestion. The intersection accomodates 17% truck traffic.

The project is along the NHS but not a designated freight corridor.

From January 2015 to March 2021, 356 crashes occured at the intersection, 0 fatal and 77 serious injury.

Project Attributes

Project ID: F9i

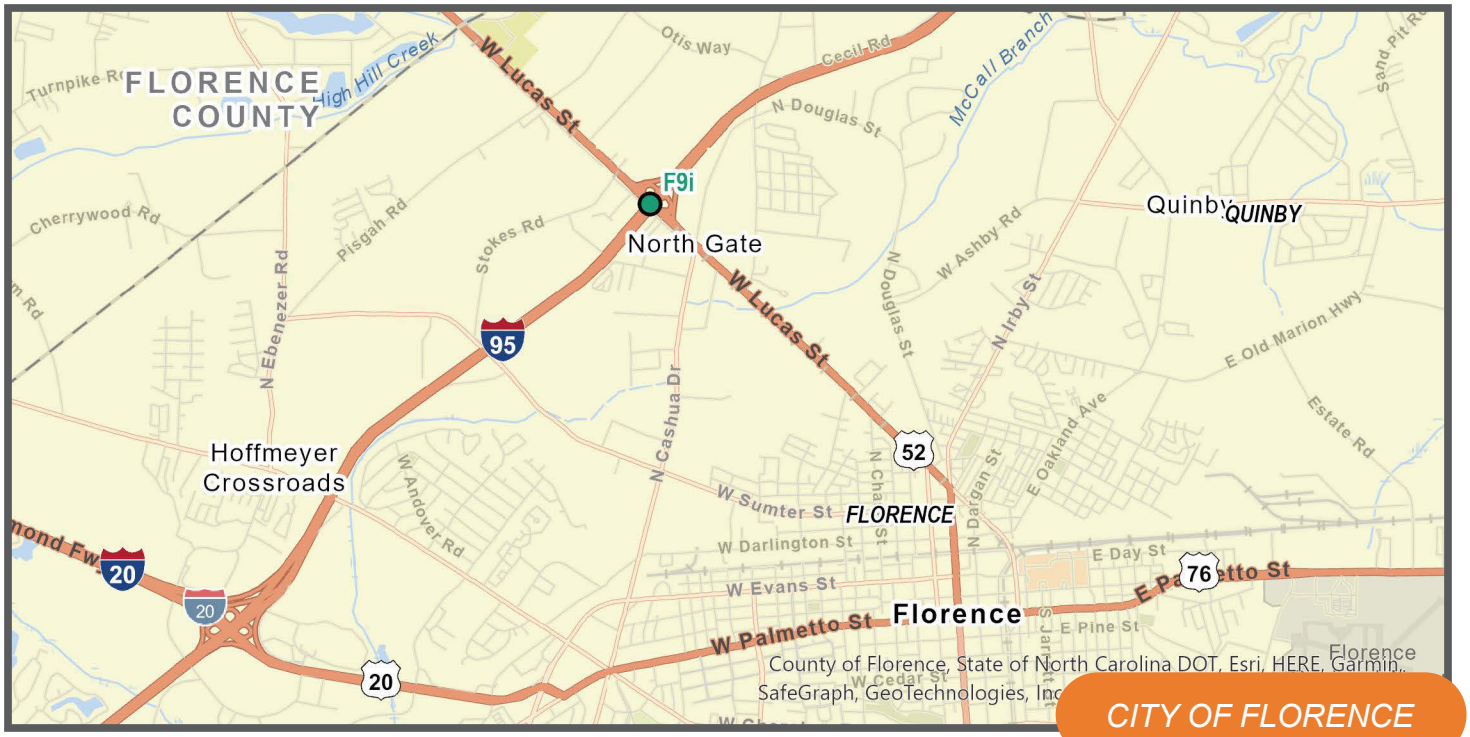
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $4,179,000

Horizon Year: 2026-2030



CITY OF FLORENCE

Intersection

E. Palmetto St. and Cheves St.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study including pedestrian, bicycle, safety and freight changes within the intersection between E. Palmetto St. and Cheves St. The intersection does not experience existing congestion. The intersection accomodates 4% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 17 crashes occured at the intersection, 0 fatal and 8 serious injury.

Project Attributes

Project ID: F12i

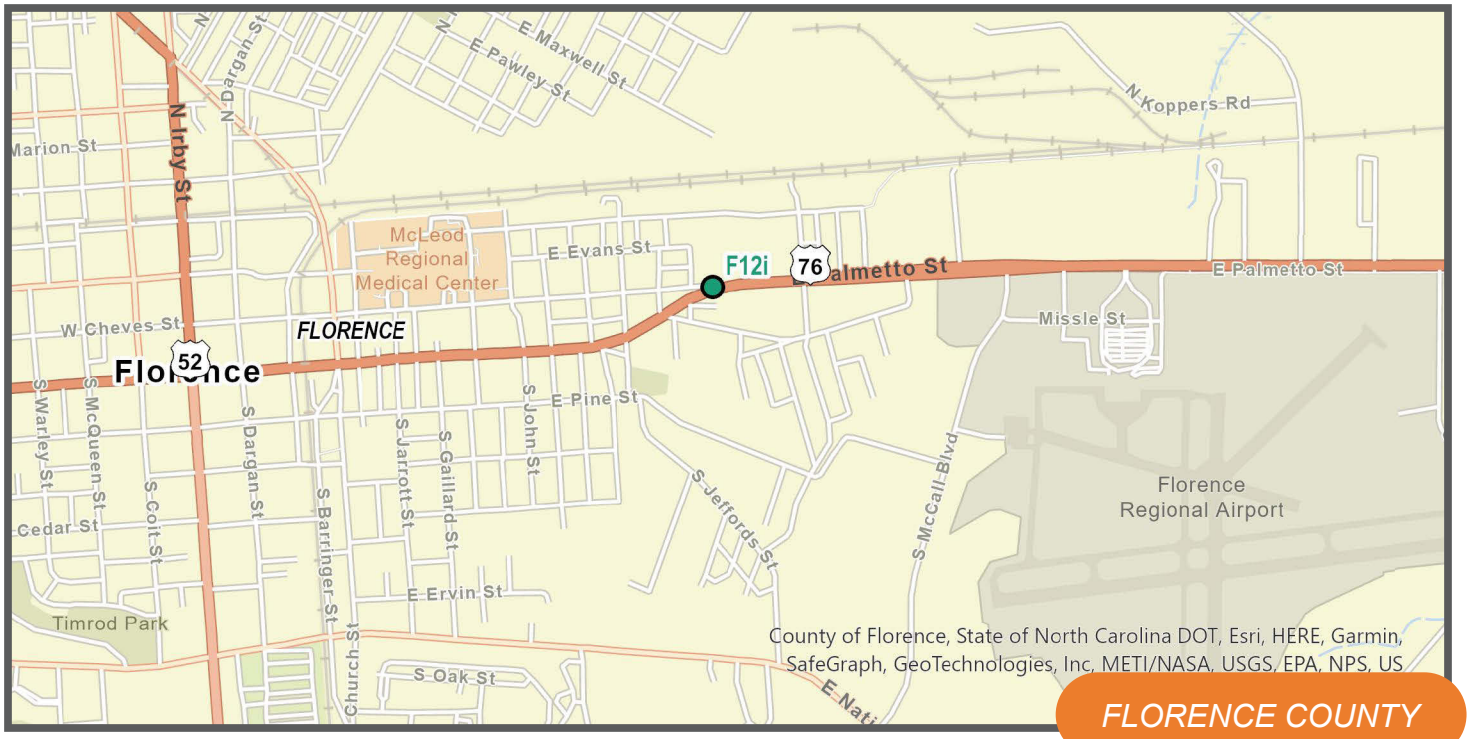
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $1,353,000

Horizon Year: 2026-2030



FLORENCE COUNTY

Intersection

E. Palmetto St. and S. McCall Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study including formalization and signalization changes within the intersection between E. Palmetto St. and S. McCall Blvd. The intersection does not experience existing congestion. The intersection accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 31 crashes occured at the intersection, 1 fatal and 10 serious injury.

Project Attributes

Project ID: F13i

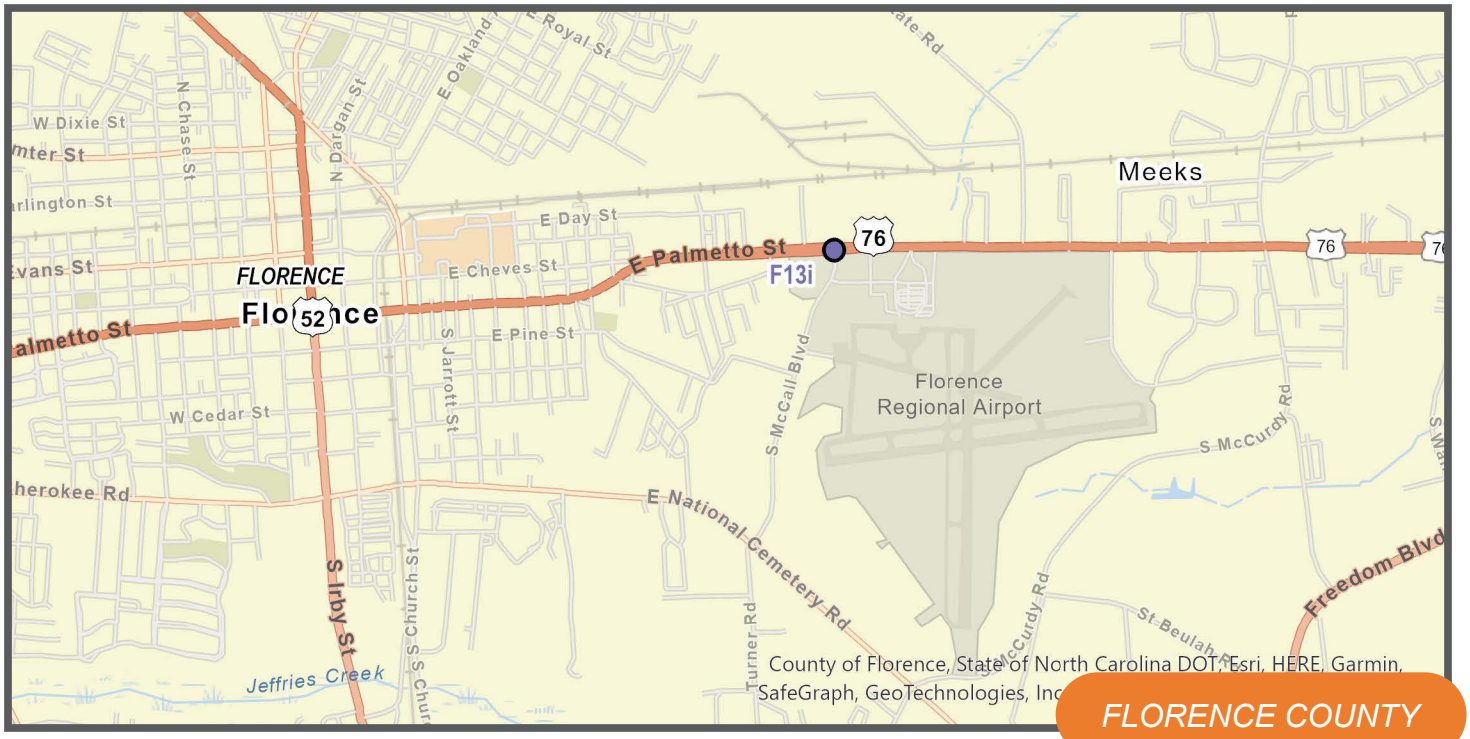
Length: N/A

Project Category: Intersection Improvement

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $333,000

Horizon Year: 2036 - 2045



FLORENCE COUNTY

Cherokee Rd.

W. Palmetto St. to S. Coit St.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the addi. on of turn lane pockets, multimodal accomodations, as well as curbs and gutters on Cherokee Road from W. Palmetto St. to S. Coit St. The corridor does experience existing congestion. The 2020 AADT was 10,800 and the corridor accomodates 2% truck traffic.

The project is not along the NHS or a designated freight corridor.

From January 2015 to March 2021, 360 crashes occured along the corridor, 1 fatal and 119 serious injury.

The PQI along the corridor is 2.68.

Project Attributes

Project ID: FL_02

Length: 2.1 Miles

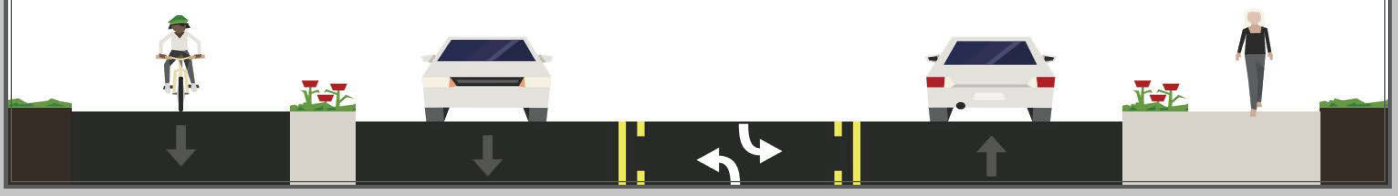
Project Category: Turn lane pockets, sidewalks, curb, and gutter.

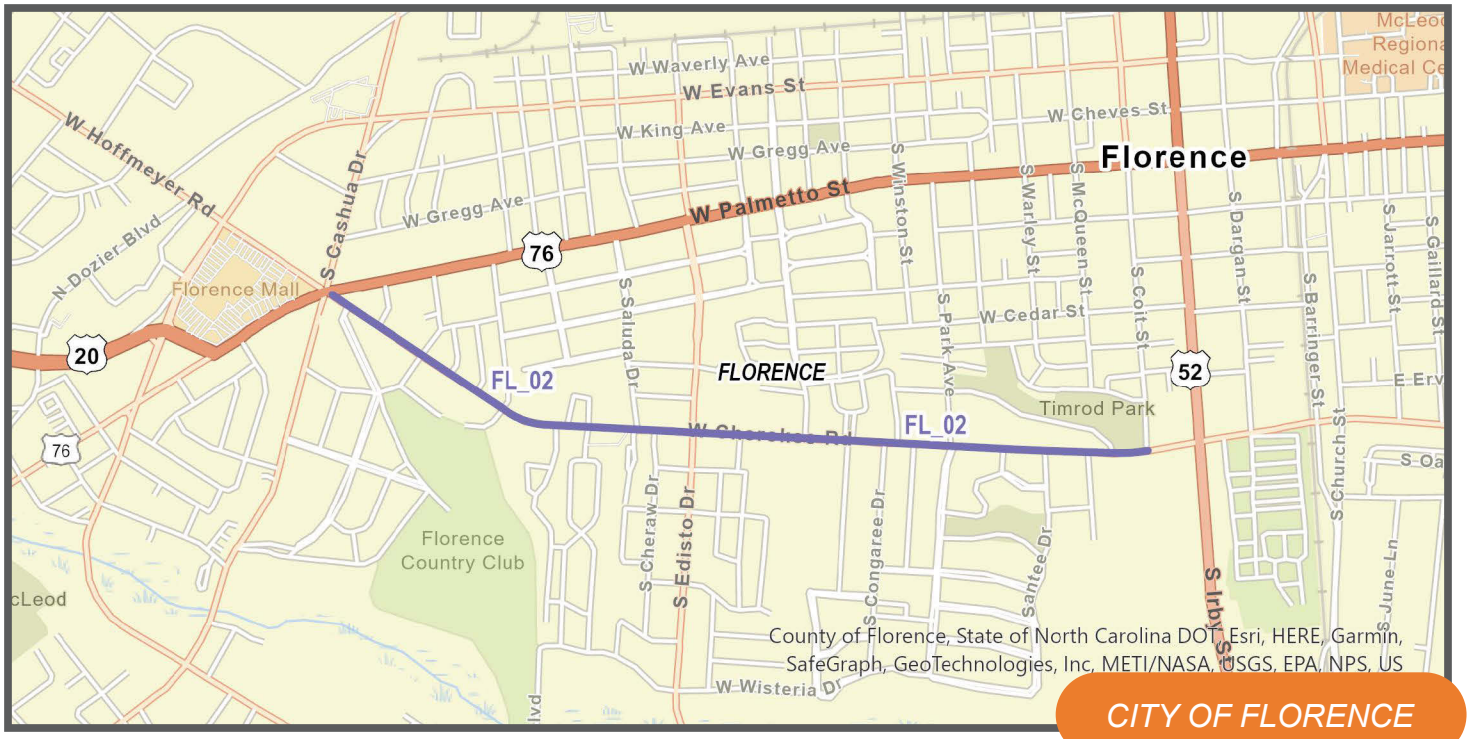
Bike/Ped Accommodations: Multi-use Path

Cost Estimate (YOE): $21,919,000

Horizon Year: 2036-2045

Example Typical Section





CITY OF FLORENCE

David H. McLeod Blvd.

I-95 NB Ramp to Woody Jones Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes corridor improvements along David H. McLeod Blvd. from the I-95 northbound ramp to Woody Jones Blvd. The corridor does not experience exis. ng congestion. The 2020 AADT was 14,100 and the corridor accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 319 crashes occured along the corridor, 0 fatal and 60 serious injury.

The PQI along the corridor is 1.83.

Project Attributes

Project ID: FL_12

Length: 0.7 Miles

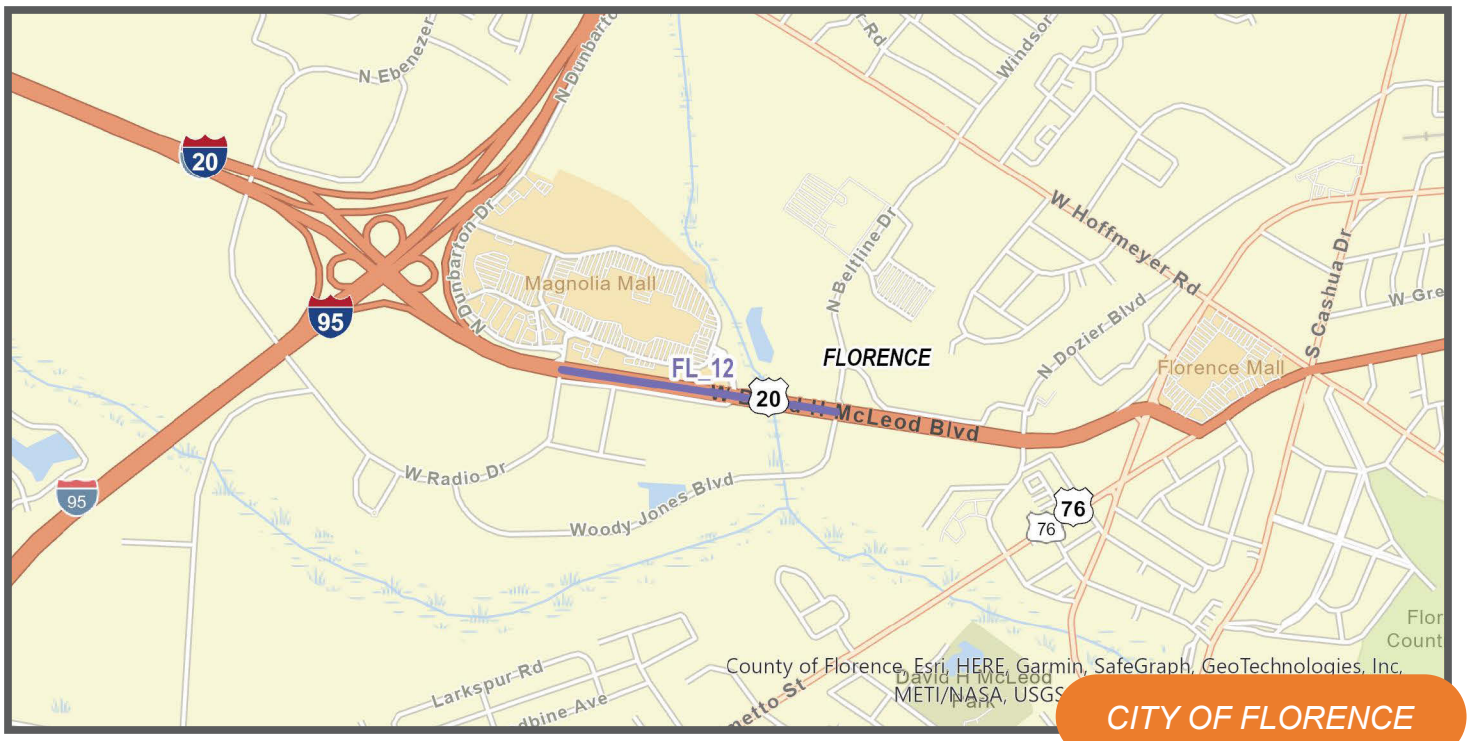
Project Category: Corridor Improvements

Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $2,981,000

Horizon Year: 2036 - 2045

Example Typical Section



CITY OF FLORENCE

E. Cheves St.

E. Palmetto St. to S. Church St.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project improves the access of E. Cheves St. from E. Palme. o St. to S. Church St by adding bike lanes. The corridor does not experience existing congestion. The 2020 AADT was 11,500 and the corridor accomodates 3% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 210 crashes occured along the corridor, 1 fatal and 91 serious injury.

The PQI along the corridor is 2.40.

Project Attributes

Project ID: FL_13

Length: 1.0 Miles

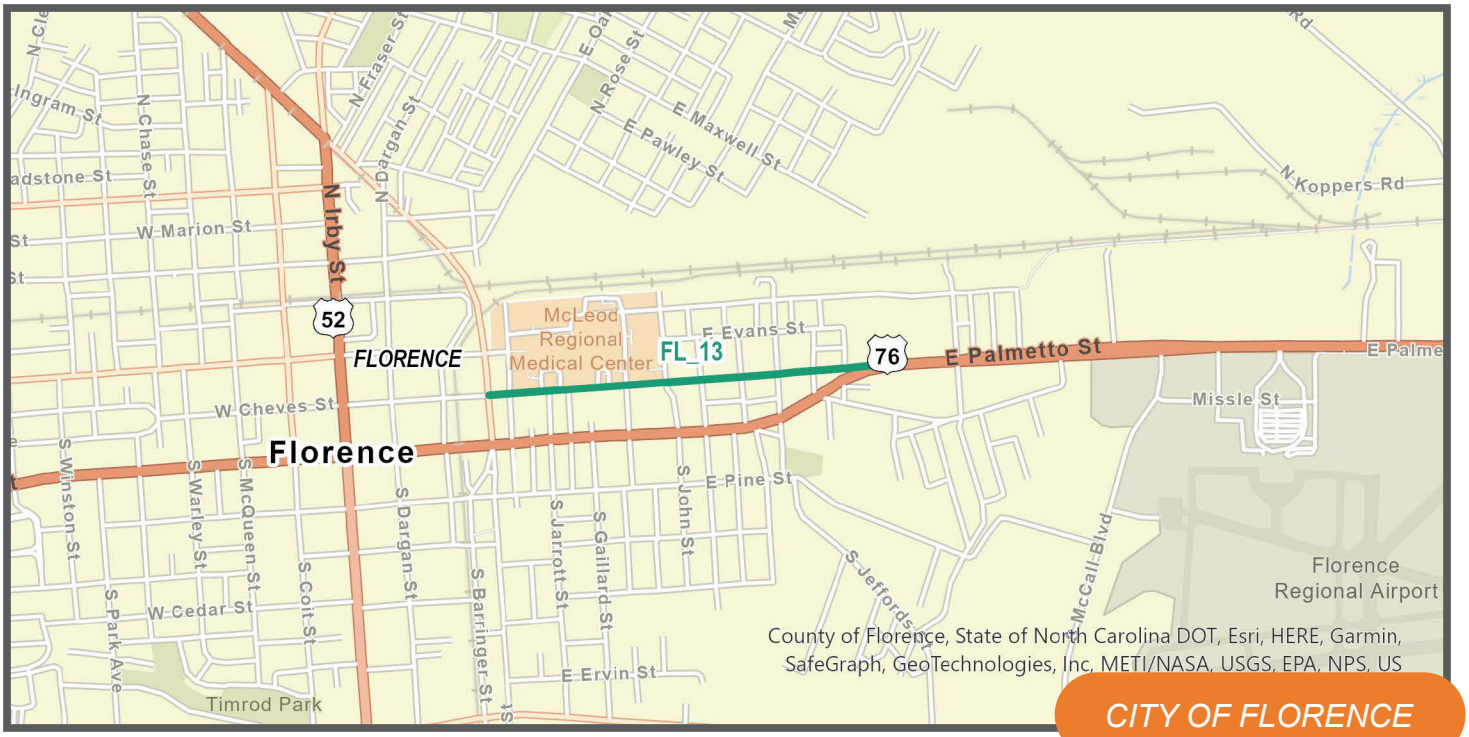
Project Category: Access Management

Bike/Ped Accommodations: Bicycle Lanes

Cost Estimate (YOE): $2,997,000

Horizon Year: 2026-2030

Example Typical Section



CITY OF FLORENCE

Palmetto St. (US 76)

Second Loop Rd. to Freedom Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes improvements in access management on Palme. o St. from Second Loop Rd to Freedom Blvd. The corridor does not experience existing congestion. The 2020 AADT was 14,800, and the corridor accomodates 14% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 1229 crashes occured along the corridor, 2 fatal and 418 serious injury.

The PQI along the corridor is 1.35.

Project Attributes

Project ID: FL_19

Length: 3.3 Miles

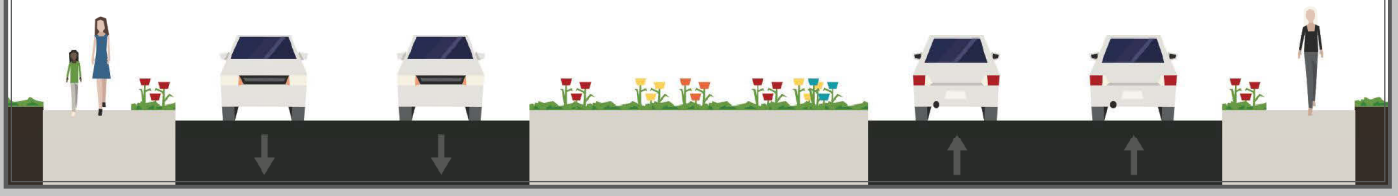
Project Category: Access management

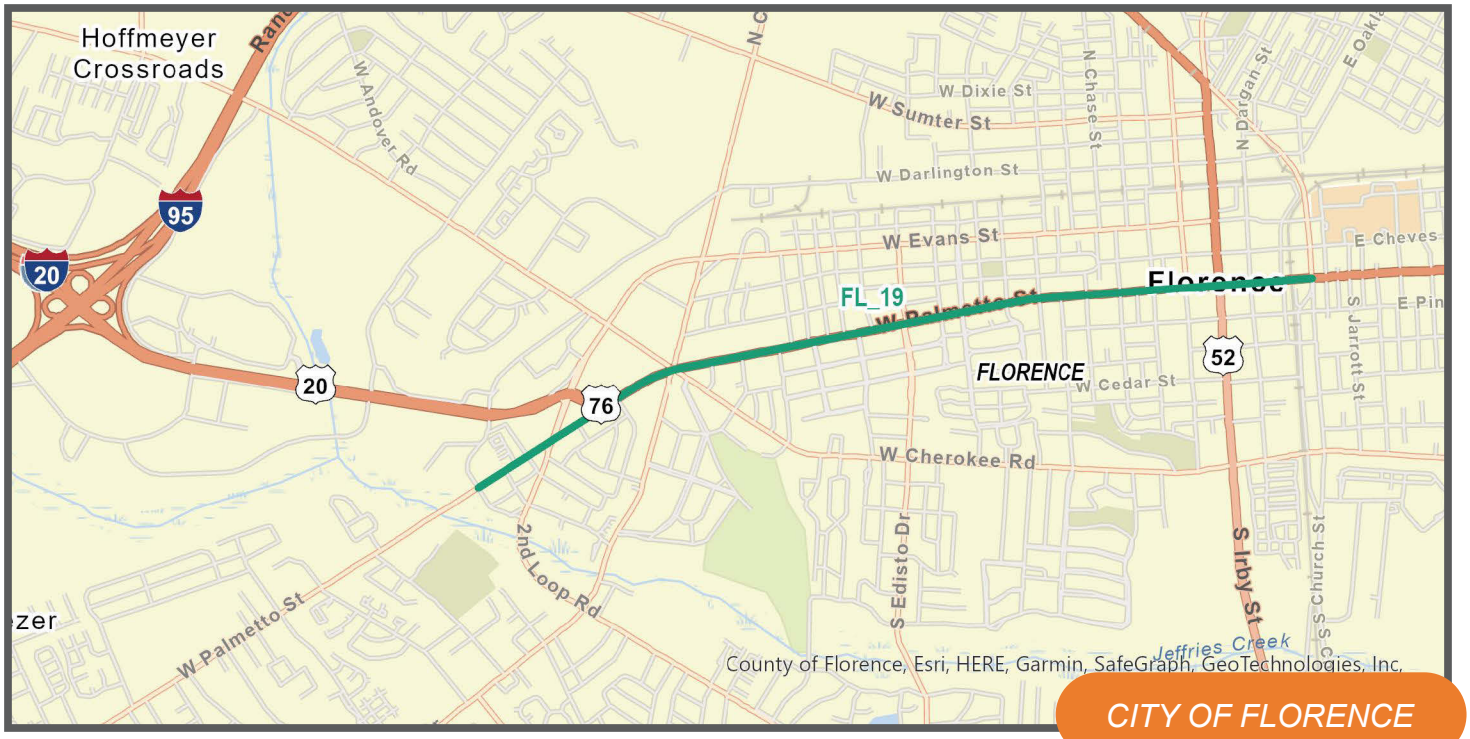
Bike/Ped Accommodations: N/A

Cost Estimate (YOE): $9,958,000

Horizon Year: 2026-2030

Example Typical Section





CITY OF FLORENCE

Second Loop Rd./Pamplico Hwy. (SC 51)

W.Palmetto St. to Howe Springs Rd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes improvements in access management by adding a mul. -use path on Second Loop Rd. and Pamplico Hwy. from W. Palmetto St. to Howe Springs Rd. The corridor does experience existing congestion. The 2020 AADT was 20,500 and the corridor accomodates 4% truck traffic.

The project is not along the NHS or a designated freight corridor.

From January 2015 to March 2021, 1749 crashes occured along the corridor, 4 fatal and 548 serious injury.

The PQI along the corridor is 2.62.

Project Attributes

Project ID: FL_20

Length: 6.2 Miles

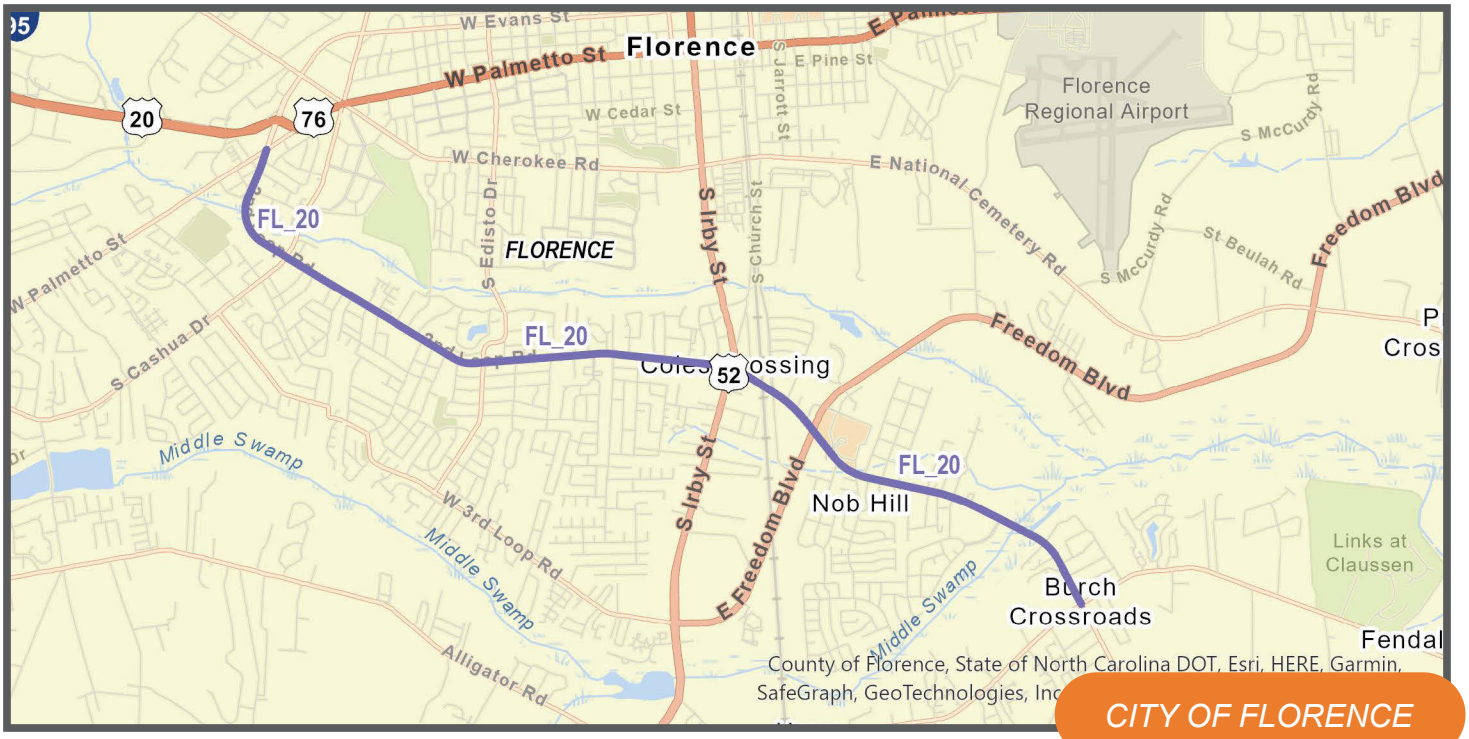
Project Category: Access Management

Bike/Ped Accommodations: Multi-use path

Cost Estimate (YOE): $27,285,000

Horizon Year: 2036-2045

Example Typical Section



CITY OF FLORENCE

City Gateway District (US 76)

Church St. to South McCall Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study on E. Palmetto St. (US 76) from Church St. to South McCall Blvd. The corridor does not experience existing congestion. The 2020 AADT was 20,100 and the corridor accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 270 crashes occured along the corridor, 1 fatal and 114 serious injury.

The PQI along the corridor is 0.90.

Project Attributes

Project ID: FL_80

Length: 1.7 Miles

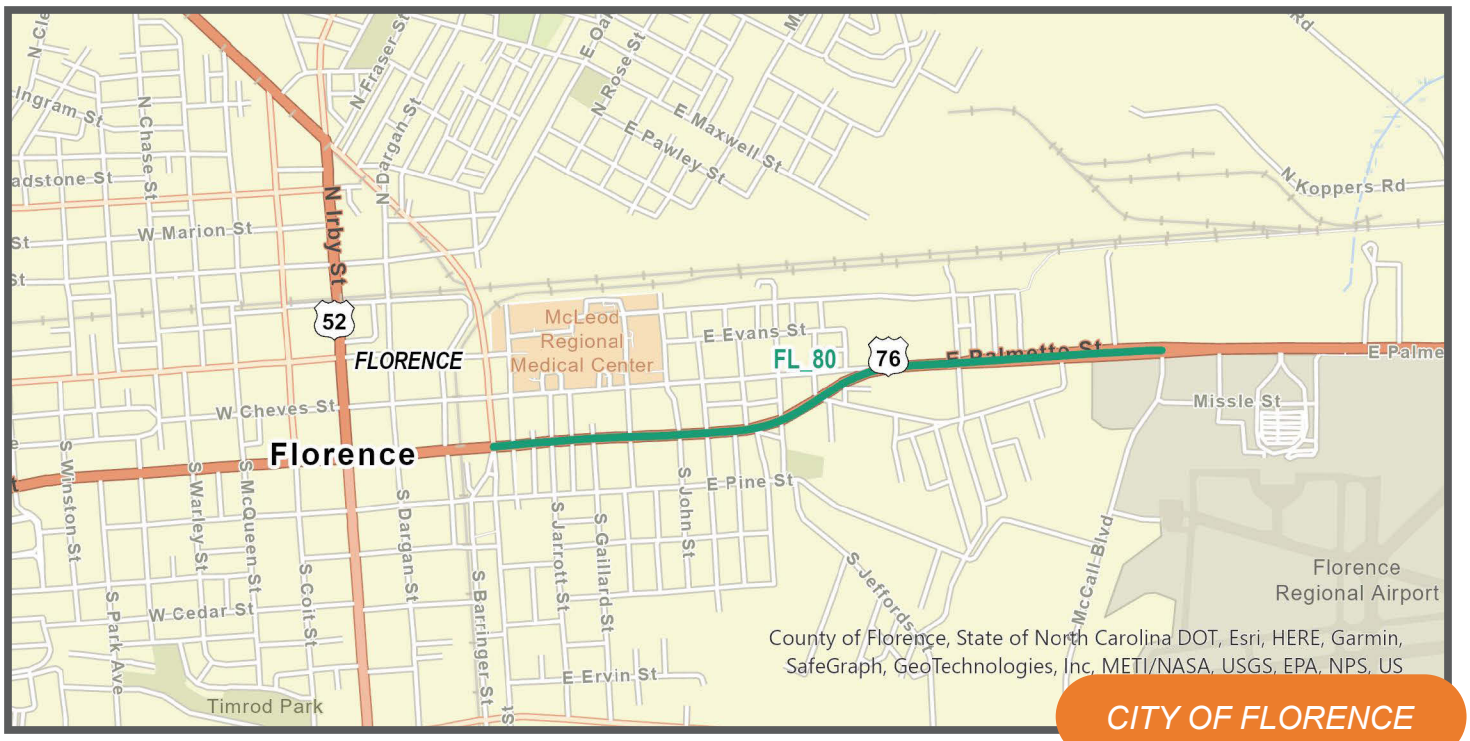
Project Category: US 76 Gateway (2018)

Bike/Ped Accommodations: Multi-use Path

Cost Estimate (YOE): $3,812,000

Horizon Year: 2026-2030

Example Typical Section



CITY OF FLORENCE

University District (US 76)

Freedom Blvd. to Francis Marion Rd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study on US 76 from Freedom Blvd. to Francis Marion Rd. The corridor does not experience existing congestion. The 2020 AADT was 20,200 and the corridor accomodates 11% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 218 crashes occured along the corridor, 1 fatal and 55 serious injury.

The PQI along the corridor is 1.72.

Project Attributes

Project ID: FL_81

Length: 1.6 Miles

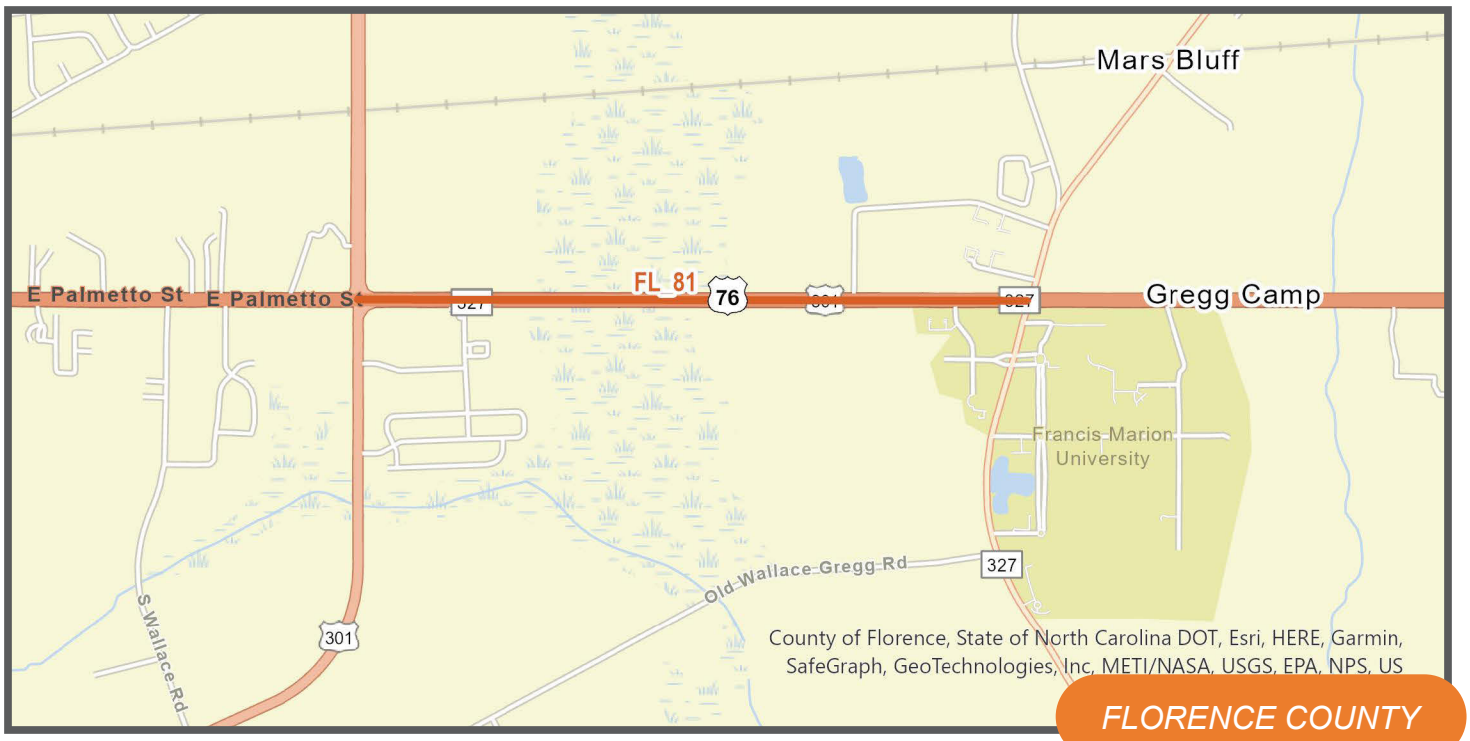
Project Category: US 76 Gateway (2018)

Bike/Ped Accommodations: Multi-use path

Cost Estimate (YOE): $4,823,000

Horizon Year: 2031 - 2035

Example Typical Section



FLORENCE COUNTY

Emerging District (US 76)

South McCurdy Rd. to Freedom Blvd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study on US 76 from South McCurdy Rd. to Freedom Blvd. The corridor does not experience existing congestion. The 2020 AADT was 17,200 and the corridor accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 195 crashes occured along the corridor, 0 fatal and 61 serious injury.

The PQI along the corridor is 1.69.

Project Attributes

Project ID: FL_82

Length: 1.2 Miles

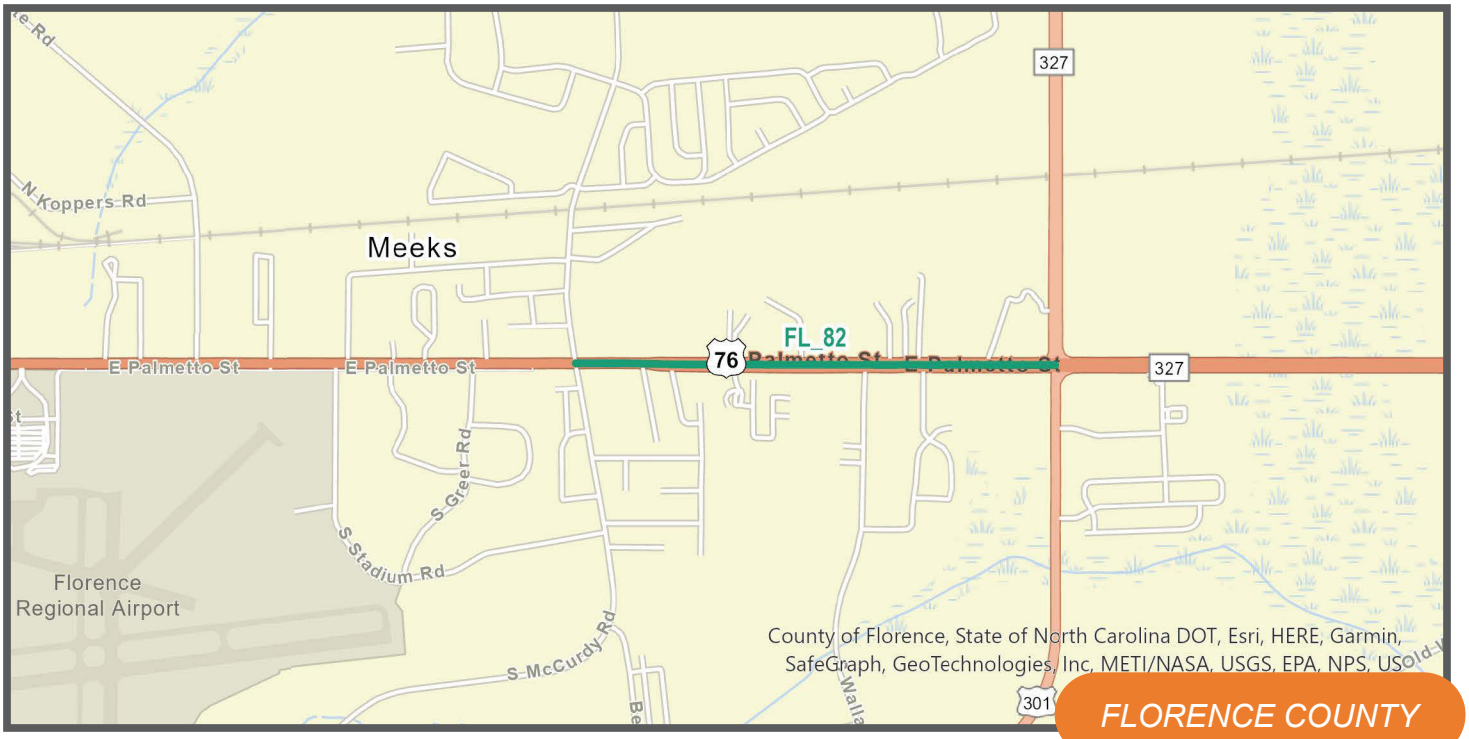
Project Category: US 76 Gateway (2018)

Bike/Ped Accommodations: Multi-Use Path

Cost Estimate (YOE): $2,635,000

Horizon Year: 2026-2030

Example Typical Section



FLORENCE COUNTY

Aviation District (US 76)

South McCall Blvd. to South McCurdy Rd.

2045 FLATS
LONG RANGE TRANSPORTATION PLAN

Project Needs

This project includes the implementa. on of the recommendations in the 2018 US 76 Gateway Study on US 76 from South McCall Blvd. to South McCurdy Rd. The corridor does not experience existing congestion. The 2020 AADT was 20,100 and the corridor accomodates 5% truck traffic.

The project is along the NHS and a designated freight corridor.

From January 2015 to March 2021, 128 crashes occured along the corridor, 4 fatal and 56 serious injury.

The PQI along the corridor is 1.06.

Project Attributes

Project ID: FL_83

Length: 1.6 Miles

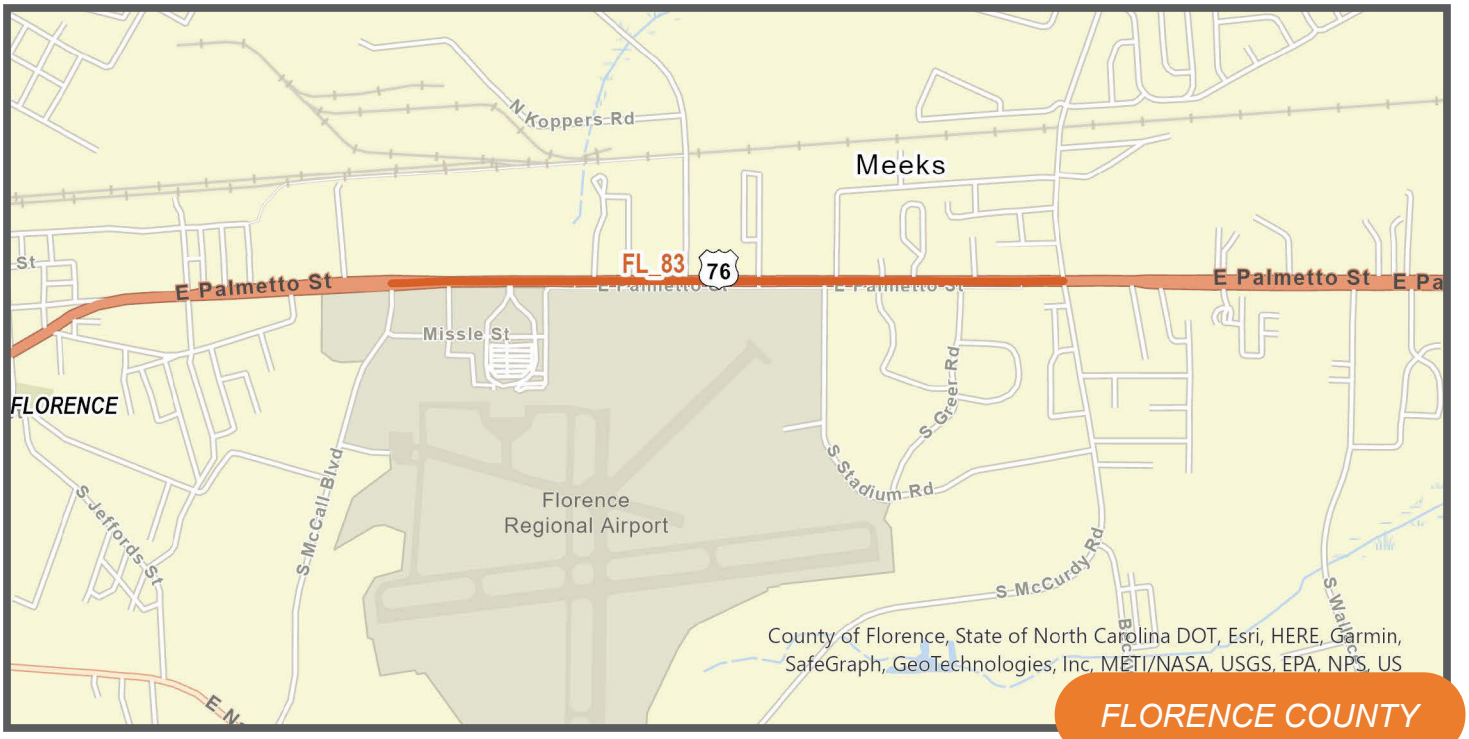
Project Category: US 76 Gateway (2018)

Bike/Ped Accommodations: Multi-use Path

Cost Estimate (YOE): $1,655,000

Horizon Year: 2031-2035

Example Typical Section



FLORENCE COUNTY